

Early Adolescence

Yi-Fu Chen

Department of Sociology, National Taipei University, New Taipei City, Taiwan

Definition

Adolescence is the second decade in the life span. It is a critical period that bridges childhood and adulthood. The first stage of this transition, often signaled by the beginning of puberty, is called early adolescence. According to the US Centers for Disease Control and Prevention (CDC), early adolescence ranges from age 12 to age 14, during which time boys and girls start to experience dramatic changes in their physical and cognitive development and social roles. With the development of primary and secondary sexual characteristics triggered by sex hormones, boys and girls experience rapid growth in their bodies and advances in their ► [cognitive abilities](#). During this period, adolescents start to develop their self-perceptions, self-identities, and sense of autonomy while establishing more complicated and multidimensional social relationships with parents, friends, and significant others.

Description

Changes during early adolescence create challenges for teens. Research on quality of life

(QoL) during this turbulent period, therefore, should address multiple life domains. As summarized by Felce (1997) and Harding (2001), QoL is a multidimensional construct combining objective conditions (objective QoL) and subjective perceptions of self and life conditions (subjective QoL). Furthermore, the construct not only should include the four domains that the ► [World Health Organization Quality of Life \(WHOQOL\)](#) outlined (i.e., physical, psychological, and social functioning and environmental conditions) but also needs to incorporate adolescent-specific domains regarding personal competence; performance in school and extracurricular activities; social relationships with families, friends, and significant others; and personal satisfaction. These domains map onto the physical and psychological developments taking place during early adolescence, such as pubertal development and increases in autonomy, self-identity, and ► [self-esteem](#). In addition, because family and school are two primary social settings during early adolescence, cognitive and social competence, school performance, and interpersonal relationships (i.e., parent-child, peer, and student-teacher relationships) are also important to QoL evaluations.

Although assessments of individual domains of adolescent QoL have long been available in the ► [child development](#) and family studies literature, it was not until the 1980s that composite indices became widely used in evaluating QoL for children and adolescents (Harding 2001). Two

types of assessments have been developed in the QoL literature: those dealing with disease-specific and generic QoL. Disease-specific assessments are designed to evaluate young patients' functioning and adjustment to their disabilities or diseases and their treatments. With changes in patient care philosophy in the medical area, disease-specific QoL takes on a broader consideration of the ways in which diseases affect patients' lives (Harding 2001; Solans et al. 2008). In addition to ► [physical functioning \(PF\)](#), more recently developed disease-specific QoL assessments incorporate dimensions of health such as life satisfaction and mental, social, and psychological well-being.

The major difference between disease-specific and generic QoL assessments is the targeted population: disease-specific assessments are designed for patients with specific conditions, and generic assessments are targeted to adolescents without a diagnosis (Harding 2001). Although they target different populations, the two types of assessments were not developed completely independently. Generic assessments are designed to share core domains in common with disease-specific assessments. This enhances instrument development and ensures its utility in testing because comparisons can be made between the two groups using the same items to measure each domain. Another strategy for assessing adolescent QoL is to create a generic scale as the core of the instrument and then develop different modules specific to the various diseases under study. This procedure makes possible the flexible use of an instrument in future research. A good example of this approach is Varni et al. (2001) PedsQLTM. Details can be found on the website of the instrument at www.pedsq.org.

Research on QoL in early adolescence, using either generic or disease-specific assessments, provides a comprehensive evaluation of adolescents' current health status. Several themes have emerged in this literature. First, QoL scores of teens with disabilities or diseases are not as consistent as the scores of teens without those conditions. Research has found that teens with disabilities or diseases do not differ from their healthy counterparts in subjective health-related QoL but demonstrate lower objective QoL (Chow

et al. 2005). This unexpected result could be explained in terms of coping mechanisms that teens with specific illnesses use (Van De Ven et al. 2007) and by their socioeconomic backgrounds (Panepinto et al. 2009). Second, girls generally have lower QoL scores than do boys. Michel, Bisegger, Fuhr, Abel, and The KIDSCREEN group (2009) investigated this gender difference using data across 12 European countries. They found that girls had lower physical, self, and school QoL scores than do boys, but there was no difference in the general health-related QoL between genders during childhood. However, as they made transition to early adolescence, girls showed significant decreases in general score of health-related QoL as well as the scores of almost all the subscales. This shows that the transition and associated changes have greater impact on girls than they do on boys.

Third, disagreements between teen self-reports and parent proxy reports have been noted in the literature, especially on subjective QoL; this confirms the importance of including self-reports in evaluations (Harding 2001). Last, in multivariate models, past research has shown that adolescent QoL is positively related to high family socioeconomic status (Panepinto et al. 2009), good neighborhood characteristics (Wu et al. 2010), and related constructs such as life satisfaction.

Despite the rich findings emerging from the QoL literature, challenges remain. Several review papers indicate that heterogeneity in QoL assessments hampers the direct comparison of results from different studies. Different domains of QoL are covered in different assessments, even within disease-specific or generic populations; therefore, comparisons of findings across studies remain difficult to interpret. Future QoL research should address methods of determining ► [measurement invariance](#) and score equating for different assessments.

Past research on QoL mainly has focused on group comparisons of QoL scores between adolescents with and without health problems, between boys and girls, and among different ethnic groups. Researchers have begun to search for predictors of QoL for teens in early adolescence in their multivariate models (Meulenens and

Lee 2005; Palacio-Vieira et al. 2008). Future research needs to explore the mechanisms that foster positive QoL for adolescents. Because early adolescence is a period of change, the incorporation of longitudinal data analysis in future investigations of adolescent QoL is of particular importance.

Cross-References

- Child Development
- Cognitive Abilities
- Measurement Invariance
- Physical Functioning (PF)
- Self-Esteem
- World Health Organization Quality of Life (WHOQOL) Assessment

References

- Chow, S. M. K., Lo, S. K., & Cumins, R. A. (2005). Self-perceived quality of life of children and adolescents with physical disabilities in Hong Kong. *Quality of Life Research*, 14, 415–423.
- Felce, D. (1997). Defining and applying the concept of quality of life. *Journal of Intellectual Disability Research*, 41, 126–135.
- Harding, L. (2001). Children's quality of life assessments: A review of generic and health related quality of life measures completed by children and adolescents. *Clinical Psychology & Psychotherapy*, 8, 79–96.
- Meuleners, L. B., & Lee, A. H. (2005). Quality of life profile – adolescent version: Assessing the relationship of covariates to scale scores using structural equation modeling. *Quality of Life Research*, 14, 1057–1063.
- Michel, G., Bisegger, C., Fuhr, D. C., Abel, T., & The KIDSCREEN group. (2009). Age and gender differences in health-related quality of life of children and adolescents in Europe: A multilevel analysis. *Quality of Life Research*, 18, 1147–1157.
- Palacio-Vieira, J. A., Villalonga-Olives, E., Valderas, J. M., Espallargues, M., Herdman, M., Berra, S., et al. (2008). Changes in health-related quality of life (HRQoL) in a population-based sample of children and adolescents after 3 years of follow-up. *Quality of Life Research*, 17, 1207–1215.
- Panepinto, J. A., Pajewski, N. M., Foerster, L. M., Sabnis, S., & Hoffmann, R. G. (2009). Impact of family income and sickle cell disease on the health-related quality of life of children. *Quality of Life Research*, 18, 5–13.
- Solans, M., Pane, S., Estrada, M., Serra-Sutton, V., Berra, S., Herdman, M., et al. (2008). Health-related quality of life measurement in children and adolescents: A systematic review of generic and disease-specific instruments. *Value in Health*, 11, 742–764.
- Van De Ven, M. O. M., Engels, R. C. M. E., Sawyer, S. M., Otten, R., & Van Den Eijnden, R. J. J. M. (2007). The role of coping strategies in quality of life of adolescents with asthma. *Quality of Life Research*, 16(4), 625–634.
- Varni, J., Seid, M., & Kurtin, P. (2001). PedsQL (TM) 4.0: Reliability and validity of the pediatric quality of life inventory(TM) version 4.0 generic core scales in healthy and patient populations. *Medical Care*, 39, 800–812.
- Wu, X. Y., Ohinmaa, A., & Veugelers, P. J. (2010). Socio-demographic and neighbourhood determinants of health-related quality of life among grade-five students in Canada. *Quality of Life Research*, 19, 969–976.

Early Childhood Development (ECD)

Nazeem Muhajarine

Department of Community Health and Epidemiology, Saskatchewan Population Health and Evaluation Research Unit, College of Medicine, University of Saskatchewan, Saskatoon, SK, Canada

Definition

Child development is a multifaceted, integral, and continual process of change in which children become able to handle ever more complex levels of moving, thinking, feeling, and relating to others. (Inter-American Development Bank 1999)

Early childhood development, generally used to describe the time from conception to age 8, is increasingly recognized as the most crucial period of development and is the focus of this entry.

Description

Emergence of the Field

In the last decades of the twentieth century, a rapidly expanding body of research in the neurobiological, behavioral, and social sciences documented the tremendous importance of optimal growth and development in the early years,

not only for the individual's later health and success but for the well-being of society. At the same time, it was becoming clear that the conditions for most children around the world fell far short of what science recommended (Shonkoff and Phillips 2000). Even as many around the world enjoyed unprecedented levels of material wealth, the quality of the human environment required for developmental health seemed to be deteriorating overall (Keating and Hertzman 1999).

Concern about ensuring that all children have a good start to life has brought together a wide array of groups in society: from parents, childcare providers and educators, pediatricians, public health researchers and practitioners, psychologists, and neuroscientists, to economists, policy makers, and international financial institutions. For example, the World Health Organization's Commission on the Social Determinants of Health, established in 2005, identified early child development (ECD) as a priority issue. From the perspective of the World Bank, ECD is crucial because it is the foundation of human-capital formation, has the highest rate of return in economic development, and is the most cost-effective way to reduce poverty and foster economic growth. ECD is also foundational in international development: six of the UN's eight Millennium Development Goals, ratified by all UN member states, relate directly to child survival, growth, and development.

Core Concepts

Early childhood is the most intensive period of brain development and the most important phase for overall development throughout the lifespan. Adequate stimulation and nutrition are essential for development during the first years of life, when the brain is most sensitive to influences of the external environment. Children who are well nurtured and cared for in their earliest years are more likely to survive, to grow in a healthy way, to experience less illness, and to develop the thinking, language, emotional, and social skills needed to function effectively in the world. What happens during this period does not just affect quality of life during childhood; it determines health, education, and economic participation for the rest of

life. As a result, child development is a foundation for community development and economic development (Science of Early Childhood 2007). Because of its impact on lifelong health, ECD is seen by many as a health determinant in itself, not just a period of development (Hertzman and Power 2004), and a key to reducing ► [health inequities](#) within and between countries (Irwin et al. 2007).

An individual's experiences during development have a profound impact on the brain and on general physiology, in a process that has been termed *biological embedding* (Keating and Hertzman 2004). Two important concepts in development are critical and *sensitive periods* (Keating and Hertzman 2004). *Critical periods* are defined as distinct periods during which experiences of a particular type will be encoded, especially in the neural system; before and after the critical period, the same experience will have little or no effect on development. Other times are better described as *sensitive periods*, during which the quality of particular experiences shapes developmental outcomes, but in less "all or nothing" ways than in critical periods.

Key Problems in ECD

In all regions of the world, there is room to improve the conditions for healthy early childhood development, to differing degrees. Every year, more than 200 million children under 5 years old fail to reach their full cognitive and social potential. Most of these children live in South Asia and sub-Saharan Africa. Four risk factors affect at least 20–25% of infants and young children in developing countries: malnutrition that is chronic and severe enough to cause growth stunting; inadequate stimulation or learning opportunities; iodine deficiency; and iron deficiency anemia (World Health Organization [WHO] 2009).

The situation in developed countries varies considerably from one nation to another, but as in developing countries, poverty is a major underlying cause of poor health and development in children. Poverty in developed countries is more relative than absolute; it rarely results in the kind of health problems mentioned above, but rather, it

affects children's well-being by increasing the risk of low birth weight, which has a multitude of implications for subsequent development, particularly in interaction with continuing poverty; parental stress, depression, and conflict, which lead to poorer parenting behavior and attachment; and a less stimulating home environment, which impairs cognitive development (Aber et al. 1997). Children who are born into poverty and remain poor consistently through their childhood are most greatly affected.

Particularly in developed countries, however, development in early childhood is shaped not simply by whether children live above or below the poverty line but by their family's position on the socioeconomic spectrum. Socioeconomic gradients in health across the life course begin as socioeconomic gradients in ECD. The socioeconomic gradient effect is present not only for physical and mental health but also for a wide range of other developmental outcomes, from behavioral adjustment, to literacy, to mathematics achievement.

In all prosperous countries, regardless of the measures used, children of higher socioeconomic status (SES) are found to have an advantage over their lower-SES peers. They arrive at school better prepared to learn, exhibit better social adjustment, attain higher test scores, and maintain better health throughout the school years. They carry these early advantages into their adult lives, showing superior achievement, higher income, better social adjustment, and greater resistance to disease at all ages. Even after controlling for SES in adulthood, those who began their lives in high-SES families do better in retirement, showing fewer degenerative ailments and living to an older age (Case et al. 1999).

Although effects such as these can be found in all countries, their magnitude varies considerably between countries and between regions within a country. Regions with steep income gradients and low levels of social cohesion tend also to show the steepest gradients and lowest means in terms of infant mortality, early childhood disease and readiness for learning, educational achievement, measures of adult health and well-being, and longevity (Case et al. 1999).

The Process of ECD

The development of the brain begins before birth, continues throughout life, and is influenced by the interaction between genetics and experience. Positive and negative experiences in early childhood determine the formation of critical pathways and processes in the brain that in turn influence the individual's capacity to respond, learn, and thrive (Young 2007). However, the relationship of the environment to development is not unidirectional: Children also shape their environment (National Research Council 2000).

Current understanding of developmental processes suggests three distinct types of effects, which interact to shape development (Hertzman and Power 2004). (1) The *latency model* refers to the effects an exposure at one point in the life course (a critical or sensitive period) has on an outcome years or decades later, independent of intervening experience, e.g., the risk of death from heart disease in the fifth decade of life is strongly associated with the size of an individual's placenta at birth and weight gain during the first year of life (ref). (2) In the *cumulative model*, outcomes result from multiple exposures, either to a single recurrent factor, such as stress or poverty, or a series of exposures to different factors. (3) *Pathways* are dependent sequences in which an exposure at one stage of the life course influences the probability of other exposures later in the life course. For example, an infant is born to a single mother in poverty, whose parenting skills are limited, is socially isolated, and receives inadequate support from social service systems. The child consequently fails to receive adequate nurturing or stimulation and make a secure attachment, which impedes his socio-emotional and cognitive development. From the time he begins school, he struggles academically and socially, and the fact that many other children in his neighborhood school are suffering from similar challenges exacerbates his difficulties. In his early teens, he is drawn to a local gang that offers a sense of belonging and power that he has not experienced elsewhere in his life and drops out of school. He quickly spirals down into violence, drug abuse, and crime, which affects his health and opportunities for the rest of his life.

Influences on ECD

By school age, development has been influenced by factors at three levels of society: family, neighborhood/village, and the broader societal level (Maggi et al. 2005). Ideally, families offer children stable and loving relationships with adults who provide responsive and reciprocal interaction, protection from harm, encouragement for exploration and learning, and transmission of cultural values. At the next level of social aggregation, communities need to provide safety, inclusion, cohesion, and further opportunities for children to grow and thrive, including access to schooling and adequate nutrition and the expansion of caring relationships. At the broadest level of social aggregation, development is directly and indirectly influenced by sociopolitical and economic factors such as national wealth, income distribution, patterns of employment and migration, and policies in a wide range of domains, from child care and education to agriculture and transportation.

Recommended Actions

Neuroscience is expanding our understanding of the developing brain, but it is important to note that little data exists that links specific experiences at specific times with specific effects on the central nervous system. Moreover, more is known about the harm caused by deprivation than the beneficial effects of enrichment, and most knowledge about brain development comes from studies of adults and animals other than humans (National Research Council 2000). At the same time, a huge gap exists between what we do know about the optimal conditions for ECD and what many children experience (Keating 1999).

Research has shown that interventions focused on children's earliest years are most successful at improving human development and breaking the cycle of poverty. Promoting healthy child development through policies and programs that create supportive conditions is likely to be less costly and more effective than treating the multitude of problems that result from suboptimal development.

Efforts to protect early brain development are best embedded in an overall strategy of general

health promotion and disease prevention. This includes attention to the importance of adequate nutrition (beginning during the prenatal period), the avoidance of harmful exposures (e.g., drugs, viruses, and environmental toxins), and protection from the stresses of chronic understimulation or significant maltreatment (i.e., abuse or neglect) (National Research Council 2000). Improving the quality of early childhood development requires paying attention to all levels of social aggregation: family, neighborhood, school, civil society, and the national socioeconomic environment (Keating 1999).

Morán and Haefeli (1998) describe six approaches to ECD interventions:

1. *Center-based*: Focuses on the immediate needs of children by establishing centers that serve as alternative environments for both care and development (e.g., preschools, childcare centers, cooperative programs and playgroups, or programs for pregnant women and young children operated through health centers).
2. *Family caregiver support*: Enabling family members to improve their ability to care for and interact with the child (e.g., through home visiting programs; adult education courses; nutrition, health, or literacy programs; mass media campaigns; or as part of a general community development strategy).
3. *Child-centered community development*: Using children as a motivating force for community initiatives, organization, and participation in a range of interrelated activities, aimed at improving a community's physical environment, knowledge, and practices, and empowering the community, to the benefit of the whole community as well as its children.
4. *Strengthening institutions*: Uses strategies such as institution building, training, and providing materials to enhance the financial, material, and human resources available to public and private institutions involved with early childhood development.
5. *Strengthening national commitment*: Focuses on the legal, regulatory, and policy frameworks related to young children and their families, and the incentives provided for establishing

and sustaining relevant programs (e.g., reforming a national constitution, passing new laws, establishing national committees, incorporating an early childhood dimension into regular planning processes).

6. *Strengthening demand and awareness:* Focuses on the production and distribution of knowledge in order to shape the broad cultural ethos that influences child development, by creating awareness and demand in the population at large and promote social participation.

References

- Aber, J. L., Bennett, N. G., Conley, D. C., & Li, J. (1997). The effects of poverty on child health and development. *Annual Review of Public Health, 18*, 463–483.
- Case, R., Griffin, S., & Kelly, W. M. (1999). Socioeconomic gradients in mathematical ability and their responsiveness to intervention during early childhood. In D. P. Keating & C. Hertzman (Eds.), *Developmental health and the wealth of nations: Social, biological, and educational dynamics* (pp. 125–149). New York: Guilford Press.
- Hertzman, C., & Power, C. (2004). Child development as a determinant of health across the life course. *Current Paediatrics, 14*, 438–443.
- Inter-American Development Bank, Sustainable Development Department. (1999). *ECCD guide: A toolkit for early childhood care and development*. Washington, DC: Inter-American Development Bank (SDS/SOC).
- Irwin, L. G., Siddiqi, A., & Hertzman, C. (2007). *Early child development: A powerful equalizer. Final report for the World Health Organization's Commission on Social Determinants of Health*. Vancouver: Human Early Learning Partnership.
- Keating, D. (1999). Developmental health as the wealth of nations. In D. P. Keating & C. Hertzman (Eds.), *Developmental health and the wealth of nations: Social, biological, and educational dynamics* (pp. 337–347). New York: Guilford Press.
- Keating, D. P., & Hertzman, C. (1999). Modernity's paradox. In D. P. Keating & C. Hertzman (Eds.), *Developmental health and the wealth of nations: Social, biological, and educational dynamics* (pp. 1–17). New York: Guilford Press.
- Maggi, S., Irwin, L. G., Siddiqi, A., Poureslami, I., Hertzman, E., & Hertzman, C. (2005). *Knowledge network for early childhood development. Analytic and strategic review paper: International perspectives on early child development*. Vancouver: Human Early Learning Partnership.
- Morán, R., & Haefeli, J. (1998). An ECCD strategy dialog: An outline of messages. Discussion Draft Number 1, SDS/SOC. In R. Deutsch (Ed.), *How early childhood interventions can reduce inequality: An overview of recent findings*. Washington, DC: Inter-American Development Bank, Poverty and Inequality Unit, Sustainable Development Department, No. POV-105.
- National Research Council and Institute of Medicine. (2000). In commission on behavioral and social sciences and education, J. P. Shonkoff, & D. A. Phillips (Eds.), *From neurons to neighborhoods: The science of early childhood development*. Board on Children, Youth, and Families. Committee on Integrating the Science of Early Childhood Development. Washington, DC: National Academy Press.
- The science of early childhood development*. (2007). National Scientific Council on the Developing Child.
- World Health Organization. (2009). *Early child development. Fact sheet N° 332*. Accessed October 9, 2011, from <http://www.who.int/mediacentre/factsheets/fs332/en/index.html>
- Young, M. E. (2007). The ECD agenda: Closing the gap. In M. E. Young (Ed.), *Early child development from measurement to action: A priority for growth and equity* (pp. 3–12). Washington, DC: The International Bank for Reconstruction and Development/The World Bank.

Early Development Instrument

Magdalena Janus¹, Sally Brinkman² and Martin Guhn³

¹Offord Centre for Child Studies, Department of Psychiatry and Behavioural Neurosciences, McMaster University, Hamilton, ON, Canada

²Education Futures, University of South Australia, Adelaide, SA, Australia

³Human Early Learning Partnership, School of Population and Public Health, University of British Columbia, Vancouver, BC, Canada

Definition

The Early Development Instrument (EDI) is a population-based tool to measure developmental health of children at school entry in five major domains of child development: physical, social, emotional, language-cognitive, and communication. Sometimes it is also referred to as a tool to measure readiness to learn at school, or more briefly, school readiness. The instrument was designed primarily for use with whole populations

of children (based on geographical or administrative boundaries) and cannot be interpreted at an individual level for diagnostic purposes. It can, however, be used as a research tool to formally evaluate programs and interventions. The EDI has also been employed in longitudinal studies (Birken et al. 2019).

Description

The Early Development Instrument (EDI) (Janus and Offord 2007) is a 103-item, teacher-completed checklist combining five major areas that have been identified as relevant to children's developmental health at school entry, sometimes described by proxy as school readiness: physical health and well-being, social competence, emotional maturity, language and cognitive development, and communication skills and general knowledge. The instrument was developed to be used as a population measure, so while the EDI is completed for individual children in a class, the scores are aggregated to the school, neighborhood, region, or country level. The interpretation is intended to occur only at group level, based on the analyses of all children and with reference to the distribution of all scores. The population-level measurement approach provides an evidence base to inform both universal prevention strategies and those targeted to geographic or population groups.

The EDI is a holistic measure of child development as it combines several domains in one instrument. Teachers complete the EDI for each child in their class on the basis of their knowledge of the child's skills and behaviors (i.e., the EDI is not a task-based assessment). The EDI is validated for children aged 4 through to 6 years of age and generally conducted halfway into the first year of full-time schooling (Janus and Offord 2007).

The design of the EDI was based on a blending of approaches rooted in developmental psychology, education, epidemiology, and public health (Guhn and Goelman 2011; Janus et al. 2011). As a result, data collected through the administration of the EDI are of interest to the fields of health (public health, epidemiology, child development,

community psychology, and health service research), education (particularly early education services), community development, social policy, and human development economics.

As a population measure, the purpose of the EDI is to provide an evidence base to inform both universal prevention strategies and interventions targeted to specific geographic or population groups. EDI data can be linked with other population-level datasets (e.g., administrative health and education data, neighborhood data) in order to gain a better understanding of children's developmental health, what influences or is associated with it, and what it can predict (see for example Bentley et al. 2018; Green et al. 2019; Janus et al. 2019; Thomson et al. 2019; Tzoumakis et al. 2018; Wall-Wieler et al. 2019). (For full bibliography of papers including the EDI data, see <https://edi.offordcentre.com/resources/bibliography-of-the-edi/>).

Instrument Description

The introductory section of the instrument requests information on child demographic variables (gender, date of birth, language), as well as on selected variables related to the child's school-based designations (e.g., English/language of instruction as a second language, special needs, type of class), and the completion date. Sections A to C of the EDI contain questions relevant to the five domains of school readiness: physical health and well-being, social competence, emotional maturity, language and cognitive development, and communication skills and general knowledge. Most of these are "core" questions, meaning that they directly contribute to one of the five domains. There are also questions related to children's special skills and special problems. Finally, Section D collects information on any concerns (functional or diagnostic) that the teacher may have, followed by Section E which contains questions about children's prekindergarten experience (early intervention, child care, preschool, etc.). Only questions in the five core domains are used to score children's school readiness in the five domains of development. The remaining items are used for

demographic purposes and contribute to additional indices such as those of special skills, or functional impairments.

The questionnaire takes between 7 and 20 min to complete. It is recommended that it be implemented in the second half of the kindergarten year, to give teachers the opportunity to get to know children in their class. The EDI is accompanied by a teacher manual called the EDI Guide which clarifies most items and as such is meant to facilitate uniform interpretation and shorten the time required to complete the instrument. For the implementation in Canada, both the instrument and the EDI Guide are available in English and French. The EDI Guide is translated along with the EDI during international adaptations. Throughout out the past 10 years, the EDI has evolved from a pen and paper questionnaire to one which is completed entirely on-line (in Canada and Australia) on any web-enabled device. This has increased data accuracy and completeness.

Data Collections to Date

The EDI was developed at the Offord Centre for Child Studies, at McMaster University in Hamilton, Ontario, in Canada in 1998. Since its inception, it has been completed for over 1,400,000 children. The international use of the EDI started in 2002 with Australia being the first country to implement the instrument outside of Canada. Since that time, the EDI has been adapted for use in more than 30 countries. These implementations of the EDI vary from small pilot studies through to national monitoring.

Adapted versions of the EDI exist for use in Ireland, USA, Scotland, Jamaica, Australia (English), Peru, Chile and Mexico (Spanish), Brazil and Mozambique (Portuguese), Vietnam (Vietnamese), Hong Kong (Mandarin), Sweden (Swedish), Estonia (Estonian), Kosovo (Albanian), Indonesia (Bahasa), Philippines (Tagalog), Jordan (Arabic), Pakistan (Urdu), Greece (Greek), Germany (German), Italy (Italian), and Kyrgyz Republic (Kyrgyz and Russian). Translation and adaptation follows a

protocol (<https://edi.offordcentre.com/>), which ensures standards allowing for international comparison. The use of the EDI requires a license with McMaster University, and the first step in each country is the ascertainment of reliability and validity of the adapted instrument.

Knowledge Dissemination and Knowledge Translation

Knowledge dissemination and knowledge translation is a critical component of the EDI projects in Canada and abroad. EDI data are geographically mapped to visualize the variability in children's developmental health outcomes across neighborhoods. The EDI maps also routinely provide information on neighborhood characteristics, such as socioeconomic status (income, education, employment rates). The EDI maps thus allow one to see which neighborhoods have relatively high or relatively low average EDI scores and to what extent the EDI scores on the different developmental domains are associated with neighborhood characteristics. Geographical maps for several jurisdictions are publicly available, via reports and online resources that are accessible at the following websites: <http://earlylearning.ubc.ca/maps/edi/>, <https://www.aedc.gov.au/data>, and <https://edi.offordcentre.com/partners/canada/edi-in-ontario/>

The public materials include plain language descriptions of the EDI and provide interpretations of results that community stakeholders, educators, and policy makers can use to inform discussions and decisions as they relate to early child development, education, care, and family services.

Reliability and Validity

The reliability of the EDI has been studied in a number of contexts and approaches. Due to its interdisciplinary scope, the EDI can be validated from a variety of theoretical perspectives (Guhn et al. 2011). Here, we summarize the most pertinent information.

Internal Consistency

Internal consistency of the EDI domains in the original Canadian validation sample varied from 0.84 to 0.94 (Janus and Offord 2007). An international comparison of samples from Canada, Australia, Jamaica, and United States demonstrated similar range – from 0.64 to 0.92 (Janus et al. 2011). Internal consistency of EDI domains is investigated with every international adaptation, and generally, the values are very similar to the ones for the Canadian sample.

Test-Retest

Test-retest reliabilities in the original Canadian sample ranged from 0.84 to 0.94. As with the internal consistency, test-retest reliability is explored for every new adaptation, and results have always been acceptable, ranging from 0.8 to 0.9 (Janus et al. 2011; Janus and Offord 2007).

Validity

Various aspects of validity of the EDI domains have been examined over the many implementations (for detailed overview, see Janus and Reid-Westoby 2016). The domain scores have shown to be associated with parent ratings, relevant direct assessments, assessments in later ages or grades, and family and neighborhood socioeconomic status (Brinkman et al. 2007; Forget-Dubois et al. 2007; Janus and Offord 2007; Lloyd and Hertzman 2009). More recently, the EDI has been validated for use with children with special health needs (Janus et al. 2018). Research stemming from Canada and Australia, where the EDI has been used the longest, has also examined the EDI's predictive validity (e.g., Brinkman et al. 2013; Brownell et al. 2016). Vulnerability in kindergarten, in any developmental domain, has been associated with poorer academic achievement and social competence in Grades 3 and 4 (Davies et al. 2016; Guhn et al.

2016), with both cognitive and noncognitive skills being significant predictors of later outcomes.

Validation for Culturally Diverse Populations

Canadian researchers have investigated how the EDI works for various subpopulation groups and language backgrounds (Guhn et al. 2007; Janus et al. 2010). The EDI has also been well validated for Indigenous populations (Muhajarine et al. 2011; Silburn et al. 2009) and for learners of the language of instruction (Guhn et al. 2007; Tazi 2014). Similar research has been conducted with international versions of the EDI adapted for use in Australia (Brinkman et al. 2007), Hong Kong (Ip et al. 2013), Scotland (Geddes et al. 2014), Sweden (Hagquist and Hellström 2014), Ireland (Curtin et al. 2013), Brazil and Peru (Gonçalves et al. 2019; Janus et al. 2014), as well as Indonesia and the Philippines (Brinkman et al. 2017; Duku et al. 2015).

Australia as a Case Study

In 2009, as a federal government election commitment, the Australian version of the EDI (AvEDI) was collected for almost every child across Australia in their first year of full-time schooling. In essentially a “child development census,” information was collected for over 261,000 children representing 98% of the population. Nearly 16,000 teachers from 7420 government and nongovernment schools completed the checklist. Since that time, the federal government has committed to undertake the Australian Early Development Census (AEDC) once every 3 years (2012, 2015, 2018, 2021, etc.). As of 2018, data have been collected on more than 1.2 million children across Australia. The AEDC provides an evidence base to inform both universal prevention strategies and interventions targeted to specific geographic or population groups. The AEDC data are made publicly available via community maps, community profiles, and state and national

reports, with the information intended to inform strategies that can be applied to improve child development (www.aedc.gov.au).

Although the 2009 National AEDC data set provides the first Australia-wide population baseline of which future data collections have been compared to, the instrument had been used in Australia since 2002 and had been the subject of various reliability and validity studies. The checklist was first utilized in Perth in 2002 and then again in 2003 where the process of adaptation initially included testing its content validity and utility as a community-level measure of early child development in Australian context (Brinkman and Blackmore 2003; Hart et al. 2003). In 2004, federal government funding enabled further instrument validation and communities from across Australia to become involved (Goldfeld et al. 2009). From a technical point of view, Rasch analyses were conducted to confirm adequate psychometric properties of the instrument (Andrich and Styles 2004). From a community point of view, the use of the instrument was evaluated in terms of its utility as a community mobilizer around early childhood (Sayers et al. 2007).

In a separate study, the AvEDI was embedded in a nested sample within the Longitudinal Study of Australian Children (LSAC). To date, this has enabled the assessment of the AvEDI's concurrent, construct (Brinkman et al. 2007), and predictive validity (Brinkman 2013). The results indicate that the AvEDI performs as well as expected and in some cases better than individual assessment tools that are more time consuming and expensive to administer. The AvEDI Indigenous Adaptation Study further developed the instrument to ensure it is relevant and sensitive to the needs of indigenous children (Silburn et al. 2009), while the Language Background Other Than English (LBOTE) Study reviewed the AvEDI implementation process, results, and data usage for culturally and linguistically diverse populations (Goldfeld et al. 2014). These two studies have resulted in significant improvements to the AvEDI Teacher Guidelines to further explain the intent of each question with the

provision of culturally inclusive examples and prompts to support teachers while completing the checklist.

To help community members, service providers, and policy makers understand and interpret the results, there are interactive web-based Results Guides, Fact Sheets, Research Snapshots, Policy Briefs, Community Stories, short educational videos, and many other resources available online. In addition to web-based support, the federal government provides for an AEDC State and Territory Coordinator in each jurisdiction across Australia. They work with communities to support action and mobilization around the AEDC results and have a mandate to influence policy development to support child development in their jurisdictions both through universal programs and resources, as well as targeted approaches. With more than three waves of data, a deeper investigation of change in child development over time at a national, jurisdictional, and community level is helping to provide insight into the effectiveness of policy changes (e.g., a minimum of 15 h universal preschool, or changes to the maternal and child health nursing schedules). Additionally, with the federal government committing to the census once every 3 years, evaluations and longitudinal studies can be planned to align with the AEDC implementation years.

The AEDC data assist researchers in developmental science and governments in making informed decisions. They are increasingly embedded within national and jurisdictional data linkage platforms, enabling researchers to reveal the influences on and implications of poor child development (e.g., Green et al. 2019). The AEDC data are an essential planning tool for governments at all levels (local, jurisdictional, and federal) to inform, monitor, and advocate for children in Australia.

Discussion

The EDI represents the first population-level measure of young children's developmental health in Canada. The EDI is currently included as an indicator of children's well-being in the ► [Canadian](#)

Index of Well-Being. Also, provincial governments in Canada are using EDI data to inform their public health and education strategies (e.g., Ontario poverty reduction strategy <https://www.ontario.ca/page/realizing-our-potential-ontarios-poverty-reduction-strategy-2014-2019>, and CHI health system indicators <https://yourhealthsystem.cihi.ca/hsp/inbrief.#!/indicators/013/children-vulnerable-in-areas-of-early-development;/mapC1;mapLevel2;/>), and intersectoral coalitions use EDI data to inform local debates and decision-making processes that are related to the promotion of children's well-being. In Canada currently, the EDI data collection is enhanced with additional population-level measurement initiatives of developmental health and well-being. In Ontario and British Columbia, surveys for parents of children in kindergarten are implemented on a voluntary basis (Ontario: Kindergarten Parent Survey, KPS <https://edi.offordcentre.com/about/kps/>); British Columbia: Childhood Experience Questionnaire, CHEQ (http://earlylearning.ubc.ca/media/cheq_questionnaire.pdf). The Human Early Learning Partnership is also implementing the Toddler Development Instrument (a survey for parents of children 1 to 2 years old; <http://earlylearning.ubc.ca/media/tdiinfosheet-2018.pdf>), and the ► **Middle-Years Development Instrument**, for children aged 10–13 (<http://earlylearning.ubc.ca/md/i/>), which is also used by school boards in several other Canadian jurisdictions. The overarching goal is to complement EDI data with data that reflect developmental health and well-being outcomes at earlier and later ages. The objective of these initiatives is to allow our society to monitor children's wellbeing over time and to use this information to enhance health prevention and promotion efforts at local, regional, provincial, and national levels.

Cross-References

- **Australia, Quality of Life**
- **Australian Indigenous Peoples: Culture and Well-Being**
- **Canadian Index of Well-Being**
- **Internal Consistency**

- **Knowledge Transfer and Exchange**
- **Middle Years Development Instrument**
- **Rasch Analysis**
- **Reliability**
- **Test-retest Reliability**

References

- Andrich, D., & Styles, I. (2004). *Final report on the psychometric analyses of the early development instrument (EDI) using the Rasch model: A technical paper commissioned for the development of the Australian Early Development Index (AEDI)*. Perth: Murdoch University.
- Bentley, J. P., Schneuer, F. J., Lain, S. J., Martin, A. J., Gordon, A., & Nassar, N. (2018). Neonatal morbidity at term, early child development, and school performance: A population study. *Pediatrics*, 141(2), e20171726. <https://doi.org/10.1542/peds.2017-1726>.
- Birken, C. S., Omand, J. A., Nurse, K. M., Borkhoff, C. M., Koroshegyi, C., Lebovic, G., . . . TARGet Kids! Collaboration. (2019). Fit for School Study protocol: Early child growth, health behaviours, nutrition, cardiometabolic risk, and developmental determinants of a child's school readiness, a prospective cohort. *BMJ Open*, 9, e030709.
- Brinkman, S. (2013). AEDI Research Snapshot. *The predictive validity of the AEDI: Predicting later cognitive and behavioural outcomes*. Retrieved from https://www.aedc.gov.au/?doc_id=14783.
- Brinkman, S. A., Silburn, S., Lawrence, D., Goldfeld, S., Sayers, M., & Oberklaid, F. (2007). Investigating the validity of the Australian Early Development Index. *Early Education and Development*, 18(3), 427–451. <https://doi.org/10.1080/10409280701610812>.
- Brinkman, S., Gregory, T., Harris, J., Hart, B., Blackmore, S., & Janus, M. (2013). Associations between the Early Development Instrument at age 5, and reading and numeracy skills at ages 8, 10 and 12: A prospective linked data study. *Child Indicators Research*, 6(4), 695–708. <https://doi.org/10.1007/s12187-013-9189-3>.
- Brinkman, S. A., Kinnell, A., Maika, A., Hasan, A., Jung, H., & Pradhan, M. (2017). Validity and reliability of the Early Development Instrument in Indonesia. *Child Indicators Research*, 10(2), 331–352. <https://doi.org/10.1007/s12187-016-9372-4>.
- Brownell, M. D., Ekuma, O., Nickel, N. C., Chartier, M., Koseva, I., & Santos, R. G. (2016). A population-based analysis of factors that predict early language and cognitive development. *Early Childhood Research Quarterly*, 35, 6–18. <https://doi.org/10.1016/j.ecresq.2015.10.004>.
- Curtin, M., Madden, J., Staines, A., & Perry, I. J. (2013). Determinants of vulnerability in early childhood development in Ireland: A cross-sectional study. *BMJ Open*, 3(5), e002387. <https://doi.org/10.1136/bmjopen-2012-002387>.

- Davies, S., Janus, M., Duku, E., & Gaskin, A. (2016). Using the Early Development Instrument to examine cognitive and non-cognitive school readiness and elementary student achievement. *Early Childhood Research Quarterly*, 35, 63–75. <https://doi.org/10.1016/j.ecresq.2015.10.002>.
- Duku, E., Janus, M., & Brinkman, S. (2015). Investigation of the cross-national equivalence of a measurement of early child development. *Child Indicators Research*, 8(2), 471–489. <https://doi.org/10.1007/s12187-014-9249-3>.
- Forget-Dubois, N., Lemelin, J.-P., Boivin, M., Dionne, G., Séguin, J. R., Vitaro, F., & Tremblay, R. E. (2007). Predicting early school achievement with the EDI: A longitudinal population-based study. *Early Education & Development*, 18(3), 405–426. <https://doi.org/10.1080/10409280701610796>.
- Geddes, R., Woolfson, L. M., McNicol, S., Booth, J. N., Wray, S., Hardie, S., . . . Frank, J. (2014). Translating research into practice: A cross-sectional study using the Early Development Instrument to assess early years interventions in local level public health practice. *The Lancet*, 384, S33. [https://doi.org/10.1016/S0140-6736\(14\)62159-0](https://doi.org/10.1016/S0140-6736(14)62159-0).
- Goldfeld, S., Sayers, M., Brinkman, S., Silburn, S., & Oberklaid, F. (2009). The process and policy challenges of adapting and implementing the Early Development Instrument in Australia. *Early Education and Development*, 20(6), 978–991. <https://doi.org/10.1080/10409280903375800>.
- Goldfeld, S., O'Connor, M., Mithen, J., Sayers, M., & Brinkman, S. (2014). Early development of emerging and English-proficient bilingual children at school entry in an Australian population cohort. *International Journal of Behavioral Development*, 38(1), 42–51. <https://doi.org/10.1177/0165025413505945>.
- Gonçalves, T. R., Duku, E., & Janus, M. (2019). Developmental health in the context of an early childhood program in Brazil: The “Primeira Infância Melhor” experience. *Cadernos de Saúde Pública*, 35(3). <https://doi.org/10.1590/0102-311x00224317>.
- Green, M. J., Tzoumakis, S., Laurens, K. R., Dean, K., Kariuki, M., Harris, F., . . . Carr, V. J. (2019). Early developmental risk for subsequent childhood mental disorders in an Australian population cohort. *The Australian and New Zealand Journal of Psychiatry*, 53(4), 304–315. <https://doi.org/10.1177/0004867418814943>.
- Guhn, M., & Goelman, H. (2011). Bioecological theory, early child development and the validation of the population-level Early Development Instrument. *Social Indicators Research*, 103(2), 193–217. Retrieved from JSTOR.
- Guhn, M., Gadermann, A., & Zumbo, B. D. (2007). Does the EDI measure school readiness in the same way across different groups of children? *Early Education and Development*, 18(3), 453–472. <https://doi.org/10.1080/10409280701610838>.
- Guhn, M., Zumbo, B. D., Janus, M., & Hertzman, C. (2011). Validation theory and research for a population-level measure of children's development, wellbeing, and school readiness. *Social Indicators Research*, 103(2), 183–191. <https://doi.org/10.1007/s11205-011-9841-6>.
- Guhn, M., Gadermann, A. M., Almas, A., Schonert-Reichl, K. A., & Hertzman, C. (2016). Associations of teacher-rated social, emotional, and cognitive development in kindergarten to self-reported wellbeing, peer relations, and academic test scores in middle childhood. *Early Childhood Research Quarterly*, 35, 76–84. <https://doi.org/10.1016/j.ecresq.2015.12.027>.
- Hagquist, C., & Hellström, L. (2014). The psychometric properties of the early development instrument: A Rasch analysis based on Swedish pilot data. *Social Indicators Research*, 117(1), 301–317. <https://doi.org/10.1007/s11205-013-0344-5>.
- Ip, P., Li, S. L., Rao, N., Ng, S. S. N., Lau, W. W. S., & Chow, C. B. (2013). Validation study of the Chinese Early Development Instrument (CEDI). *BMC Pediatrics*, 13(1), 146. <https://doi.org/10.1186/1471-2431-13-146>.
- Janus, M., & Offord, D. R. (2007). Development and psychometric properties of the Early Development Instrument (EDI): A measure of children's school readiness. *Canadian Journal of Behavioural Science/Revue Canadienne Des Sciences Du Comportement*, 39(1), 1–22. <https://doi.org/10.1037/cjbs2007001>.
- Janus, M., & Reid-Westoby, C. (2016). Monitoring the development of all children: The Early Development Instrument. In T. Moreno (Ed.), *Early childhood matters* (pp. 40–45). The Hague: Bernard van Leer Foundation.
- Janus, M., Hughes, D., & Duku, E. (2010). *Patterns of school readiness among selected subgroups of Canadian children: Children with special needs and children with diverse language backgrounds* (p. 54). Retrieved from Canadian Council for Learning, Conseil canadien sur l'apprentissage website: https://www.researchgate.net/profile/Magdalena_Janus2/publication/267776550_Patterns_of_school_readiness_among_selected_subgroups_of_Canadian_children_Children_with_special_needs_and_children_with_diverse_language_backgrounds/links/573e725008aea45ee842ece1.pdf
- Janus, M., Brinkman, S. A., & Duku, E. K. (2011). Validity and psychometric properties of the Early Development Instrument in Canada, Australia, United States, and Jamaica. *Social Indicators Research*, 103(2), 283. <https://doi.org/10.1007/s11205-011-9846-1>.
- Janus, M., Duku, E., Brinkman, S., Dunkelberg, E., Chianca, T., & Marino, E. (2014). Socioemotional development and its correlates among 5-year-old children in Peru and Brazil. *Journal of Latino/Latin American Studies*, 6(1), 40–53. <https://doi.org/10.18085/jlas.6.1.9730476466441574>.
- Janus, M., Brownell, M., Reid-Westoby, C., Bennett, T., Birken, C., Coplan, R., . . . Santos, R. (2018).

Establishing a protocol for building a pan-Canadian population-based monitoring system for early childhood development for children with health disorders: Canadian Children's Health in Context Study (CCHICS). *BMJ Open*, 8(5), e023688. <https://doi.org/10.1136/bmjopen-2018-023688>.

Janus, M., Labonté, C., Kirkpatrick, R., Davies, S., & Duku, E. (2019). The impact of speech and language problems in kindergarten on academic learning and special education status in grade three. *International Journal of Speech-Language Pathology*, 21(1), 75–88. <https://doi.org/10.1080/17549507.2017.1381164>.

Lloyd, J. E. V., & Hertzman, C. (2009). From kindergarten readiness to fourth-grade assessment: Longitudinal analysis with linked population data. *Social Science & Medicine*, 68(1), 111–123. <https://doi.org/10.1016/j.socscimed.2008.09.063>.

Muhajarine, N., Puchala, C., & Janus, M. (2011). Does the EDI equivalently measure facets of school readiness for Aboriginal and non-Aboriginal children? *Social Indicators Research*, 103(2), 299–314. <https://doi.org/10.1007/s11205-011-9847-0>.

Sayers, M., Coutts, M., Goldfeld, S., Oberklaid, F., Brinkman, S., & Silburn, S. (2007). Building better communities for children: Community implementation and evaluation of the Australian Early Development Index. *Early Education and Development*, 18(3), 519–534. <https://doi.org/10.1080/10409280701610879>.

Silburn, S., Brinkman, S., Ferguson-Hill, S., Styles, I., Walker, R., & Shepherd, C. (2009). *The Australian Early Development Index (AEDI) Indigenous Adaptation Study* (p. 30). Retrieved from Curtin University of Technology and Telethon Institute for Child Health Research website: https://www.researchgate.net/publication/228486192_The_Australian_Early_Development_Index_AEDI_Indigenous_Adaptation_Study

Tazi, Z. (2014). Ready for La Escuela: School readiness and languages of instruction. *Journal of Multilingual Education Research*, 5, 11–31.

Thomson, K. C., Richardson, C. G., Gadermann, A. M., Emerson, S. D., Shoveller, J., & Guhn, M. (2019). Association of childhood social-emotional functioning profiles at school entry with early-onset mental health conditions. *JAMA Network Open*, 2(1), e186694–e186694. <https://doi.org/10.1001/jamanetworkopen.2018.6694>.

Tzoumakis, S., Carr, V. J., Dean, K., Laurens, K. R., Kariuki, M., Harris, F., & Green, M. J. (2018). Prenatal maternal smoking, maternal offending, and offspring behavioural and cognitive outcomes in early childhood. *Criminal Behaviour and Mental Health*, 28(5), 397–408. <https://doi.org/10.1002/cbm.2089>.

Wall-Wieler, E., Lee, J. B., Nickel, N., & Roos, L. L. (2019). The multigenerational effects of adolescent motherhood on school readiness: A population-based retrospective cohort study. *PLoS One*, 14(2), e0211284. <https://doi.org/10.1371/journal.pone.0211284>.

Early Leaving from Education and Training

Irene Psifidou

Department for Learning and Employability, Cedefop, Thessaloniki, Greece

Definition

Early leaving from education and training (ELET) is understood at EU level as a failure to complete upper secondary education or a failure to gain qualifications or school leaving certificates. European terminology defines ELET as share of the population aged 18 to 24 with only lower secondary education or less and not involved in further education or training (Eurostat 2020), and it is the basis for the European indicator on early leaving. Although it is broadly used nationally and internationally to compare rates of early leaving across countries, this definition has many limitations, which explains why there are alternative definitions and measurement approaches used by some countries. This indicator was previously named early school leaving (ESL). However, the main aspect implied in this indicator was leaving from “school” and did not recognize that young people can drop out from other forms of education and training. Additionally, the term “dropout” is not a synonym of early leaving, since this refers to interrupting an ongoing course, experienced by different age groups, and does not necessarily lead to early leaving. For example, it can reflect a change of course or school and may also happen at higher levels of education. Hence, not all early leavers are necessarily dropouts. In conclusion, the definition of ELET has its particularities and differences with other similar concepts, as well as its variations among countries.

This entry is based on the information provided in the two-volume study “Leaving education early: putting vocational education and training centre stage” from Cedefop (2016a, b).

Description

The ELET Indicator

This indicator has been constructed to provide a comparable measurement of early leaving across the EU. Early leavers from education and training are statistically defined as persons aged 18 to 24 fulfilling the following two conditions: a) the highest level of education or training attained is ISCED 0, 1, 2, or 3c short (ISCED stands for the International Standard Classification of Education. This classification has been developed by UNESCO to aid comparisons of education statistics and indicators across countries. The different levels correspond to different education levels: level 0, pre-primary education; level 1, primary education; level 2, lower secondary education; and level 3, upper secondary education) and b) no education or training has been received in the 4 weeks preceding the survey. To calculate the early leaving rate, the reference group used is the total population of the same age group (18 to 24). This EU indicator is updated annually by Eurostat and built on data from the Labour Force Survey (LFS), which is a large-scale household survey in EU-28 (This includes the United Kingdom), three EFTA (European Free Trade Association) countries, and two candidate countries. This indicator provides a reliable data set at European level and allows analysis of the phenomenon over time in a cross-national perspective while is not dependent on differences in education and training systems across countries, being based on a status definition. However, it offers limited opportunities to understand who most at risk is and what are the programs and situations that result in dropping out or to monitor early leavers to offer support. Additionally, it places young people in a variety of situations within the same broad category of “early leavers,” while there are many factors that could create a significant difference, such as the level of education, e.g., leaving after primary education vs fulfilling upper secondary education but not succeeding in the final examination. The EU indicator on ELET can thus be one broad measure that brings together a range of different situations to provide a snapshot of what it is a multifaceted and complex phenomenon.

EU Versus National Definitions

While all EU countries use the EU definition to report data at European level and for comparison with other countries or regions, many countries also use alternative definitions, typically more specific and suited to the characteristics of the national education system. Cedefop (2016a) summarizes the most common differences between the national indicators and the EU definition and related indicator in the following elements:

- a) Focus of the definition: qualification attainment versus participation in education and training. The EU definition mainly focuses on qualification attainment, with participation as a secondary aspect that helps to measure the number of those who did not achieve the minimum qualification.
- b) Minimum level of qualification considered: while the EU definition focuses on upper secondary qualification attainment, some national definitions include lower secondary education attainment to measure early leaving. Further, unlike in the EU definition, the qualification attainment is measured via reference to specific qualifications and not to ISCED levels.
- c) Participation in education and training: unlike the EU definition, some national definitions specify that to be considered as still in education (hence not an early leaver); the unqualified young person should be enrolled in formal education. The EU definition covers any form of education and training.
- d) The age groups considered also differ: while the EU definition considers the population aged 18 to 24, in several countries, the numbers of dropouts are compared with the age cohort of those in typical age brackets associated with a given level of education. In these countries, the indicator does not give a transversal picture of the full age cohort of young people.
- e) Data collection method varies: while the EU definition is built on data from the LFS through a large-scale household survey updated annually, most countries use administrative data sets to develop indicators on early leaving or dropouts based on either school-reported

cohort data or student registers. School-reported cohort data typically give information on number of students initially enrolled in each grade compared with numbers of students who successfully completed the grade. Data based on student registers are more accurate as they are based on individuals' personal identification (using a unique student number) and enable following a pathway across education and training institutions. These data are also reported by education and training institutions but per individual rather than per cohort. They allow differentiation between those students who changed education institution or program and those who left the education and training altogether.

European Context and Early Leaving Rates

Fighting ELET is a key element of the [Education and Training 2020 Strategic Framework](#), reflected in the commitment of the EU countries to [reduce the average share of early leavers to less than 10% by 2020](#) and to implement the [Council Recommendation](#) (2011) on policies to reduce early leaving by developing coherent, comprehensive, and evidence-based strategies to address ELET.

According to Eurostat, the ELET rate has steadily decreased from 17.0% in 2002 to 13.4% in 2011 and to 10.2% in 2019. Although there has been a significant improvement overall, progress has stagnated since 2016 with significant differences across countries/regions and genders and for specific population groups, such as people of migrant background. In regard to the differences across countries, data from the European Commission (2019b) shows that the national highest rates are in Spain (17.9%), Malta (17.5%), Romania (16.4%), Italy (14.5%), Bulgaria (12.7%), Hungary (12.5%), and Portugal (11.8%), while the lowest are in Croatia (3.3%), Slovenia (4.2%), Lithuania (4.6%), Greece (4.7%), Poland (4.8%), and Ireland (5%).

Rates differ not only among countries but within countries too presenting significant regional disparities. In Spain, for example, the

regional autonomous community of País Vasco has one the lowest percentages of ELET in Europe, while this of Baleares islands one of the highest (Psifidou 2017).

In regard to differences by gender, fewer young women than young men leave education before gaining an upper secondary diploma (8.9% versus 12.2%, respectively), and this gap has remained broadly constant over the last decade. Regarding differences based in origin, native-born people have significantly lower rates than foreign-born people (9.5% versus 20.2%, respectively), especially those born outside the EU (20.7%).

In conclusion, ELET is still a concern for many countries and can reach dramatic levels in some population groups, hindering equity in education and social inclusion. Especially following the COVID-19 effects and prolonged school closures, we may see an increase in the ELET rates in the coming academic years.

Consequences of Early Leaving

ELET can lead to a vicious cycle of unemployment, social exclusion, and poverty, with costs for the individual and society that include reduced levels of economic activity, higher unemployment, poorer health outcomes, and demands on state welfare systems. Tackling ELET may prevent low skills in adulthood, which come at a high social and economic cost for the individual and for the society (Cedefop 2019). There is also abundant evidence suggesting that, when compared to the population which achieves the minimum threshold qualification, early leavers have a higher risk of unemployment (incidence and duration), lower income, precarious work conditions, and lower job satisfaction; worse health, lower life expectancy, and worse lifetime satisfaction; and lower participation in democratic institutions and other civil society initiatives and organizations (Cedefop 2016a). Hence, the reduction of early leaving promotes equity, helping every young person to realize their potential; can help reduce costs for societies and economies, countering the associated outcomes: can lower tax revenues and higher costs of public services such as social benefit payments, healthcare, and criminal justice; and can help attain other European strategic

targets on employment and lifelong learning and increase EU international economic competitiveness (Cedefop 2016a).

Understanding and Addressing Early Leaving from Education and Training

Understanding and acknowledging the different factors that can cause early leaving from education and training (ELET) is crucial evidence for policy-makers to be able to develop specific and tailored policies and measures. To prevent and counteract early leaving, policy-makers and education and training practitioners need to reflect on the specific characteristics of their target group (s) and design actions accordingly. To this end, Cedefop has developed the VET toolkit for tackling early leaving (www.cedefop.europa.eu/TEL-toolkit), an online Europe-wide toolkit aiming at helping young people at risk of becoming early leavers to remain in education and training and qualify and helping early leavers to reintegrate into education or training and the labor market.

Profiles of Early Leavers

Cedefop's toolkit illustrates how different risk factors can interact and lead to early leaving by identifying six profiles of early leavers and learners at risk of early leaving:

- a) Learners escaping the system: they are not radically different from other students. Their education performance is average or below average, and they have low future education aspirations. Education is not major interest: they need motivation and encouragement to raise their aspirations.
- b) Learners confronting the system: still in education and training but with high levels of absenteeism, low interest in education and training, and gaps in basic skills, which is an obstacle for further progression. They need a combination of motivational activities and remedial training.
- c) Learners disengaging due to difficulties adapting after transition: they are starting to disengage during the transition period from one track to another. They have difficulties adapting to new work rhythms; they have inaccurate program expectations and do not mix well with the group. They need support to engage fully in the program.
- d) Learners disengaging because they cannot find a placement of their choice: typically, this can happen due to lack of placements in apprenticeship or in the VET program of their preference or because they lack information and guidance or they have unrealistic expectations and lack of work-readiness. They need to be reoriented toward a more suitable track, possibly a bridging program. (The goal of VET bridging and preparatory programs, including career exploration opportunities and study guarantees, is to facilitate more supported, prepared, and informed transitions by helping unqualified young people to upskill and become better prepared for VET and to obtain and retain apprenticeships (Cedefop 2016b)).
- e) Learners who had to leave education and training because of caring, parenting, or working obligations: even if they see the relevance of education and training, external circumstances make it hard for them to enroll as they need a source of income or have other duties, such as taking care of their children. They need solutions that enable combining working and learning, possibly with support from social services.
- f) Learners combining multiple disadvantages, possibly facing health and psycho-social issues: they ended up leaving education and training for various reasons. They need comprehensive support of which education and training is only a part.

Policies and Measures to Prevent and Counteract Early Leaving

Cedefop (2016b) examined 337 initiatives across Europe that had the objective of reducing early leaving from or through VET, aiming to support national and EU policy and decision-makers in improving ELET data collection, and developing and monitoring measures to combat and counteract ELET. Some of the main conclusions drawn from this comparative research are the following:

- a) There is no single blueprint of an effective intervention to tackle ELET: the detail of successful interventions differs by target group and setting. That's why policies and measures to tackle ELET are more likely to succeed if they acknowledge the different factors that can influence it and are tailored to the specific profiles of early leavers and needs of young people at risk of leaving education and training prematurely.
- b) Preventing early leaving does not necessarily require extensive and costly measures or creation of new structures and programs; relatively simple adjustments can make a big difference for those who are not yet significantly disengaged.
- c) Compared to prevention, compensation measures, which seek to integrate early leavers back into education and training, are more complex to design and implement, since the target group is more heavily disengaged and the gaps to compensate are wider. Compensation measures should be comprehensive and flexible pooling resources from local support measures (psycho-social assistance, social services, health services, etc.) and transit to programs that give access to mainstream qualifications.
- d) Addressing ELET requires a combination of education with social and employment measures to tailor responses to the different profiles of young people at risk. European countries are at different stages in coordinating ELET measures nationally and regionally and make sure they complement each other and link well with other social and employment services.
- e) Systematic evaluation of measures to tackle ELET is indispensable to upscaling and mainstreaming while ensuring sustainability. Such evaluations are not systematic in Europe. (Of the 337 policies and initiatives mapped in this study of Cedefop (2016b), only 44 were supported by evidence of success. Only few evaluations included the following elements of analysis in their design: the real impact on individual learning pathways; how and why a given intervention or policy influenced education outcomes; what happened to the young people exiting the intervention and their subsequent relationship to education and training, to make conclusions about whether they eventually qualified, for example; measurement of intermediary outcomes related with ELET (e.g., improvement of educational aspirations, education results, work-readiness, motivation and confidence, or changed risk behaviors such as absenteeism); and how and why a given activity leads to the observed outcomes) and often are based solely on output data, such as the number of beneficiaries, which provides information on the scale of the activity but not on success in addressing the initial problem. This is why trial and transfer of successful local, regional, or international examples into national settings also appear rare.
- f) The study found that important improvements could be made to the scale and focus of evaluations of measures to tackle early leaving; such evaluations should be encouraged in EU policies and guidelines.
- g) Transferring successful projects and initiatives into national policies and measures will improve early leavers' perspectives and retain learners at risk of dropping out. A high level of commitment by policy-makers is crucial to ensuring sustainability of good practices. All successful examples analyzed demonstrate quick pick-up on innovation, effective implementation and evaluation of pilot projects, subsequent upscaling of the measure, and continued financial and political support.
- h) Having evidence of success is essential to informing policies, putting in place funding arrangements, and helping build necessary capacity. Supporting peer learning and exchange of good practices also helps understanding of what works.
- i) National policy-makers have been giving increasing opportunity to education and training providers and other local stakeholders to develop their own approaches, using supplied guidelines, methods, and advice. Better cooperation between national, regional, and local authorities may ensure that best practices are captured and mainstreamed to make them available nationally.

Cedefop's [VET toolkit for tackling early leaving](#) recognizes these challenges in designing policies and measures counteracting ELET and offers [action plans to develop a comprehensive strategy](#) to tackle ELET, [reflection tools and evaluation plans](#) for policy-makers and learning providers, inspiring [intervention approaches with tips for success](#), and a selection of the [most successful VET practices](#) to tackle ELET, among other updated and relevant resources on this matter, based on comparative research and analytical work.

Accordingly, a study of the European Commission (2019a) also mapped the range of prevention (Prevention policies aim to reduce the risk of early school leaving before problems start; such measures optimize the provision of education and training in order to support better learning outcomes and to remove obstacles to educational success (European Commission 2019a)), intervention (Intervention policies aim to avoid early leaving by improving the quality of education and training at the level of the educational institutions, by reacting to early warning signs, and by providing targeted support to pupils or groups of pupils at risk of ELET; they address all educational levels, starting from early childhood education and care to upper secondary education (European Commission 2019a)), and compensation (Compensation policies aim to help those who left school prematurely to re-engage in education, offering routes to re-enter education and training and gain the qualifications they missed (European Commission 2019a)) policies and practices to reduce early leaving, implemented at a national level across the EU-28 (UK is included), EFTA, and candidate countries, to assess the impact of the Council Recommendation of 2011 on Policies to Reduce Early School Leaving. The findings can be summarized in the following points according to the type of policies (European Commission 2019a):

a) Prevention policies:

- The majority of countries have implemented prevention policies during the period of examination.

- Implementation of systemic or infrastructural prevention policies, such as anti-segregation policies, appears to be less prevalent than measures implemented within schools or other institutions.
- There is evidence of relatively good coverage of targeted prevention measures, oriented toward specific groups at risk of early school leaving, such as Roma, migrant children, and families experiencing socio-economic disadvantage.

b) Intervention policies:

- The majority of countries have implemented intervention policies during the period of examination (2011–2019), although with more variation than for prevention policies.
- Most countries have implemented intervention measures focused on in-school support, including targeted support for learners experiencing personal, social, or academic difficulties, as well as CPD (Continuing Professional Development) for teachers and school leaders to help them to manage diversity and to support learners.
- Over half of the countries also implement measures to promote inclusive school environments, anti-bullying, and well-being, as well as policies to engage child participation in decision-making. However, there are some clear gaps in certain countries for these two groups of measures.
- Only a minority of countries has implemented infrastructural measures, including measures relating to building school networks, clusters, or multi-professional teams, setting up early warning systems, and providing extra-curricular cultural and civic education.

c) Compensation measures:

- They are better established across Europe, in comparison to the other two types of policies.
- Most countries offer “second chance” education schemes of some type, often combined with careers guidance, financial, childcare, and/or psychological support.

- The weakest overall focus in this area is on systems to support the recognition and validation of prior learning.

The study concludes that the impact of these policies is not possible to be assessed since evaluation of ELET policies has not been systematic, as Cedefop study has also revealed (2016a, b), and hence, evaluative evidence is only available for a few policies and initiatives. This is why Cedefop's VET toolkit for tackling early leaving offers evaluation tools and guidelines to support policy makers and VET practitioners to monitor and evaluate their policies and practices.

Supporting Learners at Risk During Pandemic and School Closures

At the beginning of 2020, educational systems around the world faced an extended closure due to the COVID-19 pandemic. This has presented unique challenges by disrupting the education and training of an entire generation of learners. Those at risk could suffer from early leaving if continuity of learning is not ensured through other means, e.g., distance learning. Evidence shows that targeted measures and flexible formats of training can prevent early leaving. In this context, it is crucial to support those learners who are at a greater risk, such as students from disadvantaged socioeconomic backgrounds, migrants, and students from ethnic minorities, low-skilled adults, and learners with disabilities and special educational needs. Broad accessibility for all these learners needs to be ensured, and any remaining barriers to participation needs to be removed, to help address the equity concerns raised during the COVID-19 crisis (European Commission 2020). Some of the initiatives implemented in this context have been mapped by Cedefop (2020) and include:

- Ensuring access to distance education with the free provision of the necessary equipment and free unlimited Internet connection
- Translating material into different languages spoken by ethnic minorities and refugees, including sign language for hearing-impaired students

- Offering training opportunities to learners on digital skills and competences
- Monitoring learners' engagement in online classes
- Providing individualized distance support to learners at risk and their parents, in both academic and mental health aspects
- Supporting VET teachers and trainers through online training modules on digital skills and e-learning pedagogies and by providing them with free digital devices

In autumn 2020, schools of Europe reopen for the new academic year. The general European plan for a safe re-start of face-to-face lessons requires strict protection measures, such as:

- Practicing social distance measures inside and outside the classrooms
- The mandatory use of sanitary masks for students over a certain age
- Classrooms with fewer students and desks at appropriate distances from each other according to the recommendations of social distance in the use of the facilities

Schools in some areas of Europe will remain empty as they will continue with online classes and distance learning for the beginning of this new academic year, while others will follow a hybrid modality of learning, with a mix between physical and virtual presence according to certain scenarios, for example, giving the possibility to students over a certain age to choose between online education and attending physically school lessons. All students and pedagogical staff who are at higher risk due to pre-existing health problems are entitled to distance education. Accordingly, governments are taking actions to adjust to the new requirements, creating more classroom space, offering masks to students and teachers, and recruiting more teachers.

Despite these efforts made worldwide, the impact on the cognitive and soft skills of pupils remains unknown with scientists arguing for the negative consequences of these school irregularities in the short and long term of students' learning

outcomes and qualifications, fearing for dramatic increases on the rates of early leaving.

References

- Cedefop. (2016a). *Leaving education early: Putting vocational education and training centre stage*. Volume I: Investigating causes and extent. Luxembourg: Publications Office. Cedefop research paper; No 57. <https://doi.org/10.2801/893397>
- Cedefop. (2016b). *Leaving education early: Putting vocational education and training centre stage*. Volume II: Evaluating policy impact. Luxembourg: Publications Office. Cedefop research paper; No 58. <https://doi.org/10.2801/967263>
- Cedefop. (2019). *Briefing note - Preventing low skills through lifelong learning*. https://www.cedefop.europa.eu/files/9136_en.pdf
- Cedefop. (2020). *Digital learning gap during COVID-19 for VET learners at risk in Europe*. Synthesis report based on preliminary information on seven countries provided by Cedefop community of ambassadors tackling early leaving from VET. June 2020. Available here: <https://www.cedefop.europa.eu/en/news-and-press/news/coronavirus-distance-learning-increases-dropout-risk-vulnerable-learners>
- European Commission. (2019a). *Assessment of the Implementation of the 2011 Council Recommendation on Policies to Reduce Early School Leaving*. <https://op.europa.eu/en/publication-detail/-/publication/72f0303e-cf8e-11e9-b4bf-01aa75ed71a1#>
- European Commission. (2019b). *Education and training monitor 2019*. <https://ec.europa.eu/education/sites/education/files/document-library-docs/volume-1-2019-education-and-training-monitor.pdf>
- European Commission. (2020). *Council Recommendation on vocational education and training (VET) for sustainable competitiveness, social fairness and resilience*. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=SWD%3A2020%3A123%3AFIN>
- Eurostat. (2020). *EU labour force survey – Methodology: Core questionnaires [database]*. http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/EU_labour_force_survey_-_methodology#Core_questionnaires
- Psifidou, I. (2017). Les autoritats locals al capdavant de lluita contra l'abandonament escolar prematur dels estudis post obligatoris i la formació professional. In Observatori de l'educació local Anuari 2017, pp. 101–110, Diputació Barcelona.

Early School-Leavers

► High School Completion Rates

Early Sexual Debut

► Family and Individual Factors Associated with Risky Sex

Earnings Model

► Human Capital Models

Earth's Carrying Capacity

Federico Pulselli and Luca Coscieme
Department of Physical, Earth and Environmental Sciences, Siena, Italy

Definition

Carrying capacity is defined as the maximum number of individuals of a population that the environment can support.

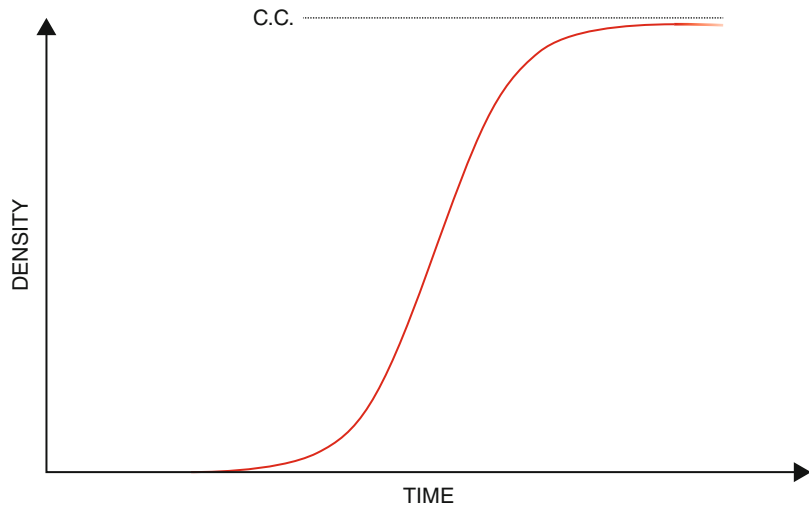
Description

Patterns of ► **population growth** have been studied and observed in ecology. A population increases its number of individuals until it runs out of some resource. The number of individuals of a population that the environment can support is called carrying capacity. The equilibrium level beyond which no major increase in population can occur is the upper asymptote of a “sigmoid growth form” curve (Fig. 1). When the population size reaches the upper limits of carrying capacity, it may remain at this level or decline, producing a “relaxation oscillation” pattern in density (for a wide explanation of these concepts, see Odum 1971).

This capacity is intuitively influenced by the major limiting factors (e.g., food or space) in the given environment, which can be stressed by

Earth's Carrying Capacity, Fig. 1

The “sigmoid growth form” curve and the carrying capacity (C.C.): This growth form curve describes the increase of human populations with limited resources (After Odum 1971; see also Verhulst 1838)



external factors such as, for instance, seasonal ones. In general, depending on the referred system (from a single species to an entire community), the carrying capacity can be dynamically influenced by a number of factors. Considering the entire Earth system and the most common and widespread species on Earth, the detection and estimation of carrying capacity becomes a very complex issue. In particular, the assessment of human carrying capacity could be much more difficult to make than for other species (Daly 1996; see also Crutzen and Stoermer 2000, for the concept of Anthropocene and the impacts of the human species on the global ecosystem).

Carrying capacity for humans depends especially on not fixed, static, or simple relations. It is contingent on the rapidly changing technology, preferences, and structure of production and consumption (Arrow et al. 1995). According to Meadows et al. (1992), “for the human population, [calculation] is much more complex due to the great variety of resources that humans take from the environment, the great quantity of wastes they put back, and the range of their possible technologies, institutions and life-styles” (see also Pulselli et al. 2008). A calculation of Earth’s carrying capacity for humans thus requires hypothesis on living standards, degree of distributional equality, technology, and trade extension (Daly 1996). However, besides considering all

these variables, a general question arises on the planetary biophysical limits to growth, upon which the concept of carrying capacity of Earth is based.

Rockström et al. (2009) pose this question, identifying nine areas that are most in need of planetary boundaries: climate change, biodiversity loss, excess of nitrogen and phosphorus production, stratospheric ozone depletion, ocean acidification, global consumption of freshwater, change in land use for agriculture, air pollution, and chemical pollution, the first three of which have been already transgressed by humanity.

Already in the 1970s, investigating the carrying capacity question in their book “Limits to Growth,” Meadows et al. (1972) argued that in case of continuous unchanged growth in five basic sectors (population, industrialization, pollution, food production, and consumption of natural resources), humankind would have reached the natural limits of growth in less than 100 years. In 1972, the authors were optimistic, maintaining that the carrying capacity of the planet was still far to be overcome. Years later, they updated their research, identifying the serious risk of exceeding the limits (Meadows et al. 1992, 2004).

The ► [population growth](#) also acts as a multiplication factor. To maintain humanity at fair distance from Earth’s carrying capacity, we need to reduce the identified “impacts” and,

simultaneously, limit the population increase. According to the United Nations projections, the global population will continue to grow, reaching about nine billion people by 2050 (UNEP 2004). It must be noted, however, that the unequal distribution of wealth and appropriation of natural resources make the population of Western industrialized countries historically more responsible than that of the south of the world, independently of the number of individuals. Moreover, a growing competition for land is expected also due to the emergence of human needs: food (see Godfray et al. 2010), raw materials, primary energy, as well as other ecosystem services, namely, provisioning, regulating, and cultural environmental services (Millennium Ecosystem Assessment 2005). These wide varieties of services constitute the environmental “resource” basis on which human life, economic activity, and well-being ultimately depend.

When a wide set of factors determine the carrying capacity, systemic indicators can be identified to take into account their synergies and cumulated effects. Among many systemic indicators related, directly or indirectly, to the concept of carrying capacity, the ► [Ecological Footprint](#) seems to be one of the most powerful and used (see Wackernagel and Rees 1996). ► [Ecological Footprint](#) is defined as the biologically productive area required to sustain a given population in a given lifestyle. Its counterpart is the biocapacity, which represents the theoretical maximum resource capacity for a territory, in a year. The comparison of biocapacity with footprint discriminates ecological creditors and debtors. This can be interpreted as a distinction between nations exceeding their own territory's carrying capacity and nations still far from it (Niccolucci et al. 2007). ► [Ecological Footprint](#), however, considers only some of the factors which can influence the carrying capacity for humans (energy production, living space, food production, forest services such as wood and carbon sequestration). A wider range of ecosystem services have to be taken into account for a better estimation of carrying capacity at different scales, as well as social factors, distributional equality, and other well-

being indicators that are important to relate carrying capacity with the quality of life.

Cross-References

- [Ecological Footprint](#)
- [Population Growth](#)

References

- Arrow, K., Bolin, B., Costanza, R., Dasgupta, P., Folke, C., Holling, C. S., et al. (1995). Economic growth, carrying capacity, and the environment. *Science*, 268, 520–521.
- Crutzen, P. J., & Stoermer, E. F. (2000). The “Anthropocene”. *Global Change Newsletter*, 41, 17–18.
- Daly, H. (1996). *Beyond growth: The economics of sustainable development*. Boston: Beacon.
- Godfray, H. C. J., Beddington, J. R., Crute, I. R., Haddad, L., Lawrence, D., Muir, J. F., et al. (2010). Food security: The challenge of feeding 9 billion people. *Science*, 327, 812–818.
- Meadows, D. H., Meadows, D. L., Randers, J., & Behrens, W. W., III. (1972). *Limits to growth*. New York: Universe Books.
- Meadows, D. H., Meadows, D. L., & Randers, J. (1992). *Beyond the limits*. Post Mills: Chelsea Green Publishing Company.
- Meadows, D. H., Meadows, D. L., & Randers, J. (2004). *Limits to growth. The 30-year update*. Post Mills: Chelsea Green Publishing Company.
- Millennium Ecosystem Assessment. (2005). Washington, DC: Island Press.
- Niccolucci, V., Pulselli, F. M., & Tiezzi, E. (2007). Strengthening the threshold hypothesis: Economic and biophysical limits to growth. *Ecological Economics*, 60, 667–672.
- Odum, E. P. (1971). *Fundamentals of ecology*. Philadelphia: Saunders.
- Pulselli, F. M., Bastianoni, S., Marchettini, N., & Tiezzi, E. (2008). *The road to sustainability*. Southampton: WIT Press.
- Rockström, J., Steffen, W., Noone, K., Persson, A., Chapin, F. S., III, Lambin, E. F., et al. (2009). A safe operating space for humanity. *Nature*, 461, 472–475.
- UNEP. (2004). *World population to 2300*. New York: United Nations.
- Verhulst, P. (1838). Notice sur la loi que la population poursuit dans son accroissement. *Correspondance mathématique et physique*, 10, 113–121.
- Wackernagel, M., & Rees, W. E. (1996). *Our ecological footprint: Reducing human impact on the earth*. Gabriola: New Society.

Earthquakes

Yandong Zhao

Chinese Academy of Science and Technology for Development, Institute of Science, Technology and Society, Beijing, China

Synonyms

Disasters

Description

Disasters occur as the result of the impact of hazards on vulnerable people (Blaikie et al. 2004). Therefore, an earthquake can be regarded as a disaster only when it results in various impacts on the quality of life of the affected population. Such consequences include both the deterioration of objective living conditions and negative impacts on subjective well-being.

The negative impacts of earthquakes on objective living conditions are comprehensive. First, an earthquake usually brings about severe damage, including destruction of housing, property damage and physical injury, disability, and death. As a result, people's access to resources such as assets and income is weakened, which in turn may be exacerbated by business recession during and after an earthquake (Webb et al. 2000). Second, an earthquake may destruct infrastructure, such as roads, power plants, hospitals, and schools. Apart from being an inconvenience to people's daily lives, it may also cause disaster-related health problems. Last, but not the least, some of those affected by an earthquake may have to migrate or be relocated to other areas. During such a process, the pre-earthquake local social networks may be disturbed or destroyed, which might affect people's normal social interaction and thus deteriorate the social capital in the affected area (Kasapoglu et al. 2004; Bland et al. 1997; Zhao 2007, 2009).

Compared to the impact on living conditions, the impacts of earthquakes on subjective well-being are more complex and have induced more

debate among researchers. Some suggest that disasters produce both short- and long-term negative psychological consequences among the victims (Chou et al. 2004; Sharan et al. 1996). For example, some researchers have documented posttraumatic stress disorder (PTSD) and other kinds of psychiatric impairment among victims of earthquakes, while others have pointed to increase in depression or anxiety after an earthquake (Zhang et al. 2010; Goenjian et al. 1994). Nevertheless, other researchers insist that earthquakes have few severe and long-lasting psychological effects (Taylor 1977). Some have even argued that after a disaster, there are more social order and altruism than chaos and selfishness (Quarantelli and Dynes 1977). Zhao et al. (2010) find that after Sichuan earthquake in 2008, the social trust among the affected population significantly increases, which implies that the earthquake might increase the local social capital and thus bring positive impacts on people's mental health. These different findings are partly the reason why Kreps (1984) complains that "disaster, the social order, and mental health are viewed as inextricably linked by ill-defined concepts and variables as well as elusive thresholds."

The impacts of disasters are not evenly distributed among individuals and groups but are strongly related to preexisting social vulnerability, which is constructed by many social variables such as class, occupation, ownership, and type of residence (Blaikie et al. 2004). Individuals with lower income or belonging to minority ethnic groups may have higher probability to live in unsafe places. As Poteyeva et al. (2006) have observed, un-reinforced masonry buildings and other types of shabby houses constitute the main part of affordable housing for low-income residents in tectonically active areas and are more likely to collapse in an earthquake than the houses of affluent segments of the population. Other studies have found that those who suffer serious effects on quality of life after the disaster tend to be older, female, divorced/widowed, and less educated (Suhail et al. 2009; Chou et al. 2004).

While social inequality makes some population groups more vulnerable than others, the problem is just as or even more salient in the

post-disaster recovery phase. The improvement and recovery of the quality of life is the main theme of post-disaster recovery or reconstruction. Usually, each individual, family, community, and society would mobilize their own resources in the recovery. However, the resources, as well as the abilities to mobilize resources, are again not evenly distributed among social groups. For example, individuals with lower socioeconomic status (SES) and members of minority ethnic groups recover at a much slower rate than their counterparts (Bates et al. 1982). Persons with higher education and income are more likely to know more about where to obtain assistance after earthquake (Bourque et al. 2006), while the black, elderly, and lower-income victims were less likely to receive external aid (Drabek and Key 1983). Relationship between the capability of recovery and individuals' social attributes such as race, class, and gender also has been found in other studies (Oliver-Smith 1999; Bolin and Bolton 1986). Based on these findings, many researchers have warned that the post-disaster recovery might reproduce or even further enlarge the pre-disaster inequalities (Bates et al. 1982; Kreps 1984).

Accordingly, the support and intervention from external social actors, including government, NGOs, and international organizations, may be indispensable for the recovery of quality of life after an earthquake. When providing support, they should pay particular attention to the more vulnerable social groups with the purpose of reducing social inequality. This is especially true in modern society, because access to disaster recovery assistance had obviously become regarded as an entitlement, rather than compassionate acts (Platt 1999). Scholars have developed some models, which can be used to assess people's capability of recovery from disasters, such as Access Model (Blaikie et al. 2004) and Policy Oriented Post-disaster Needs Assessment (POPNA) (Kristin et al. 2011). And one of these models' purposes is to identify the vulnerable subgroups, which have fewer opportunities to access to resources.

(I thank Lu Yangxu for his contribution to this entry. I also thank Jon Pedersen for his comments).

References

- Bates, F. L., Farrell, W. T., Ferrate, L. A., Killian, S. D., Peacock, W. G., et al. (1982). *Recovery, change, and development: A longitudinal study of the 1976 Guatemalan earthquake*. Athens: University of Georgia.
- Blaikie, P. M., Wisner, B., & Davis, I. (2004). *At risk: Natural hazards, people's vulnerability, and disaster* (2nd ed.). London: Routledge.
- Bland, S. H., O'Leary, E. S., Farinaro, E., Jossa, F., Krogh, V., Violanti, J. M., & Trevisan, M. (1997). Social network disturbances and psychological distress following earthquake evacuation. *The Journal of Nervous and Mental Disease*, 185(3), 188–195.
- Bolin, R. C., & Bolton, P. (1986). *Race, religion and ethnicity in disaster recovery* (Monograph) (Vol. 42). Boulder: University of Colorado.
- Bourque, L. B., Siegel, J. M., Megumi, K., & Wood, M. M. (2006). Morbidity and mortality associated with disasters. In H. Rodriguez, E. L. Quarantelli, & R. R. Dynes (Eds.), *The handbook of disaster research* (pp. 97–112). New York: Springer.
- Chou, C. F. H., Chou, P., Lin, C., Tom, T., Su, P., Yang Ou, C. W., Chien, C. I., Su, C. Y., Lu, M. K., & Chen, M. C. (2004). The relationship between quality of life and psychiatric impairment for a Taiwanese community post-earthquake. *Quality of Life Research*, 13(6), 1089–1097.
- Drabek, T. E., & Key, W. H. (1983). *Conquering disaster: Family recovery and long-term consequences*. New York: Irvington.
- Goenjian, A. K., Najarian, L. M., Pynoos, R. S., Steinberg, A. M., Manoukian, G., Tavosian, A., & Fairbanks, L. A. (1994). Posttraumatic stress disorder in elderly and younger adults after the 1988 earthquake in Armenia. *The American Journal of Psychiatry*, 151(6), 895–901.
- Kasapoglu, A., Ecevit, Y., & Ecevit, M. (2004). Support needs of the survivors of the august 17, 1999 earthquake in Turkey. *Social Indicators Research*, 66, 229–248.
- Kreps, G. A. (1984). Sociological inquiry and disaster research. *Annual Review of Sociology*, 10, 309–330.
- Kreps, G. A. (1995). Disaster as systemic event and social catalyst: A clarification of the subject matter. *International Journal of Mass Emergencies and Disasters*, 13, 255–284.
- Kristin, D., Zhang, H., & Zhao, Y. (2011). *POPNA: A toolbox for conducting policy oriented post-disaster needs assessments*.
- Oliver-Smith, A. (1999). What is a disaster? In A. Oliver-Smith & S. Hoffman (Eds.), *The angry earth: Disasters in anthropological perspective* (pp. 18–34). New York: Routledge.
- Platt, R. H. (1999). *Disasters and democracy: The politics of extreme natural events*. Washington, DC: Island Press.
- Poteyeva, M., Denver, M., Barsky, L. T., & Aguirre, B. E. (2006). Search and rescue activities in disasters. In

- H. Rodriguez, E. L. Quarantelli, & R. R. Dynes (Eds.), *The handbook of disaster research* (pp. 200–216). New York: Springer.
- Quarantelli, E. L., & Dynes, R. R. (1977). Response to social crisis and disaster. *Annual Review of Sociology*, 3, 23–49.
- Sharan, P., Chaudhary, G., Kavathekar, S. A., & Saxena, S. (1996). Preliminary report of psychiatric disorders in survivors of a severe earthquake. *The American Journal of Psychiatry*, 153, 556–558.
- Suhail, K., Malik, F., Mir, I. A., Hasan, S. S., Sarwar, A., & Tanveer, S. (2009). Psychological health of earthquake survivors in Pakistan. *Psychology and Developing Societies*, 21, 183–207.
- Taylor, V. A. (1977). Good news about disasters. *Psychology Today*, 11, 93–96.
- Webb, G. R., Tierney, K. J., & Dahlhamer, J. M. (2000). Businesses and disasters: Empirical patterns and unanswered questions. *Natural Hazards Review*, 1, 83–90.
- Zhang, Y., Kong, F., Wang, L., Chen, H., Gao, X., Tan, X., Chen, H., Lv, J., & Liu, Y. (2010). Mental health and coping styles of children and adolescent survivors one year after the 2008 Chinese earthquake. *Children and Youth Services Review*, 32(10), 1403–1409.
- Zhao, Y. (2007). Social capital and post-disaster recovery: A sociological study on disaster. *Sociological Research*, 5, 164–187.
- Zhao, Y. (2009). *Social networks and reduction of risk in disasters: An example of the Wenchuan Earthquake*. Conference paper presented in international conference on economic stress, human capital, and families in Asia: Research and policy challenges, Singapore.
- Zhao, Y., Deng, D., & Li, R. (2010). Social Capital in the Wenchuan Earthquake-affected Area. *China Soft Science*, 8, 91–98.

Ease of Doing Business Index

Kornelia Kozovska
European Commission, Brussels, Belgium

Synonyms

Business regulation measure

Definition

The ease of doing business index measures the quality of the business environment and the

impact of national government policymaking on the cost of doing business throughout the lifecycle of small- and medium-sized firms.

Description

The first ease of doing business index was published by the World Bank in 2003 (World Bank 2003). Its last edition (World Bank 2010) covers 183 economies and ranks them with regard to the conduciveness of the regulatory environment to start and operate a local firm. Nine topics are taken into account in the ► [index construction](#) – starting a business, dealing with construction permits, registering property, getting credit, protecting investors, paying ► [taxes](#), trading across borders, enforcing contracts, and closing a business. The index averages the country's percentile rankings on each of the nine topics, using an equal weighting scheme for each topic. The ranking on each of the topics is the simple average of the component indicators.

Reliability

The index gives a broad idea of the general business climate in a country, quality of related ► [governance](#) structures, and the potential for ► [economic efficiency](#). The underlying data is collected on the basis of a standardized survey distributed to local experts, using a simple business case with assumption on the legal form of the business, its size, location, and nature of its operations. This allows for transparency, but a number of shortcomings have been recognized related to the geographical location of reference (an economy's largest business city), the selected business form, standardization of case scenarios, subjectivity of time measures, and an assumption of fully available information for the businesses.

Discussion

The topics included in the index have undergone changes in the years. One of the topics previously included – employing workers – has been criticized (e.g., Berg and Cazes 2007) for its implications with regard to flexible employment

regulation and the weak evidence for a strong link between labor market deregulation and improved economic performance. Further work on a new work protection indicator is currently taking place. Further methodological weaknesses have been pointed out by the World Bank Independent Evaluation Group (2008) and Høyland et al. (2008), especially with regard to the relationship between the ranking and the underlying factor, the business climate, and the implication this can have in terms of ► [policy analysis](#) and targeted policy measures for improving country's position.

Cross-References

- [Economic Efficiency](#)
- [Governance](#)
- [Index Construction](#)
- [Indicators, Quality of Life](#)
- [Policy Analysis](#)
- [Taxes](#)
- [Weighting Schemes](#)

References

- Berg, J., & Cazes, S. (2007). *The doing business indicators: Measurement issues and political implications* (Economic and Labour Market Paper 2007/6). Geneva: International Labour Organization.
- Høyland, B., Moene, K., & Willumsen, F. (2008). *Be careful when doing business. Report for the Norwegian Ministry of Foreign Affairs*. Oslo: ESOP.
- World Bank. (2003). *Doing business in 2004: Understanding regulation*. Washington, DC: Author.
- World Bank. (2010). *Doing business 2011: Making a difference for entrepreneurs*. Washington, DC: World Bank and International Finance Corporation.
- World Bank Independent Evaluation Group. (2008). *Doing business: An independent evaluation-taking the measure of the World Bank-IFC doing business indicators*. Washington, DC: Author.

Easterlin Paradox

Conal Smith
OECD, Paris, France

Synonyms

[Hedonic treadmill](#)

Definition

The Easterlin paradox is an empirical relationship observed between measures of overall ► [subjective well-being](#) (such as ► [life satisfaction](#) or ► [happiness](#)) and income first noted by Richard Easterlin (1974). In Easterlin's original article, he observed that, although higher incomes are associated with higher levels of happiness within a country, average levels of happiness for a country do not appear to increase over time in line with increases in average income. In other words, the rich are happier than the poor, but there is no evidence that countries increase in average happiness as they get richer.

Description

In the original formulation of the paradox, Easterlin's analysis was largely limited to one country (the USA) with only limited data available on other countries. Since then, better information has indicated a strong empirical relationship across countries, with wealthy countries having a higher average level of happiness. In fact, there is a strong empirical relationship between the logarithm of per capita Gross Domestic Product (GDP) and average happiness across countries. However, apart from this finding, there has been relatively little data since 1974 to substantively amend Easterlin's original observation (Easterlin 1995). Indeed, one of the most striking features of the Easterlin paradox has been its robustness in the face of nearly four decades of accumulating data.

East Germany

- [Germany, Quality of Life](#)

The Easterlin paradox is significant because it potentially calls into question one of the core assumptions of economics as a discipline: that increasing income (and hence consumption possibilities) increases well-being. At a policy level, if increasing the average level of income in society does not increase the well-being of that society, then the relevance of economic growth as a policy goal is called into question.

Because the Easterlin paradox is so counterintuitive when compared to the assumptions underpinning traditional economic analysis, it has been the focus of extensive analysis. Explanations accounting for the Easterlin paradox remain one of the main topics of research in the economics of happiness, and a range of different hypotheses have been put forward. Broadly speaking, however, there are four main theories accounting for the Easterlin paradox, not all of which are mutually exclusive. The four theories relate to social comparisons and ► [adaptation](#), offsetting effects, ► [measurement error](#), and whether there is an Easterlin paradox at all.

The most prominent account of the Easterlin paradox places its main emphasis on social comparisons and the role of adaptation to one's current circumstances. Clark et al. (2008), for example, argue that the Easterlin paradox can be explained if it is a person's relative income compared to some other reference group that determines their level of happiness rather than the absolute income. In other words, the rich are happier than the poor because they have a higher level of income than other people to which they compare themselves, not because of the absolute level of consumption which they are able to sustain with their higher income. For a given individual, increasing their income will move them up in the income distribution compared to their peers and therefore increase happiness. However, a general rise in income for all members of society will leave average happiness unchanged since there has been no change in the ranking of people in the income distribution.

A related concept is the notion of adaptation. Some studies have suggested that people adapt to changes in their circumstances. An increase in income may initially raise happiness, but as a

person adapts to the new level of income, their happiness will return to its normal level. This is sometimes referred to as the "hedonic treadmill." Adaptation does not explain why the rich in any given society are happier than those with lower incomes but does account for why a rise in incomes over time does not lead to a general rise in the average level of happiness in society.

A second group of explanations for the Easterlin paradox focuses on the effect of factors other than income on levels of happiness. It may be that while higher incomes do lead to higher levels of happiness, we do not observe a rise in average levels of happiness as GDP increases because some other factor important to happiness is moving in an offsetting direction. Angeles (2011) finds that for the USA, the impact of the fall in the proportion of the population who are married between the 1970s and the 2000s is, on its own, large enough to offset the impact of higher levels of average income on the expected level of happiness in the USA. Di Tella and MacCulloch (2008) examined a similar hypothesis with respect to Europe but found the opposite result. The net effect of adding in additional variables known to have an effect on happiness was to increase the expected level of happiness compared to the actual change.

Easterlin et al. (2012) proposes a variant of this hypothesis to account for changes in the level of life satisfaction in China between 1990 and 2010. During this period, per capita GDP in China quadrupled, while life satisfaction fell at first and then began to rise, although still not returning to its 1990 levels by 2010. This pattern is consistent with a weak positive effect of real income on life satisfaction that has been offset by a large initial fall in life satisfaction due to a pronounced rise in ► [unemployment](#), growing ► [inequality](#), and an accompanying dissolution in the social safety net associated with rapid economic change. A similar pattern is seen in many East European transition economies.

The third type of explanation for the Easterlin paradox focuses on the measurement issues associated with subjective well-being. The main data sets for which long time series on subjective well-being are available (e.g., Eurobarometer) are

based on relatively small sample sizes, and there is therefore a relatively large degree of noise associated with measured levels of subjective well-being. There is general agreement that the relationship between income and happiness across countries declines as income increases (i.e., each additional amount of income produces less subjective well-being). Because most of the countries for which time series information on subjective well-being is available are relatively wealthy, the effect of income growth may be too small to be observed in existing data. In this case, a stronger relationship between trends in income and subjective well-being for developing nations may become apparent as longer time series become available for these countries.

A number of authors have noted other measurement issues that may account for the Easterlin paradox. While there is a robust empirical relationship between life satisfaction and GDP per capita across countries, this relationship is much weaker for measures of happiness (Diener et al. 2010; Kahneman and Deaton 2010). Both Easterlin's original 1974 article and much of the subsequent literature used measures of happiness rather than life satisfaction to examine the relationship between income and subjective well-being. This line of argument is developed further by Graham (2011), who emphasizes the sensitivity of results to the method of analysis used, the choice of micro or macro data, and the way in which questions of subjective well-being are framed.

The final approach to the Easterlin paradox is to argue that it does not in fact exist. Deaton (2007) demonstrates a strong, linear relationship between the logarithm of per capita GDP and life satisfaction. Sacks et al. (2010) extend this to compare the relationship between income and life satisfaction at an aggregate level and at an individual level. Showing that the relationship is largely the same at both levels of analysis, it is argued that this only makes sense if it is the absolute level of income that drives life satisfaction, not the relative level. Further, Sacks, Stevenson, and Wolfers provide some examples of where life satisfaction has moved in line with per capita GDP across a number of countries.

Evidence on the reason for the Easterlin paradox is currently unclear. Depending on the data set, time frame considered, and methodology, studies can be found supporting a range of different positions. Given the centrality of the relationship between income and well-being both to public policy and to economics as a discipline, the Easterlin paradox remains a significant area of research within the economics of happiness.

Cross-References

- [Consumption Externalities](#)
- [Happiness](#)
- [Life Satisfaction](#)
- [Subjective Well-Being](#)

References

- Angeles, L. (2011). A closer look at the Easterlin Paradox. *The Journal of Socio-Economics*, 40, 67–73.
- Clark, A., Frijters, P., & Shields, M. (2008). Relative income, happiness, and utility: An explanation for the Easterlin Paradox and other puzzles. *Journal of Economic Literature*, 46(1), 95–144.
- Deaton, A. (2007). *Income, ageing, health and wellbeing around the world: Evidence from the Gallup world poll* (NBER Working Paper 13317).
- Di Tella, R., & MacCulloch, R. (2008). Gross national happiness as an answer to the Easterlin Paradox? *Journal of Development Economics*, 86, 22–42.
- Diener, E., Kahneman, D., Tov, W., & Arora, R. (2010). Income's association with judgments of life versus feelings. In E. Diener, J. Helliwell, & D. Kahneman (Eds.), *International differences in well-being*. Oxford/New York: Oxford University Press.
- Easterlin, R. (1974). Does economic growth improve the human lot? In P. A. David & M. W. Reder (Eds.), *Nations and households in economic growth: Essays in honour of Moses Abramovitz*. New York: Academic.
- Easterlin, R. (1995). Will raising the incomes of all increase the happiness of all? *Journal of Economic Behaviour and Organization*, 27(1), 35–47.
- Easterlin, R., Morgan, R., Switek, M., & Wang, F. (2012). China's life satisfaction, 1990–2010. *Proceedings of the National Academy of Sciences*, 109(25), 9775–9780.
- Graham, C. (2011). Does more money make you happier? Why so much debate? *Applied Research in Quality of Life*, 6, 219–239.
- Kahneman, D., & Deaton, A. (2010). High income improves evaluation of life but not emotional well-

being. *Proceedings of the National Academy of Sciences*, 107(38), 16489–16493.

Sacks, D., Stevenson, B., & Wolfers, J. (2010). *Subjective well-being, income, economic development and growth* (NBER working paper 16441).

Eat Local Campaigns

► Local Food Movements (100-Mile Diet)

Eating Attitudes Test (EAT-26)

► Caregivers of Patients with Eating Disorders, Quality of Life

Eating Disorder(s) and Health-Related Quality of Life

Janet D. Latner¹, Mackenzie C. Kelly² and Jessica M. Murakami¹

¹University of Hawaii, Honolulu, HI, USA

²Department of Psychology, University of Hawaii at Manoa, Honolulu, HI, USA

Synonyms

Anorexia nervosa; Binge eating disorder; Bulimia nervosa; Eating disturbances

Definition

Psychological disorders characterized by abnormal or disturbed eating habits.

Description

The eating disorders (EDs) are mental disorders that can have a significant impact on both mental and physical functioning. The major categories of

eating disorders include anorexia nervosa (AN), bulimia nervosa (BN), and eating disorder not otherwise specified (EDNOS). AN involves refusal to maintain at least 85% of expected normal weight, intense fear of gaining weight, shape and weight concerns, and amenorrhea. BN involves recurrent episodes of binge eating, consuming a large amount of food while losing control over eating, compensatory behavior to prevent weight gain (e.g., self-induced vomiting), and shape and weight concerns. These disorders affect predominantly women. EDNOS is defined as any clinically significant eating disorder that does not meet criteria for AN or BN. The most widely studied category of EDNOS is binge eating disorder (BED), in which recurrent binge eating episodes are not accompanied by compensatory behaviors. BED frequently co-occurs with obesity, and patients often exhibit significant shape and weight concerns as well.

Assessment of Health-Related Quality of Life in EDs

The potential health implications associated with AN, BN, and EDNOS are vast, ranging from dental enamel erosion and acid reflux to osteoporosis and kidney damage (e.g., Mehler 2011). In addition to the physical impacts, EDs are associated with impairment in psychological, social, emotional, and cognitive functioning. Generic ► [health-related quality of life \(HRQOL\)](#) measures have been used to assess the level of impairment associated with EDs. Generic measures commonly used in ED research include the Medical Outcomes Studies 36-item (SF-36; Ware and Sherbourne 1992), 20-item (SF-20; Stewart et al. 1988), and 12-item (SF-12; Ware et al. 1996) Short-Form Scales. These measures have been well validated and allow researchers to compare ED patients with other populations. However, it has been suggested that ED patients experience a pattern of impairment that may not be adequately accounted for by these global, generic measures of HRQOL (Tirico et al. 2010).

Recently, HRQOL measures have been adapted for specific use in eating disorder populations. The measures are designed to identify differences between individuals with different

ED diagnoses (i.e., AN, BN, EDNOS) and contain items that have been tailored to reflect the domains of impairment associated with EDs (e.g., behavior, eating disorder feelings, effects on daily life, school and work, financial effects, effects on acute medical status and body weight, and psychological impacts). There are currently four measures that assess ED-specific QOL: Quality of Life for Eating Disorders (Abraham et al. 2006), Eating Disorders Quality of Life (Engel et al. 2006), Health-Related Quality of Life in Eating Disorders (Las Hayas et al. 2006, 2007), and Eating Disorders Quality of Life Scale (Adair et al. 2007). The measures highlight differences between AN, BN, and EDNOS and allow for comparisons between the diagnoses. The Clinical Impairment Assessment (Bohn and Fairburn 2008) is a HRQOL measure that does not contain ED-specific items, but assesses life domains that are typically impacted by ED psychopathology, such as ► [mood](#) and self-perception, cognitive and interpersonal functioning, and work performance. Additional research is needed to further validate these ED-specific measures and to evaluate long-term changes in patients' ED-related HRQOL over time.

Impairment in EDs Relative to Other Individuals

ED patients exhibit greater impairment on the mental and psychological subscales of QOL measures than on the physical subscales of QOL measures. Studies have repeatedly shown that individuals with EDs experience significant impairment on the mental health subscales of QOL measures compared to healthy populations (see Jenkins et al. 2011 for a review). When samples of patients with different eating disorders (AN, BN, BED, EDNOS) are combined, they exhibit significantly greater impairment in HRQOL than normal control populations.

Subclinical EDs, such as binge eating, are also associated with impairment in QOL. Compared to individuals who do not report binge eating, but report other physical or mental disorders, binge eaters experience greater impairment in bodily pain and social functioning (Spitzer et al. 1995). Notably, former ED patients who no longer experience symptoms of the disorder also report lower

QOL than healthy comparisons (de la Rie et al. 2005). These results suggest that ED pathology is associated with significant impairment in multiple life domains, even when the individual has recovered or does not fully meet criteria to be diagnosed with an ED.

Patients with AN and BN show significant impairment in QOL relative to both healthy controls and physically ill individuals without mental illness (e.g., individuals with cystic fibrosis or heart transplant candidates). Compared with physically ill patients, ED patients reported significantly more impaired emotional reaction, social isolation, and relationships (Keilen et al. 1994). ED patients also reported similar impairments in sleep and energy to cardiac patients.

Patients with EDs have been compared to individuals diagnosed with mood disorders on generic HRQOL measures. ED patients have reported significantly better physical functioning and bodily pain, but significantly poorer social functioning, emotional role functioning, and mental health than clinically depressed patients (de la Rie et al. 2005). However, it is difficult to compare EDs with other mental disorders due to the high comorbidity between EDs and other psychological disorders such as ► [anxiety](#) and mood disorders.

Types of Eating Disorder Diagnoses

Possibly due to the relative rarity of eating disorders in the general population (Hudson et al. 2007), few studies have examined differences in QOL between specific ED diagnoses. Even fewer have done so using ED-specific QOL measures (Jenkins et al. 2011). While having a current ED is indicative of similar or worse QOL than other psychiatric conditions, the data are mixed on differences in QOL impairment between ED diagnoses as well as subthreshold eating pathology. The current research highlights the complexity of QOL differences between eating disorder diagnoses and the need for multi-measure, ED-specific assessment of QOL. Some evidence points to limited differences in QOL among patients with AN, BN, BED, and EDNOS when assessed using generic measures of QOL (de la Rie et al. 2005; Padierna et al. 2000). Mond et al. (2005) used two

generic measures of QOL (the SF-12 & WHOQOL-BREF) to assess women diagnosed with the restrictive subtype of anorexia nervosa (AN-R), the purging subtype of anorexia nervosa (AN-P), BN, BED, and normal controls. As expected, eating disorder patients experienced marked impairment in health-related and subjective QOL compared to normal controls. However, AN-R patients reported significantly better QOL than other eating disordered groups, with social relationship QOL comparable to the non-eating disordered controls. However, it has been noted that some ED patients lack insight into the full severity and implications of their disorder and that generic QOL measures do not adequately account for this poor insight. Additionally, the egosyntonic nature of EDs, particularly AN-R, may account for the elevated QOL scores on the generic measures (Latner et al. 2008; Williams and Reid 2009).

When ED-specific QOL measures were used, patients with AN were found to be more impaired across several QOL domains compared to their BN and EDNOS counterparts. Furthermore, the use of these ED-specific measures revealed more differences between eating disordered pathologies than did generic measures. Abraham et al. (2006) used the Quality of Life for Eating Disorders measure and found significantly greater impairment in patients with AN compared to those with BN in the domains of body weight, eating behavior, and eating disorder symptoms, as well as significantly greater global impairment compared to those with EDNOS or no diagnosis. Those with BN also reported significantly greater impairment across nearly all domains compared to those with EDNOS and no disorder. Similar findings were replicated in additional studies using ED-specific measures across a variety of treatment settings (Muñoz et al. 2009; Bamford and Sly 2010).

Within EDs, patients with BED most consistently report the poorest QOL when assessed with both ED-specific and generic measures of QOL. Individuals with BED have reported the poorest scores on the SF-36 in the emotional and physical domains compared to other ED patients (Doll et al. 2005; Padierna et al. 2000). As BED is frequently associated with obesity (Grilo 2002),

these scores may reflect greater physical limitations and dissatisfaction with weight gain. However, obese BED patients may still be more impaired than obese non-BED patients. Masheb and Grilo (2004) found that individuals with BED scored worse on the SF-36 than obese, non-BED treatment seekers in terms of mental health, emotional role limitation, social functioning, and vitality. It is important to note that there is additional evidence suggesting that individuals with eating pathology who do not meet full diagnostic criteria (i.e., partial or subclinical pathology) experience more distress (Chamay-Weber et al. 2005; Cotrufo et al. 1998, 2005) and QOL impairment than individuals without eating pathology (Doll et al. 2005; Mond and Hay 2007; Mond et al. 2005). Mond and Hay (2007) also found that women with subclinical eating pathology experience more impairment related to weight and shape concerns, whereas men with similar levels of pathology were also impaired by binge eating and fasting. The limited research on subclinical eating pathology indicates that QOL is poorer in individuals with any level of ED pathology than in those unaffected by weight and shape concerns.

Types of Disordered Eating Behaviors and Attitudes

Several studies have examined the relationship between certain behavioral features of eating disturbances and QOL. Such research increases our understanding of which specific symptoms and dysfunctional behaviors may be associated with the reduction in QOL seen in ED patients. Evidence suggests that self-induced vomiting is significantly associated with QOL (Gonzalez-Pinto et al. 2004; Hay 2003; Padierna et al. 2000). This is unsurprising in light of the multiple physical and emotional consequences of purging. In addition, even though normal physical activity improves health and well-being, excessive exercise of the magnitude that eating disorder patients engage in is associated with significant impairment in QOL (Mond et al. 2006).

Binge eating behavior, the consumption of a large amount of food accompanied by a loss of control over eating, has been shown to be associated with quality of life impairment (Hay 2003;

Mond et al. 2010). As described above, the different diagnostic categories that involve binge eating can all involve QOL impairment, including BED, AN (binge-purge subtype), and BN. Emerging evidence suggests that a variant of binge eating, subjective bulimic episodes, involving a loss of control over eating while consuming only a small or moderate amount of food, may also be associated with QOL impairment. This impairment may be as great as among individuals with “true” binge eating, or objective bulimic episodes, and greater than among healthy control participants (Mond et al. 2010; Vallance et al. 2011). The evidence concerning the potential negative consequences of subjective bulimic episodes is consistent with research on the psychopathology, body image, and self-esteem impairments seen in individuals with these episodes (Latner et al. 2007). Although these smaller episodes of binge eating are not currently part of the diagnostic criteria for any eating disorder, they may be as important as larger binge episodes in the impairment and suffering that they signal.

In addition to the behavioral symptoms of eating disorders that are associated with impairment in QOL, there is evidence that the attitudinal aspects of eating disorders may also be associated with functional impairment. However, less is known about the contribution of attitudinal disturbances to the functional impairment in EDs. Emerging research suggests that shape and weight concern may be paramount in predicting the functional impairment in QOL demonstrated among both patient samples (Lobera and Ríos 2011) and community samples (Mond et al. 2011) of eating disorders. Similarly, in individuals without eating disorders, body dissatisfaction is associated with significant QOL impairment (Cash and Fleming 2002; Mond and Hay 2007). Body dissatisfaction may even predict reduction in mental QOL to a greater extent than other features of eating disorders, such as binge eating, vomiting, and laxative misuse (Mond et al. 2011). Overall, there is a need for early intervention and detection of eating disturbance and body image dissatisfaction to protect individuals with eating disorder symptoms and body dissatisfaction from a further deterioration in QOL.

Cross-References

- [Body Image](#)
- [Mental Illness](#)

References

- Abraham, S. F., Brown, T., Boyd, C., Luscombe, C., & Russell, J. (2006). Quality of life: Eating disorders. *The Australian and New Zealand Journal of Psychiatry*, 40, 150–155.
- Adair, C. E., Marcoux, G. C., Cram, B. S., Ewashen, C. J., Chafe, J., Cassin, S. E., Pinzon, J., Gusella, J. L., Geller, J., Scattolon, Y., Fergusson, P., Styles, L., & Brown, K. E. (2007). Development and multi-site validation of a new condition-specific quality of life measure for eating disorders. *Health and Quality of Life Outcomes*, 5, 23.
- Bamford, B., & Sly, R. (2010). Exploring quality of life in the eating disorders. *European Eating Disorders Review*, 18, 147–153.
- Bohn, K., & Fairburn, C. G. (2008). The clinical impairment assessment questionnaire (CIA). In C. G. Fairburn (Ed.), *Cognitive behaviour therapy and eating disorders*. New York: Guilford Press.
- Cash, T. F., & Fleming, E. C. (2002). The impact of body image experiences: Development of the body image quality of life inventory. *International Journal of Eating Disorders*, 31, 455–460.
- Chamay-Weber, C., Narring, F., & Michaud, P. A. (2005). Partial eating disorders among adolescents: A review. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*, 37, 417–427.
- Cotrufo, P., Barretta, V., Monteleone, P., & Mag, M. (1998). Full-syndrome, partial-syndrome and sub-clinical eating disorders: An epidemiological study of female students in Southern Italy. *Acta Psychiatrica Scandinavica*, 98, 112–115.
- Cotrufo, P., Gnisci, A., & Caputo, I. (2005). Brief report: Psychological characteristics of less severe forms of eating disorders: An epidemiological study among 259 female adolescents. *Journal of Adolescence*, 28, 147–154.
- de la Rie, S. M., Noordenbos, G., & van Furth, E. F. (2005). Quality of life and eating disorders. *Quality of Life Research*, 14, 1511–1522.
- Doll, H. A., Petersen, S. E., & Stewart-Brown, S. L. (2005). Eating disorders and emotional and physical well-being: Associations between student self-reports of eating disorders and quality of life as measured by the SF-36. *Quality of Life Research*, 14, 705–717.
- Engel, S. G., Wittrock, D. A., Crosby, R. D., Wonderlich, S. A., Mitchell, J. E., & Kolotkin, R. L. (2006). Development and psychometric validation of an eating disorder-specific health-related quality of life instrument. *International Journal of Eating Disorders*, 39, 62–71.

- Gonzalez-Pinto, A., Inmaculada, F., Cristina, R., Corres Blanca, F., Sonsoles, E., Fernando, R., et al. (2004). Purging behaviors and comorbidity as predictive factors of quality of life in anorexia nervosa. *International Journal of Eating Disorders*, 36, 445–450.
- Grilo, C. M. (2002). Binge eating disorder. In C. Fairburn & K. D. Brownell (Eds.), *Eating disorders and obesity: A comprehensive handbook* (2nd ed., pp. 178–182). New York: Guilford Press.
- Hay, P. (2003). Quality of life and bulimic eating disorder behaviors: Findings from a community-based sample. *International Journal of Eating Disorders*, 33, 434–442.
- Hudson, J. I., Hiripi, E., Harrison, G., Pope, J., & Kessler, R. C. (2007). The prevalence and correlates of eating disorders in the National Comorbidity Survey replication. *Biological Psychiatry Journal*, 61(3), 348–358.
- Jenkins, P. E., Hoste, R. R., Meyer, C., & Blissett, J. M. (2011). Eating disorders and quality of life: A review of the literature. *Clinical Psychology Review*, 31, 113–121.
- Keilen, M., Treasure, T., Schmidt, U., & Treasure, J. (1994). Quality of life measurement in eating disorders, angina, and transplant candidates: Are they comparable? *Journal of the Royal Society of Medicine*, 87, 441–444.
- Las Hayas, C., Quintana, J. M., Padierna, A., Bilbao, A., Munoz, P., Madrazo, A., Urresti, B., & Cook, E. F. (2006). The new questionnaire health-related quality of life for eating disorders showed good validity and reliability. *Journal of Clinical Epidemiology*, 59, 192–200.
- Las Hayas, C., Quintana, J. M., Padierna, A., Bilbao, A., Munoz, P., & Cook, F. (2007). Health-related quality of life for eating disorders questionnaire version-2 was responsive 1-year after initial assessment. *Journal of Clinical Epidemiology*, 60, 825–833.
- Latner, J. D., Hildebrandt, T., Rosewall, J. K., Chisholm, A. M., & Hayashi, K. (2007). Loss of control over eating reflects eating disturbances and general psychopathology. *Behaviour Research and Therapy*, 45, 2203–2211.
- Latner, J. D., Vallance, J. K., & Buckett, G. (2008). Health-related quality of life in women with eating disorders: The association with subjective and objective binge eating. *Journal of Clinical Psychology in Medical Settings*, 15, 148–153.
- Lobera, I. J., & Rios, P. B. (2011). Body image quality of life in eating disorders. *Journal of Patient Preference and Adherence*, 5, 109–116.
- Masheb, R. M., & Grilo, C. M. (2004). Quality of life in patients with binge eating disorder. *Eating and Weight Disorders*, 9(3), 194–199.
- Mehler, P. S. (2011). Medical complications of bulimia nervosa and their treatments. *International Journal of Eating Disorders*, 44, 95–104.
- Mond, J. M., & Hay, P. J. (2007). Functional impairment associated with bulimic behaviors in a community sample of men and women. *International Journal of Eating Disorders*, 40, 391–398.
- Mond, J. M., Hay, P. J., Rodgers, B., Owen, C., & Beumont, P. J. V. (2005). Assessing quality of life in eating disorder patients. *Quality of Life Research*, 14, 171–178.
- Mond, J. M., Hay, P. J., Rodgers, B., & Owen, C. (2006). An update on the definition of “excessive exercise” in eating disorders research. *International Journal of Eating Disorders*, 39, 147–153.
- Mond, J. M., Latner, J. D., Hay, P. H., Owen, C., & Rodgers, B. (2010). Objective and subjective bulimic episodes in the classification of bulimic-type eating disorders: Another nail in the coffin of a problematic distinction. *Behaviour Research and Therapy*, 48, 661–669.
- Mond, J. M., Hay, P. J., Rodgers, B., & Owen, C. (2011). Mental health impairment associated with eating disorder features in a community sample of women. *Journal of Mental Health*, 20, 445–455.
- Muñoz, P., Quintana, J. M., Las Hayas, C., Aguirre, U., Padierna, A., & González-Torres, M. A. (2009). Assessment of the impact of eating disorders on quality of life using the disease-specific, Health-Related Quality of Life for Eating Disorders (HeRQoLED) questionnaire. *Quality of Life Research*, 18, 1137–1146.
- Padierna, A., Quintana, J. M., Arostegui, I., Gonzalez, N., & Horcajo, M. J. (2000). The health-related quality of life in eating disorders. *Quality of Life Research*, 9, 667–674.
- Spitzer, R. L., Kroenke, K., Linzer, M., Hahn, S. R., Williams, J. B. W., deGruy, F. V., III, Brody, D., & Davies, M. (1995). Health-related quality of life in primary care patients with mental disorders: Results from the PRIME-MD 1000 study. *Journal of the American Medical Association*, 274, 1511–1517.
- Stewart, A. L., Hays, R. D., & Ware, J. E. (1988). The MOS short-form general health survey: Reliability and validity in a patient population. *Medical Care*, 26, 724–735.
- Tirico, P. P., Stefano, S. C., & Blay, S. L. (2010). Validity studies of quality of life instruments for eating disorders: Systematic review of the literature. *The Journal of Nervous and Mental Disease*, 198, 854–859.
- Vallance, J. K., Latner, J. D., & Gleaves, D. H. (2011). The relationship between eating disorder psychopathology and health-related quality of life within a community sample. *Quality of Life Research*, 20, 675–682.
- Ware, J. E., & Sherbourne, C. D. (1992). The MOS 36-item Short Form health survey (SF-36) I: Conceptual framework and item selection. *Medical Care*, 30, 473–483.
- Ware, J. E., Kosinski, M., & Keller, S. D. (1996). A 12-item short-form health survey: Construction of scales and preliminary tests of reliability and validity. *Medical Care*, 34, 220–233.
- Williams, S., & Reid, M. (2009). Understanding the experience of ambivalence in anorexia nervosa: The maintainer’s perspective. *Psychology and Health*, 25, 551–567.

Eating Disturbances

► [Eating Disorder\(s\) and Health-Related Quality of Life](#)

Eco-efficiency

Qunwei Wang
Dongwu Business School, Soochow University,
Nanjing University of Aeronautics and
Astronautics, Suzhou, China

Synonyms

[Ecological efficiency](#)

Definition

The term eco-efficiency (EE) was coined by the World Business Council for Sustainable Development (WBCSD) in its 1992 publication “Changing Course.” It is based on the concept of creating more goods and services while using fewer resources and creating less waste and pollution.

According to the WBCSD definition, eco-efficiency is achieved through the delivery of “competitively priced goods and services that satisfy human needs and bring quality of life while progressively reducing environmental impacts of goods and resource intensity throughout the entire life-cycle to a level at least in line with the Earth’s estimated carrying capacity.”

Description

The concept of eco-efficiency can be traced back to the 1970s as “environmental efficiency” proposed by Freeman III et al. (1973). In the 1990s, Schaltegger and Sturm introduced eco-efficiency as a “business link to ► [sustainable development](#)” (Erkko et al. 2005). Later, this concept is introduced to the world by World Business Council for

Sustainable Development (WBCSD 2000) in 1992. Not surprisingly, eco-efficiency has received significant attention in the literature on ► [sustainable development](#). Eco-efficiency plays an important role in expressing how efficient economic activity is with regard to nature’s goods and services. Although there are different descriptions about eco-efficiency, it is usually expressed and measured as $\text{eco-efficiency} = \text{product or service value} / \text{environmental influence}$ by WBCSD. According to the WBCSD, seven critical aspects of eco-efficiency are:

- A reduction in the material intensity of goods or services
- A reduction in the energy intensity of goods or services
- Reduced dispersion of toxic materials
- Improved recyclability
- Maximum use of renewable resources
- Greater durability of products
- Increased service intensity of goods and services

The concept given by WBCSD is comprised in three broad objectives where the seven elements are found in the objectives:

- *Reducing the consumption of resources.* Minimizing the use of energy, material, water, and land. Increase the recyclability, product durability, and closing material loops.
- *Reducing the impact on nature.* Minimizing emissions to air and discharges to water, waste disposal, and use of nonrenewable resources.
- *Increasing product or service value.* Providing more customer benefits, for example, through product functionality and flexibility, the customer receives the same or an enhanced function with less resources and materials.

Since the philosophies of ► [sustainable development](#) and ► [low-carbon development](#) are accepted by more and more people, eco-efficiency has been widely applied at different levels. According to the classification (Li et al. 2010), the applications of eco-efficiency can be

summarized as enterprise, industry, and region. The enterprise's eco-efficiency performance focuses on business opportunities and allows companies to become more environmentally responsible and more profitable (WBCSD 2000). From the perspective of industry, eco-efficiency can help the managers to improve ► [economic efficiency](#) and environmental performance, and it is also useful to compare the merits of products, technical process, and production technology in different enterprises (Huppel et al. 2007). The regional eco-efficiency evaluation expands the contents to society and people (Hinterberger et al. 2000). It emphasizes that the use of resources should meet human's needs.

The definition and expression of eco-efficiency given by WBCSD is most widely spread; then how are the numerator and denominator of "product or service value" and "environmental influence" determined? This is currently a subject of international research and development (Sepplala et al. 2005). For the time being, there are a variety of recommendations for the exact meanings of these indicators and how they should be quantified. As regards the value part, for example, WBCSD (2000) takes the quantity of product/service produced or sold and net sales as generally applicable indicators and treats value added as a business-specific indicator, while United Nations Conference on Trade and Development (UNCTAD 2003) states that only "value added" is under control of enterprises and considers that it should be a generally applicable indicator.

As regards the environmental influence or environmental impacts, WBCSD (2000) provides several business-specific indicators and five generally applicable indicators, namely, energy consumption, water consumption, material consumption, greenhouse gas, and ozone-depleting substance. UNCTAD (2003) also presents environmental-performance indicators, such as water use, energy use, global-warming contribution, ozone-depleting substance, and waste. While referring to the regional environmental impact indicators, Mickwitz et al. (2006) apply physical input-output tables of Kymenlaakso's regional economy to produce indicators for

natural resource consumption, such as total material requirement (TMR) or direct material input (DMI). Besides, Li et al. (2010) and other researchers also give some indicators according to their research topics.

To measure and evaluate eco-efficiency, several methods are proposed and adopted. Life Cycle Assessment (LCA) and ► [Data Envelopment Analysis \(DEA\)](#) are mostly used. LCA is a useful and powerful methodology for assessing the environmental performance of a product or process using a comprehensive approach that takes into account the whole life cycle of the products (Lozano et al. 2009). It converts inventory data to a reduced number of environmental indicators which lead to the identification of hot spots and to the consistent definition of the corresponding environmental improvement actions. DEA has been proposed for environmental-performance analysis of industrial plants, economic sectors, countries, etc. (Zhou et al. 2006). It has also been used for eco-efficiency assessment of processes and products (Kuosmanen and Kortelainen 2007). An interesting new development is the use of DEA within an Environmental Cost Benefit Analysis (ECBA) approach that takes into account the time dimension of the environmental impacts, something that also occurs in LCA (Kuosmanen et al. 2009).

Cross-References

- [Data Envelopment Analysis](#)
- [Economic Efficiency](#)
- [Low-Carbon Development](#)
- [Sustainable Development](#)

References

- Erkko, S., Melanen, M., & Mickwitz, P. (2005). Eco-efficiency in the Finnish EMAS reports -a buzz word? *Journal of Cleaner Production*, 13, 799–813.
- Freeman, A. M., III, Haveman, R. H., & Kneese, A. V. (1973). *The economics of environmental policy*. New York: Wiley.
- Hinterberger, F., Bamberger, K., Manstein, C., et al. (2000). *Eco-efficiency of regions: How to improve*

competitiveness and create jobs by reducing environmental pressure. Vienna: Sustainable Europe Research Institute (SERI).

- Huppes, G., Davidson, M. D., Kuyper, J., et al. (2007). Eco-efficiency environmental policy in oil and gas production in Netherland. *Ecological Economics*, 61, 43–51.
- Kuosmanen, T., Bijsterbosch, N., & Dellink, R. (2009). Environmental cost-benefit analysis of alternative timing strategies in greenhouse gas abatement: A data envelopment analysis approach. *Ecological Economics*, 68, 1633–1642.
- Kuosmanen, T., & Kortelainen, M. (2007). Eco-efficiency analysis of consumer durables using absolute shadow prices. *Journal of Productivity Analysis*, 28, 57–69.
- Li, D. Z., Hui, C. M., Leung, Y. H., Li, Q. M., & Xu, X. (2010). A methodology for eco-efficiency evaluation of residential development at city level. *Building and Environment*, 45, 566–573.
- Lozano, S., Iribarren, D., Moreira, M., & Feijoo, G. (2009). The link between operational efficiency and environmental impacts: A joint application of Life Cycle Assessment and Data Envelopment Analysis. *Science of the Total Environment*, 407, 1744–1754.
- Mickwitz, P., Melanen, M., Rosenstrom, U., & Seppala, J. (2006). Regional eco-efficiency indicators-a participatory approach. *Journal of Cleaner Production*, 14, 1603–1611.
- Seppala, J., Melanen, M., Maenpaa, I., et al. (2005). How can the eco-efficiency of a region be measured and monitored? *Journal of Industrial Ecology*, 9, 117–130.
- United Nations Conference on Trade and Development [UNCTAD]. (2003). *Integrating environmental and financial performance at the enterprise level: A methodology for standardizing eco-efficiency indicators*. Geneva: United Nations Publication.
- World Business Council for Sustainable Development [WBCSD]. (2000). *Measuring eco-efficiency: A guide to reporting company performance*. Geneva: Author.
- Zhou, P., Ang, B. W., & Poh, K. L. (2006). Slacks-based efficiency measures for modelling environmental performance. *Ecological Economics*, 60, 111–118.

environment; Global feminist environmental justice; Social ecofeminism

Definition

Ecofeminism is the theory and practice of examining and challenging the political, social, historical, epistemological, and conceptual links between the domination of women and the exploitation of nature. It has evolved into a movement that connects all the “-isms” of domination, e.g., racism, sexism, classism, etc., with the exploitation, degradation, and destruction of natural entities, habitats, and ecosystems.

Description

History and Ideas

Ecofeminism has conceptual beginnings in the work of Simone de Beauvoir who pointed out in 1952 in *The Second Sex* that in the logic of patriarchy, both women and nature appear as other (de Beauvoir 2010). In 1974, in France, a literature connecting gender oppression and environmental issues emerged. Luce Irigaray diagnosed a “phallic logic of the Same” that precludes representation of alterity, thereby subjecting woman and nature to man’s domination (Irigaray 1985), and Françoise d’Eaubonne pointed to the necessity for women to bring about ecological revolution (d’Eaubonne 1974). D’Eaubonne used the slogan “Feminism or death [*Le féminisme ou la mort*]” to argue that patriarchy is the source of a double threat to humanity: overpopulation, caused by an excess of reproduction through exploitation of female reproductive power, and resource scarcity, caused by an excess of production through the exploitation of natural resources. “Feminism or death” was not a battle cry but a warning that human beings cannot survive the ecological consequences of patriarchy. She named this revolution “l’eco-féminisme.”

A year later, literature began emerging in the United States that made the same connection. Ruether (1975) argued that “Women must see that there can be no liberation for them and no

Ecofeminism

Trish Glazebrook

School of Politics, Philosophy and Public Affairs,
Washington State University, Pullman, WA, USA

Synonyms

Critical feminist eco-socialism; Ecological feminism; Feminist environmentalism; Gender and the

solution to ecological crisis within a society whose fundamental model of relationships continues to be one of domination.” Griffin (1978) assessed the ways in which women and nature, and those associated with a feminine, “natural,” or primitive state, are constructed as inferior to men and culture. Daly (1978), in her radical feminist *Gyn/Ecology*, catalogued various cultural practices used to control the minds and bodies of women and recommended women-centered language and myth to protect and heal both women and the earth.

Daly (1978) contributed to a widespread earth-goddess symbolic that celebrated reclamation of the female generative capacity. Christ (1978) reclaimed the Goddess as a “symbol of life and death powers and waxing and waning energies in the universe and in [women].” Starhawk (1979) brought a much-needed indigenous voice to ecofeminism concerning traditional goddess beliefs and ecological knowledge (cf. LaDuke 2005). Ecofeminism developed a spiritual alternative to patriarchal religions that focused on life, nourishing and love, while rejecting also a materialist, scientific worldview. The Goddess symbol is closely related to the ecofeminist promise of healing for both women and the planet that was especially predominant in the 1980s and 1990s (Plant, 1989; Reuther 1994, 1996).

In the early 1980s, ecofeminism also grew as an activist movement initiated by anti-nuclear weaponry groups that merged with lesbian feminist and other environmental movements. The Women’s Pentagon Actions of 1980 and 1981 strongly connected sexism, racism, and classism to both militarism and environmental destruction.

The literature also grew. Merchant (1980) analyzed Bacon’s usage of witch trial discourse in his account of the experimental method to show that Enlightenment science is a patriarchal knowledge system that dominates nature by feminizing it and that such investigation of nature for the sake of control, in conjunction with capitalism, supports destructive processes of industrialization. Salleh (1984, 1992) argued in the journal *Environmental Ethics* that ecofeminism reaches deeper than the then dominant approach of “deep” ecology –

thereby launching the deep ecology/ecofeminism debate that lasted until 1992. She argued that deep ecology is both theoretically deficient in its failure to address gender, and gender biased as a movement in its activities. Deep ecologists never conceded to Salleh’s argument, though it affected other environmental ethicists who became more deliberately gender-inclusive, e.g., Zimmerman (1987). Salleh, an activist and sociologist, was a lone voice in Australian ecofeminism at the time. Her eco-socialist, ecofeminist stance used a Marxist materialist approach to refute both anthropocentric reductions of nature and women to their instrumental use-value and deep ecology’s biocentric obliviousness to environmental justice in its focus on wilderness ethics. Diamond and Orenstein (1990) collected papers from a 1987 conference, including poets, artists, novelists, scholars, scientists, ecological activists, and spiritual teachers that marked the first collected essays establishing ecofeminism as a multi- and interdisciplinary academic and activist movement.

In the third decade of ecofeminism, Warren (1991) similarly established ecofeminism in academic philosophy in a special issue of *Hypatia*, re-consolidated subsequently in a book (Warren 1996). Warren (1997) is a further edited volume that extends philosophical ecofeminism into race studies, postcolonial studies, and other debates engaging diverse women’s voices and cultural values. These collections map the variety of issues and disciplinary perspectives within ecofeminism, constructively and productively rupture traditional conceptions of philosophical method, and take women’s lived experience – not abstract theory – as the starting point for analysis because of Warren’s commitment to “taking empirical data seriously” that expands ecofeminism to include cultural diversity, international issues, marginalized groups, and women in the global South (Warren 1997). In her own work, Warren (1990) argued iconically that patriarchy is an oppressive conceptual framework that subjects women and nature to a “logic of domination” (Warren 1996). Such logics begin with a dualism, e.g., man/woman, man/nature, reason/emotion, etc. One term is then privileged over the other, and this privilege is used to justify domination by the privileged of

the other. In this way, patriarchy justifies domination over nature and women.

This idea has endured. Plumwood (1993) argues that mastery is logically dependent on dualisms that underwrite hierarchies to justify power differentials, and argues instead for an ecofeminist transformation to enable respect for other people and earth-others. The theory of “logics of domination” is also found in environmental justice literature, e.g., Higgins (1994) and Cuomo (1998), and also, Glazebrook’s analyses of sustainability, capital, and oil in Africa and the United States rely heavily on Warren’s theory (Glazebrook 2016, 2017, 2018, 2019a, b; Glazebrook and Gessas 2020; Glazebrook and Kola-Olusanya 2011).

Warren (1990) also argued for “narrative voice” as a method that articulates concrete, situated lived experience as a basis for ethical reasoning and action, in contrast to the experimental method of the sciences and the logical, universalized, conceptual arguments of traditional philosophy. Her only monograph updates her focal writings but also lays out a strong argument for “emotional intelligence” (Warren 2000). Ethical action requires emotional intelligence because ethical attitudes cannot be indifferent. Of their very nature, ethics requires caring which is a feeling and affect. Warren’s conceptual vision identifying logics of domination and defending emotional intelligence, and her innovative introduction of narrative voice and insistence upon empirical data have together established a definitive theoretical and methodological framework for academic ecofeminists that refuses to separate theory from women’s lived experience.

Criticisms

Three main criticisms of ecofeminism have emerged since its inception: ecofeminism is (1) not feminism, (2) philosophically weak, and (3) essentialist. According to the first, ecofeminism stops being feminism because feminism addresses gender oppression, while ecofeminist treatment of all the “-isms” of domination strips gender oppression of its uniqueness and significance. This criticism is a consequence of

ecofeminism’s breadth, but demand that any feminism focus solely on gender is shortsighted because women’s oppression is intersectional: women’s identity includes race, class, and many other factors. Analysis only from a gender standpoint ignores women’s complex situatedness. This recognition of women’s holistic particularity arises in feminist analysis (Lorde 1984), and interest in all the “-isms” of domination is central to ecofeminism’s function as *eco-feminism*. Moreover, recognition that intersectionality is constitutive of women’s experience entails women’s embodiment that – in contrast to the abstract, universalized ego cogito of traditional modern philosophy – is a focal insight of feminism. Ecofeminist understanding of women’s situated embodiment in nature, as well as social, political, and historical context, constitutes further contribution to feminist analysis of women’s embodied subjectivity. Ecofeminism shows that documenting and assessing women’s experience without including environmental situatedness is theoretically deficient in ways that undermine possibilities for empowering. For example, concerning environment and health, women’s health, especially their reproductive health, is impacted by environment, and women’s capacity, in developing countries, to grow crops that provide family food security is strongly influenced by environmental factors. In short, ecofeminism shows that environmentalism must include a gendered perspective, while feminism must address environmental issues to be capable of understanding many women’s needs.

According to the second criticism, ecofeminism is philosophically weak because its premises have not been proven and cannot support its conclusions. For example, ecofeminism assumes that oppression of women and exploitation of nature are inherently linked; this co-presence of dominations could, however, be historically contingent. A factor enabling this criticism is that ecofeminism is inherently interdisciplinary. For example, in developing countries, both environmental degradation and persistent lack of gender equality and gender equity are strongly correlated with women’s poverty and well documented across multiple academic disciplines and in policy-making, both

internationally and nationally, but may be a novel insight for philosophers. Expecting ecofeminists to reproduce well-recognized theory accepted elsewhere is prohibitive in obliging their contributions to start from scratch, and puts them at risk of repetitiveness, redundancy, and exceeding journal length guidelines. Ecofeminism is accordingly vulnerable to disciplinary enclaves that resist interdisciplinary inquiry and must balance summarizing diverse knowledge bases, introducing their own insights, while educating their colleagues. This criticism brings to light not so much weakness in ecofeminism as strength and perseverance among ecofeminists whose academic legitimacy must be buttressed against hegemony in labor-intensive ways.

In philosophy in particular, this second criticism is a challenge to disciplinary integrity and rigor. Philosophy traffics in universals and typically, especially in the analytic tradition, begins with assumptions and definitions that lead to or at least support conclusions. Discussion above showed how ecofeminism ejects universalization in favor of inclusiveness and the particularities of women's embodied and situated experience. Concerning assumptions that build to conclusions, narrative method simply does not work like that. Narrative method is important for ecofeminists aiming not just to establish a truth about the world but to identify injustices and articulate socio-ethical criticism. Narrative method can serve, for example, to diagnose ethical fails and indicate what potential solutions might look like. Ecofeminism has access to practices, strategies, and insights from various traditions – not all academic, e.g., traditional ecological knowledge systems – that support feminist challenges to traditional philosophy; for example, feminist insight that knowledge is conditioned by context, experience, and location, and that the very notion of a universal knower is a situated, patriarchal, Eurocentric construct that excludes and devalues alternative knowledge systems, can be experienced as a threat to the validity of the history of philosophy. Yet feminists have shown that the intellectual history of the West has in practice damaged and still damages women. Justice requires that this reality be addressed even if it disturbs patriarchal privilege.

Ecofeminism reveals further how that intellectual history is damaging to nature and how these damages are inter-related. Merchant (1980), Plumwood (1993), and Glazebrook (2016) have shown how the emergence of “objectivity” in the history of science influenced human understanding of non-human nature as instrumental, i.e., reduced to value only as exploitable resource, while privileging reason over emotion to reduce women also to resources. As d'Eaubonne originally noted, nature is exploited in production, while women are exploited in reproduction.

Cartesian rationality separates science from ethics by excluding emotion from reason. Ethics requires emotional intelligence rather than Cartesian rationality (Warren 2000). Glazebrook (2005) argues that ethical knowledge is doubly partial: it is finite and fragmentary rather than universal and complete; and it is partial in caring rather than favoring disinterest. Ecofeminists offer direct challenge to the separation of reason and emotion that privileges the former as masculine and denigrates the latter as feminine. Ecofeminism is accordingly only philosophically weak under a logic-of-the-same that evaluates ecofeminism against an intellectual history that ecofeminists reject as privileged but also destructive to human and non-human others. The rejection of Cartesian rationality and its proclivity for universals does not mean, however, that there is no truth or that just anything can be true. Rather, there are many truths, i.e., many ways to understand the world; none is necessarily more true than any other, but each can be evaluated as to whether it is destructive or healing, i.e., whether it opens a world that promotes oppressive and exploitative behaviors or relations of healing and empowerment. Theories can be judged on whether they are true but also on whether they are “useless, arrogant, disrespectful, ignorant, ethnocentric, imperialistic” (Lugones and Spelman 1983). Being true is necessary but not sufficient for a theory to be morally acceptable.

Thirdly, criticism that ecofeminism is essentialist has been leveled by feminists. By aligning women and nature, ecofeminism risks re-inscribing biological essentialism in which women are reduced to their reproductive capacity and the qualities associated with it, i.e., caring and

nurturing. Indeed, the early ecofeminist earth-goddess motif of birthing, nourishing, and life-and love-creating power strongly articulated women's reproductive capacity. Consciousness-raising about connections between women's oppression and nature's exploitation was foundational to ecofeminism and earth-goddess symbolism that also responded to a need for healing while displacing images and ideology of women's dependency that undermined their autonomy. It provided a vision of women's power, but it also located that power dangerously close to women's reproductive capacity.

Queer theorists further objected that ecofeminist essentialism privileges heterosexuality. It is certainly true that the earth-goddess is strongly associated with pregnancy. Ecofeminism cannot avoid this criticism because analysis that ignores women's reproductive function is empirically deficient. Salleh's focus on issues of class, Glazebrook's work documenting women subsistence farmers' experience of and adaptations to climate change in Africa, and Cuomo's work with indigenous groups in Alaska each recognize and value women's labor. Much of this labor consists in reproducing the material conditions for daily living as primary caretaker of the family, regardless of whether birth-mother or not. Gendered work remains, independent of sexual orientation and marital or maternal status, even though some women are freed of its burden. For example, when the employed mother goes to work, the carer she leaves her children with is virtually always a woman, whether she have children or not; the person who housekeeps for a working woman is also virtually always a woman, regardless of her reproductive status. These are examples of gendered work. Approaching women's labor as Marxists and socialists allows ecofeminists neither to universalize the experiences of "liberated" women in the global North nor to idealize women's reproductive labor. Ecofeminism offers a place more generally for feminists and LGBTQ+ theorists to think through how embodiment re-inscribes or need not re-inscribe biological essentialism while instead offering opportunities to understand connections between women and nature that are symbolic, historical, political, and epistemological. The ecofeminist transition from

exclusive gender analysis to both intersectionality and the "-isms" of domination recognizes the cultural diversity of women's engendered life experience that disallows essentialist commitment both to a universal ontology of the female and to the heterosexuality requirement that would follow from biological essentialism. Women are embodied, but bodies are irreducible to universalized paradigms; this is fundamental to ecofeminist demand for recognition of gender difference. That is, ecofeminist inclusion of the natural in feminism precludes support of universalism with respect to what it means to be human or what it means to be a woman: natural kinds can be at best generalized, and ethics requires non-privileging of hegemony within such generalization.

Ecofeminism Today

Phillips and Rumens (2016) collected contemporary perspectives in ecofeminism from a broad array of scholars in education, humanities, science, organization studies and behavior, political sociology, and a host of other disciplines from Europe, the United States, and South Africa that addressed the fundamental question of why ecofeminism is still needed. As the editors note, ecofeminism has "a chequered history in terms of its popularity and its perceived value" (Phillips and Rumens 2016), but is now "more relevant than ever" as the issues ecofeminism originally addressed have grown even more deep. Currently, the most pressing environmental challenge is climate change, and ecofeminism is one of the few places from which to challenge the neoliberal paradigm that structures international climate policy.

International and national climate policy, particularly in developing countries, recognizes the need to address gender in mitigation and especially adaptation because of women's global contribution of over two thirds to agriculture and food security. Given climate impacts already affecting women, and women's leadership role in protecting communities and vulnerable populations – demonstrated repeatedly at the United Nations Framework Convention on Climate Change and climate finance meetings – the rise of women's voices demanding gender-sensitive policy is crucial in the struggle to limit global mean surface

temperature increase to 1.5 °C over pre-industrial levels and to manage essential human, biodiversity, and ecosystem adaptation needs.

Yet in the policy-driving gendered discussions of the United Nations Framework Convention on Climate Change, “ecofeminism” is rarely mentioned. Given global gender justice recidivism, in, for example, Taliban education inequality, Boko Haram theft of women and girls for domestic labor and sexual service, non-implementation of women’s legislated right to drive in Saudi Arabia, attack on women’s reproductive autonomy in the United States and Poland, and many other examples, the United Nations may be the only arena in which feminism has achieved goals with what may be long-lasting impacts. Ecofeminism, much like feminism, has primarily been driven by the voices of privileged women in the global North. Now that climate discussions are opened more broadly in international contexts to women of diverse backgrounds and nationalities but especially women of the global South, ecofeminism may be redundant. The importance of gender seems to have been recognized in what is currently the most significant global forum. The challenge is whether ecofeminist aims and ideals can be sustained if the basic concept of ecofeminism, i.e., that both women and nature are subject to logics of domination that privilege capitalist patriarchy, is lost in contemporary neoliberalist economics such that the power and promise of ecofeminism, i.e., to bring women together in solidarity through recognition that gender oppression and resource exploitation are inherently connected, dwindles to nothing in the face of capital patriarchy manifest in neoliberalism. Implicit ecofeminism may not be adequate for maintaining ecofeminist advances or even women’s integration into global environmental policy and leadership in a post-Beijing Declaration world. At the same time, ecofeminism may be the only available perspective in contemporary climate debates that can challenge the neoliberal-, patriarchal-, and capital-driven approaches to climate change that currently determine international climate policy.

Cross-References

- ▶ [Cultural Diversity](#)
- ▶ [Cultural Values](#)
- ▶ [Embodied Subjectivity](#)
- ▶ [Empowerment](#)
- ▶ [Environment and Health](#)
- ▶ [Feminism](#)
- ▶ [Food Security](#)
- ▶ [Gender Equality](#)
- ▶ [Gender Equity](#)
- ▶ [Gendered Work](#)
- ▶ [Poverty](#)
- ▶ [Vulnerable Populations](#)
- ▶ [Women’s Health](#)

References

- Christ, C. P. (1978). Why women need the Goddess: Phenomenological, psychological, and political reflections. *Heresies: A Feminist Publication on Art and Politics*, 5, 8–13.
- Cuomo, C. (1998). *Feminism and ecological communities: An ethic of flourishing*. New York: Routledge.
- d’Eaubonne, F. (1974). *Le féminisme ou la mort*. Paris: P. Horay.
- Daly, M. (1978). *Gyn/ecology: The metaethics of radical feminism*. Boston: Beacon Press.
- de Beauvoir, S. (2010). *The second sex*. New York: Alfred A. Knopf. trs. C. Borde and S. Malovany-Chevallier.
- Diamond, I., & Orenstein, G. F. (Eds.). (1990). *Reweaving the world: The emergence of ecofeminism*. San Francisco: Sierra Club Books.
- Glazebrook, T. (2005). Gynocentric eco-logics. *Ethics & the Environment*, 10, 75–99.
- Glazebrook, T. (2016). Science, capital, and care: A phenomenological assessment of climate justice. In S. W. Gurley & G. Pfeifer (Eds.), *Phenomenology and the political* (pp. 277–294). London: Rowman and Littlefield International.
- Glazebrook, T. (2017). Technology, the environment, and sustainability. In *Philosophy of technology* (Macmillan Interdisciplinary Handbooks: Philosophy series) (pp. 293–320). Farmington Hills: Macmillan Reference USA/Gale, a Cengage Company.
- Glazebrook, T. (2018). Letting beings be: An ecofeminist reading of *Gestell*, *Gelassenheit* and sustainability. In A. Wendland, C. Mervin, & C. Hadjioannou (Eds.), *Heidegger and technology* (pp. 243–260). London: Routledge.
- Glazebrook, T. (2019a). Heidegger and economics: Withdrawal of being in capital. *Studia Culturalogica (Divinatio): New Ways of Contextualizing Heidegger*, 47, 7–21.

- Glazebrook, T. (2019b). Water and oil: Global struggles in sustainability. In R. Lally (Ed.), *Sustainability in the Anthropocene: Philosophical essays on renewable technologies* (pp. 65–81). Lanham: Lexington Books/Rowman & Littlefield.
- Glazebrook, T., & Kola-Olusanya, A. (2011). Justice, conflict, capital, and care: Oil in the Niger Delta. *Environmental Ethics*, 33, 163–184.
- Glazebrook, T., & Gessas, J. (2020) Standing Rock: Water protectors in a time of failed policy. In I. Stefanovic (Ed.), *The wonder of water: Lived experience, policy and practice*. Toronto: University of Toronto Press.
- Griffin, S. (1978). *Woman and nature: The roaring inside her*. New York: Harper & Row.
- Higgins, R. R. (1994). Race, pollution, and the mastery of nature. *Environmental Ethics*, 16, 251–264.
- Irigaray, L. (1985). *Speculum of the other woman*. Ithaca: Cornell University Press.
- LaDuke, W. (2005). Introduction. In J. Baumgardner & A. Richards (Eds.), *Grassroots: A field guide for feminist activism* (pp. xi–xvi). New York: Farrar, Straus and Giroux.
- Lorde, A. (1984). *Sister outsider: Essays and speeches*. Trumansburg: Crossing Press.
- Lugones, M., & Spelman, E. (1983). Have we got a theory for you! Feminist theory, cultural imperialism and the demand for ‘the woman’s voice’. *Women’s Studies International Forum*, 6, 573–581.
- Merchant, C. (1980). *The death of nature: Women, ecology, and the scientific revolution*. San Francisco: Harper & Row.
- Phillips, M., & Rumens, N. (Eds.). (2016). *Contemporary perspectives on eco-feminism*. London: Routledge.
- Plant, J. (Ed.) (1989) *Healing the wounds: The promise of ecofeminism*. Gabriola, BC: New Society Publishers.
- Plumwood, V. (1993). *Feminism and the mastery of nature*. New York: Routledge.
- Reuther, R. R. (1994). *Gaia and god: An ecofeminist theology of Earth healing*. New York: Harper-Collins.
- Reuther, R. R. (1996). *Women healing earth: Third world women on ecology, feminism and religion*. Maryknoll: Orbis.
- Ruether, R. R. (1975). *New woman, new earth: Sexist ideologies and human liberation*. New York: Seabury Press.
- Salleh, A. (1984). Deeper than deep ecology: The eco-feminist connection. *Environmental Ethics*, 6, 339–345.
- Salleh, A. (1992). The ecofeminism/deep ecology debate. *Environmental Ethics*, 14, 195–216.
- Starhawk. (1979). *The spiral dance: A rebirth of the ancient religion of the great goddess*. New York: Harper & Row.
- Warren, K. J. (1990). The power and the promise of ecological feminism. *Environmental Ethics*, 12, 125–146.
- Warren, K. J. (Ed.). (1991). *Hypatia*, 6 (1) Special Issue: Ecological Feminism.
- Warren, K. J. (Ed.). (1996). *Ecological feminist philosophies*. Bloomington: Indiana University Press.
- Warren, K. J. (Ed.). (1997). *Ecofeminism: Women, culture, nature*. Bloomington: Indiana University Press.

Warren, K. J. (2000). *Ecofeminist philosophy: A Western perspective on what it is and why it matters*. Oxford: Rowman & Littlefield.

Zimmerman, M. (1987). Feminism, deep ecology, and environmental ethics. *Environmental Ethics*, 9, 21–44.

Eco-friendly Behavior

► [Proenvironmental Behavior](#)

Eco-friendly Index

► [Environment Friendly Index](#)

Ecoguilt and Environmental Behavior

► [Guilt and Environmental Behavior](#)

Ecohealth

Margot Parkes¹, David Waltner-Toews² and Pierre Horwitz³

¹University of Northern British Columbia, Prince George, BC, Canada

²Department of Population Medicine, University of Guelph, Guelph, ON, Canada

³School of Natural Sciences, Edith Cowan University, Joondalup, WA, Australia

Synonyms

[Ecosystem approaches to health](#)

Definition

Ecohealth is a field of research, education, and practice that adopts systems approaches to promote the health of people, animals, and

ecosystems in the context of social and ecological interactions. Health is seen as encompassing social, mental, spiritual, and physical well-being and not merely the absence of disease. As a contraction of “ecosystem approaches to health,” ecohealth emphasizes human agency and systemic thinking to promote ► [well-being and quality of life](#). As a field of scholarship, ecohealth research draws on the natural sciences, health sciences, social sciences, the humanities, and beyond, often working in collaboration with interested parties and community members to address issues at the interface of health, ecosystems, and society.

Description

Ecohealth emerged in the 1990s in recognition that ► [quality of life](#) and ► [health](#) are embedded in the ecosystems in which we live and is a call to better understand and respond to the health implications of rapid, global changes in trade, patterns of infectious and noninfectious disease, technological and economic development, and perceived conflicts between environmental sustainability and economic development. Over the last decades, the field has come to highlight overlaps and synergies among the agendas of ecosystem sustainability (and sustainable development) and social justice as they related to health and well-being.

Ecohealth is characterized by concepts and approaches that cross boundaries formed by sectors, disciplines, and knowledge cultures. The field has attributes of public health, ecosystem management, and sustainable development and is recognized as being allied to all these fields, but also has important points of differentiation. By using communities as points of departure, ecohealth recognizes that health and well-being are outcomes of social-ecological dynamics that include issues of gender and power as much as biodiversity and ecosystem management.

Main Precedents and Influences

Ecohealth emerged in the context of several decades of global conventions and agreements

that each contributed to our recognition for the need for practical, integrated, and intersectoral actions that reflect the importance of ecology on both social and environmental determinants of health.

Ecohealth also developed in relation to, and informed by, a series of interrelated scholarly efforts and discourses related to environment and conservation issues, ► [public health](#) and ► [health promotion](#), ► [sustainable development](#), and ► [social justice](#). Drawing on the WHO definitions of health that emphasize well-being, realizing aspirations, satisfying needs, and coping with change, ecohealth considers humans as integral species, “at home” in the world, understanding the relationships between human well-being and ecological sustainability as being complex, uncertain, and continually renegotiated based on changing systemic dynamics and our understanding of them.

The term ecohealth started to receive active use in research and practice during the 1990s as a contraction of the phrase ecosystem approaches to health and developed along these lines to influence extensive bodies of international research and practice (Lebel 2003; Webb et al. 2010; Charron 2012). A notable characteristic of these approaches has been attention to guiding principles that focus attention on both the processes (systems thinking, transdisciplinary research and participation) as well as the goals (gender and social equity, sustainability, and knowledge to action) of ecohealth research and practice.

Informing and influencing developments in ecosystem approaches to health are several decades of scholarly contributions that share what can be described as a “family of origin” (see Waltner-Toews et al. 2008) or, at least, a common interest in the complex ways in which human well-being, animal health, ecological sustainability, and social processes interact. Especially notable influences include the extensive bodies of work associated with ecosystem health (Rapport et al. 1998), social-ecological systems (Gunderson and Holling 2002), ecological health and conservation medicine (Aguirre et al. 2012), one health (Zinsstag et al. 2011), and related efforts spanning ecological integrity, health, and

sustainability (Brown et al. 2005; Soskolne et al. 2007).

These literatures were influential in the establishment of the journal *EcoHealth* which, when launched in 2004, made explicit acknowledgment of precedents in the journals “Ecosystem Health” and “Global Change and Human Health” and the field of conservation medicine. *EcoHealth* was described as “a transdisciplinary imperative for a sustainable future” and, since 2006, has been the official journal of the International Association for Ecology & Health. The stated mission of the International Association for Ecology & Health “to strive for sustainable health of people, wildlife and ecosystems by promoting discovery, understanding and transdisciplinarity” (www.ecohealth.net) is also influenced by precursors such as the International Society for Ecosystem Health and related precedents noted above.

From the Ecology of Disease to Ecosystem Approaches to Health, Well-Being, and Resilience

The methodological orientations of ecohealth research are eclectic, spanning global meta-data linking ecosystem services and health, quantitative modeling of ecology of infectious disease through to analysis of social networks in relation to environment and health challenges, and innovative approaches to participatory and narrative research focused on health in social-ecological context that allow research to be adapted to a range of global contexts (see Lebel 2003; Waltner-Toews 2004; Parkes et al. 2010; Webb et al. 2010; Aguirre et al. 2012; Charron 2012).

Of particular interest to quality of life research are innovations focused on factors that enhance health and well-being (as compared to causing disease), with an emphasis on social-ecological relationships relevant to health promotion, wellness, and ► [salutogenesis](#). The examples here are profiled for their demonstration of the range of work that is focused on positive, health-generating relationships with ecology, biodiversity, sense of place, and nature, and with potential synergies and relevance to scholarship focused on quality of life and well-being. Ecohealth approaches focus on the holistic, interrelated

health, ecosystems and community, and for some, represent a rediscovery or revisiting of indigenous knowledge systems as applied to indigenous health and wellness over millennia (see, e.g., Parkes 2011).

Ecosystem Services, Well-Being, and Resilience

Building on an emerging understanding of resilience in relation to social-ecological systems, as well as the work of the Millennium Ecosystem Assessment (MA) (Gunderson and Holling 2002, Corvalan et al. 2005; MA 2005), new attention is being paid to the links between ecosystem services, resilience, and well-being. Using this framework allows consideration of trade-offs between human health and ecosystem services and their resolution according to the principles of sustainability and equity. The MA identified new thinking about ecosystem change, encouraging attention not only to mitigation (reducing or reversing change processes) but also to adaptation that aims to “increase the resilience of both social systems and ecosystems to the impacts of ecosystem change in order to reduce the current and future health risks” (Corvalan et al. 2005, p. 9).

The rate and scale of changes to ecosystem services have highlighted close links with understanding of hazards, risks, and disasters and the relevance of resilience to inform upstream, preventive thinking across fields of disaster preparedness, public health, and natural resources management (Parkes et al. 2010). Obvious links between ecosystem services and physical hazards include flood control and flood storage; soil, sediment, and nutrient retention; coastal shoreline and riverbank stabilization and storm protection; and local climate regulation/buffering of change. Physical hazards and their health effects are exacerbated when these ecosystem services are degraded or traded off for some other human development purpose. Increasing resilience of social-ecological systems with a focus on retaining ecosystem services has the potential for short, medium, and long-term benefits. For instance, a more resilient social-ecological system may be better prepared to respond to the short-term impacts from disasters such as physical

injury, exposure to microbial and chemical contaminants, increased disease vector activity, as well as building resilience to help buffer enduring mental health effects that have the potential to affect several generations (Horwitz et al. 2012).

Biodiversity, Sense of Place, and Well-Being

A parallel domain of ecohealth research and practice focuses on the links between biodiversity, sense of place, and well-being – especially as it relates to endemism (see MA 2005). Biodiversity, and its endemic features, contributes to an emotional connection to a place and becomes part of a person's identity. In addition to the direct effects of biological “hazards” (e.g., invasive species, pathogens, mosquitoes), changes to, or loss of, biodiversity has the potential to affect an individual's perceptions of a place and psychological well-being and to challenge a community's identity and image of itself over time. Related research is providing new directions for ecohealth, including greater attention to the mental health and well-being implications of contact with nature and changes to the landscapes and social-ecological contexts of everyday lives (see Townsend and Weerasuriya 2010; Cunsolo Willox et al. 2011).

New Cultures of Care: Linking Environmental Stewardship, Nature, and Well-Being

Related efforts are also expanding our understanding of health and ecology in relation to notions of environmental stewardship and cultures of care. Although much of this attention has arisen in the urban context (Lee and Maheswaran 2011), rekindled attention is being focused at ecosystem-scale stewardship efforts in land and water restoration at landscape scales, including watershed and catchment-based efforts (Parkes et al. 2010). These developments challenge longstanding constraints restricting the value of “care” to health-care contexts and are linked with a reinvigorated sense of moral responsibility relating to the emotional and restorative value of nature, landscape and living systems for our well-being, as well as the spiritual importance of stewardship and caring for the Earth. An ecohealth approach seeks to restore a clearer

relationship between caring for the “land” (or water or environment), human, and animal health, one built on a range of knowledges, including the indigenous, traditional, and emotional, with benefits for many facets of well-being and mental health (Kingsley 2011; Townsend and Weerasuriya 2010; Cunsolo Willox et al. 2011; Parkes 2011).

Future Prospects: A Space for Common Ground Among Health, Ecosystems, and Society

An ongoing motivation for ecohealth has been the need for a scholarly home that can accommodate the synthesis and commonalities among multiple converging efforts. This has ranged from ecology of specific diseases (especially infectious diseases crossing human, animal, and ecosystem boundaries) through to the application of ecological thought and ecosystem approaches to understand food security, climate change, emerging diseases, social and environmental determinants of health, and health promotion. Recent efforts to consolidate, reflect on, and identify new directions for the field have highlighted the conceptual and methodological richness that has been triggered interface of ecology, health, equity, and sustainability and the importance of ongoing reflection and critique in the face of pressing challenges from local to the global scales (Dakubo 2010; Charron 2012; Aguirre et al. 2012).

In an era of converging and overlapping challenges, ecohealth provides a space for research, education, and practice that recognizes the links among international processes, conventions, and agendas. In some cases, this requires revisiting important innovations that have not been fully realized, such as the social-ecological orientation of the 1984 Ottawa Charter for Health Promotion or the health implications of the 1992 Rio Declaration on Sustainable Development and subsequent international environmental conventions (Parkes et al. 2010; Patz et al. 2012). Ecohealth work continues to draw attention to the crosscutting health implications of, for example, the International Panel on Climate Change, the Millennium Ecosystem Assessment (2005), the

Commission on Social Determinants of Health (2007), the United Nations Declaration on the Rights of Indigenous Peoples (2007), and the resilience-oriented Hyogo Framework of the International Strategy for Disaster Reduction (2007). Recent innovations such as the “Healthy Wetlands Healthy People” initiative of the Ramsar Convention on Wetlands (Horwitz et al. 2012) and recognition of the far-reaching health implications of existing international agreements (Patz et al. 2012) point to an enduring need for efforts that link health, ecosystems, and society and suggest ongoing opportunities for improving quality of life through ecohealth efforts that make these connections explicit.

Ecohealth-oriented research and practice explicitly acknowledge the complex ways in which human well-being, animal health, and ecological sustainability interact and have created a broadly based foundation for the diverse societal, cultural, and ecological context for human well-being. By working with affected actors, communities, and colleagues, by integrating human, animal and ecosystem health, and by linking process with systemic thinking and goal setting, ecohealth speaks to human agency and promotes human well-being and quality of life.

Cross-References

- [Health Promotion](#)
- [Indigenous Knowledge](#)
- [Public Health](#)
- [Resilience](#)
- [Salutogenesis](#)
- [Social Justice](#)
- [Sustainability](#)
- [Sustainable Development](#)
- [Wellness](#)

References

- Aguirre, A. A., Ostfeld, R. S., & Daszak, P. (2012). *New directions in conservation medicine: Applied cases of ecological health*. New York: Oxford University Press.
- Brown, V., Grootjans, J., Ritchie, J., Townsend, M., & Verrinder, G. (2005). *Sustainability and health – Supporting global ecological integrity in public health*. Sydney: Allen and Unwin.
- Charron, D. F. (Ed.). (2012). *Ecohealth research in practice: Innovative applications of an ecosystem approach to health*. Springer, New York/International Development Research Centre, Ottawa, ON. Available on the International Development Research Centre website at: <http://idl-bnc.idrc.ca/dspace/bitstream/10625/47809/1/IDL-47809.pdf>
- Commission on Social Determinants of Health (CSDH). (2008). *Closing the gap in a generation: Health equity through action on the social determinants of health. Final Report of the Commission on Social Determinants of Health*. Geneva: World Health Organization. Available online at: http://www.who.int/social_determinants/final_report/en/index.html.
- Corvalan, C., Hales, S., & McMichael, A. J., (Core Writing Team), Butler, C., et al., (Eds.). (2005). *Ecosystems and human well-being: health synthesis millennium ecosystem assessment*. Geneva: WHO. <http://www.millenniumassessment.org/en/index.aspx>.
- Cunsolo Willox, A., Harper, S., Edge, V., Landman, K., Houle, K., Ford, J., et al. (2011). The land enriches the soul: On environmental change, affect, and emotional health and well-being in Nunatsiavut, Canada. *Emotion, Space, and Society, Special Issue on Ecology and Emotion*. <https://doi.org/10.1016/j.emospa.2011.08.005>.
- Dakubo, C. Y. (2010). *Ecosystems and human health: A critical approach to ecohealth research and practice*. New York: Springer.
- Gunderson, L., & Holling, C. (Eds.). (2002). *Panarchy: Understanding transformation in human and natural systems*. Washington, DC: Island Press.
- Horwitz, P., Finlayson, M., & Weinstein, P. (2012). *Healthy wetlands, healthy people: A review of wetlands and human health interactions* (Ramsar technical report no. 6). Gland, Switzerland: Secretariat of the Ramsar Convention on Wetlands/Geneva, Switzerland: The World Health Organization.
- International Strategy for Disaster Reduction (ISDR). (2005). *Hyogo framework for action 2005–2015: Building resilience of nations and communities to disasters* (Extract from the final report of the World Conference on Disaster Reduction (A/CONF.206/6). United Nations. International Strategy on Disaster Reduction/World Conference on Disaster Reduction. Available online at <http://www.unisdr.org/we/coordinate/hfa>.
- Kingsley, J., Townsend, M., Philips, R., & Aldous, D. (2009). “If the land is healthy... it makes the people healthy”: The relationship between caring for Country and health for the Yorta Yorta Nation, Boonwurrung and Bangerang Tribes. *Health & Place*, 15, 291–299.
- Lebel, J. (2003). *Health: An ecosystem approach*. Ottawa, ON: International Development Research Centre.

- Lee, A. C. K., & Maheswaran, R. (2011). The health benefits of urban green spaces: A review of the evidence. *Journal of Public Health*, 33(2), 212–222.
- Millennium Ecosystem Assessment (MA). (2005). *Synthesis*. Washington, DC: Island Press. Available online at: <http://www.millenniumassessment.org>.
- Parkes, M. W. (2011). *Ecohealth and aboriginal health: A review of common ground*. Prince George, BC: National Collaborating Centre for Aboriginal Health. Available online at www.nccah-ccnsa.ca.
- Parkes, M. W., Morrison, K. E., Bunch, M. J., Hallström, L. K., Neudoerffer, R. C., Venema, H. D., et al. (2010). Towards integrated governance for water, health and social-ecological systems: The watershed governance prism. *Global Environmental Change*, 20, 693–704.
- Patz, J., Corvalan, C., Horwitz, P., & Campbell-Lendrum, D. (2012). Our planet, our health, our future. Human health and the Rio Conventions: biological diversity, climate change and desertification. A discussion paper, based on a collaboration of the World Health Organization and the Secretariats of the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change and the United Nations Convention to Combat Desertification. Available: <http://www.who.int/globalchange/publications/reports/healthintherioconventions/en/index.html>
- Rapport, D., Costanza, R., Epstein, P. R., Gaudet, C., & Levins, R. (Eds.). (1998). *Ecosystem health*. Malden, MA: Blackwell Science.
- Soskolne, C., Westra, L., Kotzé, L. J., Mackey, B., Rees, W. E., & Westra, R. (Eds.). (2007). *Sustaining life on earth: Environmental and human health through global governance*. Lanham: Lexington Books.
- Townsend, M., & Weerasuriya, R. (2010). *Beyond Blue to Green: The benefits of contact with nature for mental health and well-being*. Melbourne: Beyond Blue Limited.
- United Nations. (2007). *United Nations declaration on the rights of indigenous peoples*. Resolution adopted by the United Nations General Assembly, 13 September 2007 (A/RES/61/295). <http://www.ohchr.org/english/issues/indigenous/declaration.htm>
- Waltner-Toews, D. (2004). *Ecosystem sustainability and health: A practical approach*. Cambridge, UK: Cambridge University Press.
- Waltner-Toews, D., Kay, J. J., & Lister, N.-M. E. (2008). *The ecosystem approach: Complexity, uncertainty, and managing for sustainability*. New York: Columbia University Press.
- Webb, J., Mergler, D., Parkes, M. W., Saint-Charles, J., Spiegel, J., Waltner-Toews, D., et al. (2010). Tools for thoughtful action: The role of ecosystem approaches to health in enhancing public health. *Canadian Journal of Public Health*, 101(6), 439–441.
- Zinsstag, J., Schelling, E., Waltner-Toews, D., & Tannera, M. (2011). From “one medicine” to “one health” and systemic approaches to health and well-being. *Preventive Veterinary Medicine*, 101(3–4), 148–156.

Eco-health

► Social-Ecological System(s)

Ecoliteracy

► Ecological Literacy

Ecological Efficiency

► Eco-efficiency

Ecological Fallacy

Alasdair Rae

Town and Regional Planning, University of Sheffield, Sheffield, UK

Synonyms

Ecological inference fallacy

Definition

An ecological fallacy occurs when incorrect assumptions are made about an individual, based on the characteristics of a group to which the individual belongs. It is normally associated with an error in the interpretation of quantitative data at the group vs. the individual level. In quality of life research, it might be assumed that all individuals within a specific group experience the same quality of life but at the individual level this will not necessarily be the case since there is usually significant in-group variation in terms of individual characteristics. It is, therefore, a special kind of interpretation problem that researchers must be aware of when dealing with aggregate

(or “ecological”) data and individual data at a comparative level.

Description

The origins of the ecological fallacy in a formal sense extend back in time to the work of William S. Robinson and his highly cited analysis of US Census Data for 1930 (Robinson 1950). In his paper on *Ecological Correlations and the Behavior of Individuals*, he explains that in an “ecological correlation” the statistical object (or unit) is a group of persons. This seminal piece of work explored the correlation between literacy and race and found that there were large discrepancies between correlation coefficients at the group vs. the individual level. Robinson’s early work led to further discoveries in relation to the ecological fallacy, with the work of Feldman and Tilly (1960) being particularly important. In 1969, Alker then extended the concept of the ecological fallacy to include five others. In the 40-plus years since then, the ecological fallacy has become a very important concept in academic research more generally, with a proliferation of papers in a number of disciplines including geography, sociology, political science, and epidemiology. Nonetheless, Schwartz (1994) urged caution in relation to the potential misuse of the concept, and this advice should be taken seriously.

Despite the volume of high-quality scientific papers on the ecological fallacy, it is actually quite a simple concept and is perhaps best illustrated using a trivial example. If a group of 10 individuals has an average annual income of US\$500,000, it might be assumed that all group members are very wealthy. Such a conclusion would be justifiable, but it may not be correct. If eight of these individuals earn \$620,000 per year and two earn \$20,000, there is a 2 in 10 (20%) chances that assumptions about individual incomes in the group will be incorrect (if it was assumed that they were all wealthy). The group average is still \$500,000, but clearly some individuals in the group are not wealthy. To erroneously assume that a particular group member is rich would be to succumb to the ecological

fallacy. This example highlights the importance of understanding more about in-group distributions and being aware of the dangers of aggregate data more generally.

To summarize, then, the ecological fallacy is a special kind of error in which the characteristics of a group are incorrectly assumed to apply to an individual member of that group.

References

- Alker, H. (1969). A typology of ecological fallacies. In M. Dogan & S. Rokken (Eds.), *Quantitative ecological analysis in the social sciences* (pp. 69–86). Cambridge, MA: MIT Press.
- Feldman, A., & Tilly, C. (1960). The interaction of social and physical space. *American Sociological Review*, 25, 877–884.
- Robinson, W. (1950). Ecological correlations and the behavior of individuals. *American Sociological Review*, 3, 351–357.
- Schwartz, S. (1994). The fallacy of the ecological fallacy: The potential misuse of a concept and the consequences. *American Journal of Public Health*, 84, 819–824.

Ecological Feminism

► Ecofeminism

Ecological Footprint

Jeffrey Wilson

School for Resource and Environmental Studies
and College of Sustainability, Dalhousie
University, Halifax, NS, Canada

Synonyms

[Environmental footprint](#)

Definition

The ecological footprint is a biophysical accounting tool to estimate the environmental impact of

► **consumption**. In technical terms, the ecological footprint provides a snapshot in time and the trajectory over time of how much nature – expressed in a common unit of bioproductive area or space – is used exclusively for producing all the resources (food, energy, materials) a given population consumes and absorbing the wastes they produce, using prevailing technologies (Chambers et al. 2000). The ecological footprint provides a comprehensive aggregate indicator of human pressure on ecosystems Holmberg et al. (1999). At the global level, if the human footprint exceeds the productive capacity of the biosphere, then consumption patterns are clearly not sustainable.

While most ► **sustainability** models focus on production, the ecological footprint emphasizes consumption: it highlights the role of the consumer as a driver of environmental impact. The ecological footprint is unique in that it accounts for the costs of consumption regardless of where associated environmental burden falls. For example, through trade, consumers may enjoy the benefits of consuming without experiencing the impacts in the local region. While the ecological footprint is an indicator of consumption, important factors other than consumption habits influence the ecological footprint: these include population size, technology, and gains or losses in ► **eco-efficiency** (Wackernagel and Rees 1996).

Description

The ecological footprint concept was developed by Mathis Wackernagel and William Rees (1996). Several modifications to the original model have since been adopted since that time, notably by Kitzes et al. (2008), Kitzes et al. (2007), Wackernagel et al. (2005), and Wackernagel et al. (1999). The Global Footprint Network, the leading authority on ecological footprint analysis, maintains the National Ecological Footprint Accounts, biannually updating ecological footprint values for 241 countries (Ewing et al. 2010). In efforts to ensure continuity and consistency in calculation methodology, a team of

ecological footprint experts began developing calculation standards in 2006 under the umbrella of the Global Footprint Network (2009). The current version (2009) includes a national calculation standard and a standard for all subnational footprint studies (subnational populations, organizations, and products).

The ecological footprint methodology has been extended to account for several missing components not considered in the standard calculation approach. These are pollutants (Bai et al. 2008; Peters et al. 2006), water (Hoekstra and Chapagain 2007), disturbed land (Lenzen and Murray 2001), non-CO₂ greenhouse gas emissions (Walsh et al. 2009; Holden and Hoyer 2005), nutrient emissions (Hanafiah et al. 2010), and nonrenewable resource consumption (Nguyen and Yamamoto 2007).

In addition, several researchers have proposed promising methodological advancements. Erb et al. (2009), Haberl et al. (2007) and Venetoulis and Talberth (2008) recommend using net primary productivity (NPP) or human appropriated net primary productivity (HANPP) as a means to better account for biocapacity. Liu et al. (2008) advanced an ecological footprint calculation approach based on the “emergy” concept. Bicknell et al. (1998), Li et al. (2007), Wiedmann et al. (2006), and allocated ecological footprint impacts to consumption activities using input–output modeling. More recently, Wiedmann (2009) has recommended using a multiregional input–output (MRIO) method to account for changes in production from region to region dramatically improving the ability of the ecological footprint tool to account for the embodied costs of trade flows.

A major criticism of the ecological footprint concerns how to account for energy consumption. The standardized methodology measures the hypothetical forest land needed to sequester the associated CO₂ emissions. The creation of hypothetical land disconnects the ecological footprint from actual ecological systems and overstates the true land area required to support a given population (Huetting and Reijnders 2004; Van den Bergh and Verbruggen 1999). The ecological footprint has also been widely criticized for not

distinguishing between sustainable and unsustainable yields (Ferng 2005; Lenzen et al. 2007). In addition, land use is associated with single functions, ignoring that different land use categories may provide multiple services or functions (Van den Bergh and Verbruggen 1999).

Quality of Life

The ecological footprint, as a key determinant of quality of life, reflects the importance of ► [sustainability](#) in expanding people's choices. The ecological footprint measures the amount of natural capital required to support human consumption (Rees and Wackernagel 1997). The concept supports a strong sustainability position, which argues that natural capital underpins all economic activity and is the foundation of social and economic well-being. Other indicators of quality of life (income, happiness, ► [health](#)) are secondary and depend on maintaining critical levels of natural capital.

Governments, communities, and organizations increasingly report the ecological footprint as a macro indicator of sustainable resource use in environmental reporting and sustainability indicator studies (see, e.g., Collins et al. 2006; Dawkins et al. 2008; Sustainable Sonoma County and Redefining Progress 2002). Well-known quality of life metrics like the Calvert-Henderson Quality of Life Indicators and the Environmental Sustainability Index include the ecological footprint as a sub-indicator (Calvert Group and Henderson 2006; World Economic Forum 2005). The ecological footprint has also been included as part of genuine progress reporting and health indicator reporting (see, e.g., Anielski 2007; Rainham and McDowell 2005).

The United Nations Development Program (UNDP) identified the ecological footprint as an indicator to consider when evaluating ► [human development](#). In *Human Development and Sustainability*, Neumayer (2010) argued for the need to report the ecological footprint as an external sustainability qualification when reporting the ► [Human Development Index](#) (HDI). Several authors previously suggested combining the ecological footprint with the HDI. Morse (2003) and Hermele (2006) proposed developing a green or

sustainable HDI respectively by adding the ecological footprint as a component of the index. Wilson et al. (2008) suggested including the ecological footprint as an external qualifier or trump variable. Linking the ecological footprint with the HDI conclusively demonstrates that countries with high human development also report large ecological footprints highlighting the need to break the connection between advancing human development and depleting critical stocks of natural capital. Combining development metrics with an ecological threshold would prevent these metrics from promoting development trajectories that neglect or potentially jeopardize ► [environmental sustainability](#) at the expense of social and economic aspirations.

Cross-References

- [Consumption](#)
- [Reporting of Indices by the Press](#)
- [Sustainability](#)

References

- Anielski, M. (2007). *The economics of happiness*. Gabriola Island, BC: New Society.
- Bai, Y., Zeng, H., Wei, J. B., Zhang, W. J., & Zhao, H. W. (2008). Optimization of ecological footprint model based on environmental pollution accounts: A case study in Pearl River Delta urban agglomeration. *China Journal of Applied Ecology*, 19, 1789–1796.
- Bicknell, K., Ball, R., Cullen, R., & Bigsby, H. (1998). New methodology for the ecological footprint with an application to the New Zealand economy. *Ecological Economics*, 27, 149–160.
- Calvert Group & H. Henderson. (2006). Calvert-Henderson quality of life indicators. Available at [www. http://www.calvert-henderson.com/](http://www.calvert-henderson.com/). Accessed April 2011.
- Chambers, N., Simmons, C., & Wackernagel, M. (2000). *Sharing nature's interest: Ecological footprints as an indicator of sustainability*. London: Earthscan.
- Collins, A., Flynn, A., Wiedmann, T., & Barrett, J. (2006). The environmental impacts of consumption at a sub-national level: The ecological footprint of Cardiff. *Journal of Industrial Ecology*, 10, 9–24.
- Dawkins, E., Paul, A., Barrett, J., Minx, J., & Scott, K. (2008). *Wales' ecological footprint – Scenarios to 2020*. Stockholm Environment Institute. A report to the Welsh Assembly Government.

- Erb, K., Krausmann, F., Gaube, V., Gingrich, S., Bondeau, A., Fischer-Kowalski, M., et al. (2009). Analyzing the global human appropriation of net primary production-processes, trajectories, implications. An introduction. *Ecological Economics*, 69, 250–259.
- Ewing, B., Reed, A., Galli, A., Kitzes, J., & Wackernagel, M. (2010). *Calculation methodology for the national footprint accounts* (2010th ed.). Oakland, CA: Global Footprint Network.
- Ferng, J. (2005). Local sustainable yield and embodied resources in ecological footprint analysis – A case study on the required paddy field in Taiwan. *Ecological Economics*, 53, 415–430.
- Global Footprint Network. (2009). *Ecological footprint standards 2009*. Oakland: Global Footprint Network. Available at <http://www.footprintstandards.org>. Accessed May 2011.
- Haberl, H., Erb, K., Krausmann, F., Gaube, V., Bondeau, A., Plutzer, C., et al. (2007). Quantifying and mapping the human appropriation of net primary production in earth's terrestrial ecosystems. *Proceedings of the National Academy of Sciences USA*, 104, 12942–12947.
- Hanafiah, M., Huijbregts, M., & Hendriks, A. (2010). The influence of nutrients and non-CO₂ greenhouse gas emissions on the ecological footprint of products. *Sustainability*, 2, 963–979. <https://doi.org/10.3390/su2040963>.
- Hermele, K. (2006). *Greening the human development index*. Paper presented to the Workshop on Trade and Environmental Justice, Lund University.
- Hoekstra, A. Y., & Chapagain, A. K. (2007). Water footprints of nations: Water use by people as a function of their consumption pattern. *Water Resources Management*, 21(1), 35–48.
- Holden, E., & Hoyer, K. (2005). The ecological footprints of fuels. *Transportation Research Part D: Transport and Environment*, 10, 395–403.
- Holmberg, J., Lundqvist, U., Robèrt, K.-H., & Wackernagel, M. (1999). The ecological footprint from a systems perspective of sustainability. *International Journal of Sustainable Development and World Ecology*, 6, 17–33.
- Hueting, R., & Reijnders, L. (2004). Broad sustainability contra sustainability: The proper construction of sustainability indicators. *Ecological Economics*, 50, 249–260.
- Kitzes, J., Peller, A., Goldfinger, S., & Wackernagel, M. (2007). Current methods for calculating national ecological footprint accounts. *Science for Environment & Sustainable Society*, 4, 1–9.
- Kitzes, J., Galli, A., Rizk, S., Reed, A., & Wackernagel, M. (2008). *Guidebook to the national footprint accounts* (2008th ed.). Oakland, CA: Global Footprint Network. Version 1.01.
- Lenzen, M., & Murray, S. A. (2001). A modified ecological footprint method and its application to Australia. *Ecological Economics*, 37, 229–255.
- Lenzen, M., Hansson, C., & Bond, S. (2007). On the bioproductivity and land-disturbance metrics of the ecological footprint. *Ecological Economics*, 61, 6–10.
- Li, H., Zhang, P. D., He, C. Y., & Wang, G. (2007). Evaluating the effects of embodied energy in international trade on ecological footprint in China. *Ecological Economics*, 62, 136–148.
- Liu, Q. P., Lin, Z. S., Feng, N. H., & Liu, Y. M. (2008). A modified model of ecological footprint accounting and its application to cropland in Jiangsu, China. *Pedosphere*, 18, 154–162.
- Morse, S. (2003). Greening the United Nations' human development index. *Sustainable Development*, 11, 183–198.
- Neumayer, E. (2010). *Human development and sustainability*. Human Development Research Paper, 2010/05.
- Nguyen, H. X., & Yamamoto, R. (2007). Modification of ecological footprint evaluation method to include non-renewable resource consumption using thermodynamic approach. *Resources, Conservation and Recycling*, 51, 870–884.
- Peters, G., Sack, F., Lenzen, M., Lundie, S., & Gallego, B. (2006). A new ecological footprint calculation for the Australian water industry: Regionalisation and inclusion of downstream impacts. *Journal of Applied Input–Output Analysis*, 12, 73–90.
- Rainham, D., & McDowell, I. (2005). The sustainability of population health. *Population and Environment: An Interdisciplinary Journal*, 26(4), 303–324.
- Rees, W., & Wackernagel, M. (1997). Perceptual and structural barriers to investing in natural capital: Economics from an ecological footprint perspective. *Ecological Economics*, 20(1), 3–24.
- Sustainable Sonoma County and Redefining Progress. (2002). The Sonoma County ecological footprint report. May 2002.
- Van den Bergh, J., & Verbruggen, H. (1999). Spatial sustainability, trade and indicators: An evaluation of the "Ecological footprint". *Ecological Economics*, 29(1), 61–72.
- Venetoulis, J., & Talberth, J. (2008). Refining the ecological footprint. *Environment, Development and Sustainability*, 10, 441–469.
- Wackernagel, M., & Rees, W. (1996). *Our ecological footprint-reducing human impact on the earth*. Gabriola Island: New Society.
- Wackernagel, M., Onisto, L., Bello, P., Callejas Linares, A., López Falfán, I., Méndez García, J., et al. (1999). National natural capital accounting with the ecological footprint analysis. *Ecological Economics*, 29(3), 375–390.
- Wackernagel, M., Monfreda, C., Moran, D., Wermer, P., Goldfinger, S., Deumling, D., et al. (2005). *National footprint and biocapacity accounts 2005: The underlying calculation method*. Oakland, CA: Global Footprint Network.
- Walsh, C., O'Regan, B., & Moles, R. (2009). Incorporating methane into ecological footprint analysis: A case study of Ireland. *Ecological Economics*, 68, 1952–1962.

- Wiedmann, T. (2009). A first empirical comparison of energy footprints embodied in trade-MRIO versus plum. *Ecological Economics*, 68, 1975–1990.
- Wiedmann, T., Minx, J., Barrett, J., & Wackernagel, M. (2006). Allocating ecological footprints to final consumption categories with input-output analysis. *Ecological Economics*, 56, 28–48.
- Wilson, J., Pelot, R., & Tyedmers, P. (2008). Ensuring that development metrics consider environmental sustainability – a proposal to combine development metrics with an ecological threshold variable. *International Journal of Transdisciplinary Research*, 3(1), 44–68.
- World Economic Forum, Yale Center for Environmental Law and Policy, and CIESIN. (2005). *Environmental sustainability index: An initiative of the global leaders of tomorrow environment task force*. World Economic Forum annual meeting. New Haven: Yale Center for Environmental Law and Policy.

Ecological Inference Fallacy

► [Ecological Fallacy](#)

Ecological Literacy

Alma Clavin
Department of Geography, National University of
Galway, Galway, Ireland

Synonyms

[Ecoliteracy](#); [General systems theory](#); [Systems thinking](#)

Definition

Ecological literacy (or ecoliteracy) is the ability to understand the principles of organization of ecosystems and to use those principles in everyday life to create sustainable communities.

Description

The term “ecoliteracy” was coined by American educator David W. Orr and physicist Fritjof Capra

who advocate ecological literacy as an educational paradigm (<http://www.ecoliteracy.org>).

The term “ecology” itself was first coined in the mid-nineteenth century by Ernst Haeckel to refer to a new branch of biology concerned with the relationship between living organisms and their surroundings. For Haeckel ecology had social and political implications (Bramewell 1989). Ecologists contend that the interaction of both the biological (biotic) and physical (abiotic) constituents of the environment together form a spatial unit, which is termed an ecosystem (Tansley 1935). The term ecosystem has been used both to define a unit of study and to describe a concept or approach – for examining environmental systems (McIntosh 1989).

In the period up to the 1960s, the idea of ecological science was based on a mechanistic view of ecological balance. A new ecology which developed from the 1970s onward rejected the idea of nature as a balanced system and looked to disequilibrium – to nature as unpredictable, dynamic, evolving, and self-adaptive. Biological systems were seen to become efficient at “grabbing” energy to become increasingly complex and efficient (Prigogine and Nicolis 1977). Within such biological systems a flow of energy leads to clearly defined (trophic) structures, biotic diversity, and material cycles (i.e., exchanges of materials between living and nonliving parts) within the system (Odum 1983).

Lovelock (1979) showed that the biosphere, or Gaia, actually created these conditions that are required for its support and systematically builds up the stock of materials it requires to move toward increasing complexity, diversity, and stability. The biosphere contains the steady state system intermediate in the flow of energy between the high-energy inputs of the sun and the thermal sink of space, and the earth and the biosphere can be considered a closed material system with a finite mass. Ecologically, we therefore can conceive the earth as a unit. This finiteness defines the limit to which human use of the earth’s resources is restricted. Therefore, the totality of the interactions between the biotic and abiotic constituents of all the ecosystems within the biosphere and the finite quantities of the earth’s energy and material

resources is our ecological context and as such can be considered the final limiting factor in all designed human activities (Yeang 1995). McHarg (1992) argues that human society must fit with nature in that humans must understand that the integrity of human societal ecosystems is inextricably linked to the integrity of natural ecosystems.

Ecological literacy looks to whole systems, linkages, processes, patterns, context, and nature's outcomes at higher system levels. Capra (1997) has advocated that taking such an approach to human and natural systems harnesses new understanding for organized systems in business, politics, ► [health care](#), ► [education](#), and everyday life. In twentieth-century science, such a holistic perspective became known as "systemic" and the way of thinking it implies as "systems thinking." According to the systems' view, the essential properties of an organism, or living systems, are properties of the whole, none of which the parts have. In the 1920s, the term "emergent properties" was coined for those properties that emerge at a certain level of complexity, but do not exist at lower levels. Indeed this concept of "organized complexity" became the very subject of the systems' approach (Checkland 1981: 78). Furthermore, "Emergence" suggests that self-organization within complex systems results in activity, structures, and behaviors that clearly emerge from within the system but have the effect of either transforming it or producing some completely new system (Holmgren 2002).

Bertalanffy's (1969) concept of a General Systems Theory (GST) established "systems thinking" as a major scientific movement. He asserted that as there are general conceptions concerned with "systems" used in different fields and disciplines "certain general principles apply to systems irrespective of their nature" (Bertalanffy 1969: 84).

Ideas from systems theory have grown with diversified areas exemplified in the work of ecological systems which look to natural ecosystems as open, self-organized, complex, and adaptive systems (Kay 2002). Natural systems and human systems feed on a continual flux of matter and energy from their environment to stay alive. They are not static systems closed to the outside

but rather material continually enters from, and leaves into, the outside environment (Bertalanffy 1969). Open systems maintain themselves far from equilibrium in a "steady state" characterized by continual flow and change. Spontaneous coherent behavior and organization occurs in open systems. Central to understanding such phenomena is the realization that open systems are processing an enduring flow of high-quality energy (exergy) from the sun. When the input of exergy and material pushes the system beyond a critical distance from equilibrium, the open system responds with the spontaneous emergence of new, reconfigured organized behavior. Once a dissipative process emerges and becomes established, it manifests itself as a structure. As more exergy is pumped into the system, more organization emerges.

Self-organizing "dissipative" processes emerge whenever sufficient exergy is available to support them. These systems tend to get better and better at "grabbing" resources and utilizing them to build more structure, thus enhancing their dissipating capacity. These structures provide a new context, nested within which new processes can emerge, which in turn beget new structures. Thus, it emerges a self-organizing hierarchical open systems (SOHO), a nested constellation of self-organizing dissipative structures (Kay 2002: 75). The theory of nonequilibrium thermodynamics suggests that the self-organization process in SOHO systems proceeds in a way that captures increasing resources (exergy and material), makes ever more effective use of resources, builds more structure, and enhances survivability (Schneider and Kay 1994a, b). According to Kay (2002) both natural ecosystems and societal systems cannot be understood without understanding them as SOHO systems. Which state is currently occupied is a function of its history. There is no "correct" state for the system, although there may be a state that is preferred by humans (*ibid*).

Solar energy (exergy) is transformed into chemical energy by the photosynthesis of green plants, which drives ecological cycles. As ecosystems develop or mature, they should develop more complex structures and processes with greater diversity. They will develop in a way that

systematically increases their ability to degrade incoming solar exergy (Schneider and Kay 1994a, b). More cycling and more hierarchical levels aid exergy degradation. The more processes or reactions of material and energy that there are within a system (i.e., metabolism, cycling, building higher trophic levels), the greater the possibility of exergy degradation. A number of expected changes in ecosystems occur as they develop (Kay 2002: 77): more energy capture, more energy flow activity within the system, more cycling of energy and material and cycling positive and negative feedback loops, higher average trophic structure, higher respiration and transpiration (exergy utilization), larger ecosystem biomass (more pathways for exergy utilization), more types of organisms (diversity), and therefore more pathways for utilizing energy.

As various nutrients are passed along through the ecosystem, the relationships we observe are many forms of partnership, of cooperation. Ecosystems achieve stability and resilience through the richness and complexity of their ecological webs. Diversity involves many links, and many different approaches to the same problem. In this way a diverse community enhances, ► [community resilience](#). The greater their biodiversity, the more resilient they will be as a diverse ► [community](#) can adapt to changing situations. When a link is destroyed, the ecosystem can still survive, as this destroyed link is not the only one of its kind (Capra 2003). When one link is destroyed, the others should be able to partially fulfill the function and herein lay the relevance of diversity.

There is, however, in principle, an upper limit to an ecologically literate organizational response. Beyond a critical distance from equilibrium, the organizational capacity of a system is overwhelmed and the system's behavior leaves the domain of self-organization and becomes uncertain and chaotic. This is largely a function of positive and negative feedback loops. Holling (1986) has developed a general model of ecological change that proposes the internal dynamics of ecosystems cycle through four phases: rapid growth (r), conservation (k), collapse or release (Ω), and reorganization (α). The model proposes that, as weakly connected processes interact,

some processes reinforce one another, rapidly building structure or organization (rapid growth (r) and conservation (k) phases). However, the system becomes dependent upon structure and constraint for its persistence leaving it vulnerable to either internal fluctuations or external disruption. Eventually, the system collapses (Ω), allowing the remaining disorganized structures and processes to reorganize (α). Exit from the cycle occurs when ecological reorganization into a more or less productive and organized ecosystem is most likely to occur.

As the phases of the adaptive cycle proceed, an ecosystem's resilience expands and contracts. In ecology, an example of such a system is a mature forest. An ecological disturbance such as fires, floods or grazing, or disease disturbs ecological processes. This results in a "release" or collapse phase because it indicates the end of an existing organization. It is this shift from release to reorganization that creates uncertainty. This state is transitory. During this phase, an ecosystem can easily lose resources and new actors can enter it. The lack of control allows novel organizations to form. New species of plants and animals can invade the ecosystem as the ecosystem has little resilience. Such changes make it impossible for a given organization to remain static and stable. This alternation between stages may represent a necessary tension between invention and efficiency.

Such a conceptualization of nature being uncertain, dynamic, complex, and adaptive systems is in contrast to an often imaginary fixed "idealized" nature that is harmonious and balanced. Swyngedouw (2007) refutes the singular idea of nature which has a rightful point that it is fixed and fundamentally benign. Zizek (2006) insists that the "nature" we see and work with is necessarily radically imagined, scripted, symbolically charged, and radically distant from the various natures that are out there, which are complex, chaotic, often unpredictable, often radically contingent, risky, and patterned in endlessly complex ways.

However, at some larger scale it becomes difficult to detect diversity and subtle difference in local environments. In the same way as surface-

to-volume ratios limit the size of biological organisms and naturally formed physical structures, proponents of decentralization (Kohr 1978; Schumacher 1974) argue that there are these similar principles of optimum-size decentralization for cities, nations, corporations, and technologies. One reason for this has to do with human limits to understand and manage complex systems. Orr (1992) argues, for example, that the ecological knowledge and level of attention necessary to good farming limits the size of farms. Beyond that limit, the “eyes-to-acres” ratio is insufficient for land husbandry (Orr 1992: 35–36). At some larger scale it becomes harder to detect subtle differences in soil types, changes in plant communities and wildlife habitats, and variations in topography and microclimate. The memory of past events like floods and droughts fades. As scale increases, the farmer becomes a manager who must simplify complexity and homogenize differences in order to control. Beyond some threshold, control therefore requires power not stewardship. Orr (1992: 36) argues that beyond this scale, it is not possible to see the outcomes of your actions or where your waste and energy goes. He argues that the same is true for things in the built and natural environment other than farms. Increasing scale increases the number of things that must be attended to and the number of fluctuating interactions and interrelatedness between components. He also asserts that rising scale increases the cost of carelessness.

According to Capra (2003) every living community is a learning community and that development and learning are always part of the very essence of life because of this continually fluctuating network pattern. A community can learn from its mistakes, because the mistakes travel and come back along feedback loops. Then one can learn, and the next time around one can do it differently. Then the effect will come back again and one can learn again, in steps. A community potentially has its own intelligence and its own learning capability. However, when the change will precisely occur and what state the system will change to are generally not predictable.

This philosophy represents not just a shift in the way things are made and designed but also a

shift in language and epistemology. Form and pattern are visualized, and hence, relationships cannot be measured and weighed. Capra (2003: 202) states that what is important is a pattern of organization to understand, (and his principles of ecology include networks, cycles, ► [solar energy](#), partnerships, diversity, and dynamic balance) – what Bateson refers to as the “pattern that connects” (Bateson 1979: 13–15).

Thinking ecologically is therefore a way of integrating human purpose with nature’s own flows, cycles, and patterns and its natural flux. In this way, Orr (1992) states that ecology is an applied subject. Its goal is not just a comprehension of the interrelationship between things and therefore how the world works, but, in the light of that knowledge, a particular worldview and a life lived accordingly. He uses the term “ecological literacy” to imply the ability to think broadly, to know what is linked to what – the interrelationships and ► [interdependence](#) of things.

Cross-References

- [Community](#)
- [Interdependence](#)
- [Solar Energy](#)

References

- Bateson, G. (1979). *Mind and nature: A necessary unity*. Hampton: Hampton Press.
- Bramewell, A. (1989). *Ecology in the twentieth century: A history*. New Haven: Yale University Press.
- Capra, F. (1997). *The web of life: A new synthesis of mind and matter*. London: Harper Collins.
- Capra, F. (2003). *The hidden connections*. London: Harper Collins.
- Checkland, P. (1981). *Systems thinking, systems practice*. Chichester, West Sussex: Wiley.
- Holling, C. S. (1986). The resilience of terrestrial ecosystems: Local surprise and global change. In W. M. Clark & R. E. Munn (Eds.), *Sustainable development in the biosphere* (pp. 292–317). Cambridge: Cambridge University Press.
- Holmgren, D. (2002). *Permaculture: Principles and pathways beyond sustainability*. Hepburn: Holmgren Design Services.
- Kay, J. (2002). On complexity theory, exergy, and industrial ecology. In C. Kibert, G. Sendzimir, & B. Guy

- (Eds.), *Construction ecology: Nature as the basis for green buildings* (pp. 72–107). London: Spon Press.
- Kohr, L. (1978). *The breakdown of nation*. New York: E.P. Dutton.
- Lovelock, J. E. (1979). *Gaia: A new look at life on earth*. Oxford: Oxford University Press.
- McHarg, I. L. (1992). *Design with nature: An ecological basis for architectural design*. New York: Doubleday.
- McIntosh, R. P. (1989). Citation classics of ecology. *The Quarterly Review of Biology*, 64, 31–49.
- Odum, E. (1983). *Basic ecology*. Philadelphia: Saunders.
- Orr, D. (1992). *Ecological literacy: Education and the transition to a postmodern world*. Albany: State University of New York Press.
- Prigogine, I., & Nicolis, G. (1977). *Self-organization in non-equilibrium systems*. New York: Wiley.
- Schneider, E. D., & Kay, J. J. (1994a). Complexity and thermodynamics: Towards a new ecology. *Futures*, 24, 626–647.
- Schneider, E. D., & Kay, J. J. (1994b). Life as a manifestation of the second law of thermodynamics. *Mathematical and Computer Modelling*, 19, 25–48.
- Schumacher, E. (1974). *Small is beautiful*. New York: Harper Torchbooks.
- Swyngedouw, E. (2007). Impossible “Sustainability” and the Postpolitical Condition. In R. Krueger & D. Gibbs (Eds.), *The sustainable development paradox: Urban political economy in the United States and Europe* (pp. 13–41). New York: Guildford Press.
- Tansley, A. G. (1935). The use and abuse of vegetational concepts and terms. *Ecology*, 16, 284–307 [reprinted as part of Trudgill, S. (2007). *Classics Revisited*].
- van Bertalanffy, L. (1969). *General systems theory*. New York: Brazillier.
- Yeang, K. (1995). *Designing with nature: The ecological basis for architectural design*. New York: McGraw Hill.
- Zizek, S. (2006). *The parallax view*. Cambridge, MA: MIT Press.

Ecological Momentary Assessment

- [Daily Diary Methodology](#)
- [Experience Sampling](#)

Ecological Systems Theory

- [Political Context and Social Change](#)

Ecological Well-Being

Frederick M. E. Grouzet and Elliott S. Lee
Department of Psychology, University of
Victoria, Victoria, BC, Canada

Synonyms

[Planetary well-being](#)

Definition

Ecological well-being refers to the harmonious relationship between people and their ecological system, which leads to a successful management, distribution, and sustainability of environmental resources for current and future generations.

Description

Ecological well-being is a generic term that is used in several disciplines, such as ecology, sociology, politics, psychology, and economics, to describe the wellness of the ecological system and more generally the planet Earth. Because an ecological system includes its inhabitants, human quality of life is directly tied to the health of the environment and vice-versa. Therefore, ecological well-being does not only refer to the well-being of the natural environment or the planet but encompasses the relationship between humans and the environment. The actions of humans (individuals or societies) on their natural environment may impact the well-being of ecological systems, which in turn impact the quality of life of current human populations and future generations. Of course, major natural disasters (e.g., tsunami) could also affect ecological well-being, while human actions might not be (at least directly) at the origin of these natural disturbances.

The conceptualization of ecological well-being as the result of humans' action has greatly influenced the measure of ecological well-being.

For example, current measures of ecological well-being include ► [ecological footprint](#), the Happy Planet Index, and specific pro-environmental behaviors. However, further developments of both the conceptualization and measure of ecological well-being are ongoing.

Toward a Comprehensive Model of Well-Being

In ► [positive psychology](#), various models of well-being have been proposed. The most comprehensive one (Keyes 2003; Keyes and Magyar-Moe 2003) involves three dimensions: ► [emotional well-being](#) (aka hedonic well-being), ► [psychological well-being](#), and ► [social well-being](#). Each dimension refers to one important aspect of human being and well-being. On one hand, one's emotional state is directly related to the hedonistic functioning of human body. On the other hand, an optimal human being is based on the individual's personal functioning (psychological well-being or eudaimonia) and social functioning (social well-being). This model of well-being captures well the principle of a physiological body within an individual, within a social environment. Following the same principle, Grouzet ([in preparation](#)) proposed that the inclusion of ecological well-being in the model would capture the last element of the "Russian-nesting doll" model where the social environment is within the natural environment. This proposition has been echoed in recent environmental critiques to personal well-being models (e.g., Carlisle et al. 2009; Clayton and Opatow 2003). The exclusive pursuit of one form of well-being (e.g., hedonistic) may compromise the well-being of others or the environment, which may negatively affect social and ecological well-being. By including ecological well-being in a more general model of well-being and positive mental health, the symbiotic relationship between human being and the ecological system is acknowledged. Various conceptualizations and assessment of quality of life also include indicators of ecological well-being in addition to individual, social, and economic factors. Indeed, ecological well-being is directly related to individuals' health and well-being (Boyd and Genuis 2008; McMichael and Butler 2011; Mitchell and Popham 2008). For

example, *nef* (the new economics foundation) proposed the ► ["Happy Planet Index"](#) which includes not only physical well-being (► [Life Expectancy](#)) and personal well-being (► [Life Satisfaction](#)) but also ecological well-being (► [Ecological Footprint](#)).

In order to assess ecological well-being, researchers, decision-makers, and policy-makers have used various measures. The most used is the ecological footprint analysis that is an assessment of human demand on the Earth's resources (e.g., Brown and Kasser 2005; Sheldon et al. 2011). Other measures includes self-report of pro-environmental behaviors.

Ecological Well-Being and Ecological Footprint

During the last decade, ecological well-being was often assessed through the measure of ► [ecological footprint](#), which has led to considering ecological well-being as synonymous of planetary well-being or the well-being of the Earth. However, ecological footprint has some limitations. Ecological footprint was introduced in the late twentieth century by Rees and Wackernagel (1994) and now serves as an analytical and educational tool that the creators believe can foster public action from sustainability concerns (Wackernagel and Rees 1996). While original conceptions consisted of calculating populations' consumption of resources that are required for food, transportation, housing, energy, and goods and services, it has evolved to encompass broader categories of consumption and greater accessibility for users.

A number of questionnaires have grown out of the original conceptualization of the ► [ecological footprint](#) to be more accessible to the general public and to help researchers to measure the ecological footprint of individuals. The EcoCal is one such self-assessment tool that was created in an effort to narrow the ecological footprint from local, region, or global footprinting to a household level in the UK (Simmons and Chambers 1998). The EcoCal encompasses categories of transportation, energy, water, purchasing, house and garden, and waste. The individual's footprint is compared to the potential 15.71 renewable global

hectares that are available per person to everyone on the earth, resulting in a ratio that represents the number of earths required if everyone were to live as the user does. In counter distinction to early ecological footprint measures, this updated version (Footprint 2.0) uses the entire earth in calculation of biocapacity, other species' needs are taken into account, as well as other accounting strategies as suggested by Venetoulis and Talberth (2008).

This form of self-assessment has, however, important limitations. For example, Simmons and Chambers (1998) noted that households with large ecological footprints were often those with large families, energy inefficient homes, taking distance holidays, and a product of "one-off" large purchases such as a car. All of these things could be amortized over several years. Self-report measures, such as the Center for Sustainable Economy's ecological footprint quiz, make gross approximations. For instance, in the food category, an item concerned with diet limits possible responses to vegan, vegetarian, omnivore, carnivore, and top of the food chain, which does not correspond to all possible diets (CSE 2012). Then the choice becomes whether the responder indicates their level above their true behavior, potentially increasing their footprint, or indicating their level below their true behavior, potentially decreasing their footprint. ► **Ecological footprint** is also very complex and each component may interact with others. For example, living in an urban area could be compensated by ecological transportation (e.g., bicycle) and urban gardening.

Ecological Well-Being and Pro-environmental Behaviors

Another, but related, method to assess ecological well-being is the use of self-reports of individuals' pro-environmental behaviors. Pro-environmental behaviors are vast, so in an effort to create a comprehensive measure of pro-environmental behaviors, Kaiser (1998) compiled a list of 38 behaviors, from the use of chemical cleaners to the use of public transportation, to create the General Ecological Behavior scale. However, using self-reported pro-environmental behaviors to assess ecological well-being has some

limitations. First, a well-accepted pro-environmental behavior, such as recycling, could be detrimental for ecological well-being. Indeed, recycling a lot also means consuming a lot. Inversely, low frequency of recycling could be associated with reduced use of paper. Therefore, as De Young (1985)–86 suggests, the assessment of recycling behaviors should go further than one's household recycling by asking how often one recycles products that cannot be picked up "curbside" and how often one encourages others to recycle. Second, common assessments of pro-environmental behaviors include behaviors that often correspond to a direct interaction between humans and the environment. Ecological protection in the form of political advocacy, education, voluntary simplicity, or environmental activism can also be considered as pro-environmental behaviors, however. For example, in a study of motivation toward pro-environmental behaviors, Green-Demers, Pelletier, and Ménard (1997) identified three levels of difficulty for pro-environmental behaviors: self- and other-education on environmental issues, environmentally friendly consumption, and recycling behaviors. Therefore, any effort to measure ecological well-being should take into consideration the difficulty level of the behavior. For example, each self-reported behavior could be weighted by its difficulty, which is directly correlated with its impact on the well-being of the planet. Indeed, recycling is relatively easy and its impact is relatively local (and, as shown above, a potential indicator of ecological ill-being), while purchasing organic food is more difficult and the impact is more global.

Ecological Well-Being Beyond Behavioral Measures

Ecological footprint and pro-environmental behavior are good assessments of a person's behaviors and/or how the planet is doing as a result of those behaviors. However, they do not encompass the full definition of ecological well-being that is the harmonious relationship between people and their ecological system. They are mainly behavioral and correspond to an anthropocentric view of ecological well-being. In order to

fill this gap, Grouzet (in preparation) has undertaken a series of studies to develop a multi-dimensional measure of ecological well-being that captures the affective, cognitive, and behavioral components of the harmonious relationship. For example, the ► [affective connection to nature](#) (or biophilia) is an important component of ecological well-being.

In conclusion, ecological well-being is an important component of ► [quality of life](#). Under different forms, ecological well-being has been included in different conceptualization and assessment of well-being and quality of life. The best example is the ► [“Happy Planet Index”](#) that considers ecological footprint as a moderator of traditional measures of well-being and health. This acknowledges the importance of the ecosystem in determining humans’ well-being. Future research on the conceptualization, measurement, and determinants of ecological well-being are still needed.

Cross-References

- [Affective Connection to Nature](#)
- [Ecological Footprint](#)
- [Ecosystem Approach to Human Health](#)
- [Environment and Health](#)
- [Environment Friendly Index](#)
- [Fostering Pro-environmental Behavior for Individual and Societal Well-Being](#)
- [Happy Planet Index](#)
- [Nature Relatedness and Subjective Well-Being](#)
- [Sustainability](#)

References

- Boyd, D. R., & Genuis, S. J. (2008). The environmental burden of disease in Canada: Respiratory disease, cardiovascular disease, cancer, and congenital affliction. *Environmental Research*, 106, 240–249.
- Brown, R., & Kasser, T. (2005). Are psychological and ecological well-being compatible? The role of values, mindfulness, and lifestyle. *Social Indicators Research*, 74, 349–368.
- Carlisle, S., Henderson, G., & Hanlon, P. W. (2009). ‘Wellbeing’: a collateral casualty of modernity? *Social Science and Medicine*, 69, 1556–1560.
- Center for Sustainable Economy. (2012). *Ecological footprint quiz*. Retrieved December 12, 2012, from <http://myfootprint.org/>
- Clayton, S., & Opatow, S. (2003). Justice and identity: Changing perspectives on what is fair. *Personality and social psychology review*, 7, 298–310.
- De Young, R. (1985–86). Encouraging environmentally appropriate behavior: The role of intrinsic motivation. *Journal of Environmental Systems*, 15, 281–292.
- Green-Demers, I., Pelletier, L. G., & Ménard, S. (1997). The impact of behavioral difficulty on the saliency of the association between self-determined motivation and environmental behaviours. *Canadian Journal of Behavioural Science*, 29, 157–166.
- Grouzet, F. M. E. (in preparation). *Ecological well-being: Conceptualization and measurement*. Victoria: University of Victoria.
- Kaiser, F. G. (1998). A general measure of ecological behavior. *Journal of Applied Social Psychology*, 28, 395–422.
- Keyes, C. L. M. (2003). Complete mental health: An agenda for the 12th century. In C. L. M. Keyes & J. Haidt (Eds.), *Flourishing: Positive psychology and the life well-lived* (pp. 293–312). Washington, DC: American Psychological Association.
- Keyes, C. L. M., & Magyar-Moe, J. L. (2003). The measurement and utility of adult subjective well-being. In S. J. Lopez & C. R. Synder (Eds.), *Positive psychological assessment: A handbook of models and measures* (pp. 411–425). Washington, DC: American Psychological Association.
- McMichael, A. J., & Butler, C. D. (2011). Promoting global population health while constraining the environmental footprint. *Annual Review of Public Health*, 32, 179–197.
- Mitchell, R., & Popham, F. (2008). Effect of exposure to natural environment on health inequalities: An observational population study. *Lancet*, 372, 1655–1660.
- Rees, W. E., & Wackernagel, M. (1994). Ecological footprints and appropriated carrying capacity: Measuring the natural capital requirements of the human economy. In A. M. Jansson, M. Hammer, C. Folke, & R. Costanza (Eds.), *Investing in natural capital: The ecological economics approach to sustainability* (pp. 362–390). Washington, DC: Island Press.
- Sheldon, K. M., Nichols, C. P., & Kasser, T. (2011). Americans recommend smaller ecological footprints when reminded of intrinsic American values of self-expression, family, and generosity. *Ecopsychology*, 3, 97–104.
- Simmons, C., & Chambers, N. (1998). Footprinting UK households: How big is your ecological garden? *Local Environment: The International Journal of Justice and Sustainability*, 3, 355–362.
- Venetoulis, J., & Talberth, J. (2008). Refining the ecological footprint. *Environment, Development, and Sustainability*, 10, 441–469.
- Wackernagel, M., & Rees, W. E. (1996). *Our ecological footprint: Reducing human impact on the earth*. Gabriola Island, BC: New Society Publishers.

Ecology

► Environment and Health

Economic and Financial Literacy

Celeste Amorim Varum

Department of Economics, Management,
Industrial Engineering, and Tourism, University
of Aveiro, Aveiro, Portugal

Definition

Capacity to apply reasoning when making decisions about using scarce resources. It translates into one capacity to understand the forces that affect ones' quality of life.

Description

Economic reasoning implies having the ► **capabilities** to identify the choice-related problems which confront us, define criteria and goals which frame our choices, identify and analyze the possible effects and opportunity cost of each alternative, and take actions based upon a cost-benefit analysis of the various alternatives (Symmes and Gilliard 1981).

Knowledge of economic-related aspects has become determinant to deal with the increasing complexity of the day-by-day decisions that a normal citizen has to take. Economic literacy is a broader concept than financial literacy.

Not surprisingly, the issues related to economic ► **education** are under increasing attention. A survey of the literature conducted under the Project Economicando (Varum and Ferreira 2011) shows that in the first decade of the twenty-first century economic education has enjoyed a clear revival, reflected in the “boom” in published research on the matter. As a result,

from its initial contributions in the 1960s (e.g., Senesh 1964), economic education has developed into a major subfield of economics (Marlin and Durden 1993, p. 171) with its own field classification in the *Journal of Economic Literature*, namely, with codes A20–A29.

The literature on the matter discusses three critical aspects. First, there is an ongoing discussion about the advantages of people having economic knowledge and of receiving some type of education in economics (Walstad 1991). In spite of the critiques, there are numerous potential benefits for people and for the society as a whole. Economic knowledge, of financial issues, for example, supports people's (financial) decisions and enhances their autonomy and prevents over indebtedness (FES Report 2007). From research on economic education in the USA, Stern (2002) concludes that those who have had classes in economics or finance on the secondary school tend to have significantly higher levels of wealth in adulthood. But the advantages of economic literacy go well beyond the private benefit, as discussed by Lucey and Giannangelo (2006). Eventually, “invisible hand works better when the agents of the economy are economically and financially literate” (Stern 2002; see also the National Council on Economic Education 2003). The economy performs better when its participants are well informed because well-informed participants make decisions that enhance resource allocation and thus contribute to rising ► **economic efficiency**, productivity, and living standards. Economic knowledge also helps to promote ► **entrepreneurship**, ► **active citizenship**, and to avoid **social exclusion**.

While the importance of economic ► **literacy** is recognized, for many countries there are substantial deficiencies in population's knowledge on economic matters. Hence, projects to enhance population general knowledge and interest on economics are to be supported. The projects may assume different formats, from ► **lifelong learning** initiatives to formal courses at the university level (e.g., Becker 1997), as well as child education. Broad-based economic education initiatives for school-age children will translate into a society of financially literate adults, with eventual

positive effects on the well-being of future generations.

This takes to a second question in the literature: Should young people be taught in economics? How capable are youngsters to understand economic concepts? A vast body of research has examined economics education in primary and elementary school and beyond, mostly in the USA, with the overwhelming finding that young students are capable of understanding a variety of economic concepts (Ajello et al. 1987; Davison and Kilgore 1971; Laney 1988; Laney and Schug 1998). Yet, only a small share of youngsters recognize to have a high understanding of it. Women and some minorities are the ones reporting lower knowledge about economic matters.

However, economics is not in the formal school curricula, nor even as complementary extracurricular activity, for most economies. The advances in the USA are reflected in the existence of the National Council on Economic Education that promotes economic literacy and in the formal inclusion of economics in the children's educational curriculum. There are no formal indicators, but for most economies, economics is addressed in the curricula accidentally, being approached very superficially in some subjects.

A third question raised in the literature relates to the methods used to educate people in economics. Among different alternatives, it has been defended that using computer games, in class or outside the classroom, is very consistent with the emerging paradigm of instruction. These studies show how apart from being enjoyable, fun and games can be effective methods to teach, especially for early childhood.

Cross-References

- ▶ [Active Citizenship](#)
- ▶ [Capabilities](#)
- ▶ [Economic Efficiency](#)
- ▶ [Education](#)
- ▶ [Entrepreneurship](#)
- ▶ [Indicators, Quality of Life](#)
- ▶ [Lifelong Learning](#)
- ▶ [Literacy](#)

Acknowledgments Project Economicando (PTDC/EGE-ECO/100923/2008) financed by FCT – Fundação para a Ciência e Tecnologia and cofinanced by FEDER funds through the Programa Operacional Fatores de Competitividade – COMPETE.

References

- Ajello, A. M., Bombi, A. S., Pontecorvo, C., & Zuccheromaglio, C. (1987). Teaching economics in primary school: The concepts of work and profit. *International Journal of Behavioral Development*, 10, 51–69.
- Becker, W. E. (1997). Teaching economics to undergraduates. *Journal of Economic Literature*, 35(3), 1347–1373.
- Davison, D., & Kilgore, J. (1971). A model for evaluating the effectiveness of economic education in primary grades. *Journal of Economic Education*, 3(1), 17–25.
- FES Report. (2007, April 12–13). *EU project FES, financial education & better access to adequate financial services*. In International conference: Financial education & better access to adequate financial services. Best practices and ways forward to combat financial exclusion in Europe, Vienna.
- Laney, J. D. (1988). Can economic concepts be learned and remembered: A comparison of elementary students. *Journal of Economic Research*, 82(2), 99–105.
- Laney, J. D., & Schug, M. (1998). Teach kids economics and they will learn. *Social Studies and the Young Learner*, 11(2), 13–17.
- Lucey, T. A., & Giannangelo, D. M. (2006). Short changed: The importance of facilitating equitable financial education in urban society. *Education and Urban Society*, 38(3), 268–287.
- Marlin, J. W., & Durden, G. C. (1993). An analysis of contributions and contributors in economic education research. *Journal of Economic Education*, 24(2), 171–186.
- National Council on Economic Education. (2003). *Survey of the States: Economic and personal finance education in our nation's schools in 2002*. New York: Author.
- Senesh, L. (1964). *Our working world*. Chicago: Science Research Associates.
- Stern, G. H. (2002). From pocketbook to policymaking, economic education matters. *The Region*, 16(2), 2–5.
- Symmes, S. S., & Gilliard, J. V. (Eds.). (1981). *Economic literacy – What is it? In economic education: Links to the social studies*. Washington, DC: National Council to the Social Studies.
- Varum, C. A., & Ferreira, A. (2011). *Survey of economic education literature in recent decades*. Mimeo, Projecto Economicando, DEGEI, and GOVCOPP, University of Aveiro, financed by FCT/MCTES (PIDDAC) and co-financed by Fundo Europeu de Desenvolvimento Regional (FEDER) através do COMPETE – Programa Operacional Fatores de Competitividade (POFC).
- Walstad, W. B. (1991). A flawed ideological critique. *Journal of Economic Perspectives*, 5(3), 167–173.

Economic and Social Indicators

Cecilia Wong

Manchester Urban Institute, The University of Manchester, Manchester, UK

Synonyms

[Socioeconomic indicators](#)

Definition

Economic and social indicators are statistics that measure different aspects of development and performance of the economy and the society.

Description

The history of using quantitative indicators to guide policy making can be traced back to the 1940s when the monthly economic indicators, e.g., GDP, were first published to measure the buoyancy of the US economy. This was partly a response to the Great Depression happening in the decade preceding World War II when the severe economic depression had devastating effects worldwide. This success in developing a set of reliable economic indicators prompted American social scientists, welfare advocates, and civil servants to develop indicators to measure social change in the mid-1960s. The term “social indicators” was popularized by Raymond Bauer (Bauer 1966), who was commissioned by the National Aeronautics and Space Administration (NASA) to examine the impact of the space program on American society. The idea of compiling social indicators spread rapidly from the USA to international organizations such as the Organization for Economic Cooperation and Development (OECD) and the Social and Economic Council of the United Nations (Horn 1993), which began to develop social accounting and reporting schemes

(e.g., Stone 1971; UN Statistical Office 1975). This wave of research was named the “social indicators movement” by Otis Dudley Duncan (1969).

There is a thorough discussion on social indicators in this encyclopedia. The inclusion of economic and social indicators into one domain is closely linked to the debate over the scope and coverage of indicators (Wong 2006). Some authors deliberately demarcate social indicators from their economic cousins to repudiate the view that social indicators only play an auxiliary role to their economic counterpart (Cazes 1972). Such a distinction is not very helpful because it fails to clarify the sphere of social indicators. Bauer (1966: xvi) thus defined the term “social” as “societal” and saw social indicators as indicators for society. This broader notion of social indicators aims to take into account both social and economic considerations and to integrate them into policy decisions.

Duncan Mac Rae Jr. (1985:9) puts forward the view that “policy indicators” should be all inclusive and that “economic indicators should be joined in a single inclusive domain with the social and related to them. Indicators based on the natural sciences” he considered “should also be treated in this common framework”. It is clear that he broadens the notion of policy indicators with an inclusive approach and emphasizes on their interrelationships.

Economic and social indicators can be used to measure socioeconomic development of the society by having indicators such as GDP, GVA (gross value added), unemployment level, life expectancy, education level, crime and safety, and level of participation in civil society. In order to move away from “GDP fetishism” of measuring development, the UN-Habitat (2012) introduced the City Prosperity Index (CPI) in 2012 toward measuring the broader conception of human and societal well-being in a holistic and integrative manner. The CPI consists of measures on productivity, infrastructure, quality of life, equity and inclusion, environmental sustainability, and governance and legislation; each of these is measured by a number of indicators or subindices (see Wong 2015).

Discussion

Socioeconomic development encapsulates the dynamic process of change (i.e., causes and contributing factors) as well as the state of development (i.e., performance and outcomes) (Wong 2006; Wong and Watkins 2009). Many indicator models thus have a theoretical assumption that there is a causal chain of relationships to be measured by different types of indicators (Wong and Zheng 2019). However, due to the complexity and the lack of strong theoretical underpinning of the precise interrelations between different socioeconomic issues, it is rather difficult to untangle the web of causal relationships (Wong and Watkins 2009). The operation of different aspects of change may reinforce and enhance the restructuring process (such as quality of life and economic competitiveness), but their interaction can also be contentious. Knowing that it is not easy to develop a linear causal chain model of socioeconomic indicators, the solution is often found to have a comprehensive indicator framework (Wong and Zheng 2019; UNDESA 2007).

Cross-References

- GDP Growth
- Indicators, Quality of Life
- Life Expectancy
- Quality of Life
- Social Indicators

References

- Bauer, R. A. (1966). *Social indicators*. Cambridge, MA: MIT.
- Cazes, B. (1972). The development of social indicators: A survey. In A. Shonfield & S. Shaw (Eds.), *Social indicators and social policy, published for the social science research council*. London: Heinemann Educational Books.
- Duncan, O. D. (1969). *Towards social reporting: Next steps*. New York: Russell Sage.

- Horn, R. V. (1993). *Statistical indicators for the economic and social sciences*. Cambridge, MA: Cambridge University Press.
- Mac Rae, D., Jr. (1985). *Policy indicators: Links between social science and public debate*. Chapel Hill: University of North Carolina Press.
- Stone, R. (1971). *Demographic accounting and model-building*. Paris: Organisation for Economic Cooperation and Development.
- UN Statistical Office. (1975). *Towards a system of social and demographic statistics, studies in methods* (Vol. Series F, No. 18). New York: UN Statistical Office.
- UNDESA. (2007). *Indicators of sustainable development: Guidelines and methodologies, department of economic and social affairs* (3rd ed.). New York: United Nations.
- United Nations Human Settlements Programme [UN-Habitat]. (2012). *State of the world's cities 2012/13: Prosperity of cities*. Nairobi: UN-HABITAT.
- Wong, C. (2006). *Quantitative indicators for urban and regional planning: The interplay of policy and methods*. Royal town planning institute library book series. London: Routledge.
- Wong, C. (2015). A framework for 'City Prosperity Index: Linking indicators, analysis and policy'. *Habitat International*, 45, 3–9.
- Wong, C., & Watkins, C. (2009). Conceptualising spatial planning outcomes: Towards an integrative measurement framework. *Town Planning Review*, 80(4–5), 481–516.
- Wong, C., & Zheng, W. (2019). Indicator-based approaches to environmental planning. In S. Davoudi, R. Cowell, I. White and H. Blanco (Eds.), *The Routledge Companion to Environmental Planning and Sustainability*, Routledge, London: 329–345.

Economic and Social Life Goals

- Material and Nonmaterial (Family, Social, Leisure) Values

Economic and Social Values

- Material and Nonmaterial (Family, Social, Leisure) Values

Economic Development

Robert Pittman¹ and Rhonda Phillips²

¹Janus Economics, Atlanta, GA, USA

²Community Resources/Development, Arizona State University, Phoenix, AZ, USA

Synonyms

Local and regional development; Market-measured development

Definition

The process of creating wealth through the mobilization of human, financial, physical, and natural resources to generate marketable goods and services for improving standards of living and quality of life in an area.

Description

Economic development planning is undertaken for the purposes of increasing standards of living through:

- Greater per capita income
- Quality and quantity of employment opportunities
- Increased quality of life for the persons represented within the development district

Economic development should be judged in terms of effects on the community, not just in quantitative terms. Activities, policies, and approaches comprising it should be focused toward goal-oriented change, not change for the purpose of change. This is reflective of the argument of growth versus development.

Who does economic development? Everyone can be involved, from residents to professional

practitioners, and generally, there are offices and activities around economic development found in the following sectors:

- Private sector
- Utilities
- Banks
- Public sector
- National/federal
- Provincial/state/region
- Local
- Nonprofit/nongovernmental sector
- Chambers of commerce
- Industrial development authorities
- Advocacy groups

There are numerous issues around economic development, not the least of which is the issue of political influences. Another area of paramount concern is that of sustainable development which implies integrating fully with all aspects of planning and development in an area. Economic development can be seen as one of the three major pillars of sustainability – economics, equity, and environment – and, as such, has major influences on sustainability.

Another issue of concern in economic development is how to measure, gauge, and respond to outcomes and impacts of various policies, actions, and investments done in the name of economic development. One way is to use community and regional indicators and other methods for evaluating/monitoring/planning future outcomes. However, these measures should reflect not only the “economic” components but also include social and environmental aspects to paint a more holistic picture of what is happening in the area. Traditional measures of economic development, such as the gross domestic or national product, simply do not capture the full impact, and there is much debate around the need to expand beyond traditional approaches to measurement to more fully reflect the goals and desires to be more sustainable. Economic development theory and policy have historically focused only on traditional factors of production to the detriment of

inclusion of a whole range of other considerations in social and environmental dimensions.

Looking more deeply at a definition, economic development can be viewed as both a process and outcome. It is also tied closely to community development, with definitions of each closely related: “community development produces assets for improving the quality of life and business climate and economic development mobilizes these assets to realize benefits for the community. Community development, therefore can be viewed as creating a ‘development ready’ community: a good place to live, work and play with a good labor force, quality of life, infrastructure, education system, government, etc. that facilitates successful economic development. The process of economic development is defined above; the outcome is more and better jobs, increased incomes and wealth and an increase in the standard of living” (Pittman et al. 2009).

Economic development is a process. “Communities successful in economic development devote the appropriate resources to the effort, design good programs, and stay with them for the long-term. Over time a good economic development program pays dividends. If communities approach economic development in a start-and-stop fashion, frequently changing programs as, say, new political officials take office, the likelihood of success is significantly lower. A well-planned and widely supported economic development program based on consensus building through the process of community development has a much higher likelihood of success” (Phillips and Pittman 2009, 5). Schaffer et al. (2006: 61) describe the relationship and synergy between community development and economic development as follows:

We maintain that community economic development occurs when people in a community analyze the economic conditions of that community, determine its economic needs and unfulfilled opportunities, decide what can be done to improve economic conditions in that community, and then move to achieve agreed upon economic goals and objectives.

Cross-References

- [Community Economic Development](#)
- [Development](#)
- [United Nations Development Programme](#)

References

- Phillips, R., & Pittman, R. (2009). *Introduction to community development*. London: Routledge.
- Pittman, R., Pittman, E., Phillips, R., & Cangelosi, J. (2009). The community and economic development chain: Validating the links between CED practice and outcomes. *Community Development*, 40(1).
- Schaffer, R., Deller, S., & Marcouiller, D. (2006). Rethinking community economic development. *Economic Development Quarterly*, 20(1), 59–74.

Economic Development for Communities

- [Community Economic Development](#)

Economic Development Website

- [Praxis](#)

Economic Efficiency

Anastasia Petrou
Department of Economics, University of
Peloponnese, Tripolis, Greece

Synonyms

[Market-measured efficiency](#); [Static and dynamic efficiency](#)

Definition

Economic efficiency is a broad term typically used in microeconomics in order to denote the state of best possible operation of a product or service market. Economic efficiency assumes minimum cost for the production of a good or

service, maximum output, and maximum surplus from the operation of the market. Economic efficiency is the sum, and outcome of, static efficiency and dynamic efficiency (Cabral 2000; Church and Ware 2000; Holmstrom and Tirole 1989; Schmalensee 1989; Tirole 1989).

Description

Under the neoclassical economics tradition, economic efficiency is the sum and outcome of static efficiency and dynamic efficiency. Static efficiency occurs when a market operates under two conditions (Cabral 2000; Church and Ware 2000; Holmstrom and Tirole 1989; Schmalensee 1989; Tirole 1989). In general, both conditions might be violated in the presence of externalities that lead to market failures. The first condition is that every resource is subject to optimal allocation, so every resource produces maximum output or else waste for the production of a given good or service is minimum. This condition is called allocative efficiency. See also X-efficiency for an analysis of efficiency of production (Leibenstein 1966). Overall market surplus, that is, the combined consumer surplus and producer surplus, is used to measure allocative efficiency. Overall surplus accounts for the value that is created because of the operation of a given market or else it measures the benefits to a society from the existence and operation of any given market. Since the price mechanism is responsible for allocating resources at their best use, allocative efficiency losses occur when a price is above marginal cost, that is, it exceeds consumers' willingness to pay. The second condition is that the actual cost of production of a unit of good, that is, unit cost, is the lowest possible cost. This condition is called productive efficiency. Productive efficiency is measured as the sum of technical efficiency and scale efficiency levels. Both technical and scale efficiency levels are measured as deviations from a given production boundary that relates aggregate input quantities to aggregate output quantities in technological terms. Technical efficiency represents a firm's current input-output combination

distance from that boundary. For any technical efficient firm, scale efficiency represents its deviation from the most productive scale size, that is, the distance from the constant returns to scale area (Banker et al. 1984). Consistent estimates of technical and scale efficiency may be derived through the specification and estimation of a production boundary using either parametric (stochastic) or nonparametric (data envelopment analysis) methods (Aigner et al. 1977; Battese and Coelli 1992, 1995; Battese and Corra 1977; Charnes et al. 1979; Coelli et al. 1998; Farrell 1957; Kumbhakar 1996; Olson et al. 1980; Schmidt 1985).

Dynamic efficiency occurs when new products are introduced in the market and the existing production techniques are improved. New products are important as product variety is a determinant of consumer utility, while improvements in the existing production techniques allow adjustments towards minimum production costs. Dynamic efficiency is difficult to measure and highly dependent upon the sector under study (Cabral 2000).

Evidently, economic efficiency is a broad term difficult to measure in all its aspects and phases. The term is commonly used to denote the economic state of minimizing waste and inefficiency while producing maximum output, while an economy is economically efficient, if any changes made to increase the welfare of one person would decrease the welfare of another (Pareto efficiency). In other words, economic efficiency is used as a criterion regarding the operation of markets and economies. Thus, economic efficiency can even be subjective based on measurement assumptions about the desirability of a social good that is created and the degree in which this might serve consumers (marginal social cost and marginal social benefit).

Markets and their operation, through basic market forces such as the prices, employment rates, and interest rates, are responsible for driving an economy and society towards achieving economic efficiency. The operation of markets in such a framework is subject to a number of hypotheses such as the *ceteris paribus* hypothesis in the case of static analysis.

Cross-References

- ▶ [Data Envelopment Analysis](#)
- ▶ [Economic Freedom \(Fraser Institute and Heritage Foundation\)](#)
- ▶ [Nonparametric Analysis](#)
- ▶ [Parametric Analysis](#)

References

- Aigner, D. J., Lovell, C. A. K., & Schmidt, P. (1977). Formulation and estimation of stochastic frontier production function models. *Journal of Econometrics*, 6, 21–37.
- Banker, R. D., Charnes, A., & Cooper, W. W. (1984). Some models for estimating technical and scale inefficiencies in data envelopment analysis. *Management Science*, 30(9), 1078–1092.
- Battese, G. E., & Coelli, T. J. (1992). Frontier production functions, technical efficiency and panel data: With application to paddy farmers in India. *Journal of Productivity Analysis*, 3, 153–169.
- Battese, G. E., & Coelli, T. J. (1995). A model for technical inefficiency effects in a stochastic frontier production function for panel data. *Empirical Economics*, 20, 325–332.
- Battese, G. E., & Corra, G. S. (1977). Estimation of a production frontier model: With application to the pastoral zone of eastern Australia. *Australian Journal of Agricultural Economics*, 21, 169–179.
- Cabral, L. (2000). *Introduction to industrial organization*. Cambridge, MA: MIT Press.
- Charnes, A., Cooper, W. W., & Rhodes, E. (1979). Short communication: Measuring the efficiency of decision making units. *European Journal of Operational Research*, 3, 339.
- Church, J., & Ware, R. (2000). *Industrial organization. A strategic approach*. Boston: Irwin McGraw-Hill.
- Coelli, T., Rao, D. P., & Battese, G. (1998). *An introduction to efficiency and productivity analysis*. Dordrecht, The Netherlands: Kluwer Academic Publishers.
- Farrell, M. J. (1957). The measurement of productive efficiency. *Journal of the Royal Statistical Society, Series A, Part III*, 120, 253–281.
- Holmstrom, B. R., & Tirole, J. (1989). The theory of the firm. In R. Schmalensee & R. Willing (Eds.), *Handbook of industrial organization*. Amsterdam: North Holland.
- Kumbhakar, S. C. (1996). Efficiency measurement with multiple outputs and multiple inputs. *Journal of Productivity Analysis*, 7(2/3), 225–256.
- Leibenstein, H. (1966). Allocative efficiency vs. X-efficiency. *American Economic Review*, 56, 392–415.
- Olson, J. A., Schmidt, P., & Waldman, D. M. (1980). A Monte Carlo study of stochastic frontier production functions. *Journal of Econometrics*, 13, 67–82.
- Schmalensee, R. (1989). Inter-industry studies of structure and performance. In R. Schmalensee & R. Willing (Eds.), *Handbook of industrial organization*. Amsterdam: North Holland.
- Schmidt, P. (1985). Frontier production functions. *Econometric Reviews*, 4(2), 289–328.
- Tirole, J. (1989). *The theory of industrial organization*. Cambridge, MA: MIT Press.

Economic Freedom (Fraser Institute and Heritage Foundation)

Fred McMahon

International Research, The Fraser Institute,
Toronto, ON, Canada

Synonyms

[Economic efficiency](#)

Definition

Economic freedom is the ability of individuals to make their own economic decisions without interference or limitations by government or government's protection of anti-market behavior in favor of powerful groups and these group's abuse of this power to limit market choices of other.

Description

For at least a quarter of a millennium, thinkers have noted the power of economic freedom. When in 1776, Adam Smith famously wrote, “It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest,” he was talking about economic freedom. Neither benevolence nor coercion brought Smith his supper. Instead, it was freely agreed upon economic exchange.

Yet, until a quarter century ago, economic freedom was an intuitive concept, unmeasured, and with no rigorous definition. Michael A. Walker,

then executive director of Canada's Fraser Institute, noted this significant gap in knowledge in the 1984 meeting of the Mont Pelerin Society in Cambridge, UK. He cited the famous passage in *Capitalism and Freedom* written by Milton Friedman and Rose Friedman, in which the authors note that "Historical evidence speaks with a single voice on the relation between political freedom and a free market. I know of no example in time or place of a society that has been marked by a large measure of political freedom, and that has not also used something comparable to a free market to organize the bulk of economic activity." He concluded that no effort to measure economic freedom or test the proposition had been undertaken (Walker 1996, p. 1).

That launched a still ongoing research project that would define and measure economic freedom, coordinated by Walker and Milton and his wife Rose Friedman. Three Nobel Laureates and 61 of the world's top scholars participated in these seminars, which led to the publication of three books of essay exploring the question (see Walker (1988), Block (1991), and Easton and Walker (1992)).

The seminars and the books explored the theoretical and philosophical questions surrounding the nature and meaning of economic freedom. Thanks to these discussions, the idea now can be intuitively and simply presented. Economic freedom is the ability of individuals, families, and businesses to make their own economic decisions free of coercion. The classic summary is as follows:

Individuals have economic freedom when (a) property they acquire without the use of force, fraud, or theft is protected from physical invasions by others and (b) they are free to use, exchange, or give their property as long as their actions do not violate the identical rights of others. An index of economic freedom should measure the extent to which rightly acquired property is protected and individuals are engaged in voluntary transactions. (Gwartney et al. 1996, p. 12)

The project faced an important question when it came to constructing the actual index. This was the nature of the measurement – should it be subjective, based on experts' opinions, or should it be objective, based on third-party

measurements. Several surveys of experts were undertaken, but comparisons across expert opinions proved difficult since few possessed expert knowledge of more than one or two nations.

On the other hand, an objective measure had strong attractions. The use of third-party data meant that the index was reproducible by other researchers, a key principle of empirical research. Some survey data were also included. While hard data would have been preferable, the use of third-party surveys maintained the reproducibility of the survey, since other researchers have access to these surveys. More importantly, it maintained objectivity. The authors and any expert panel chosen by them would have biases that would influence the results, perhaps even influence scores for nations they liked or disliked for entirely noneconomic reasons. The use of third-party data maintains the necessary distance between the researchers and the results.

The first index appeared in 1996, and since then the index has expanded to include five equally weighted areas: size of government, legal structure and security of property rights, sound money, freedom to trade, and regulation of credit, labor, and business. Forty-two variables are used to measure these areas.

Since the publication of the first edition of the *Economic Freedom of the World* in 1996, there have been about 350 scholarly and policy articles that have used the economic freedom indexes to explore the relationship between economic freedom and other socioeconomic outcomes (<http://www.freetheworld.com/papers.html>). For example, it was used as the key measure of good institutions in the International Monetary Fund's (2005) recent investigation of institutions, its 2005 report *World Economic Outlook: Building Institutions*.

The Heritage Foundation's work on economic freedom went in another direction and combined third-party data with subjective analysis. Its first report appeared in 1995 (Johnson & Sheehy), but unlike the Fraser study, it was not preceded by extensive earlier studies devoted to the analysis of economic freedom and developing an index based on that analysis.

Heritage uses ten categories: business freedom, trade freedom, fiscal freedom, government

spending, monetary freedom, investment freedom, financial freedom, property rights, freedom from corruption, and labor freedom. The two indexes would differ sometimes quite a bit for individual nations, for example, Israel, in early editions, but these differences have tended to narrow over the years.

Nonetheless, the overlap is almost complete with only the organization being significantly different.

- Government spending and fiscal freedom or size of government, depending on index, measures the space government takes up, limiting the scope for free exchange and also involving property expropriation to fund the spending.
- Monetary policy measures expropriation through inflation.
- Legal structure and property rights measures whether property is protected with fairness in the legal system so that the powerful cannot use their power to limit the economic freedom of the weak.
- Freedom to Trade Internationally measures whether people can make free exchanges across borders.
- Fraser's regulation of credit, business, and labor, and the Heritage's business, investment, financial, and labor freedom measure the extent to which freedom exchange is limited by regulations; individuals should be able to hire and work for whom they wish; borrow, lend, or invest with whom they wish; and set up a business and close it without undue red tape.

Unlike the Heritage index, the Fraser index does not have a full area devoted to "Freedom from Corruption." Instead, the Fraser index includes only one variable on "Extra payments/Bribes/Favoritism" out of the 16 variables in the "Regulation" area. Corruption is a controversial topic in economics. Corruption on one hand can allow voluntary exchange which would have been prohibited without money passing hands; on the other hand, corruption is clearly a tax, limiting economic freedom and, often worse, particularly if payoffs have to be made to competing officials who may or may not have the power to facilitate

the transaction, potentially a criminal tax without the service.

There are a couple other differences between the two projects. The Fraser Institute has established the Economic Freedom Network of the world which has member institutions and co-publishers of the index in 85 different nations and territories, including Israel and the Gaza Strip, Pakistan and India, Cambodia and Vietnam, Georgia and Russia, and Colombia and Venezuela to name a few (<http://www.freetheworld.com/member.html>). As well, the Fraser Institute has spun off a number of regional reports, for example, the *Economic Freedom of the Arab World: Annual Report* (Al Ismaily et al. 2008, 2010) (<http://www.freetheworld.com/regional.html>).

Benefits of Economic Freedom

Most of the research on economic freedom seems to have used the Fraser Institute index, likely because it is replicable. A search of the social science citation index in June 2011 for 2009 to 2011 found 103 citations for the Fraser report compared to 31 for the Heritage report, once duplicates were eliminated for both.

Nonetheless, the now high level of correlation between the two reports suggests that they are measuring the same thing, albeit by slightly different methods. However, given the larger volume of research based on the Fraser report, the discussion of the benefits for economic freedom will be based on research using this report.

Economic freedom creates positive social and economic dynamics, which can be described intuitively. In economically free nations, people succeed by creating goods or services that others want to buy. In other words, people get ahead by creating benefits for other people. It also generates economic growth as discussed below.

Where economic freedom does not exist, economies grow slowly, if at all, and people gain by rent seeking and limiting the possibilities of others. In the case of economic freedom, the biggest gains are achieved by people who increase the size of the pie for everyone; without economic freedom, the biggest gains are by those who cut a bigger slice of the pie for themselves to the disadvantage of others.

This is a key reason that economic freedom has been shown to promote democracy and other freedoms (Griswold 2004). The dynamics of a society where individuals gain by promoting the well-being of other individuals (by efficiently creating goods and services people want) differs dramatically from the dynamics of society where, in the absence of economic freedom, rent seeking, and power hoarding to the disadvantage of others is the path to increased wealth and power. The first dynamic is conducive to a stable, peaceful, civil society marked by freedom; the latter produces dynamics that create incentives to reduce freedoms.

Intuitively, one would expect that economic freedom would have a positive impact on economic growth because economic freedom creates a climate that allows individuals and business to allocate their resources to the highest end use. However, the question is ultimately an empirical one. In one of the first studies, Easton and Walker (1997) found that changes in economic freedom have a significant impact on the steady-state level of income even after the level of technology, the level of education of the work force, and the level of investment are taken into account.

De Haan and Sturm (2000) show empirically that positive (negative) changes in economic freedom lead to positive (negative) changes in economic growth rates. Using the economic freedom index published in Gwartney et al. (1996) and per capita GDP data for 80 countries, their results indicate that after accounting for educational level, investment, and population growth, changes in economic freedom have a significant impact on economic growth.

Gwartney and Lawson (2004) examined the impact of economic freedom on economic growth but with a specific focus on investment and productivity. They found that economic freedom strongly promotes investment. Nations with an economic freedom score below 5 (on a scale from 0 to 10 where higher value indicates higher level of economic freedom) attracted US\$845 in investment per worker over the period from 1980 to 2000 and only US\$68 per worker in foreign direct investment. Nations with an economic freedom score above 7 attracted US\$10,871 in

investment per worker, including US\$3,117 of foreign direct investment.

Moreover, investment is more productive in economically free nations. Holding constant factors thought to affect growth and productivity, such as initial per capita GDP, tropical location, coastal location, change in human investment, and public investment, Gwartney and Lawson found that an increase of one percentage point in the ratio of private investment to GDP leads to increases in the growth rate of per capita GDP by 0.33 percentage point in an economically free country. The same increase in private investment in a less economically free country increases the growth rate of per capita GDP by 0.19 percentage point. In other words, investment in economically free nations (with a score above 7) had a positive impact on growth that was 70% greater than investment in nations with poor levels of economic freedom (below 5).

Using the same regression model, Gwartney and Lawson also calculated the impact of economic freedom on overall growth through both direct and indirect effects. They found that if a nation increased its economic freedom by one unit (on a scale from 0 to 10) in the 1980s, it would have seen increased growth of 1.9 percentage points a year over the period from 1980 to 2000. Because of the high rates of growth associated with economic freedom, they also found that over the long term economic freedom explains over two-thirds of the cross-country variation in GDP.

Increases in economic freedom also reduce poverty (Norton and Gwartney 2008). Specifically, the weighted \$1-per-day poverty rate was 29.7% in 2004 for countries with EFW ratings of less than 5, but only 7.7% for countries with EFW ratings between 6 and 7; the \$2-per-day poverty rate declines from 51.5% to 46.2% to 38.9% as one moves from the least to the most free economies. Moreover, a one-unit increase in the EFW rating between 1980 and 1995 was associated with a 5.21 percentage-point reduction in the \$1-per-day poverty rate and a 5.22 percentage-point reduction in the \$2-per-day poverty rate.

Norton and Gwartney also examined the relationship between economic freedom and other

measures of well-being. In the mostly unfree economies, 72.6% of the population has access to safe water compared to nearly 100% in the mostly free economies. Life expectancy of people in the mostly free group is over 20 years greater than for those in mostly unfree economies. Mostly free economies have more than twice as many physicians per 1,000 population than mostly unfree economies. For every 1,000 births, 64 more babies survive in mostly free economies per year than in the mostly unfree countries. For every 1,000 children under age of five, 109 more children survive in mostly free countries each year than in those countries that are mostly unfree.

A large body of peer-reviewed empirical research shows similar results as well as economic freedom's relationship with other positive outcomes. For a sample of literature on economic freedom, see the website <http://www.freetheworld.com>. For a summary of literature on economic freedom and economic prosperity, see Berggren (2003) and Doucouliagos and Ulubasoglu (2006).

While correlation is not causation, it may be useful for illustrative purposes to examine to examine the following tables (or charts) (Gwartney et al. 2011).

Cross-References

- [Good Governance and Happiness in Nations](#)
- [World Bank Government Indicators](#)

References

- Al Ismaily, S., Karabegovic, A., & McMahon, F. (2008). *Economic freedom of the Arab world: 2008*. Co-published by: The Friedrich Naumann Foundation for Liberty, Cairo office; The International Research Foundation, Muscat; and The Fraser Institute, Vancouver.
- Al Ismaily, S., Karabegovic, A., & McMahon, F. (2010). *Economic freedom of the Arab world: 2010*. Co-published by: The Friedrich Naumann Foundation for Liberty, Cairo office; The International Research Foundation, Muscat; and The Fraser Institute, Vancouver.
- Berggren, N. (2003). The benefits of economic freedom: A survey. *Independent Review*, 8(2), 193–211.
- Block, W. (Ed.). (1991). *Economic freedom: Toward and theory of measurement*. Vancouver: The Fraser Institute.
- De Haan, J., & Sturm, J.-E. (2000). On the relationship between economic freedom and economic growth. *European Journal of Political Economy*, 16, 215–241.
- Doucouliaos, C., & Ulubasoglu, M. A. (2006). Economic freedom and economic growth: Does specification make a difference? *European Journal of Political Economy*, 22(1), 60–81.
- Easton, S. T., & Walker, M. A. (Eds.). (1992). *Rating global economic freedom*. Vancouver: The Fraser Institute.
- Easton, S. T., & Walker, M. A. (1997). Income, growth, and economic freedom. *The American Economic Review*, 87(2), 328–332.
- Griswold, D. T. (2004). *Trading tyranny for freedom: How open markets till the soil for democracy* (Trade policy analysis, 26). Washington, DC: Cato Institute.
- Gwartney, J., & Lawson, L. (2004). *Economic freedom of the world: 2004 annual report*. Vancouver: The Fraser Institute. www.freetheworld.com.
- Gwartney, J., Lawson, R., & Block, W. (1996). *Economic freedom of the world: 1975–1995*. Vancouver: The Fraser Institute.
- Gwartney, J., Lawson, R., & Hall, J. (2011). *Economic freedom of the world: 2011 annual report*. Vancouver: The Fraser Institute. www.freetheworld.com.
- International Monetary Fund. (2005). *World economic outlook: Building institutions*. Washington, DC: Author.
- Johnson, B., & Sheehy, T. (1995). *Index of economic freedom*. Washington, DC: Heritage Foundation.
- Norton, S. W., & Gwartney, J. D. (2008). Economic freedom and world poverty chapter 2. In J. Gwartney & R. Lawson (Eds.), *Economic freedom of the world: 2008 annual report* (pp. 23–40). Vancouver: The Fraser Institute. <http://www.freetheworld.com>.
- Walker, M. A. (Ed.). (1988). *Freedom, democracy, and economic welfare*. Vancouver: The Fraser Institute.
- Walker, M. A. (1996). The historical development of the economic freedom index. In J. Gwartney, R. Lawson, & W. Block (Eds.), *Economic freedom of the world: 1975–1995* (pp. 1–7). Vancouver: The Fraser Institute.

Economic Growth

Anastasia Petrou
Department of Economics, University of
Peloponnese, Tripolis, Greece

Synonyms

[Endogenous economic growth](#); [GDP growth](#);
[Neoclassical economic growth](#)

Definition

Economic growth is about accounting of the observed pattern, across countries and across time, in levels and rates of growth of per capita income (Lucas 1988). It is the process by which the state of material well-being of a nation and the productive capacity of an economy increase over time to bring about rising levels of national output and income (Barro & Sala-i-Martin 2004). ► **Economic development**, on the other hand, is a multi-dimensional process involving changes in individual behaviors, social structures, popular attitudes, and national institutions (Basu 1997). Development, in that sense, is about achieving not only growth but also equity, poverty reduction, political, and economic stability and democracy (Basu). In short, development is a process of improving the quality of life of all human lives by improving all the economic, social, political, and institutional mechanisms that operate in the public and private sectors of an economy (Basu). The third key process refers to ► **human development**, a concept that evolved rapidly under the commonly held view that the quality of development matters. According to Ranis et al. (2000), while economic growth provides the resources to permit sustained improvements in human development, it is improvements in the quality of the labor force that is an important contributor to economic growth.

Description

The Industrial Revolution in England in the 1870s marks the emergence of systematic and intellectual interest in understanding how and why economic growth occurs. Theories of economic growth date as far back as classical economics of Adam Smith, David Ricardo, Thomas Malthus, and Karl Marx. The major preoccupations of classical economics were about the relationship between free markets – with everyone pursuing their own personal gain – and the development of a good society. The key questions that emerged in the eighteenth and the nineteenth centuries were “what propels economic growth?” and “what

determines its distribution?” Classical theorizing included approaches of rational competitive behavior and equilibrium, the role of diminishing returns and their relation to the accumulation of physical capital, the interplay between per capita income and the growth rate of the population, the effects of technology changes in the forms of production, the role of comparative advantage and specialization, and the trade effects on economic growth. Despite different theoretical methods, concepts, and outcomes, classical economic thinking about growth has two basic ingredients in common: (a) the political economy approach to economic growth where issues such as class, power, individual equity, and the search of a good society played a critical role and (b) the search of factors that limit growth and the rate of capitalist accumulation (Cypher & Dietz 2009).

Modern Growth Theory

After the 1870s, interest among economists in examining the sources of economic growth and in understanding the development of capitalist society disappeared from view for a time. The neoclassical marginalist revolution redirected the research agenda focus on the utility-maximizing behavior of individuals and the profit-maximizing rational actions of perfectly competitive firms. Modern growth theory emerged in the 1930s with the Harrod-Domar model which attempted to integrate Keynesian tradition in the analysis of the economy’s increasing production capacity. The principal mechanism of growing production is savings and investment. Actually, Sir Roy Harrod of the University of Oxford, UK, and Evsey Domar of the Massachusetts Institute of Technology, USA, developed in 1939 and 1946, respectively, broadly similar explanations for the aggregate economic process. According to the Harrod-Domar model, economic growth is the result of abstention from current consumption. Households hold back income from consumption in a year making available funds that firms use to buy capital goods. These goods add to the stock of capital in the economy and endow it in the future with an even larger capacity for production and so an economy grows. The two basic assumptions of the Harrod-Domar model involve (a) fixed ratios of the inputs

in production and (b) constant returns to scale. Fixed proportions and the lack of technological flexibility were acknowledged as the sources of disequilibrium that called for public policy intervention and manipulations if the assumed model stability was to be achieved (Ray 1998).

The Neoclassical Growth Model

Solow's seminal contribution to the economic growth literature is usually considered as a response to the unstable disequilibrium behavior of the Harrod-Domar model. Solow (1956) made the now-standard neoclassical assumption of capital and labor substitutability in production, using the Cobb-Douglas production function subject to the law of eventually diminishing returns. For any rate of savings a steady-state equilibrium level of income per person can be achieved. The possibility that public policy can impact the growth rate of countries is again present, however via policies that affect the rate of savings or the population growth rate (Cypher & Dietz 2009). Solow's model led to the hypothesis of international convergence as it infers that regardless of the initial per capita capital stock, two countries with similar savings rates, depreciation rates, and population growth rates will converge to similar standards of living in the long run. This is the so-called extreme version of this concept, known as "unconditional convergence, under which relative income differences between countries must die away in the long run. A weaker version, called conditional convergence, states that controlling for possible differences in cross-country parameters, such as in the rates of savings, initially poor countries grow faster. Convergence is intimately connected to the notion of diminishing marginal productivity of capital: it is based on the idea that a poorer country has a marginal return to capital and therefore exhibits a higher rate of per capita growth" (Ray 1998: 89). The debate on the mere existence of convergence, and of its types, is open and a large body of literature, and in particular the endogenous growth empirical literature today addresses these themes (Islam 2003). Actually, the literature on convergence has developed parallel and in conjunction to the literature on endogenous growth models.

New Growth Theory or Endogenous Growth Theory

New growth theorists made a great effort to refine the Solovian view by building models that endogenize technology and explain the innovation-driven growth (Aghion & Howitt 1992; Lucas 1988; Romer 1986). Comprehensive surveys in the field of endogenous growth theories include Aghion & Howitt (1998), Temple (1999), and Islam (2003). New growth models initially developed in the late 1980s in order to overcome the problems left unresolved by the Solow model. Actually, new growth theories were motivated by researchers largely "unsatisfied" with the exogenous character of technological change assumed by the Solow-type models. The Solow model, under its basic assumptions of constant returns to scale of the production function and of decreasing marginal productivity of capital in the long run, predicted economic growth up to an end point. The only possible source of permanent growth was technological change, but technological change was left unexplored by the model and was indeed considered exogenous. Another shortcoming of the neoclassical growth model was the assumed public good character of technology. Technology was conceived as a good that is freely available to all countries, albeit this neoclassical assumption was in mere contrast with the empirical evidence on the persistence of growth rate differences over long periods of time (Barro 1991; Barro & Sala-i-Martin 1995). Trying to overcome this inconsistency, Romer (1986) and Lucas (1988) in their seminal contributions explicitly analyzed that technological knowledge, as a public and non-rival good, introduces important externalities in the economic system and it may explain existence of increasing returns to scale in the production function. Technological knowledge and the way that it accumulates through innovations and human capital improvements explain how an economy can achieve a permanent positive effect on the rate of growth of production output. Grossman and Helpman (1990) and Romer (1990) moderate the features of knowledge, arguing that knowledge is at least partly an appropriable good, and the positive outcomes may be appropriated by the

knowledge producer in the form of monopoly rents. These models release the assumption of perfect competition and actually introduce monopolistic competition, and economic growth takes the form of an increasing variety of intermediate capital goods. Endogenous growth models evolve rapidly around new and more complicated assumptions about the nature of knowledge production and the organization of market competition. Aghion and Howitt (1992) model innovation as an uncertain and nondeterministic process with no certain outcomes for knowledge producers and point out that technological competition and economic growth is characterized by Schumpeterian “creative destruction,” wherein the monopoly power associated with an innovation is only temporary. In this framework, economic growth in the long run is attributed to the amount of human capital employed in the research sector, the degree of market power in the intermediate capital goods sector, and the productivity in the research sector (Castellacci 2007).

Evolutionary Theory of Economic Change

The prominent role of innovation and technological knowledge for economic growth has been increasingly recognized in the last three decades, though in a different theoretical and methodological framework, that of the modern evolutionary economics. Evolutionary thinking of economic change, inspired from Schumpeter work on innovations, and Veblen’s Institutional theorizing influentially contribute to the understanding of economic change and growth (Dosi 1982; Nelson & Winter 1982). Modern evolutionary models of economic growth and change further criticize neoclassical and new growth theories and introduce a rather different research agenda. They emphasize the evolutionary character of economic and technological change and formulate distinctive assumptions about the engine of growth. The basic features of the evolutionary theory of economic change relate to the following understandings:

- Technological change and the way that it evolves are critical for economic growth, while technological advance is essentially a disequilibrium process. Economic growth is

seen as a non-predictable process, because fundamental sources of uncertainty in the economic system exist.

- Economic and technological change are both dynamic processes, wherein firm capabilities and firms’ different routines are central elements leading to rather different production outcomes.
- The recognition of a microeconomic approach to economic growth, focusing on the evolutionary patterns of firms’ change, introduced the need for understanding the institutional environment within which these patterns of technological change evolve.

Measurement Issues of Economic Growth

Gross Domestic Product (GDP) per capita has long been used for measuring economic growth and comparing living standards across countries. GDP per capita is considered as an accurate tool that measures the value of the goods and services produced within a country during a given period of time. GDP actually measures the production of those activities that fall within the boundary of the System of National Accounts. The production of these goods and services is valued at market prices. Yet, per capita income may increase or decrease with respect to net transfers from abroad, in this case Gross National Income (GNI) is more relevant to the material well-being of a country’s population. Both GDP and GNI, in order to be comparable between countries, need to be converted to a common currency using purchasing power parity (PPPs) exchange rates. Nowadays, the consensus on the use of GDP per capita as a good proxy measure of material well-being is becoming less obvious for both economists and policy makers, as modern economies move from a situation of scarcity to a situation of plenty. Once a certain level of material needs has been met, there is a strong indication of existing divergence between added income and added well-being. Several studies have been published in the last two decades on alternative measures of well-being/► [quality of life](#)/► [happiness](#)/► [societal progress](#), all terms closely related to each other (Sirgy et al. 2006). Academics, researchers, official statisticians, and international

organizations have proposed different measures as alternatives to the traditional GDP measures. The “Istanbul Declaration,” adopted in 2007 by the European Commission, the OECD, the United Nations, the United Nations Development Programme, and the World Bank, recognized the need to go “beyond GDP” when measuring the well-being of people and nations (Giovannini et al. 2007).

An influential policy report highlighting the need to better measures of well-being for designing policies and assessing social progress is the report by the Commission on the Measurement of Economic Performance and Social Progress known as the Sarkozy Report. The Sarkozy Report advocates the use of subjective measures of well-being. The Report is comprised by three core thematic segments entitled “Classical GDP Issues,” “Quality of Life,” and ► “Sustainable Development and Environment” and proposes a conceptual distinction among four types of measures: (1) production (economic performance), (2) material living level (economic well-being), (3) overall (multidimensional) well-being, and (4) well-being of current versus future generations (► sustainability). This conceptual distinction of measures actually asserts the limited power or the deficiency of GDP to measure social progress and actual well-being. The Sarkozy Report advocates a shift of emphasis from a production-oriented measurement system to one focused on the well-being of current and future generations (Easterlin 2010). This shift in orientation on what to measure as progress and development is even stronger than previously successful attempts like the ► Human Development Index (HDI), as it advocates not just the addition of new statistics but a shift in the orientation of the entire measurement system.

Cross-References

- Economic Development
- Gross Domestic Product (GDP) and Happiness
- Happiness
- Human Capital
- Human Development
- Human Development Index (HDI)

- Quality of Life (QOL)
- Societal Progress
- Sustainability
- Sustainable Development

References

- Aghion, P., & Howitt, P. (1992). A model of growth through creative destruction. *Econometrica*, 60, 323–351.
- Aghion, P., & Howitt, P. (1998). *Endogenous growth theory*. Cambridge, MA: MIT Press.
- Barro, R. (1991). Economic growth in a cross-section of countries. *Quarterly Journal of Economics*, 106, 407–443.
- Barro, R., & Sala-i-Martin, X. (1995). *Economic growth*. Boston: McGraw-Hill.
- Barro, R., & Sala-i-Martin, X. (2004). *Economic growth* (2nd ed.). Cambridge, MA: MIT Press.
- Basu, K. (1997). *Analytical development economics: The less developed economy revisited*. Cambridge, MA/London: MIT Press.
- Castellacci, F. (2007). Evolutionary and new growth theories. Are they converging? *Journal of Economic Surveys*, 21(3), 585–627.
- Cypher, J. M., & Dietz, J. L. (2009). *The process of economic development*. London: Routledge.
- Dosi, G. (1982). Technological paradigms and technological trajectories. *Research Policy*, 11, 147–162.
- Easterlin, R. (2010). Well-being, front and center: A note on the Sarkozy report. *Population and Development Review*, 36(1), 119–124.
- Giovannini, E., Hall, J., & D’Ercole, M. M. (2007). *Measuring well-being and societal progress*. Organization for Economic Co-operation and Development. Background paper for the conference ‘Beyond GDP’, 19–20 November, Brussels.
- Grossman, G., & Helpman, E. (1990). Trade, Innovation, and Growth. *The American Economic Review*, 80(2), 86–90.
- Islam, N. (2003). What have we learnt from the convergence debate? *Journal of Economic Surveys*, 17(3), 309–362.
- Lucas, R. E. (1988). On the mechanisms of economic development. *Journal of Monetary Economics*, 22, 3–42.
- Nelson, R., & Winter, S. (1982). *An evolutionary theory of economic change*. Cambridge, MA: Harvard University Press.
- Ranis, G., Stewart, F., & Ramirez, A. (2000). Economic growth and human development. *World Development*, 28(2), 197–219.
- Ray, D. (1998). *Development economics*. Princeton, NJ: Princeton University Press.
- Romer, P. (1986). Increasing returns and long-run growth. *Journal of Political Economy*, 94, 1002–1037.
- Romer, P. (1990). Endogenous Technological Change. *Journal of Political Economy*, 98(5), S71–S102.

- Sirgy, M. J., Michalos, A. C., Ferriss, A. L., Easterlin, R. A., Patrick, D., & Pavot, W. (2006). The quality-of-life (QOL) research movement: Past, present and future. *Social Indicators Research*, 76, 343–466.
- Solow, R. (1956). A contribution to the theory of economic growth. *Quarterly Journal of Economics*, 70, 65–94.
- Temple, J. (1999). The new growth evidence. *Journal of Economic Literature*, 37, 112–156.

Economic Opportunity Loss

- [Opportunity Cost](#)

Economic Performance Indicator

- [Cost-Efficiency Indicators](#)

Economic Rationalism

- [Economic Rationality Assumption](#)

Economic Rationality Assumption

Peter DiRita
University of Sydney, Baulkham Hills, NSW,
Australia

Synonyms

[Bounded rationality](#); [Economic rationalism](#); [Logical thought](#); [Rational behavior](#); [Rational choice](#); [Rationalism](#); [Rationality](#); [Reasoning and economic rationality](#); [Utility maximization](#)

Definition

The economic rationality principle is based on the postulate that people behave in rational ways and

consider options and decisions within logical structures of thought, as opposed to involving emotional, moral, or psychological elements.

Description

The economic rationality principle is based on the postulate that people behave in rational ways and consider options and decisions within logical structures of thought, as opposed to involving emotional, moral, or psychological elements. In relation to choosing and undertaking options within publicly funded service provision, the principle assumes that people will act in a reasonable fashion by behaving and thinking in a way that a reasonable person would, given the situation. Effectively, this can mean weighing up the pros and cons and choosing from what is available as opposed to seeking alternative measures of support. Applying the rationality principle through policy and publicly funded programs in this context implies that services designed to meet a pre-defined need is a sufficient means to account for quality of life by addressing localized and broader socioeconomic issues impacting on the community.

A central tenet of the economic rationality principle is that self-interest provides a guide for optimizing outcomes and, to some degree, allows for a regard for others that affords beneficial social results (including economic growth) (Friedman 2005). To a large extent, the latter rests on unintended outcomes delivering beneficial results. Similarly, it is assumed that the trickle-down effect of boosting the economic wealth and capacity of the community will in turn deliver economic benefits to those with lower economic participation and power, based on the notion that the self-interest of those with greater wealth and economic power will deliver benefits to others. Therefore, while economic policy and funding initiatives target key factors aimed at enhancing and sustaining general well-being, broader economic policy and measures will provide an additional boost to overall quality of life through unintended outcomes of the macro level. The association between rational behavior and

instrumentalism within economic principles underlying policy and funding frameworks highlights the rational choice approach (Zafirovski 2003). This association constructs the conception of rational behavior as economic rationality in linking providers with consumer utility.

However, the conception of rational behavior and self-interest assumed in this context fails to account for the emotional and psychological factors involved in choice and behavior nor does it consider the boundedness experienced by people hoping to address individual and group needs, wants, and desires. The conception of rational action assumes that the relationship between economic, instrumental, egoistic, and private motivations and intentions is restricted to a single class. The underlying assumption of this procedure is that only such goals and the corresponding actions, means, and choices are rational, and others nonrational or even irrational (Zafirovski 2003). The association presented within institutionalized conventions for choice making (in the context of matching available services with individual need) portrays the intended outcome or policy aim as a reasonable choice for consumers to make and reasonable outcome for them to align their motivations. This may be viewed as a demarcation between the reasonable and the preferred (Goux 2001). In effect, the person is bounded by the situation and surrenders any priority in deviant interests by internalizing through action and the uptake of the service – the logical and functional choice-making process available. This internalization provides a structure for subjective and objective understanding through a reasoning logic.

People considering decisions and options within a given situation of available services and supports do so in light of the immediate institutional context while involving personal biases and interpretative stances that make up their lived experience. In considering service options that they have not had a role in designing, people are forced to choose what they believe comes the closest to meeting the needs of their situation. Making rational choices even in this context suggests that there is a constraint upon what is considered reasonable. This is both in terms of what a reasonable person would do and in terms of what

is considered as reasonable to offer given the broader socioeconomic climate. Indeed, the broader economic construct creates overarching parameters for reasonable actions and choices that establish a stable choice-making situation. Over time, this becomes a set of conventions that establishes what is possible and what is not, irrespective of what may be the person's need and interest. In this sense, deliberative strategies coalesce with institutionalized conventions to deliver a subtle coercion of preferred outcomes as a routinized set of directions (Raines and Jung 1992). What is aimed at quality of life is subsumed within the parameters of conventions and reasonable outcomes, as divined by community norms and economic priorities.

People's deliberations will tend to be governed by the nature of this construct by acknowledging that only certain types of decisions can be made relative to the immediate situation and that quality of life is defined by inherent understanding of what is reasonable at the time and in the situation.

This context conflates consent with choice, by involving contractualism through institutional design (Yeatman 1996), as a self-regulation principle. In regard to the development of individualized services and innovative models of support, the intent of a consumer-driven service delivery market does not shift the notion of blame from the recipient of service (Kerr and Savelsberg 2001). Such a model of competition reflects the rational choice model of individualism with the assumption that individuals will regulate services to further their interest (Kerr and Savelsberg 2001). The intent of increasing choice through purchasing power and sidelining poor-quality services (Jacobsen 1997) and the side effect of distancing government ownership of services increase the vulnerability of persons who factor lower in the broader community cost/benefit calculation. Economic rationalism and competitive environments tend to narrow the available choices and lower the available redress for recipients of services.

Human economic behavior is influenced by interpersonal social considerations involving trust, reciprocity, fairness, and other socio-moral connections (Arsenio 2008) whose relationship has a deep impact on economic choices and beliefs. At the same time, behaviors are

guided by cognitive processes that are deeply and systematically irrational. Adult economic decisions can be affected by arbitrary framing, irrelevant emotional arousal, and other biases that can render economic decision making flawed. Rational behavior can include not just purely instrumental ends, such as utility, profit, or wealth, but also social ones. It is a fundamental fallacy of rational choice theory to subsume intended ends of action to just one type (the economic) (Zafirovski 2003). In a given situation, restrictions limit the leeway of action (such as income, pricing, availability) as well as the (expected) reactions of other individuals. There are the various alternatives within the leeway, and in reality, the person would only have limited information and therefore limited awareness of consequences on which to weigh up options and directions. Ensuing preferences relay intentions that in themselves reflect values and socialization, eventually choosing an option that matches closely with these influences – hence, rational choice within the constraints of uncertainty (Kasper 1997; Kirchgaessner 2005).

The broader context of economic rationalism as a principle of practice and philosophy underpinning policy development discounts moral argumentation and construes a particular understanding of individualism and access (Rowse and Mitchell 2005). The overarching context of economic priorities and reasonableness in lieu of community norms forces a compromise between individual interests and a satisfying quality of life and political priorities.

References

- Arsenio, W. F. (2008). Psychological limits of economic rationality: Relational contexts and cognitive irrationality. Commentary on Gummerum, Hanoch and Keller. *Human Development*, 51, 268–273.
- Friedman, D. (2005). Economics and evolutionary psychology. In R. Koppl (Ed.), *Evolutionary psychology and economic theory*, Advances in Austrian economics, Vol. 7. Emerald Group Publishing. eBook download. Retrieved 18 April 2011, from http://www.daviddfriedman.com/Academic/econ_and_evol_psych/economics_and_evol_psych.html
- Goux, J. (2001). Utility: Equivocation and demoralization. *Discourse*, 23(3), 3–23.
- Jacobsen, J. (1997). Market theory in human services: Dancing with wolves or better choice? *Interaction*, 11(1), 21–25.
- Kasper, W. (1997). Ignorance, discovery and choice – A requiem for economic rationalism. *Australian Journal of Legal Philosophy*, 22, 1–14.
- Kerr, L., & Savelsberg, H. (2001). The community service sector in the era of the market model: Facilitators of social change or servants of the state. *Just Policy*, 23, 22–32.
- Kirchgaessner, G. (2005). *The weak rationality principle in economics*. Paper presented at the Workshop on “Rationality and Commitment”, University of St. Gallen, May 13–15, 2004 – Revised Version, Sept 2004.
- Raines, J., & Jung, C. R., Jr. (1992). Schumpeter and Knight on economic and political rationality: A comparative restatement. *Journal of Socio-Economics*, 21(2), 109–124.
- Rowse, T., & Mitchell, D. (2005). From social issues to social policy: Engaging professionals and the public. - *Australian Journal of Social Issues*, 40(1), 155–180.
- Yeatman, A. (1996). Interpreting contemporary contractualism. *Australian Journal of Social Issues*, 31(1), 39–54.
- Zafirovski, M. (2003). Human rational behavior and economic rationality. *Electronic Journal of Sociology*, 7, ISSN: 1198 3655. http://www.sociology.org/content/vol7.2/02_zafirovski.html.

Economic Value

Evangelos Charalambakis

Economic Analysis and Research Department,
Special Studies Section, Bank of Greece, Athens,
Greece

Synonyms

Financial value

Definition

Economic value is the worth of a good or service, which is determined by the market.

Description

A central question in economics is: How we assess the economic value of a good? Among

the competing schools of economic theory there are differing metrics for value assessment, which constitute what is widely known as the theory of value. Therefore, there are different theories of value based on various schools of economic theory.

The classical economic theory of value states that the value of a good or service is determined by the price, which in turn derives from the amount of labor invested in the production of a good. This economic concept is widely known as the labor theory of value, which was developed by Adam Smith (1776[1981]), David Ricardo (1817) and Karl Marx (1865[1975]). Smith argued that price equals the value of labor. When capitalists begin to organize the labor of others, however, price includes the profits of the capitalists, i.e., the difference between the market price and the cost of wages and inputs. According to David Ricardo, the value of a good is based on two sources: scarcity and the quantity of labor to produce it. Marx distinguished between the “value in use” and “exchange value.” The value in use refers to what utility a commodity provides to its buyer. The exchange value addresses how much labor time the sale of the commodity can claim. Marx also uses the concept of “socially necessary abstract labor-time.” The “socially necessary” labor refers to the quantity required to produce a commodity “in a given state of society, under certain social average conditions or production, with a given social average intensity, and average skill of the labor employed.” Unlike previous classical economists, Marx argues that the value of a product is determined more by societal standards than by individual conditions. This explains why technological breakthroughs lower the price of commodities and put less advanced producers out of business. He also makes the distinction between productive labor and unproductive labor. Finally, Marx states that it is not the labor per se that creates value but the labor power sold by free wage workers to capitalists. Only wage workers of productive sectors of the economy produce value.

The neoclassical economic theory was originated by Thorstein Veblen (1900) and is based on three fundamental assumptions. First, individuals have

rational expectations among outcomes. Second, individuals maximize utility and firms maximize their profits. Third, individuals act independently on the basis of full and relevant information.

In neoclassical economics, the value of a good or service is determined by the price it would derive from an open and a competitive market, which in turn is determined by the demand for the good relative to the supply of the good. Buyers attempt to maximize their gains from getting goods, and they do this by increasing their purchases of a good until what they gain from an extra unit is just balanced by what they have to give up to obtain it. In this way they maximize “utility,” i.e., the satisfaction associated with the consumption of goods and services. Likewise, individuals provide labor to firms that wish to employ them, by balancing the gains from offering the marginal unit of their services (the wage they would receive) with the disutility of labor itself—the loss of leisure. Individuals make choices at the margin. Similarly, producers attempt to produce units of a good so that the cost of producing the incremental or marginal unit is just balanced by the revenue it generates. In this way they maximize profits. Firms also hire employees up to the point that the cost of the additional hire is just balanced by the value of output that the additional employee would produce. According to the modern neoclassical theory, the exchange value in equilibrium cannot be determined. In addition, the distinction between the value in use and the exchange value no longer exists as the exchange value is now determined by utility (use value) at the margin. As a result, the distinction between market and natural prices also disappears.

The general principle of valuation in the national accounts is the current exchange value, i.e., values at which goods and other assets, services, labor, or the provision of capital are in fact exchanged or else could be exchanged. Valuation has many applications in economics and finance. For example, based on the cost-benefit analysis, managers of a firm use several net present value techniques to evaluate a project with a distinct stream of revenues and costs. Also, the concept of net present value is used in corporate finance for the valuation of securities, such as shares and bonds.

However, there are some nonmarket goods and services, i.e., goods and services that cannot be exchanged in the market, such as education, crime, social capital, and environmental resources. The contingent valuation method (CVM) is one of the most widely used methods to estimate economic values of nonmarket goods and services. In particular, it is a survey-based approach, in which respondents state their willingness to pay for nonmarket goods and services. It is most commonly applied to quantify the value of natural and environmental resources.

References

- Marx, K. (1865). *Value, theory and profit*. New York.
- Ricardo, D. (1817). *On the principles of political economy and taxation*. Hamilton: McMaster University.
- Smith, A. (1776). *An enquiry into the nature and causes of the wealth of nations*. Edwin Canan ed.
- Veblen, T. (1900). The preconceptions of economic science – III. *The Quarterly Journal of Economics*, 14, 240–269.

Economic Well-Being

- [Income, Motivation, and Life Satisfaction](#)

Economic Well-Being, Arctic

- [Material Well-Being, Arctic](#)

Economics of Welfare

- [Welfare Economics](#)

Economist Intelligence Unit Quality of Life Index

- [Livability Index](#)

Ecosystem

- [Environment and Health](#)

Ecosystem Approach to Human Health

Finbarr Brereton and Mick Lennon
School of Architecture, Planning and
Environmental Policy, University College Dublin,
Belfield, Ireland

Synonyms

[Human ecology](#)

Definition

- (a) Ecological: In sociology, the branch that is concerned with studying the relationships between human groups and their physical and social environments. Also called human ecology.
- (b) *Health*: ► [Health](#) is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.

Description

The environment is essential for human existence through the vital ecosystem services that the Earth produces and its assimilative capacity to process wastes. Nature provides a range of life support services necessary to maintain the habitability of the planet (Costanza et al. 1997). The literature shows that the environment has a direct effect on human health (Ulrich 1984). Within this literature, the environment is viewed as one of the key determinants of physiological health alongside inherited characteristics, lifestyle, and social and economic variables (Barton 2009). The literature also indicates that the environment exhibits an

influence on subjective measures of human welfare such as well-being and happiness (Diener et al. 1999; Summers et al. 2012). Environmental variables such as ► [noise](#) (Van Praag and Baarsma 2005), air pollution (Luechinger 2009), and the prevailing climate (Rehdanz and Maddison 2005; Perini et al. 2018) influence subjective well-being; the same is true of environmental attitudes (Ferrer-i-Carbonell and Gowdy 2007). Hence, the central focus of an ecosystems approach to human health is to provide an organizing concept for understanding the reciprocal relationships between human quality of life and natural environments (Coutts 2016).

There are multiple approaches to examining how the environment exerts a beneficial effect on human health. These can be broadly divided into approaches with a physiological and psychological focus. The physiological approach has a longer lineage and has subdivided into a number of specialized branches with different foci, such as environmental toxicology and epidemiology (Friis 2018). A concern of much work in these physiological approaches is on how the contextual specificities of environments influence physical health (Solomon et al. 2016). Among a spectrum of issues, these include the physical health benefits provided to society by soil microbiota (Wall et al. 2015) and the restoration of natural ecosystems for managing toxins and the provision of potable drinking water (Russell and Greening 2015). The last number of decades have witnessed a growth of psychologically focused approaches to understanding the role played by ecosystems in human health. These approaches are centered around a series of theoretical perspectives to conceiving psycho-ecological relationships. The most important theories concerning the influence of nature on health are the biophilia hypothesis (Wilson 1984), the psycho-evolutionary model (Ulrich 1993), and the attention restoration theory (Kaplan and Kaplan 1989).

The processes by which effects occur are complex and varied. However, a range of studies have now demonstrated that the environment affects human health through how we organize our urban areas (Rydin et al. 2012). Research includes

studies exploring the impact of the ► [built environment](#) on ► [physical activity](#) (Bowler et al. 2010), the availability of green spaces and health differences (Douglas et al. 2017), the relationship between the built environment and self-rated stress (Yang and Matthews 2010), and the effect of the physical and built environment on mental health (Clark et al. 2007). Emerging evidence suggests that changing environments may help to change behavior for positive health outcomes (Heath et al. 2012). Consequently, improving quality of life through managing ► [land use](#) has gained increasing prominence in policy (United Nations 2017).

Finally, the environment affects human health as a function of economic activity. Nature (natural capital) constitutes the source of all economic activity. These services can be divided into the following: direct contributions to economic activity (raw materials, energy), goods and services for consumption, and services provided by the environment, which range from current values such as extractive uses (fish, pharmaceuticals), non-extractive uses (recreation, aesthetic), and future values (options and existence values) (Mankiw and Taylor 2006). Ongoing research is now moving toward measuring the health effects of the outdoors (Gascon et al. 2016), including the development and validation of novel personal monitoring and biomarkers of exposures and effects, and the disentangling of social and environmental impacts (Daly et al. 2009).

The ecosystem approach to human health seeks to describe and explain how the environment has an impact on human health: (1) directly; (2) through how we organize our activities in space; and (3) through economic activity. Hence, the environment, human health, and well-being are interlinked.

Cross-References

- [Ecosystem](#)
- [Environment and Health](#)
- [Healthy Cities](#)
- [Healthy Communities](#)

References

- Barton, H. (2009). Land use planning and health and Well-being. *Land Use Policy*, 26, S115–S123.
- Bowler, D. E., Buyung-Ali, L. M., Knight, T. M., & Pullin, A. S. (2010). A systematic review of evidence for the added benefits to health of exposure to natural environments. *BMC Public Health*, 10(1), 456.
- Clark, C., Myron, R., Stansfeld, S. A., & Candy, B. (2007). A systematic review on the effect of the built and physical environment on mental health. *Journal of Public Mental Health*, 6, 14–27.
- Costanza, R., d'Arge, R., de Groot, R., Farber, S., Grasso, M., Hannon, B., Limburg, K., Naeem, S., O'Neill, R. V., Paruelo, J., Raskin, R. G., Sutton, P., & van de Belt, M. (1997). The value of the world's ecosystem services and natural capital. *Nature*, 387, 253–260.
- Coutts, C. (2016). *Green infrastructure and public health*. Abingdon: Routledge.
- Daly, M., Delaney, L., & Harmon, C. (2009). Psychological and biological foundations of time preference. *Journal of the European Economic Association*, 7, 659–669.
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective Well-being: Three decades of progress. *Psychological Bulletin*, 125, 276–302.
- Douglas, O., Lennon, M., & Scott, M. (2017). Green space benefits for health and Well-being: A life-course approach for urban planning, design and management. *Cities*, 66, 53–62.
- Ferrer-i-Carbonell, A., & Gowdy, J. M. (2007). Environmental degradation and happiness? *Ecological Economics*, 60, 509–516.
- Friis, R. H. (2018). *Essentials of environmental health*. London: Jones & Bartlett Learning.
- Gascon, M., Triguero-Mas, M., Martínez, D., Dadvand, P., Rojas-Rueda, D., Plasència, A., & Nieuwenhuijsen, M. J. (2016). Residential green spaces and mortality: A systematic review. *Environment International*, 86, 60–67.
- Heath, G. W., Parra, D. C., Sarmiento, O. L., Andersen, L. B., Owen, N., Goenka, S., Montes, F., & Brownson, R. C. (2012). Evidence-based intervention in physical activity: Lessons from around the world. *The Lancet*, 380, 272–281.
- Kaplan, R., & Kaplan, S. (1989). *The experience of nature. A psychological perspective*. Cambridge: Cambridge University Press.
- Luechinger, S. (2009). Valuing air quality using the life-satisfaction approach. *The Economic Journal*, 119, 482–515.
- Mankiw, N. G., & Taylor, M. P. (2006). *Economics*. London: Thomson Learning.
- Perini, K., Chokhachian, A., & Auer, T. (2018). Chapter 3.3 – Green streets to enhance outdoor comfort. In G. Pérez & K. Perini (Eds.), *Nature based strategies for urban and building sustainability* (pp. 119–129). Oxford, United Kingdom: Butterworth-Heinemann.
- Rehdanz, K., & Maddison, D. (2005). Climate and happiness. *Ecological Economics*, 52, 111–125.
- Russell, M., & Greening, H. (2015). Estimating benefits in a recovering estuary: Tampa Bay, Florida. *Estuaries and Coasts*, 38, 9–18.
- Rydin, Y., Bleahu, A., Davies, M., Dávila, J. D., Friel, S., De Grandis, G., Groce, N., Hallal, P. C., Hamilton, I., Howden-Chapman, P., Lai, K.-M., Lim, C. J., Martins, J., Osrin, D., Ridley, I., Scott, I., Taylor, M., Wilkinson, P., & Wilson, J. (2012). Shaping cities for health: Complexity and the planning of urban environments in the 21st century. *The Lancet*, 379, 2079–2108.
- Solomon, G. M., Morello-Frosch, R., Zeise, L., et al. (2016). Cumulative environmental impacts: Science and policy to protect communities. *Annual Review of Public Health*, 37, 83–96.
- Summers, J. K., et al. (2012). A review of the elements of human Well-being with an emphasis on the contribution of ecosystem services. *Ambio*, 4, 327–340.
- Ulrich, R. S. (1984). View through a window may influence recovery from surgery. *Science*, 224, 420–421.
- Ulrich, R. S. (1993). Biophilia, biophobia and natural landscapes. In S. R. Kellert & E. O. Wilson (Eds.), *The Biophilia hypothesis* (pp. 75–137). Washington, DC: Island Press.
- United Nations. (2017). *New Urban Agenda*. New York: United Nations Habitat III Secretariat.
- Van Praag, B. M. S., & Baarsma, B. E. (2005). Using happiness surveys to value intangibles: The case of airport noise. *The Economic Journal*, 115, 224–246.
- Wall, D. H., Nielsen, U. N., & Six, J. (2015). Soil biodiversity and human health. *j*, 528(7580), 69–76.
- Wilson, E. O. (1984). *Biophilia*. Harvard, MA: President and fellows of Harvard College.
- Yang, T. C., & Matthews, S. A. (2010). The role of social and built environments in predicting self-rated stress: A multilevel analysis in Philadelphia. *Health & Place*, 16, 803–810.

Ecosystem Approaches to Health

► Ecohealth

Ecosystem Goods

► Ecosystem Services and Human Well-Being

Ecosystem Management

► Natural Resource Management (NRM)

Ecosystem Services and Human Well-Being

Matteo Corsi

Department of Economics, University of Genoa,
Genoa, Italy

Synonyms

Ecosystem goods; Nature's contributions to humans

Definition

Ecosystem services are the material and immaterial contributions of ecosystems to human well-being. The concept is used in different disciplines, from environmental science to welfare economics and accounting, to represent the interdependencies between the natural environment and the human sphere of activity.

Description

A Brief History of the Concept and Its Use

In the field of environmental science, the concept of ecosystems services surfaced in the 1960s (Helliwell 1969; King 1966; SCEP 1970) but the term was coined in the early 1980s (Ehrlich and Ehrlich 1981) and its broader appeal is due to a book edited by Gretchen C. Daily and published in 1997. The book provided the initial impulse and a conceptual framework for the United Nation's Millennium Ecosystem Assessment (MA 2003), which adopted the ecosystem approach and denounced the decline of two-thirds of the world's ecosystem services as a consequence of degradation and overuse of ecosystems. The concept was put under review for the proliferation of alternative and inconsistent definitions (Boyd and Banzhaf 2007; Fisher and Turner 2008; Wallace 2007). Nonetheless, the Millennium Assessment was followed by a series of international work programs dedicated to conceptual

adjustments and the assessment of ecosystems and biodiversity (Díaz et al. 2015; Haines-Young and Potschin 2018; TEEB 2010; UK-NEA 2011; United Nations 2014). Ecosystem services have had extensive application in the fields of environmental cost-benefit analysis (Bateman et al. 2013) and ecosystem accounting (Hein et al. 2020).

From Ecosystems to Human Well-Being

Ecosystems have long been regarded as the fundamental ecological unit (Lindeman 1942). The Convention on Biological Diversity (United Nations 1992), signed by 150 countries at the 1992 Rio Earth Summit, defines an ecosystem as "a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit" (Art. 2). The Ecosystem Approach (UNEP-CBD 2000), developed from the definition above, states that the management of land, water, and living resources is a societal matter and requires adopting management levels designed around "levels of biological organization." The two statements reflect a consensus among scientists that our understanding and use of the environment cannot forgo the systemic view of the "structures, functions and interactions among organisms and with their environment," identified by the study of ecosystems.

The ecosystem service paradigm responds to such expectation. It acknowledges a complex interplay of natural processes within and between ecosystems that have no direct effect on human well-being but support the integrity and resilience of ecosystems. This, in turn, is accepted as a prerequisite for the existence of present and future ecosystem services. The sequence of steps leading from ecosystems to human well-being has been represented as a production cascade (Potschin and Haines-Young 2011). The biophysical structure underlying an ecosystem like a woodland or a wetland, that possesses a capacity (or function) that is potentially regarded as useful for humans without being a fundamental property of the ecosystem itself, like slowing the passage of surface water, is potentially producing a service of flood protection. The service turns from potential to actual as someone can be identified as a

beneficiary of it (Landers et al. 2018). This first section of the cascade is entirely set in the natural system and can dispense with any consideration over the worth of ecosystems to humans. It takes care of keeping ecosystem services distinct from processes and functions, which have been variously defined in environmental science and the early stages of the development of the ecosystem service paradigm (Nahlik et al. 2012), generating considerable confusion (Wallace 2007). Processes and functions may be described as intermediate services, whereas it is now generally accepted that ecosystem services must be end-products (Boyd and Banzhaf 2007): final products of natural systems that will undergo no further transformation before becoming available for the social and economic system (Potschin and Haines-Young 2011). This implies, for instance, that the clean water of a lake is an ecosystem service when extracted as potable water, but it is only an intermediate product for the ecosystem service consisting in fish to be eaten or in the recreation provided to sport fishing.

At the same time, by definition, ecosystem services do not exist without people needs. The rest of the “cascade,” therefore, must take into account the social and economic system that receives the services. The notion of services provided by the ecosystem in analogy with services produced in the economy reflects the intent of modelling the relationship between ecosystems and human societies in a way that reveals the dependency of the latter from the former (Daily 1997). However, such dependency is defined in terms that are particularly appropriate to bridge environmental science methods and the methods of social and economic analysis. Ecosystem services cover “nature’s instrumental values as a means to the end of human well-being” (Davidson 2013) and, as such, respond to the fundamental rationale of economic analysis, which seeks to uncover the value of goods and use it to quantify how different courses of action could affect human welfare (Bateman et al. 2011). At the time the ecosystem service paradigm made its first appearances in economic and policy analyses, it was relatively common to describe such services as direct benefits to human well-being

(Costanza et al. 1998; Daily 1997; Millennium Ecosystem Assessment 2003). An influential paper by Boyd and Banzhaf (2007) proposed an alternative conceptualization in which, despite being end-products of nature, ecosystem services are not necessarily final products in the economic system and may be combined with other goods and services to produce the benefits that people enjoy. The previously mentioned service of flood protection would then affect human welfare not in itself but by enhancing benefits like safety and health. The idea that ecosystem services are not benefits but inputs in the production of benefits was adopted in the cascade model (Potschin and Haines-Young 2011) and is now relatively common in analyses and programmes with a larger scope (TEEB 2010; United Nations 2014). There are several advantages connected with this arrangement, including the possibility to represent an ecosystem service as a contributor to different benefits (Potschin and Haines-Young 2016), to highlight the role of the environment in creating inputs of marketed goods, but also to distinguish the price of a marketed good from the value of the ecosystem service embedded in it (Atkinson and Obst 2017). As ecological commodities, ecosystem services are measured in physical terms, which means that they are distinct from the value that people attributes to them (Banzhaf and Boyd 2012).

Classifying Ecosystem Services

Quantifying the overall contribution of ecosystems to human well-being requires a systematic, complete, non-duplicative classification of all ecosystem services. Various classification models have been proposed over time (Bordt and Saner 2018) and every major step in the development of the ecosystem service paradigm was marked by an adjusted system of classification (Boyd and Banzhaf 2007; Daily 1997; Fisher et al. 2009; Millennium Ecosystem Assessment (MA) 2003; TEEB 2010; United Nations 2014; Wallace 2007). The most promising attempts at a standard in the classification of ecosystem services are represented by the Final Ecosystem Goods and Services Classification System (FEGS-CS) adopted by the United States Environmental

Protection Agency (Landers and Nahlik 2013), by the conceptual framework prepared for the Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES-CF), which was developed with the support of UNEP (Díaz et al. 2015), and by the Common International Classification of Ecosystem Services (CICES) adopted by the European Environmental Agency, the United Nations and the World Bank (Haines-Young and Potschin 2018). FECS-CS and CICES have developed along somewhat complementary lines: the emphasis of the former is on identification and prevention of duplications, that of the latter is on a socio-economic taxonomy of nature's output based on the way it is used. For instance, FECS-CF does not cover but also does not exclude the classification of ecosystem services in terms of provisioning services, regulating services and cultural services, that derives from the Millennium Ecosystem Assessment and was adopted with some modifications by CICES as the first level of its classification. The comparison with IPBES-CF is more problematic: its classification eschews the term ecosystem services, replaced with "nature's contributions to people" and aims at a pluralistic approach that looks at all the different knowledge systems that don't necessarily follow the western scientific and economic knowledge system (Turner et al. 2019).

Valuating Ecosystem Services

The aim of valuation applied to ecosystem services must be put in the context of a longstanding and contentious problem of defining what is meant by "value," particularly in relation with nature (Pascual et al. 2010). This notwithstanding, the preoccupation of capturing the worth of ecosystems to people is one of the early motivations for the development of the ecosystem service paradigm because of the expectation that this could affect policies in favour of the conservation of ecosystems (Daily 1997). A group of theories postulates some form of exceptionality for nature's services, which must be reflected in the value attributed to it. Such exceptionality may take the form of a moral, ethical, spiritual or rights-based consideration of nature for the sake of itself and independently of its usefulness to humans (Davidson 2013). Otherwise, it may be justified for the role

of ecosystem services as life support systems which cannot be replaced by manufactured services if ecosystems have been compromised (Ayres et al. 2001). The two approaches are sometimes described, respectively as "very strong sustainability" and "strong sustainability" because they imply, respectively, the strong condition of preserving most of the existing stock of ecosystems indefinitely or some "critical" part of it regardless of any other consideration. Despite some philosophical difference, the two views lead to similar conclusions about valuation, which is recommended to be in physical units or in terms of physical or energy costs associated with the production of the services (Kallis et al. 2013; Pascual et al. 2010). The rejection of monetary valuations, which is seen as a step towards the commodification of nature (Gómez-Baggethun and Ruiz-Pérez 2011) ultimately puts into question the term itself of ecosystem services for economically framing the discourse about ecosystems. Valuations in physical units partially satisfy the needs of environmental-economic accounting. Outside of this exception, such approaches to valuation have limited application outside the field of environmental science. Ecosystem services may instead be attributed an instrumental value, as contributions to human welfare, and such value originates from what is seen as the source of welfare, which is individual preferences (Bateman et al. 2011; Boyd and Banzhaf 2007). This viewpoint is typical of environmental economics and leads to valuation approaches based on the demand for ecosystem services as it can be deducted from observed behaviours or from a stated willingness to pay. The typical application of such values consists of cost-benefit analysis, which allows comparing the overall change in welfare under alternative policy options which may include different levels of ecosystem services. A final value theory to be mentioned assigns legitimacy to values that can be observed from recorded market transactions regardless of individual preferences (Atkinson and Obst 2017; Obst et al. 2016). Such value may or may not coincide with willingness-to-pay depending on the institutional arrangements governing the market (Day 2013) and it responds to criteria of objectivity and observability that are required for ecosystem accounting

(United Nations 2014), that integrates the environment in the statistical framework of national accounts.

Cross-References

► Welfare Economics

References

- Atkinson, G., & Obst, C. (2017). *Prices for ecosystem accounting*. Report for the Wealth Accounting and Valuation of Ecosystem Services global partnership (WAVES) – World Bank. Washington, DC.
- Ayres, R. U., van den Bergh, J. C. J. M., & Gowdy, J. M. (2001). Strong versus weak sustainability: Economics, natural sciences and “consilience”. *Environmental Ethics*, 23(2), 155–168.
- Banzhaf, H. S., & Boyd, J. (2012). The architecture and measurement of an ecosystem services index. *Sustainability*, 4(4), 430–461.
- Bateman, I. J., Mace, G. M., Fezzi, C., Atkinson, G., & Turner, K. (2011). Economic analysis for ecosystem service assessments. *Environmental and Resource Economics*, 48(2), 177–218.
- Bateman, I. J., Harwood, A. R., Mace, G. M., Watson, R. T., Abson, D. J., Andrews, B., et al. (2013). Bringing ecosystem services into economic decision-making: Land use in the United Kingdom. *Science*, 341(6141), 45–50.
- Bordt, M., & Saner, M. A. (2018). A critical review of ecosystem accounting and services frameworks. *One Ecosystem*, 3, e29306.
- Boyd, J., & Banzhaf, S. (2007). What are ecosystem services? The need for standardized environmental accounting units. *Ecological Economics*, 63(2–3), 616–626.
- Costanza, R., D’Arge, R., de Groot, R., Farber, S., Grasso, M., Hannon, B., et al. (1998). The value of the world’s ecosystem services and natural capital. *Nature*, 387(6630), 253–260.
- Daily, G. (Ed.). (1997). *Nature’s services: Societal dependence on natural ecosystems*. Washington, DC: Island Press.
- Davidson, M. D. (2013). On the relation between ecosystem services, intrinsic value, existence value and economic valuation. *Ecological Economics*, 95, 171–177.
- Day, B. (2013). *An overview of valuation techniques for ecosystem accounting*. Valuation for Natural Capital Accounting Seminar, 11 Nov 2013.
- Diaz, S., Demissew, S., Carabias, J., Joly, C., Lonsdale, M., Ash, N., et al. (2015). The IPBES conceptual framework – Connecting nature and people. *Current Opinion in Environmental Sustainability*, 14, 1–16.
- Ehrlich, P., & Ehrlich, A. (1981). *Extinction: The causes and consequences of the disappearance of species*. New York: Random House.
- Fisher, B., & Turner, K. (2008). Ecosystem services: Classification for valuation. *Biological Conservation*, 141(5), 1167–1169.
- Fisher, B., Turner, K., & Morling, P. (2009). Defining and classifying ecosystem services for decision making. *Ecological Economics*, 68(3), 643–653. <https://doi.org/10.1016/j.ecolecon.2008.09.014>.
- Gómez-Baggethun, E., & Ruiz-Pérez, M. (2011). Economic valuation and the commodification of ecosystem services. *Progress in Physical Geography*, 35(5), 613–628.
- Haines-Young, R., & Potschin, M. (2018). *CICES V5. 1. Guidance on the application of the revised structure* (p. 53). Nottingham: Fabis Consulting.
- Hein, L., Bagstad, K. J., Obst, C., Edens, B., Schenau, S., Castillo, G., et al. (2020). Progress in natural capital accounting for ecosystems. *Science*, 367(6477), 514–515.
- Helliwell, D. R. (1969). Valuation of wildlife resources. *Regional Studies*, 3(1), 41–47.
- Kallis, G., Gómez-Baggethun, E., & Zografos, C. (2013). To value or not to value? That is not the question. *Ecological Economics*, 94, 97–105.
- King, R. T. (1966). *Wildlife and man*. New York: State Conservation Department.
- Landers, D. H., & Nahlik, A. M. (2013). *Final ecosystem goods and services classification system (FEGS-CS)*. Washington, DC: U.S. Environmental Protection Agency. EPA/600/R-13/ORD-004914.
- Landers, D. H., Nahlik, A. M., & Rhodes, C. R. (2018). The beneficiary perspective. In *Routledge handbook of ecosystem services* (pp. 74–87). New York: Routledge.
- Lindeman, R. L. (1942). The trophic–dynamic aspect of ecology. *Ecology*, 23(4), 399–417.
- Millennium Ecosystem Assessment (MA). (2003). *Ecosystems and human well-being: A framework for assessment*. Washington, DC: Island Press.
- Nahlik, A. M., Kentula, M. E., Fennessy, M. S., & Landers, D. H. (2012). Where is the consensus? A proposed foundation for moving ecosystem service concepts into practice. *Ecological Economics*, 77, 27–35.
- Obst, C., Hein, L., & Edens, B. (2016). National accounting and the valuation of ecosystem assets and their services. *Environmental and Resource Economics*, 64, 1–23.
- Pascual, U., Muradian, R., Brander, L., Christie, M., Cornelissen, H., Eppink, F., et al. (2010). The economics of valuing ecosystem services and biodiversity. In *The Economics of Ecosystems and Biodiversity (TEEB). Ecological and economic foundations* (pp. 183–255). London/New York: Routledge.
- Potschin, M. B., & Haines-Young, R. H. (2011). Ecosystem services: Exploring a geographical perspective. *Progress in Physical Geography*, 35(5), 575–594.
- Potschin, M. B., & Haines-Young, R. H. (2016). Defining and measuring ecosystem services. In *Routledge handbook of ecosystem services* (pp. 25–44). New York: Routledge.
- Study of Critical Environmental Problems (SCEP). (1970). *Man’s impact on the global environment*. Cambridge, MA: MIT Press.
- TEEB. (2010). *The economics of ecosystems and biodiversity: Mainstreaming the economics of nature: A*

synthesis of the approach, conclusions and recommendations of TEEB. ISBN 978-3-9813410-3-4.

Turner, K., Badura, T., & Ferrini, S. (2019). Natural capital accounting perspectives: A pragmatic way forward. *Ecosystem Health and Sustainability*, 5(1), 237–241.

UK-NEA. (2011). *The UK National Ecosystem Assessment: Synthesis of the key findings*. Cambridge: UK-NEA.

UNEP-CBD. (2000). *The ecosystem approach: Description, principles and guidelines. Decisions adopted by the conference of the parties to the convention on biological diversity at its fifth meeting*. Nairobi: UNEP-CBD.

United Nations. (1992). *Convention on biological diversity*. 1760 U.N.T.S. 69.

United Nations. (2014). *SEEA-EEA: System of environmental-economic accounting 2012*. New York: United Nations. ISBN: 978-92-1-161575-3.

Wallace, K. J. (2007). Classification of ecosystem services: Problems and solutions. *Biological Conservation*, 139 (3–4), 235–246.

Edginess

► [Anxiety](#)

EDI

► [Education for All Development Index \(EDI\)](#)

Education

► [Human Capital](#)

Education for All Development Index (EDI)

EFA Global Monitoring Report Team
Education for All Global Monitoring Report,
Paris, France

Synonyms

[EDI](#)

Definition

The Education for All Development Index (EDI) is a composite index of relevant indicators (► [composite indicator\(s\)](#)) for measuring overall progress toward the six Education for All (EFA) goals (► [education](#)) agreed upon in 2000 at the World Education Forum in Dakar, Senegal (UNESCO 2000), developed by the ► [Education for All Global Monitoring Report](#) team in 2003.

Description

In Dakar, Senegal, in 2000, governments from 164 countries met at the World Education Forum and pledged to make Education for All (EFA) a reality by 2015 (UNESCO 2000). They committed themselves to six wide-ranging ► [education](#) goals that would vastly improve learning opportunities for children, youth, and adults, stressing the need for more inclusive education systems (► [educational inequality](#)).

Each goal matters in its own right, but only the achievement of all will make EFA as a whole happen. The Education for All Development Index (EDI), a composite index of relevant indicators (► [composite indicator\(s\)](#)) developed by the ► [Education for All Global Monitoring Report](#) team in 2003, provides a way of measuring overall progress, stressing the need for more balanced education policies that sustain advances on all fronts. The EDI should ideally reflect all six EFA goals. However, it currently includes only the four most easily quantifiable goals, attaching equal weight to each:

- Universal primary education (Goal 2), measured by the primary adjusted net enrolment ratio (ANER), which measures the proportion of primary school-age children enrolled in either primary or secondary education
- Adult ► [literacy](#) (first part of Goal 4), measured by the literacy rate for those aged 15 and above
- Gender parity and equality (Goal 5, ► [gender and education](#)), measured by the gender-specific EFA index (GEI), an average of the

gender parity indexes of the primary and secondary gross enrolment ratios and of the adult literacy rate (► [gender-sensitive education statistics and indicators](#))

- Quality of education (Goal 6, ► [educational attainment](#)), measured by the survival rate to grade 5 or to the last grade of primary school for countries where primary education lasts fewer than 5 years

The remaining two goals, early childhood care and education (Goal 1) and learning needs of youth and adults (Goal 3), have been excluded from the index to date. This is mainly due to data limitations, as well as conceptual challenges, in particular for the latter goal.

The EDI value for a given country is the arithmetic mean of indicators measuring each of its components. It falls between 0 and 1, with 1 representing full EFA achievement across the four goals.

The ► [Education for All Global Monitoring Report](#) annually draws on internationally comparable data to calculate the EDI. For the school year ending in 2008, the EDI was calculated for 127 countries out of 204. Forty-four had achieved the four easily quantifiable EFA goals included in the EDI, with index values of 0.97–1.00, and 18 were close to doing so on average, with values of 0.95–0.96. Thirty-six countries were at mid-distance to the EFA overall achievement, reporting an EDI value of 0.80–0.94. Finally, 29 low- and lower-middle-income countries remained far from achieving EFA as a whole, with an EDI below 0.80. Most of these countries have a poor record across the EFA goals. (UNESCO 2011).

Cross-References

- [Composite Indicator\(s\)](#)
- [Education](#)
- [Education for All Global Monitoring Report](#)
- [Educational Attainment](#)
- [Educational Inequality](#)

- [Gender and Education](#)
- [Gender-Sensitive Education Statistics and Indicators](#)
- [Literacy](#)

References

- UNESCO. (2000). *The Dakar framework for action: Education for all – meeting our collective commitments (including six regional frameworks for action)*. Adopted by the World Education Forum, 26–28 Apr. Dakar: UNESCO.
- UNESCO. (2011). *EFA global monitoring report 2011: The hidden crisis – Armed conflict and education*. Paris: UNESCO.

Education for All Global Monitoring Report

EFA Global Monitoring Report Team
Education for All Global Monitoring Report,
UNESCO, Paris, France

Synonyms

[EFA Global Monitoring Report](#); [EFA GMR](#)

Definition

The Education for All Global Monitoring Report is an annual publication, developed by an independent team and published by UNESCO (► [United Nations Educational, Scientific and Cultural Organization \(UNESCO\)](#)). Its mandate is to track progress toward achieving the six Education for All (EFA) goals agreed upon in 2000 at the World Education Forum in Dakar, Senegal (UNESCO 2000); to identify effective policy reforms and best practice in all areas relating to EFA; to draw attention to emerging challenges; and to promote international cooperation in favor of ► [education](#).

Description

In April 2000, more than 1100 participants from 164 countries gathered in Dakar, Senegal, for the World Education Forum. The participants ranged from teachers to prime ministers, academics to policymakers, and nongovernmental organizations to the heads of major international organizations. They adopted the *Dakar Framework for Action, Education for All: Meeting Our Collective Commitments* (UNESCO 2000) and agreed upon six wide-ranging education goals to be met by 2015 that would vastly improve learning opportunities for children, youth, and adults:

- Goal 1: Expanding and improving comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children (educational inequality)
- Goal 2: Ensuring that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities have access to, and complete, free, and compulsory, primary education of good quality (► [educational inequality](#))
- Goal 3: Ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning and life-skills programs (adult vocational training, ► [training](#))
- Goal 4: Achieving a 50% improvement in levels of adult ► [literacy](#) by 2015, especially for women, and equitable access to basic and continuing education for all adults.
- Goal 5: Eliminating gender disparities in primary and secondary education by 2005 and achieving gender equality in education by 2015, with a focus on ensuring girls' full and equal access to and achievement in basic education of good quality (► [gender and education](#) and ► [educational inequality](#))
- Goal 6: Improving all aspects of the quality of education and ensuring excellence of all so that recognized and measurable learning outcomes (► [educational attainment](#)) are achieved by all, especially in literacy, numeracy, and essential life skills

International agencies pledged that no country engaged in this effort would be hindered by a lack of resources.

Governments recognized that regular and rigorous monitoring was required to track progress toward the six goals, identify strategies that make a difference, and hold governments and donors to account for their promises. The EFA Global Monitoring Report was created to fill this role. Aiming to inform and influence education and aid policy through an authoritative, evidence-based review of progress and a balanced analysis of the most critical challenges facing countries, the report sets out an ambitious agenda for reform. Despite significant progress in many areas, the world is not on track to achieve the Education for All goals. The 2011 EFA GMR warns that:

- There were 67 million out-of-school children in 2008, down from 106 million in 1999. The number is falling too slowly to meet the Education for All target by 2015.
- Many children drop out of school before completing a full primary cycle. In sub-Saharan Africa alone, ten million children drop out of primary school every year.
- Gender disparities continue to hamper progress in education. Had the world achieved gender parity at the primary level in 2008, there would have been an additional 3.6 million girls in primary school.
- The quality of education remains very low in many countries. Millions of children are emerging from primary school with reading, writing, and numeracy skills far below expected levels.
- Another 1.9 million teachers will be needed by 2015 to achieve universal primary education, more than half of them in sub-Saharan Africa.
- About 17% of the world's adults – 796 million people – still lack basic literacy skills. Nearly two-thirds of these are women.

Governments and donors will have to demonstrate a far greater sense of urgency, resolve, and common purpose to bring the targets within reach.

While the report has an annual agenda for reporting progress on each of the six EFA goals,

each edition also adopts a particular theme, chosen because of its central importance to the EFA process. To date, nine reports have been published:

- 2002 Education for All – Is the world on track?
- 2003/4 Gender and Education for All – The leap to equality
- 2005 Education for All – The Quality Imperative
- 2006 Literacy for life
- 2007 Strong foundations – Early childhood care and education
- 2008 Education for All by 2015. Will we make it?
- 2009 Overcoming inequality: why governance matters
- 2010 Reaching the marginalized
- 2011 The hidden crisis: Armed conflict and education.

The 2012 report will focus on skills development for increasing employment opportunities among marginalized groups. Since the 2003/2004 report, an ► [Education for all Development Index \(EDI\)](#) has been developed by the team to provide a rounded picture of progress toward the most measurable EFA goals.

The report is funded jointly by UNESCO and several bilateral agencies. It benefits from the expertise of an international advisory board, composed of representatives from UNESCO and other multilateral agencies, bilateral agencies, nongovernmental organizations (NGOs) and regional networks, and other invited experts. While the report is published and part-funded by UNESCO, it is recognized as independent. Because the six Dakar goals are the result of a collective agreement and partnership, the report itself does not represent the voice of one organization; rather, it is an international project that tracks the performance of governments, civil society, bilateral donors, and international agencies.

Each report is developed over a 12- to 18-month period. It draws on scholarship and expertise, including a core of commissioned work, from governments, NGOs, bilateral and multilateral agencies, UNESCO institutes, and

research institutions. Since 2005, online consultations have also been organized to broaden the scope and content of the report.

The UNESCO Institute for Statistics (UIS) plays the lead role in providing the report team with extensive data collected from national governments. Serious limitations in data coverage exist, however, making it difficult to monitor some dimensions of EFA. Using the International Standard Classification of Education (ISCED), statistics are internationally comparable for the majority of countries. However, as not all countries use the same classification systems, discrepancies between national data and those published internationally sometimes emerge. Differences can also stem from discrepancies between national and international population estimates and from a time lag inevitably accompanying the quality assurance process.

The report is submitted to the director-general of UNESCO on an annual basis and considered by the High-Level Group on Education for All, whose members include government ministers, representatives of donor organizations, UN agencies, and nongovernmental organizations. The role of the High-Level Group, as stated in the Dakar Framework for Action (UNESCO 2000), is to sustain and accelerate the political momentum created at the World Education Forum and serve as a lever for resource mobilization.

The publication is targeted at education decision-makers at the national and international level. Just as crucial an audience are all those engaged in promoting the right to quality education – teachers, nongovernmental organizations (NGOs), civil society groups, researchers, and the media. By enriching understanding of education issues, the report is a springboard for debate, knowledge-sharing, and advocacy.

Along with a range of associated materials (e.g., summaries, regional overviews, presentations), background papers, and statistical data, the report is available freely online at www.efareport.unesco.org. The report is disseminated widely, in every region, through a series of launches, media events, and policy seminars that generate strong press coverage and local interest. It is widely cited in scholarly publications and

often spurs debate in both policy and academic circles.

In order that the report's messages and findings may be widely shared, it is published in the six languages of the United Nations (Arabic, Chinese, English, French, Russian, and Spanish). The summary is often translated into additional languages; these have included Catalan, German, Hindi, Japanese, Kiswahili, Korean, Lao, Portuguese, and Telegu. Over 20,000 copies of the 2010 EFA GMR were distributed, along with approximately 25,000 copies of the summary and over 10,000 copies of regional overviews. There were also approximately 90,000 recorded downloads of full reports, summaries, and regional overviews from the website in the 12-month period following the launch.

The World Education Report, prepared by UNESCO, was a precursor to the Education for All Global Monitoring Report. Five reports were published (1991, 1993, 1995, 1998, and 2000). The first three focused on multiple themes, while the final two focused on teachers and teaching and the right to education, respectively.

Cross-References

- ▶ [Education](#)
- ▶ [Education for all Development Index \(EDI\)](#)
- ▶ [Educational Attainment](#)
- ▶ [Educational Inequality](#)
- ▶ [Gender and Education](#)
- ▶ [Gender-sensitive Education Statistics and Indicators](#)
- ▶ [Literacy](#)
- ▶ [Public Spending in Education](#)
- ▶ [Training](#)
- ▶ [United Nations Educational, Scientific and Cultural Organization \(UNESCO\)](#)

References

UNESCO. (2000). *The Dakar framework for action: Education for all – Meeting our collective commitments (including six regional frameworks for action)*. Adopted by the world education forum. Dakar, April 26–28 UNESCO.

Education for Sustainable Development

Tarah Wright

Environmental Science, Dalhousie University, Halifax, NS, Canada

Definition

Education for sustainable development (ESD) is any formal, informal, or nonformal education that empowers people to assume responsibility for creating a sustainable society.

Description

ESD uses education as a means to achieve global sustainability by focusing on social justice, economic responsibility, and environmental health for educational initiatives. ESD emphasizes examining both the physical/biological and socio-economic environments, as well as human development, in all disciplines as a way to call attention to the connections among humans, their activities, and the natural environment (United Nations 1992).

ESD has four main thrusts: (1) improving basic education, (2) reorienting education to include sustainable development, (3) developing public awareness, and (4) training. Further, ESD has the following essential characteristics:

- Based on principles and values of sustainable development
- Deals with the well-being of all four dimensions of sustainability – environment, society, culture, and economy
- Uses a variety of pedagogical techniques that promote participatory learning and higher-order thinking skills
- Promotes lifelong learning
- Is locally relevant and culturally appropriate
- Is based on local needs, perceptions, and conditions, but acknowledges that fulfilling local

needs often has international effects and consequences

- Engages formal, nonformal, and informal education
- Accommodates the evolving nature of the concept of sustainability
- Addresses content, taking into account context, global issues, and local priorities
- Builds civil capacity for community-based decision-making, social tolerance, environmental stewardship, an adaptable workforce, and a good quality of life (see <http://www.unesco.org> for more information)

ESD is a concept that has emerged over the past four decades, as humanity becomes more aware of the growing number of social, economic, and environmental problems that threaten human and ecosystem health. These issues have led many governments and international agencies to highlight the need for human development to be based on principles of sustainable development. Sustainable development is defined by the World Commission on Environment and Development as “meeting the needs of the present generation without compromising the ability of future generations to meet their needs” (World Commission on Environment and Development [WCED] 1987, p. 4). This concept has been affirmed as a guiding principle for planetary progress by both the UN Rio Summit on Environment and Development in 1992 and the UN Johannesburg Summit in 2002. It is generally accepted that the term sustainable development refers to the balance of the “triple bottom line” – ecological integrity, social equity, and economic prosperity (Dale and Hill 2001; Dale and Onyx 2005; Robinson et al. 1996).

While a sustainable future cannot be achieved through changes and actions in one sector alone, education is a key component in working toward this goal. The concept of education for sustainable development (ESD) asserts a vision of education that empowers people to assume responsibility for creating sustainable societies. As the United Nations Educational, Scientific and Cultural Organization says, “the goal of education is to make people wiser, more knowledgeable, better

informed, ethical, responsible, critical and capable of continuing to learn. Education, in short, is humanity's best hope and most effective means in the quest to achieve sustainable development” (UNESCO 1997).

The Stockholm Declaration, written at the Stockholm Conference on the Human Environment in 1972, was the first international declaration to make reference to the concept of ESD, recognizing the interdependency between humanity and the environment, and discuss inter- and intragenerational equity. Principle 19 of the Declaration is most relevant to ESD in that it call for education from grade school to adulthood to “broaden the basis for enlightened opinions and responsible conduct by individuals, enterprises and communities in protecting and improving the environment in its full human dimension” (United Nations 1972).

Another important document in the evolution of ESD was the Tbilisi Declaration of 1977 (UNESCO-UNEP 1977). The Tbilisi Declaration echoes the sentiments of the Stockholm Declaration by stating that environment and sustainability must be considered within the framework of the education system and at all levels and academic aptitudes in both formal and nonformal settings.

ESD was also prominent in the 1987 World Commission on Environment and Development report and more fully developed in Agenda 21 which was the result of the 1992 United Nations Conference on Environment and Development in Rio de Janeiro. While practically all of the chapters in Agenda 21 are related to education, Chapter 36 in particular (education, awareness, and training) deals with issues related to ESD (UNCED 1992). The three main thrusts are as follows:

- Reorienting education toward sustainable development
- Increasing public awareness of environmental issues
- Promoting environmental training among educators

In 1997, the government of Greece hosted the UNESCO Conference on Environment and

Society: Education and Public Awareness for Sustainability. This resulted in the Thessaloniki Declaration which stressed that radical social change must occur in order for ESD to be effective globally: “Poverty makes the delivery of education and other social services more difficult and leads to population growth and environmental degradation. Poverty reduction is thus an essential goal and indispensable condition for sustainability” (UNESCO 1997).

In addition, the Declaration argued that the concept of environmental sustainability must be clearly linked with poverty, population, food security, democracy, human rights, peace and health, and a respect for traditional cultural and ecological knowledge.

Due to this pivotal role in humanity’s future, the United Nations declared 2005–2014 the United Nations Decade of Education for Sustainable Development (UNESCO 2004). The goal of the Decade (DESD) is to integrate the principles, values, and practices of sustainable development into all aspects of education and learning with the goal of encouraging changes in behavior that will create a more sustainable future in terms of environmental integrity, economic viability, and a just society for present and future generations. As such, UNESCO (the lead agency) has worked to facilitate networking, linkages, exchange, and interaction among stakeholders in ESD; foster an increased quality of teaching and learning in education for sustainable development; help countries make progress toward and attain the Millennium Development Goals through ESD efforts; and provide countries with new opportunities to incorporate ESD into education reform efforts (United Nations 2007).

The UNESCO World Conference on Education for Sustainable Development was held in Bonn, Germany, in 2009, and was considered the halfway point of the DESD. This conference gave the global community an opportunity to reflect on the progress of ESD during the decade and plan for the future. The final report echoes the words of former declarations, calling for increased ESD efforts throughout the globe in order to work toward a sustainable future. The report emphasizes that knowledge acquired through education

is not enough to achieve sustainable development and asserts that ESD must provide the values, knowledge, skills, and competencies for sustainable living and participation in society (UNESCO 2009).

Cross-References

- [Agenda 21](#)
- [Sustainable Development](#)

References

- Dale, A., & Hill, S. B. (2001). *At the edge: Sustainable development in the 21st century*. Vancouver: UBC Press.
- Dale, A., & Onyx, J. (Eds.). (2005). *A dynamic balance: Social capital and sustainable community development*. Vancouver: UBC Press.
- Robinson, J. B., van Bers, C., & McLeod, D. (1996). Life in 2030: The sustainable society project. In A. Dale & J. Robinson (Eds.), *Achieving sustainable development*. Vancouver: UBC Press.
- UNCED. (1992). *Agenda 21: Programme of action for sustainable development*. Rio de Janeiro: United Nations Conference on Environment and Development.
- UNESCO. (1997). *Educating for a sustainable future: A transdisciplinary vision for concerted action*. Thessaloniki: International Conference on Environment and Society.
- UNESCO. (2004). *The UN decade of education for sustainable development (DESD 2005–2014): Draft international implementation scheme*. Paris: Author.
- UNESCO. (2009). *Bonn declaration*. Bonn: UNESCO World Conference on Education for Sustainable Development.
- UNESCO-UNEP. (1977). *Tbilisi declaration and final report*. Tbilisi: Intergovernmental Conference on Environmental Education.
- United Nations. (1972). *Declaration of the United Nations conference on the human environment*. Stockholm: United Nations Conference on the Human Environment.
- United Nations. (1992). *Rio Declaration on Environment and Development. Report of the United Nations Conference on Environment and Development*. Retrieved from <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm>
- United Nations. (2007). *The UN decade of education for sustainable development (DESD 2005–2014): The first two years*. Paris: UNESCO.
- World Commission on Environment and Development. (1987). *Our common future*. Oxford: Oxford University Press.

Education Index

Michaela Saisana

Econometrics and Applied Statistics, Joint Research Centre, European Commission, Ispra, Italy

Synonyms

[Human Development Report \(HDR\)](#)

Definition

The United Nations Development Program (UNDP) Education Index is published in the context of the Human Development Report (HDR), and it is one of the three components of the ► [Human Development Index \(HDI\)](#).

The new Education Index (since the 2010 HDR) is calculated as the simple geometric average of two indicators: mean years of schooling and the expected years of schooling (UNDP 2010, 2011). Past versions of the Education Index differed from the current one in all three key issues: indicators, weights, and functional form (UNDP 2009).

Description

Since its introduction in the first HDR in 1990, the HDI has attracted great interest in policy and academic circles, as well as in the media and national audiences around the world (UNDP 1990). The HDI popularity can be attributed to the simplicity of its characterization of development – an average of achievements in health, education, and income – and to its underlying message that development is much more than economic growth.

In the new HDI (introduced in the 2010 HDR), the Education Index is calculated for 176 countries as the geometric average of mean years of schooling and of expected years of schooling in a given country/territory. The two education-related variables are first normalized into a [0, 1] scale by

subtracting the minimum value and dividing by the range (maximum-minimum value). The maximum values are set to the actual observed maximum values of the indicators from the countries in the time series (1980–2011). The maximum values observed are 13.1 years (Czech Republic) for the mean years of schooling and capped at 18 years for the expected years of schooling. The minimum values (conceived of as subsistence values) are set at 0 years for both education variables. The index is then normalized using zero and the observed maximum value of the composite Education Index (=0.978, for New Zealand, 2010).

Example of calculation of the Education Index (2011) for Qatar:

$$\text{Mean years of schooling} = \frac{7.3 - 0}{13.1 - 0} = 0.557$$

$$\text{Expected years of schooling} = \frac{12.0 - 0}{18.0 - 0} = 0.667$$

$$\text{Education index} = \frac{\sqrt{0.557 \times 0.667} - 0}{0.978 - 0} = 0.623$$

Discussion

In past releases of the HDR, the Education Index was built as a weighted arithmetic average of two indicators: adult literacy rate (with two-thirds weighting) and the combined primary, secondary, and tertiary gross enrollment ratio (GER) (with one-third weighting). The adult literacy rate was used as an indication of the ability to read and write, while the GER gave an indication of the level of education from kindergarten to postgraduate education.

In recent versions (since 2010) of the HDR, adult literacy is replaced with mean years of schooling (as calculated in Barro and Lee 2010) in order to measure the education of adults. This indicator is defined as the average number of years of education received by people ages 25 and older, converted from education attainment levels using official durations of each level. Mean years of schooling is more frequent, has broader coverage, and has better discriminatory power than literacy. The methodology used to estimate mean years of schooling is well established and broadly accepted, and the Barro-Lee estimates of

educational attainment have become the standard measure of human capital used in cross-country empirical work (Bosworth and Collins 2003; Durlauf et al. 2005). The replacement of the literacy variable by mean years of schooling is, however, also an example of a revision whose main purpose is to ensure current relevance.

Literacy – which had up to now carried a 2/3 weight in the Education Index – has become deeply unsatisfactory over time as a measure of progress in education. The world average literacy rate rose from 60% to 83% between 1970 and 2010. Almost half of the countries have a literacy rate higher than 95%, and indeed, developed countries no longer collect data on basic literacy. Further, many developing countries are poised to attain universal literacy in future years, as younger cohorts emerge from the schooling systems. While literacy was likely to be a good measure to evaluate progress during the past two decades, it is unlikely to be as informative of the future.

The new Education Index also changed its measure of the education of children, replacing the gross enrolment ratio with a measure of expected years of schooling (else term school life expectancy). This captures the average number of years that children today could be expected

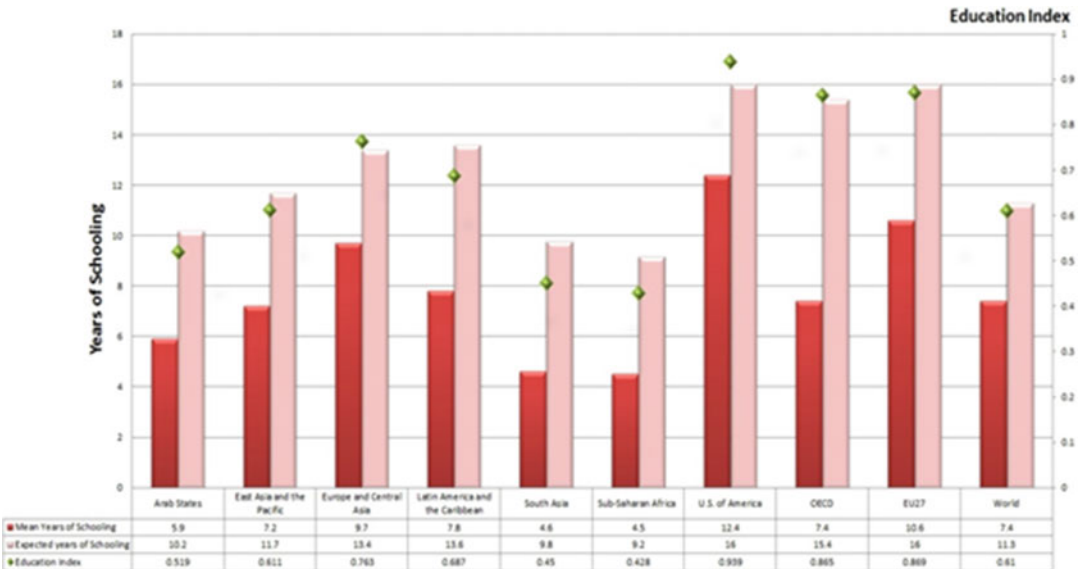
to attain in adulthood if enrolment rates stay at their current levels. Formally, expected years of schooling in year t are calculated as

$$eys^t = \sum_{i=0}^n \frac{E_i^t}{P_i^t}$$

where E_i^t is the enrolment of children of age i , P_i^t is the population of age i in that year, and n is the theoretical maximum age of schooling. Thus, if all the school-age population is enrolled in school, $eys^t = n$, but with less than 100% enrolment, eys^t will generally be lower than n (see UNESCO 2011).

Hence, the new Education Index is now framed as a measure of years of schooling, with the education of current and future generations receiving equal weights. This is an example of a conceptual reconsideration, where it was deemed desirable to have an Education Index expressed in terms of a relevant outcome variable, in this case years of schooling.

The new functional form of the Education Index is a geometric mean, as opposed to an arithmetic average in the previous version. The reasoning behind the use of a geometric mean was to address one of the most serious criticisms of the



Education Index, Fig. 1 The UNDP Education Index and its underlying indicators – regions/groups of countries. (Data source: UNDP Human Development Report 2011)

linear aggregation formula, which allowed for perfect substitution across the variables. Some substitutability is inherent in the definition of any index that increases with the values of its components (Klugman et al. 2011).

Since 2010, an inequality-adjusted Education Index is also calculated. The inequality-adjusted Education Index equals the Education Index when there is no inequality across people but is less than the Education Index as inequality rises. In this sense, the inequality-adjusted Education Index is the actual level of education (accounting for this inequality), while the Education Index can be viewed as an index of “potential” education (or the maximum level of the Education Index) that could be achieved if there was no inequality. The “loss” in potential education due to inequality is given by the difference between the Education Index and inequality-adjusted Education Index and can be expressed as a percentage.

Figure 1 presents the 2011 Education Index scores (and the values for the two education-related indicators) for the regions of Arab States, East Asia and the Pacific, Europe and Central Asia, Latin America and the Caribbean, South Asia, sub-Saharan Africa, the North America, the OECD countries, and the 27 European Union Member States. Highest Education Index scores are achieved on average in the USA and in EU27, followed closely by the OECD countries; South Asia and sub-Saharan Africa have the lowest average Education Index scores.

Cross-References

- Education
- Education for all Development Index (EDI)
- Education, Satisfaction with
- Education, Special
- Gender and Education
- International Assessment of Educational Progress (IAEP)
- Level of Education
- National Assessment of Educational Progress (NAEP)
- Public Spending in Education
- UNESCO World Culture Report

References

- Barro, R. J., & Lee J. W. (2010). *A new data set of educational attainment in the world, 1950–2010*. NBER Working Paper, N° 15902.
- Bosworth, B., & Collins, S. (2003). The empirics of growth: An update. *Brookings Papers on Economic Activity Fall*, 4, 136–147.
- Durlauf, S., Johnson, P., & Temple, J. (2005). Growth econometrics. In P. Aghion & S. Durlauf (Eds.), *Handbook of economic growth* (pp. 555–677). Amsterdam: North Holland.
- Klugman, J., Rodríguez, F., & Choi, H-J. (2011). *The HDI 2010: New controversies, old critiques*. Human Development Research Paper 2011/01.
- UNDP. (1990). *Human development report 1990. Concept and measurement of human development*. New York: Oxford University Press.
- UNDP. (2009). *Human development report 2009. Overcoming barriers: Human mobility and development*. New York: Palgrave Macmillan.
- UNDP. (2010). *Human development report 2010. The real wealth of nations: Pathways to human development*. New York: Palgrave Macmillan.
- UNDP. (2011). *Human development report 2011. Sustainability and equity: A better future for all*. New York: Palgrave Macmillan.
- UNESCO Institute for Statistics. (2011). *School-life expectancy*. http://www.uis.unesco.org/i_pages/indspec/tecspe_sle.htm. Accessed 2 May 2012.

Education International Assessment

- International Assessment of Educational Progress (IAEP)

Education Systems

Adrian Hatos
Department of Sociology, Social Work and
Philosophy, University of Oradea, Oradea,
Romania

Synonyms

School systems; Schooling systems

Definition

Concept of education systems refer to patterns of organization of education provision approached usually at country (or nation) level, the most important level where formal education is regulated. Systematic description, comparison, and analysis of evolution of education systems are the main subjects of comparative education, an interdisciplinary field developed at the border of education sciences, history, economy, and philosophy.

Introduction

In this entry, education systems will be treated applying the following blueprint: the entry will start discussing the models of convergence and divergence in education systems, then it will refer briefly to theories of change in educational organization, and end by referring to contemporary tendencies in the organization of both tertiary and pre-tertiary education. Moreover, tertiary and pre-tertiary systems will be approached separately as the two fields have developed and are still evolving largely following separate paths.

Current State: Two Conflicting Views

Theoretical representations of educational systems in comparative perspective allow us to discern between two streams of theories: (1) models of convergence, according to which educational arrangements in all countries tend to converge in time to the same configuration and (2) models of divergence, which stress the between country variation behind the more or less similarities.

Apparent Historical Convergence

According to Addick (1995) one can talk for the last century of the emergence of a global model of education. Modern educational systems are characterized by their public character everywhere – that is, 1) they are provided directly by the State, or their provision is supervised by the State, as a public good – and 2) they delivered en masse, via

universal or quasi-universal access to some cycles, in principle at the primary and secondary level. Another defining characteristic for modern teaching is the social importance of universities for the creation and distribution of knowledge but also through the allocation mechanisms in social positions.

The emergence of this system is the result of a process started in the Western world in the mid-eighteenth century and which consisted of two classes of phenomena extended currently on a global scale: (1) increased rates of participation at all levels of education, which have known sometimes explosive forms, i.e., the expansion of tertiary education in the last two decades worldwide and (2) diffusion on a planetary scale of a relatively homogeneous model of organization of education, recognizable in structure and content or cycles, which has a great sameness in whatever form of Government or degree of development of the country.

Convergent but Still Different

Cummings (2003) admits also the thesis of worldwide converge of educational practices but highlights the fact that six specific educational systems (called by him as Educational Institutions) can be identified, each with its own strengths, weaknesses, reform, and renewal cycles. In line with institutional theorists, Cummings maintains that the key element in educational systems' classification is the cultural model that they have developed or have borrowed. The central point of such cultural model is the ideal individual: virtuous clerk for Confucianism, devoted servant of God in medieval Europe, the encyclopedic and intelligent scientist in the France of Enlightenment while modern educationalists from the USA believe in the lifelong learning individual.

Modern educational systems are the results of more or less violent changes, which stretch on a time-span of more than 200 years (starting in Prussia from the middle of the eighteenth century until the Bolshevik Revolution in 1917). Thus, the curriculum reflects the ideal individual, which embodies the values and the objectives transmitted through the appropriate educational organizational configuration. Moreover, each Education

Institution has its own representative school, which best reflects the new ideals and most clearly indicates its institutional script: the new primary school in Japan, the college in the USA, and of the *lycee* and the *ecole polytechnique* in France. Comparing various educational organizations around the world, Cummings concludes that there are six distinct systems: Prussian, French, English, the USA, Japanese, and Russian, each of them distinguished by its ideal individual, representative school, aim, ways of classroom teaching, learning theory, management, expenses, and financing. According to Cummings the six Educational Institutions can be differentiated based on the following criteria: (1) horizontal differentiation designed in order to serve various groups identified by religion, social class, ethnicity, race or, gender; (2) the vertical integration of levels described, for example, by the degree of selectivity of transition from one level to the other; (3) the vertical integration of school and economy, describing the degree to which the graduates, especially of the upper secondary level, are expected to be prepared to specific job requirements and if the transition from school to work occurs on a deregulated market or is controlled by strong professional bodies; (4) the level of private initiative allowed in the provision of education.

Not far from the above vision of differentiation are other attempts of describing the similarities and differences between national systems. Obviously, differences are largest when one compares the situation in rich countries with that in the developing world, as priorities and resources are far from being similar and access to education at the basic levels (primary and lower secondary) is still lagging behind in many parts of the world. At the same time, comparisons among developed countries can be made focusing on at least two criteria (Dougherty and Hammack 2000): the localization of decisional authority in educational issues and the organization of educational career. Some more economically advanced nations, like the USA, Canada, Germany, or Holland, give large decisional competence to authorities at levels of province, community, and even to school government. In other developed nations though, the most important decisions regarding education

are taken by central regulating bodies like education ministries. This is the case, for example, in France where the curriculum and the schools are under the direct control of the Ministry of Education. Among the first theorizations to highlight the centralization vs decentralization axis in comparison of education systems is that of Archer (1984).

Concerning the educational careers, issues of horizontal and vertical differentiation are salient and reveal large variations among countries on dimensions like: the importance of vocational tracks at the secondary level, the link between education and the placement on the labor market, the university enrollment rate of upper secondary level graduates, and the organization of the higher education system. Concerning these dimensions, one cannot ignore the discrepancies between the organization of US pre-tertiary system (no specialization before entering the tertiary) and the German one in which students have to choose between academic and professional tracks much earlier. One can classify education systems thus from the perspective of the location where vocational training and qualification happens, as in Shavit and Muller (1998, 2000) who distinguish among school-based vocational education (France, Holland), company-based vocational education (the USA and the UK), and dual vocational education (Germany, Denmark).

Classifications Correlated with Societal Taxonomies (Regimes)

From taxonomies according to criteria like those listed above to more complex classifications that connect dimensions of education with other societal categorization there is a little step. Such is the theory of distribution and redistribution elaborated by Iversen and Soskice (2009), which connects the structure of education systems with that of the general social, economic, and political organization in developed nations. The two authors argue that the contemporary institutional designs in advanced capitalist nations has its origins in the second half of the nineteenth century when two types of capitalisms emerged: coordinated capitalism in which locally coordinated economies are combined with strong guild traditions and large investments in skill formation, on the one hand,

and liberal capitalism, which are recognized through market-based economies, liberal states, and low investment in skills formation, on the other hand. Coordinated capitalist countries, like Scandinavian countries invest more in primary and secondary education and in vocational education including important institutions of reskilling of workforce through adult education. Conversely, liberal capitalist states will invest more in tertiary education and encourage the unification of higher education institutions. Such evolutions can explain the sometimes counterintuitive relationships between actual measures of skills (i.e., assessed through international evaluations like PISA or TIMSS) and the measures of access to educational credentials.

A similar pattern of thinking has been adopted by researchers connecting the organization of education systems with the well-known welfare regimes identified by Gosta Esping-Andersen (1990), which is especially relevant if education is seen as part of welfare state and a factor in the production or alleviation of social inequality. Classifying 14 developed nations along several variables describing their education systems on dimensions of equality of opportunity and expenditures, West and Nikolai (2013) uncover four clusters of countries that greatly overlap with the classification of welfare regimes: Nordic, Continental, Mediterranean, and Anglo-Saxon education regimes, which all differ in features like: public financing of education, the weight of vocational education, early leaving, performance in PISA tests, equality of opportunity and access, and influence of background SES on school performances.

Theories of Change in Education Systems

Although establishment of mass compulsory primary education, the sign of institutionalization of the global model of education, was done in almost all European countries before the First World War broke out, at the national level its introduction happened in various ways and at different paces. As Soysal and Strang (1989) or Archer (1981)

have shown, this can be best understood through the ease with which the new, secular state controlled educational organization – were able to replace the previous one mostly church based.

Understanding the configuration of a certain educational system must take into account the interactions between interest groups, primarily of corporate actors that provide educational services (associations or unions of teachers, etc.) and beneficiaries of education – students and their parents. Margaret Archer (1984) believes that the inflationary development of school flows is inevitable, growth being in the interests of providers of education, while the beneficiaries of educational services, those who lose from uncontrolled development, are little able to control the growth of educational systems endogenously.

Initiation of process of educational expansion involved the replacing of the traditional educational institutions – dominated by the Church in Europe before the spread of mass-education, with modern networks, institutional changes that reflect the competition between interest groups. According to Archer, the former institutional arrangements are removed either by restriction or by substitution. Restriction is defined by Archer as a political process whereby groups destroyed the monopoly of the dominant group through legal constraints and intervention of the State while substitution is the process by which groups dispute the hegemony of the State through the creation of private institutions. The first track of changes characterizes the revolutionary turns in which the establishment of educational institutions shall be preceded by the acquisition of control over the State. The two mechanisms of change anticipate the organization of education systems from the point of view of the location of decision making: while transformation through restriction leads to centralization, change through substitution produces decentralized systems. In the case of restriction, the subsequent transformations require control over the State, so that all the actors concerned are moving in area politics.

A variant of institutionalist theory is the constructivist institutionalism. In contrast with those who assume that the adoption of a certain vision on regulation in education answers some social

needs or results from the contradictions between specific categories of actors with interests in the field, constructivists highlight the role of the diffusion of ideas and norms which, constituted in a global political culture, make the spread of certain principles and rules – as human rights, free trade – to be universal and synchronous, regardless of economic development or of cultural traits, which would evidence fundamental differences.

Meyer's studies (Meyer et al. 1977, 1992) have shown that the policies that generated the world educational revolution following the end of the Second World War were introduced in various countries of the world not at the moment of reaching a necessary level of development but when the global norms succeeded in being influential. Meyer and his collaborators (Meyer et al. 1977) highlighted that enrollment figures increased in a spectacular way until 1970 in the most various countries once as mass education has been defined as being essential for economic development and for democracy. Meyer's researches evidenced also that economic, social, or political development does not predict the expansion of mass education. The diffusion of the model of mass education occurred in every place regardless of specific locale, whether the country had or not a demand for educated workforce. The worldwide expansion of education in the period 1950–1970 had been dependent primarily, at the national level, on the available population to be educated and of the level of education in 1950.

While expansion of mass education had been seen necessary in Europe in order to sustain industrialization, it finally became seen everywhere as indispensable all around the world for nation building. Actual educational systems have to be understood, therefore, as consubstantial to the construct of modernity. According to Ramirez and Boli (1987) and Andy Green (1990), the factor that best explains the adoption of the modern model of organization of education was the degree of embracement of the project of national organization of the society. In countries that had been in the phase of national development, the key role in coordinating education was assumed by the state who took care of the preparation of the new

generations for the new political and social organization. The school, along with the military and the civil service had to lay the foundation for an elite able to assure social cohesion through competence, loyalty, and the sharing of common experiences, this last condition depending on the recruitment of the elite from all social strata.

Schofer and Meyer (2005) have approached in the same manner the expansion of higher education, which they consider a global institution whose generalization does not allow demographic, political, or economic explanations. While studies that interrogated the process of expansion in some limited areas have attributed it to some processes and phenomena from those contexts – like the famous law providing tuition-free access to university education to Second World War veterans in the USA or decolonization in the Third World – robust international comparisons proved that such explanations are not sound. All researches of this sort recorded the statistical reality of the expansion without being able to identify independent variables explaining it. For the expansion of tertiary education in the twentieth century, institutionalist theory receives great empirical support (Schofer and Meyer 2005): growth patterns are similar in all types of countries, higher in countries better linked to the world society and accelerating strongly after 1960. According to the authors, the rapid expansion during the second half of the previous century signals the replacement of the vision of higher education producing an educated elite with a new one, more open, in which education is seen as a provider of human capital, or as investment.

Systems of Higher Education

Education systems are subject to various classifications based on criteria like organization, governance, financing, values, targets, etc.

Concerning mission and values in higher education Claudius Gellert has identified (Gellert (1993) according to Scott (1995)) three strands within the modern European university tradition: (1) the university as a scientific institution, a tradition which is identified mainly in Germany

where creation and transmission of knowledge is at the heart of the university's mission; (2) the university as a professional institution, best recognizable in the French tradition of the *grandes écoles*, where students acquire high level vocational skills, and (3) the university as a cultural institution, where personalities are developed as is the focus in the Anglo-Saxon tradition. During the last decades, university systems around the world became more and more diversified, departing from the three-tier models identified by Gellert as a consequence of higher education expansion and a stronger focus on vocational education at this level.

More currently, in terms of roles, size, and allocated resources, higher education displays a very heterogeneous landscape in which, in the same country colleges of various sizes, educational programs, reputations, affiliations, accreditation a.s.o. coexist. An attempt to organize on unitary grounds this apparent chaos that have resulted from the accelerated changes brought by the expansion of higher education during the last 30 years was made by Scott (1995) who identified four organizational models (ideal-types), which are all determined by the relative positions of genuine universities and other post-secondary educational institutions (like polytechnic schools, short-term colleges a.s.o.).

1. The dual system in which universities are considered as totally separated, different, and usually above the other post-secondary schools
2. The binary system in which post-secondary institutions are seen as alternative and complementary to universities
3. The unified systems in which all institutions belong to a common and non-differentiated system
4. The stratified system in which higher education institutions are given specific, differentiated and hierarchized roles within the system

The four types correspond roughly to stages in the evolution of higher education at the nation-state level. The national higher education systems are nevertheless dynamic realities, which neither correspond entirely to one or other ideal-type nor

are fixed in an immutable organization. In Scott's opinion, the developments of the Western higher education area bring evidence of a general process in which dual systems evolve into binary ones, which then transform into unified systems and, finally convert into stratified systems.

Recent Trends

Education systems are dynamic realities. The existing institutional arrangements are, certainly, phases in the transition toward new organizational forms. The recent transformations in the organization of education systems witness three directions highlighted in the following paragraphs.

The first direction is managerialism, and refers to a trend in line with the discourse of *new public management* (Osborne and Gaebler 1993; Ball 2004; Cardoso et al. 2011) entailing a shift in educational governance to principles borrowed from market economy. Such a principle, intensely evoked in educational debates during the last two decades, is that of educational effectiveness and the subsequent assessment of school management against efficiency criteria.

One of the most compelling trends in the new waves of educational reforms occurring in all countries, in line with the above mentioned managerialist orientation, has been the dismantling of the centralized educational bureaucracies and the marketization of education by emphasizing parental choice and competition between schools (Whitty and Power 2000). In many countries, funding for pre-tertiary schools is done through educational vouchers, which are distributed to parents and whose choice the schools are competing by displaying their offers. One important consequence of introduction of competition in education provision is the acceleration of privatization of education at all levels, either through the subcontracting of school management to private operators or through the encouragement of private investments in educational institutions.

Along with the discontent toward the loss of value of educational credentials came the trend of vocationalism: the attempt to cover the supposed technical functions of education by giving up the

academic contents of objectives of instruction and focusing instead on the transmission of competencies and knowledge, which are of immediate use on the labor market. This leads to horizontal differentiation in the upper secondary track with the encouragement of vocational schools.

The last decades have witnessed the ascendance of use of ICT (Information and Communication Technology) in all areas of life, of which one of the most significant presence can be accounted in education. Digitalization of education entails various aspects, from the use of ICT in delivering content to ICT as a subject in itself when digital competencies and overcoming digital gaps is concerned. Education systems differ therefore with regard to the intensity of digitalization of teaching, the place of digital skills in the curriculum and, maybe most important, the capacity of each system to mitigate the adverse effects of digitalization.

With ICT one could notice a renewed impetus for distance education. According to Seaman et al. (2018), more than 31% of higher education students in the USA alone were enrolled in some sort of distance education in 2016, with numbers constantly increasing. Almost half of these students were enrolled exclusively in distance education. Internet communication and the development of internet technology is a catalyst for the spread of combinations of face-to-face education with online education (blended learning) as well as of MOOCs (Massive Open Online Course), which increase the access to skills and knowledge delivered from the most prestigious universities.

References

- Adick, C. (1995) Formation of a World Educational System, in Roeder, P.M. & Füssel, H.-P. (Eds) *Pluralism and Education: Current world trends in policy, law and administration*, pp. 41–60. Berkeley: University of California Press.
- Archer, M. (1981). Educational systems. *International Social Science Journal*, 33(2), 261–284.
- Archer, M. S. (1984). *Social origins of educational systems*. The University edition. London/Beverly Hills: Sage.
- Ball, S. (2004). Education for sale! The commodification of everything. In *Department of education and professional studies annual lecture (June 2004)*. London: Institute of Education.
- Cardoso, S., Carvalho, T., & Santiago, R. (2011). From students to consumers: Reflections on the marketisation of Portuguese higher education. *European Journal of Education*, 46(2), 271–284.
- Cummings, W. K. (2003). *The institutions of education: A comparative study of educational development in the six core nations*. Oxford: Symposium Books.
- Dougherty, K., & Hammack, F. (2000). Educational organization. In E. Borgatta & R. Montgomery (Eds.), *Encyclopedia of sociology* (pp. 760–772). New York: Macmillan.
- Esping-Andersen, G. (1990). *The three worlds of welfare capitalism* (Vol. 6). Cambridge: Polity Press.
- Gellert, C. (1993). *Structures and functional differentiation-remarks on changing paradigms of tertiary education in Europe* (Higher education policy series, Vol. 16, p. 234). London: Jessica Kingsley Publishers Ltd.
- Green, A. (1990). *Education and state formation: The rise of education systems in England, France, and the USA*. London: Macmillan Press.
- Iversen, T., & Soskice, D. (2009). Distribution and redistribution: The shadow of the nineteenth century. *World Politics*, 61(3), 438–486.
- Meyer, J. W., Ramirez, F. O., Rubinson, R., & Boli-Bennett, J. (1977). The world educational revolution, 1950–1970. *Sociology of Education*, 50, 242–258.
- Meyer, J. W., Ramirez, F. O., & Soysal, Y. N. (1992). World expansion of mass education, 1870–1980. *Sociology of Education*, 65, 128–149.
- Osborne, D., & Gaebler, T. (1993). *Reinventing government: How the entrepreneurial spirit is transforming the public sector*. Reading: Addison/Wesley.
- Ramirez, F. O., & Boli, J. (1987). The political construction of mass schooling: European origins and worldwide institutionalization. *Sociology of Education*, 60(1), 2–17.
- Schofer, E., & Meyer, J. W. (2005). The worldwide expansion of higher education in the twentieth century. *American Sociological Review*, 70, 898–920.
- Scott, P. (1995) *Unified and binary systems of higher education in Europe* (Higher education policy series, Vol. 32, pp. 37–54). London: Jessica Kingsley Publishers Ltd.
- Seaman, J. E., Allen, I. E., & Seaman, J. (2018). *Grade increase: Tracking distance education in the United States* (0996884823). Retrieved on December 28th 2019 from <http://www.onlinelearningsurvey.com/highered.html>
- Shavit, Y., & Muller, W. (1998). *From school to work. A comparative study of educational qualifications and occupational destinations*. Oxford: Clarendon Press.
- Shavit, Y., & Muller, W. (2000). Vocational secondary education. *European Societies*, 2(1), 29–50.
- Soysal, Y. N., & Strang, D. (1989). Construction of the first mass education systems in nineteenth-century Europe. *Sociology of Education*, 62, 277–288.

- West, A., & Nikolai, R. (2013). Welfare regimes and education regimes: Equality of opportunity and expenditure in the EU (and US). *Journal of Social Policy*, 42(3), 469–493.
- Whitty, G., & Power, S. (2000). Marketization and privatization in mass education systems. *International Journal of Educational Development*, 20(2), 93–107.

Education, Satisfaction with

Ellen Klemra

Center for Research in Primary and Community Care, Hertfordshire University, Hertfordshire, UK

Synonyms

Academic satisfaction

Definition

Satisfaction with education indicates how much one is happy with her or his education and learning experiences; the concept also includes how much an individual's experience of education (including attainment) contributes to overall life satisfaction (Campbell 1981; Michalos 2005). Satisfaction with education sometimes also can be understood as satisfaction with the current level of education in the particular institution. Alongside other domains of life, such as self-esteem, finances, friendship, family relations, and others, satisfaction with education appears to be as one of the most important part of overall life satisfaction. Aggregated with other important domains of satisfaction, satisfaction with education can predict or explain the extent of individual's overall life satisfaction.

Description

Education, Well-Being, Life Satisfaction, and Happiness

A large body of literature suggests that education is positively associated with a variety of social

outcomes, such as better health, stronger civic engagement, and reduced crime. A small but increasing number of studies further suggest that education has a positive causal effect on these social outcomes. Moreover, educational success can also be linked to health-promoting lifestyles and health status including BMI (Grossman 2006; Michalos 2008; Organisation for Economic Co-operation and Development [OECD] 2007, 2010, 2011).

Furthermore, poverty and inequality is closely linked to low educational attainment (Michalos 2008; OECD 2011). People with a higher education level also have higher income levels, are more likely to secure higher-benefit and status jobs, have a higher probability of being employed, and thus report higher levels of well-being and happiness (Witter et al. 1984; Michalos 1991; Ross and Van Willigen 1997; Michalos 2008; Cuñado and de Gracia 2011; OECD 2011).

The benefits of educational satisfaction appear to extend beyond income enhancement and the benefits associated with higher wealth. Adults aged 25–64 with higher levels of educational attainment are more satisfied with life, engaged in society, and tend to have high civic engagement (i.e., vote, volunteer, express political interest and show interpersonal trust), better perceived health, and high quality of life even after accounting for differences in gender, age, and importantly income (Keyes et al. 2002; Michalos 2008; OECD 2011, Ross and Van Willigen 1997). However, it has been also suggested that income can be a stronger predictor of well-being than education (Pinquart and Sorensen 2000). Using meta-analysis to synthesize findings from 286 empirical studies on the association of socioeconomic status (SES), social network, and competence with subjective well-being (SWB) in older people, the authors found that all three aspects of life circumstances are positively associated with SWB, but income is correlated more strongly with well-being than is education (Pinquart and Sorensen 2000).

Overall subjective well-being and life satisfaction have been also identified as being positively associated with educational success (Proctor et al. 2010). However, the reasons for this appear to be

multifaceted: that is, education has positive effect on the sense of control individuals feel over life circumstances and events and therefore has a positive effect on psychological well-being (Ross and Van Willigen 1997); education (or studying) has also been positively related to future planning, and these future-oriented planning strategies had positive effects on life satisfaction (Prenda and Lachman 2001). However, other authors have indicated that educational success by itself does not always affect subjective well-being and should be viewed through social comparisons: those adolescents who were more successful in education and occupation in comparison to their parents experienced an increase in well-being over time, whereas adolescents, who were unsuccessful in comparison to their parents, experienced a decrease in well-being over time (Samuel et al. 2012).

A number of authors (90 American studies) indicate that educational attainment accounts for between 1% and 3% of the variance in adult subjective well-being (Michalos 1991; Witter et al. 1984).

Moreover, the process and impact of studying itself has been found to have a positive relationship to life satisfaction. Decreasing the amount of time allocated to study led to a decrease in life satisfaction levels. Based on his empirical study in Australia, Hillman (Hillman and McMillan 2005) found that engagement in some form of purposeful activity, such as academic activity and education, may have benefits for the healthy functioning of young people that extend beyond having sufficient income or a future career and impact especially on their emotional well-being. The results suggested that decreasing the amount of time allocated to study led to decreased life satisfaction levels. Those young people who moved from full-time study into part-time study or no study at all reported decreased general and career satisfaction compared to those who remained in fully allocated activities (Hillman and McMillan 2005). Although the reasons for decreasing study need to be taken into account too, personal or financial considerations may generate the change and therefore also contribute to the reduction in life satisfaction.

Direct effects of education on happiness also have been identified. The authors analyzed the connection between different educational level as proxy variable of human capital and subjective well-being in Spain in 2008. The subjective well-being response was higher when the educational level was higher. Even after controlling by income, labor status, and other socioeconomic variables, it has been found that education had a positive (and direct) impact on happiness, potentially indicating evidence of an effect on “self-confidence” or “self-estimation” from acquiring knowledge (Cuñado and de Gracia 2011).

The negative association between education and psychological distress has also been well documented (Glenn and Weaver 1981; Kessler 1982; Lennon and Rosenfield 1992; Link et al. 1993; Mirowsky and Ross 1989; Mirowsky and Ross 1989, 1995; Pearlin et al. 1981; Ross and Huber 1985).

The highly educated people had lower levels of emotional and physical distress than the poorly educated (education was measured as years of formal education completed) (Ross and Van Willigen 1997). Education had a negative effect on distress of all kinds. Compared to well-educated people, the poorly educated had higher levels of depression, anxiety, malaise, aches and pains, and, to a lesser extent, anger. Poorly educated persons (people who have not completed formal education) had lower levels of enjoyment, hope, happiness, fitness, and energy.

There are, however, some cultural differences regarding how much education influences life satisfaction. In Southern European countries, the link between education and life satisfaction is more significant and positive than in northern countries, even after controlling for relative differences in income and salaries. However, workers are more satisfied and better paid on average in northern countries than in southern countries (Albert and Davia 2005).

Satisfaction with Education and Overall Life Satisfaction

How much satisfaction with education contributes to overall life satisfaction?

Surprisingly, in studies from the USA, the degree of satisfaction people felt with their education was found to be only weakly related to their overall life satisfaction (Campbell 1981).

Research has tended to indicate that an individual's level of satisfaction with their education is a much poorer indicator of general feelings of well-being than being satisfied with other life domains (Campbell 1981; Michalos 2008; Wu 2008).

In the USA, reported satisfaction with the level of educational qualification was not as high as satisfaction with other domains (e.g., satisfaction with family relationships, health). With the general upgrading of educational levels in the USA, a small decline was found in the degree of satisfaction Americans felt with their education. They were most likely to express low satisfaction with their education compared to high satisfaction with their marriage and their family life. It has been suggested that such an impersonal domain such as education is less central to the emotional life of the person and less capable of giving satisfaction (Campbell 1981).

Although a strong bidirectional link between academic satisfaction and life satisfaction has been found in some investigations (Heller et al. 2004; Lent et al. 2005), these studies did not include variables (e.g., goal progress) that may affect the nature of the interrelationship among domain and life satisfaction (Singley et al. 2010).

Social cognitive researchers may also have missed any significant bidirectional path between academic domain and global life satisfaction; neither unidirectional path (academic satisfaction to life satisfaction or life satisfaction to academic satisfaction) has been found significant (Singley et al. 2010).

Contribution of satisfaction with education in overall life satisfaction has been tested several times employing Multiple Discrepancy Theory (Michalos 1991, 2005; Michalos and Orlando 2006). In 1985 study of a sample of nearly 700 undergraduates, the domain of education has been found to have the greatest impact on its corresponding global discrepancy score (self needs, self future, self progress). Also satisfaction with education, same as satisfaction with self-

esteem and financial satisfaction, had a significant impact on all seven global discrepancies (Michalos 2005). But there have not been found any overwhelming results for satisfaction with education's contribution in overall life satisfaction, although there was a small impact identified of satisfaction with education on happiness in a female group (Michalos 2005). In another study, in combination with the life domain variables, the university-related variables added practically nothing to the explanatory power on some global quality of life variable (e.g., life satisfaction) (Michalos and Orlando 2006).

However, earlier in 1991, in the 39-country survey, satisfaction with one's university education ($b = 0.19$) has been found nearly as influential for life satisfaction as satisfaction with one's self-esteem ($b = 0.20$) (Michalos 1991).

Conclusion

How much satisfaction with education contributes to overall life satisfaction and happiness remains contested. Some authors doubt that satisfaction with education has a great impact on overall life satisfaction (Campbell 1981; Singley et al. 2010), but there is some evidence to support that satisfaction with education can be as influential on life satisfaction as, for example, satisfaction with self-esteem (Heller et al. 2004; Lent et al. 2005; Michalos 1991).

For most countries with statistically significant association between education and satisfaction with life, the association remains most significant among those who have attained tertiary education, even after accounting for age, gender, and income. This indicates that higher levels of education may contribute to life satisfaction beyond their effect on income. For example, tertiary education may help individuals develop skills, social status, and access to networks that could lead to greater satisfaction with life (OECD 2011).

Education can be defined as having either very little or enormous influence on life satisfaction and happiness. A formal education leading to only diplomas and degrees might have a very little influence on life satisfaction and happiness. Broadly defined, given more robust definition including also works of art and culture, work-

related training and experiences, social interaction and routine, as well as extraordinary life experiences, education can have an enormous influence on happiness and life satisfaction (Michalos 2008).

Cross-References

- Adolescent Life Satisfaction Measurement
- Adolescents' Life Satisfaction
- Domain Satisfaction
- Education
- Life Satisfaction, Concept of
- OECD List of Social Indicators
- Quality of Life
- Quality of Life Research
- Quality of Life, Satisfaction with
- School Satisfaction

References

- Albert, C., & Davia, M. A. (2005). Education, wages and job satisfaction, *Proposal for the EPUNET* (European Panel Users Network). 2005 Conference, Colchester, UK, 30 Jun–2 July, 2005.
- Campbell, A. (1981). *The sense of well being in America: Recent patterns and trends*. New York: Mc-Graw-Hill.
- Cunñado, J., & de Gracia, F. P. (2011). Does education affect happiness? Evidence for Spain. *Social Indicator Research*. <https://doi.org/10.1007/s11205-011-9874-x>.
- Glenn, N. D., & Weaver, C. N. (1981). Education's effects on psychological well-being. *Public Opinion Quarterly*, 45, 22–39.
- Grossman, M. (2006). "Education and nonmarket outcomes," *handbook of the economics of education*. Amsterdam: Elsevier.
- Heller, D., Watson, D., & Ilies, R. (2004). The role of person versus situation in life satisfaction: A critical examination. *Psychological Bulletin*, 130, 574–600.
- Hillman, K., & McMillan, J. (2005). Life satisfaction of young Australians: Relationships between further education, training and employment and general and career satisfaction. Longitudinal Surveys of Australian Youth, Research Report, 43.
- Kessler, R. C. (1982). A disaggregation of the relationship between socioeconomic status and psychological distress. *American Sociological Review*, 47, 752–764.
- Keyes, C. L. M., Shmotkin, D., & Ryff, C. D. (2002). Optimizing well-being: The empirical encounter of two traditions. *Journal of Personality and Social Psychology*, 82(6), 1007–1022.
- Lennon, M. C., & Rosenfield, S. (1992). Women and mental health: The interaction of job and family conditions. *Journal of Health and Social Behavior*, 33, 316–327.
- Lent, R. W., Singley, D. B., Sheu, H. B., Gainor, K., Brenner, B., Treistman, D., et al. (2005). Social cognitive predictors of domain and global life satisfaction: Exploring the theoretical precursors of subjective wellbeing. *Journal of Counselling Psychology*, 52, 429–442.
- Link, B. G., Lennon, M. K., & Dohrenwend, B. P. (1993). Socioeconomic status and depression: The role of occupations involving direction. *Control, and Planning, American Journal of Sociology*, 98, 1351–1387.
- Michalos, A. C. (1991). Global report on student wellbeing. In *Life satisfaction and happiness* (Vol. 1). New York: Springer-Verlag.
- Michalos, A. (2005). *Citation classics from social indicators research. The most cited articles edited and introduced by Alex C. Michalos* (Social indicators research series) (Vol. 26). Dordrecht: Springer.
- Michalos, A. (2008). Education, happiness and well being. *Social Indicators Research*, 87, 347–366.
- Michalos, A., & Orlando, J. (2006). A note on student quality of life. *Social Indicators Research*, 79, 51–59.
- Mirowsky, J., & Ross, C. E. (1989). *Social causes of psychological distress*. New York: Aldine de Gruyter.
- Mirowsky, J., & Ross, C. E. (1995). Sex differences in distress: Real or artefact? *American Sociological Review*, 60, 449–468.
- OECD. (2007). *Understanding the social outcomes of learning*. Paris: OECD.
- OECD. (2010). *Improving health and social cohesion through education*. Paris: OECD.
- OECD. (2011). www.oecd.org/edu/eag2011
- Pearlin, L. I., Lieberman, M. A., Menaghan, E. G., & Mullan, J. T. (1981). The stress process. *Journal of Health and Social Behavior*, 22, 337–356.
- Pinquart, M., & Sorensen, S. (2000). Influences of socioeconomic status, social network, and competence on subjective well-being in later life: A meta-analysis. *Psychology and Aging*, 15(2), 187–224.
- Prenda, K., & Lachman, M. (2001). Planning for the future: A life management strategy for increasing control and life satisfaction in adulthood. *Psychology and Aging*, 16(2), 206–216.
- Proctor, C., Linley, P. A., & Maltby, J. (2010). Very happy youths: Benefits of very high life satisfaction among adolescents. *Social Indicators Research*, 98, 519–532.
- Ross, C. E., & Huber, J. (1985). Hardship and depression. *Journal of Health and Social Behavior*, 26, 312–327.
- Ross, K., & Van Willigen, M. (1997). Education and the subjective quality of life. *Journal of Health and Social Behavior*, 38, 275–297.
- Samuel, R., Bergman, M. M., & Hupka-Bruner, S. (2012). The interplay between educational achievement, occupational success, and well-being. *Social Indicators Research*, 29, 20120105.

- Singley, D. B., Lent, R. W., & Sheu, H.-B. (2010). Longitudinal test of a social cognitive model of academic and life satisfaction. *Journal of Career Assessment*, 18, 133–146.
- Witter, D., Okun, M. A., Stock, W. A., & Haring, M. J. (1984). Education and subjective well-being: A meta-analysis. *Educational Evaluation and Policy Analysis*, 6, 165–173.
- Wu, C. H. (2008). The role of perceived discrepancy in satisfaction evaluation. *Social Indicators Research*, 88, 423–436.

Education, Special

Phil Foreman
School of Education, The University of
Newcastle, Callaghan, NSW, Australia

Synonyms

[Education, special needs](#)

Definition

Special education is the ► [education](#) of students who have a learning difficulty, behavioral or emotional disorder, or other identified disability. It includes both the education of school-aged children and educational intervention for children whose special needs are identified before school age, possibly from birth. Special education may take place in special schools, in special classes in regular schools, or in regular classes. In the case of preschool-aged children, special education may take place in a regular preschool or other child care centers, a specialized early intervention center, or in the child's home. Special education may be implemented by a trained special education teacher, a regular class teacher, or a teaching assistant. Parents and other professionals such as physical therapists, occupational therapists, speech pathologists, and psychologists also participate in the planning and implementation of special education programs.

Description

History of Special Education

While education for all children with a disability became law as recently as 1975 in the United States (United States Congress 1975), later in some other countries, and is still to occur in others, special education has a history that stretches back at least as far as the eighteenth century and possibly further (Rotatori et al. 2011). Typically, the first special schools were for students who were deaf, and these commenced in France and Britain in the mid-eighteenth century (Lane and Philip 2006; Striker 1999). This was a period of social change and “enlightenment” in Europe, with a move toward a just society. The United States and Canada followed early in the nineteenth century, also with schools for deaf students. Schools for students who were blind typically came next, followed by schools for students with an ► [intellectual disability](#) by the mid- to late nineteenth century. These schools were usually run on a charity basis and often had the effect of removing children from their home communities to live with other students who had a similar disability, in order to provide specialized teaching and care (Osgood 2007).

The intention in many cases was to improve the child's quality of life by providing access to educational opportunities. However, in some situations, particularly for students with an intellectual or physical disability, a sub-agendum was to provide a place to which children could be removed, often with little further family contact. Large ► [institutions](#) for students with an intellectual disability followed a custodial or medical model, rather than an educational model, and many children suffered deprivation and a significantly decreased quality of life in these institutions (Harris 2006).

Schools for students with a sensory impairment (hearing or vision loss) tended to be more educationally focused than those for students with an intellectual or physical disability and tried to lessen the child's handicap by teaching Braille, sign language, lip reading, or oral English as appropriate and introducing the child to the broader curriculum (Edwards 2012). However,

even the well-run residential institutions resulted in the removal of the child from family and community and led to major limitations in opportunity and choice (Harris 2006).

In the twentieth century, there was an increase in the number of day schools for students with a disability. Many of these were run by parent organizations or charities, although some were government operated. After World War II, there was an upsurge in the development of powerful parental advocacy groups demanding a better deal for children with a disability, including more community-based schooling. By the latter part of the twentieth century, there was a strong movement against residential institutions, particularly in the United States, and many larger institutions and some day-schools closed (Martin et al. 1996). Many children who would previously have lived their lives in a large institution were now living at home and either attending a local school or a special school in the community. This led to an increased need for community-based special education services.

Legislative Basis for Change in Special Education Services

During the early part of the twentieth century, governments in many developed countries began a gradual acceptance of responsibility for the education of students with a disability, with a consequent need to provide special education programs. For example, between 1900 and 1930, 17 American states passed legislation either permitting or mandating education for students with a sensory or intellectual disability (Winzer 1993). These gradual changes led to PL94/142, the “Education for All Handicapped Children” Act (United States Congress 1975). This was undoubtedly landmark legislation, as it required public schools to provide “free appropriate public education” to *all* students with a disability. Prior to this, students in many states could be refused an education on the basis that they had a disability, despite the fact that education was compulsory. For example, in the case of intellectual disability, children were frequently classified at the time as “educable,”

“trainable,” or “custodial.” Those who were considered educable may have been placed in a special class, if one were available. If they were classified as “trainable” or “custodial,” the only option was frequently a charity-run private school or residential institution. Many children stayed at home and missed out on any chance of an education.

PL94/142 not only permitted Federal funding for special education, but it also stipulated the way in which it should take place. Testing and placement procedures had to be nondiscriminatory. Parents gained the right to be involved in decision-making about their child’s educational program and future. Education had to be free and appropriate to the child’s needs and had to take place in the “least-restrictive” environment. A segregated, residential institution, for example, would be regarded as a restrictive environment.

In the United Kingdom, it was the Education Act (National Archives, United Kingdom 1981), following the Warnock Report (1978), which signaled a major change to the way the education of students with a disability was to be viewed. In particular, there was a movement away from the negative classification of students by their supposed deficits (e.g., maladjusted; educationally subnormal) toward a concept of special educational needs (SEN). Importantly, from a QOL perspective, the common goals for all students were independence, enjoyment, and understanding.

Australia has tended to make educational changes for students with a disability through policy rather than legislation, although the Commonwealth Disability Discrimination Act (Australian Government, 1992) and its associated Educational Standards (Australian Government 2005) have provided legislative backup for the policy. Education in Australia is a state matter, and by the late 1970s, the states were providing educational programs for all children, regardless of their level of disability. The most typical placement was a day school or a special unit or class within a regular school.

The United States has continued to be a leader in legislation for students with special educational needs, and its legislation has tended to be more prescriptive than that of other countries. PL

94/142 was reauthorized in 1990 and 1997 and renamed the Individuals with Disabilities Education Act (IDEA) (United States Congress 1990, 1997). The name change was an important symbolic move toward “people first” language (from “handicapped children” to “individuals with disabilities”). IDEA and its subsequent authorizations have included specific requirements about the way in which the education of students with a disability should be provided. IDEA’s requirements cover a very large range of disabilities from mild speech impediments to severe and multiple disabilities and a very wide age range from early childhood to post-school transitions. Parents are given strong rights related to decisions about their child’s education, and there are strong stipulations about how and where services are to be provided. Implementation of policy in the United States is influenced by guidance documents issued by the Office of Special Education Programs at the direction of the Secretary of State for Education.

Another piece of legislation impacting on the way special education is provided is the No Child Left Behind Act (PL 107–110) (United States Congress 2001). This act focuses on accountability through an expectation that all students will have access to teaching in basic skills and will be assessed against national standards. Schools that do not show good outcomes are expected to develop programs that will improve student achievement. While the motivation behind the act was positive, some commentators have pointed to negative consequences for students with a disability who are seen as “bringing down” the standards in a school. Debate continues about the adequacy of Federal funding to support the legislation, on whether the legislative requirements assist or impede teachers’ daily work and student outcomes, and on issues arising from shortages of fully qualified teachers (Bechtoldt and Bender 2008).

Models of Special Education: The Movement Toward Inclusion

During the 1960s and 1970s, the level of restriction imposed on people with a disability by large

institutions and segregated day schools was seen by many as both unnecessary and undesirable and as a major impediment to the affected people’s quality of life. Researchers and commentators began to analyze the provision of services to people with a disability from a ► [social justice](#) and ► [human rights](#) perspective. In Denmark, Niels Erik Bank-Mikkelsen developed the important concept of “normalization.” This was further developed in Sweden by Bengt Nirje and introduced to the English-speaking world by Wolf Wolfensberger (Bank-Mikkelsen 1969; Nirje 1970, 1985; Wolfensberger 1972).

The normalization principle recognizes that all people are entitled to live a lifestyle that other people would regard as “normal.” Normal can be defined as what most others in that culture usually do or would prefer to do. The most “normal” educational placement in most societies is a regular school chosen by the student’s parents, either in the public or independent system, usually in reasonable proximity to the student’s home. Applying the normalization philosophy to school choice suggests that children, regardless of their disability, should have the opportunity to attend a regular school, if that is what they or their parents see as the best thing for them.

Most modern school systems provide a range of educational settings for students with a disability, and the trend over the last 30 years has been to move toward settings that are more culturally normal and inclusive. The range of educational settings provided by most school systems ranges from separate special day schools to full inclusion in a regular class. Residential schools for students with a disability are now a rare occurrence. Other variations include a separate special school on a regular campus, a special unit of two or three classes located in a regular school, a single special class in regular school, and part-time regular and/or special placement.

The movement toward inclusive schooling has also been supported by human rights statements. On December 13, 2006, the United Nations passed the *Convention on the Rights of Persons with Disabilities*. Article 24 of the Convention provides clear support for inclusive education:

Article 24, Education: 1. States Parties recognize the right of persons with disabilities to education. With a view to realizing this right without discrimination and on the basis of equal opportunity, States Parties shall ensure an inclusive education system at all levels... (United Nations General Assembly 2006)

As at 2021, there were 164 signatories to the Convention and 94 signatories to the Optional Protocol which allows the Committee on the Rights of Persons with a Disability to receive communications from persons who believe that they have been a victim of a violation of the Convention. The Optional Protocol strengthens the impact of Article 24 on students with a disability. The signatories to the Convention include Algeria, Australia, Brazil, Chile, China, Germany, India, the Russian Federation, the United States, and the United Kingdom. However, the United States remains one of the few countries to have signed the treaty but not to have ratified it.

Research on the impact of the type of placement on social and academic outcomes is difficult and has produced equivocal results. At an intuitive level, it appears logical that students in a smaller specialized class with a teacher trained in special education will receive a better education than students “floundering in the mainstream.” However, this is not necessarily the case. As long ago as 1968, Lloyd Dunn questioned whether separate education for students with a mild disability produced better outcomes and pointed out the overrepresentation of minority groups in such classes (Dunn 1968). More recent research has suggested that students with a disability are likely to achieve more academically in a regular class, perhaps due to a greater emphasis on academic outcomes and greater access to the regular curriculum in mainstream classes. Research on ► [social interaction](#) has also produced patchy results (see Foreman 2009).

Curriculum and Teaching in Special Education

Curriculum and teaching in special education have been heavily influenced by American

legislation. For example, since PL 94/142 in 1975, individual goal planning in the form of an Individualized Educational Program (IEP) has been a requirement for all students with a disability in the United States. The 2004 IDEA amendments (United States Congress 2004) require a statement of the child’s present level of academic and functional performance and how this affects participation in the general curriculum, measurable functional and academic goals, a statement of specialized services needed, a statement of modifications for state-wide assessments, and a statement of how progress in meeting the goals will be assessed and reported. For students aged over 16 years, a transition program must also be developed. The IEP team must include the student, where appropriate, and his or her parents.

The American legislation has influenced policy and practice elsewhere in the world. Careful assessment and planning, setting of short-term and long-term goals, and monitoring of progress are seen by many as the essential elements of special education that differentiate it from regular education, whether this occurs in a regular class or a special class. Curriculum adaptation, supported participation, technological support, and the use of behavioral techniques such as positive reinforcement and chaining are all strategies used in special education but also by many regular education teachers. Techniques such as task analysis, direct instruction, and precision teaching are regarded by many as special education teaching techniques that can be used with students who have learning difficulties ranging from mild to severe in regular or special classes. Other strategies such as “severe discrepancy” (SD), “response to intervention” (RTI), and “pattern of strengths and weaknesses” (PSW) are used variably in different systems (Zirkel 2017). For a comprehensive review of strategies that have been used extensively in special education, see Mitchell (2014).

There is some debate among special educators about the extent to which students with a disability, particularly those with an intellectual disability, should have access to the general curriculum. One side of the argument, put forward by

Wehmeyer and colleagues (e.g., Wehmeyer 2019; Wehmeyer et al. 2003), is that access to the general curriculum will lead to higher expectations and consequently higher academic outcomes for students with a disability. They argue that standards should be open-ended, based on principles of Universal Design for Learning, and that individualized plans should be designed to promote progress in the general curriculum. The alternative argument is that the general curriculum is of limited relevance to students with a significant disability and that the curriculum for such students should be directly related to their current and future life needs. Proponents of this view believe that such students should be following a functional curriculum such as the one outlined by Bender et al. (2008).

The Future

Two main issues that will continue to impact on the education of students with a disability relate to *where* it takes place and *how* it takes place. From a QOL perspective, many have argued that the lives of people with a disability are immeasurably improved when they leave the restrictions of institutions and segregated settings and take their place in the community. However, others have argued that removing students from the more sheltered environments of special schools leaves them open to isolation, bullying, and stigmatism. Evidence can be found to support both arguments. The conclusion is probably that the impact of various educational placements will vary from student to student. Some students will thrive in the challenge of an inclusive setting, while others will find such settings to be confronting and overwhelming. The important aspect of current policy and law in most developed countries is that parents are now in a position to make a choice about what type of education they want for their child, based on their assessment of the effect of the placement on the child's current and future quality of life.

The question of *how* special education should occur is more easily resolved through empirical means. There is strong evidence that careful

planning, individualized instruction, appropriate feedback, and ongoing monitoring and evaluation lead to better outcomes for students with all types of learning difficulties. Modern technological approaches using computer-assisted instruction provide opportunities to use these techniques efficiently in regular classes, and it is likely that the future will see the further development of technology as an essential component of special education practice.

References

- Australian Government, Federal Register of Legislation: Disability Discrimination Act (1992). Retrieved 2021 from <https://www.legislation.gov.au/Details/C2018C00125>
- Australian Government, Federal Register of Legislation: Disability standards for education, (2005). Retrieved 2021 from <https://www.legislation.gov.au/Details/F2005L00767>
- Bank-Mikkelsen, N. E. (1969). *Normalization: Letting the mentally retarded obtain an existence as close to normal as possible*. Washington, DC: President's Committee on Mental Retardation.
- Bechtoldt, J. L., & Bender, V. (2008). *A policy analysis: The intersection of the individuals with disabilities education act and the no child left behind act* (Order No. 3405433). Available from Education Database. (89154645). Retrieved from <https://search-proquest-com.ezproxy.newcastle.edu.au/dissertations-theses/policy-analysis-intersection-individuals-with/docview/89154645/se-2?accountid=10499>
- Bender, M., Valletutti, P. J., & Baglin, C. (2008). *A functional assessment & curriculum for teaching students with disabilities* (Self-care skills, Vol. 1). Austin: ProEd.
- Dunn, L. M. (1968). Special education for the mentally retarded: Is much of it justifiable? *Exceptional Children*, 35, 5–22.
- Edwards, R. (2012). Introduction. In *Words Made Flesh: Nineteenth-Century Deaf Education and the Growth of Deaf Culture* (pp. 1–10). New York; London: NYU Press. <http://www.jstor.org/stable/j.ctt9qgft6.4>
- Foreman, P. (2009). *Education of students with an intellectual disability: Research and practice*. Charlotte: Information Age Publishing.
- Harris, J. (2006). *Intellectual disability*. New York: Oxford University Press.
- Lane, H. (Ed.), & Philip, F. (Trans.). (2006). *The Deaf Experience: Classics in Language and Education*. Washington, DC: Gallaudet University Press.
- Martin, E. W., Martin, R., & Terman, D. L. (1996). The legislative and litigation history of special education. *The Future of Children*, 6(1), 25–39. PMID: 8689259.

- Mitchell, D. (2014). *What really works in special and inclusive education? Using evidence-based teaching strategies* (2nd ed.). London: Routledge.
- National Archives United Kingdom, Education Act (1981). Retrieved April 4 2021 from <https://www.legislation.gov.uk/ukpga/1981/60/enacted>
- Nirje, B. (1970). The normalization principle: Implications and comments. *British Journal of Mental Subnormality*, 16, 62–70.
- Nirje, B. (1985). The basis and logic of the normalization principle. *Australia & New Zealand Journal of Developmental Disabilities*, 11, 65–68.
- Osgood, R. (2007). *The history of special education: A struggle for equality in American public schools*. Westport: Praeger Publishers.
- Report, W. (1978). *Special Educational Needs. Report of the Committee of Enquiry into the education of handicapped children and young people*. London: Her Majesty's Stationery Office.
- Rotatori, A., Obiakor, F., & Bakken, J. (Eds.). (2011). *History of special education*. Bradford: Emerald Group Publishing.
- Striker, H.-J. 1999, *A History of Disability*, (trans.) W. Sayers. University of Michigan, Michigan.
- United Nations General Assembly. (2006). *Convention on the rights of persons with disabilities*. Accessed April 4 2021 from <https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities.html>
- United States Congress. (1975). *Education for all handicapped children act of 1975. PL94–142*. Washington DC: Author.
- United States Congress. (1990). *Individuals with disabilities education act of 1990, pub law 101–476*. Washington DC: Author.
- United States Congress. (1997). *Individuals with disabilities education act amendments of 1997, public law 105–17*. Washington DC: Author.
- United States Congress. (2001). *No child left behind act of 2001, public law 107–110*. Washington DC: Author.
- United States Congress. (2004). *Individuals with disabilities education improvement act of 2004, public law 108–446*. Washington DC: Author.
- Wehmeyer, M. L. (2019). *Strengths-based approaches to educating all learners with disabilities. Beyond special education*. New York: Teachers College Press.
- Wehmeyer, M., Lattin, D. L., Lapp-Prinker, G., & Agran, M. (2003). Access to the general curriculum for middle school students with mental retardation. *Remedial and Special Education*, 34(5), 262–272.
- Winzer, M. (1993). *The history of special education*. Washington, DC: Gallaudet University Press.
- Wolffensberger, W. (1972). *The principle of normalization in human services*. Toronto: National Institute on Mental Retardation.
- Zirkel, P. A. (2017). RTI and other approaches to SLD identification under the IDEA: A legal update. *Learning Disability Quarterly*, 40(3), 165–173. <http://doi.org.ezproxy.newcastle.edu.au/10.1177/0731948717710778>.

Education, Special Needs

► Education, Special

Education, Traditional

Raymond Barnhardt

University of Alaska Fairbanks, Fairbanks, AK, USA

Synonyms

Aboriginal education; First Nations education; Indigenous education; Indigenous epistemology; Indigenous knowledge; Native education; Native science; Traditional ecological knowledge

Definition

A form of educational practice associated with traditional lifestyles, world views, and ways of knowing. Traditional education processes of indigenous people have been carefully constructed around observing natural processes, adapting modes of survival, obtaining sustenance from the plant and animal world, and using natural materials to make their tools and implements. All of this is made understandable through demonstration and observation accompanied by thoughtful stories in which the lessons are imbedded.

Description

Indigenous people have had their own ways of looking at and relating to the world, the universe, and to each other. However, indigenous views of the world and approaches to education have been brought into jeopardy with the spread of western social structures and institutionalized forms of cultural transmission. Many indigenous as well as nonindigenous peoples have begun to recognize the limitations of a monocultural education

system, and new approaches have begun to emerge that are contributing to our understanding of the relationship between indigenous ways of knowing and those associated with western society and formal education. Efforts are underway around the world to devise a system of education for all people who respect the epistemological and pedagogical foundations provided by both indigenous and western cultural traditions (Aikenhead 2011; Barnhardt and Kawagley 2011).

While western science and education tend to emphasize compartmentalized knowledge which is often de-contextualized and taught in the detached setting of a classroom or laboratory, indigenous people have traditionally acquired their knowledge through direct experience in the natural world. For them, the particulars come to be understood in relation to the whole, and the “laws” are continually tested in the context of everyday survival (Kawagley 1995; Kawagley et al. 1998). In western terms, competency is often assessed based on predetermined ideas of what a person should know, which is then measured indirectly through various forms of objective assessments. In the traditional indigenous sense, competency has an unequivocal relationship to survival or extinction. For an indigenous student imbued with an indigenous, experientially grounded, holistic world view, typical approaches to schooling can present an impediment to learning, to the extent that they focus on compartmentalized knowledge with little regard for how academic subjects relate to one another or to the surrounding universe. Learning occurs best when the subject matter is based on something useful and suitable to the livelihood of the community and is presented in a way that reflects a familiar world view (Barnhardt and Kawagley 2011; Battiste 2002).

Given the critical role of groundedness in the context of traditional education, the assessment of educational indicators can be problematic when relying on conventional measures of learning in western institutional environments. Consequently, numerous initiatives have been implemented to develop indicators that capture the cultural underpinnings of traditional educational practices. These include the *Survey of Living Conditions in the*

Arctic (www.arcticlivingconditions.org), and the *Arctic Social Indicators* (<http://www.svs.is/ASI/Report%20Chapters/Report%20Chapters.htm>), both of which were sponsored by the Indigenous Peoples’ Secretariat of the Arctic Council. Similar cultural indicators have been developed by Alaska Native Educators for use in assessing learning opportunities for Alaska Native students (Alaska Native Educators 2012; Assembly of Alaska Native Educators 1998).

The study of indigenous knowledge systems as it relates to education falls into three interrelated research themes: documentation and articulation of indigenous knowledge systems; delineating epistemological structures and learning/cognitive processes associated with indigenous ways of knowing; and developing/assessing educational strategies integrating indigenous and western knowledge and ways of knowing. These issues encompass some of the most long-standing cultural, social, and political challenges facing education in indigenous societies around the world. Public debate on these issues has revolved around apparent conflicts between educational, political, and cultural values, all of which are highly interrelated, so it is essential that future research address the issues in an integrated, cross-cultural and cross-disciplinary manner, and with strong indigenous influence (Gutierrez and Rogoff 2003; Smith 1999, 2002).

Indigenous scholars have begun to identify the epistemological underpinnings and learning processes associated with indigenous knowledge systems and ways of knowing. Comparative research has been undertaken to gain a better understanding of the inner-workings of the many and varied indigenous knowledge systems around the world. By utilizing research strategies that link the study of learning to the knowledge base and ways of knowing already established in the local community and culture, indigenous communities are able to find value in what emerges and are able to put the new insights into practice toward achieving their own ends as a meaningful exercise in sustained self-determination (Meyer 2001). In turn, the knowledge gained from these efforts has applicability in furthering our understanding of basic human processes associated with learning and the transmission of knowledge in all forms.

Cross-References

- [Education for All Development Index \(EDI\)](#)
- [Education for All Global Monitoring Report](#)
- [Education for Sustainable Development](#)
- [Educational Inequality](#)
- [Education Systems](#)
- [Subsistence in the Arctic](#)

References

- Aikenhead, G. (2011). *Bridging cultures: Indigenous and scientific ways of knowing nature*. Toronto: Pearson Publishers.
- Alaska Native Educators. (2012). *Guide to implementing the Alaska cultural standards for educators*. Juneau: Alaska Department of Education.
- Arctic Social Indicators. <http://www.svs.is/ASI/Report%20Chapters/Report%20Chapters.htm>. Accessed June 6 2012.
- Assembly of Alaska Native Educators. (1998). *Alaska standards for culturally responsive schools*. Fairbanks: Alaska Native Knowledge Network, University of Alaska Fairbanks.
- Barnhardt, R., & Kawagley, A. O. (2005). Indigenous knowledge systems and Alaska native ways of knowing. *Anthropology and Education Quarterly*, 36(1), 8–23.
- Barnhardt, R., & Kawagley, A. O. (2011). *Sharing our pathways: Native perspectives on education in Alaska*. Fairbanks: Alaska Native Knowledge Network.
- Battiste, M. (2002). *Indigenous knowledge and pedagogy in first nations education: A literature review with recommendations*. Ottawa: Indian and Northern Affairs.
- Cajete, G. (2000). *Native science: Natural laws of interdependence*. Sante Fe: Clear Light Publishers.
- Gutierrez, K. D., & Rogoff, B. (2003). Cultural ways of learning: Individual traits or repertoires of practice. *Educational Researcher*, 32(5), 19–25.
- Kawagley, O. (1995). *A Yupiaq world view: A pathway to ecology and spirit*. Prospect Heights: Waveland Press.
- Kawagley, A. O., Norris-Tull, D., et al. (1998). The indigenous worldview of Yupiaq culture: It's scientific nature and relevance to the practice and teaching of science. *Journal of Research in Science Teaching*, 35(2), 133–144.
- Meyer, M. A. (2001). Our own liberation: Reflections on Hawaiian epistemology. *The Contemporary Pacific*, 13, 124–148.
- Smith, L. T. (1999). *Decolonizing methodologies: Research and indigenous peoples*. New York: Zed Books.
- Smith, G. H. (2002). *Kaupapa Maori theory: An indigenous theory of transformative praxis*. Auckland:

University of Auckland/Te Whare Wananga oAwanuiarangi.

Survey of Living Conditions in the Arctic. <http://www.arcticlivingconditions.org>. Accessed June 6 2012.

Educational Attainment

- [Level of Education](#)

Educational Attainment, Mathematics

- [Mathematics Achievement](#)

Educational Child Care

- [Parental Time and Child Well-Being](#)

Educational Effect of Pornography

- [Pornography Use and Sexual Satisfaction: The Role of Sexual Socialization](#)

Educational Inequality

Marcel Crahay¹ and Marion Dutrévis²

¹University of Geneva, Geneva, Switzerland

²Faculty of Educational Science, University of Geneva, Geneva, Switzerland

Synonyms

[Inequality of educational opportunities](#);
[Intergroup-achievement disparities](#)

Definition

Educational inequality can be defined as intergroup disparities regarding the opportunities for academic achievement. These disparities can concern a variety of educational factors, such as resources, treatment, access, and/or results.

Description

Intergroup Educational Inequalities and Their Historical Evolution

Historically, educational inequality emerges over (affects) some particular social groups. Access as well as success in education has long been far from equal for all pupils and students regarding their group membership. Some minority groups are particularly concerned: ethnic minorities, low socioeconomic class, and women are undoubtedly the most representative and studied groups in the field of educational inequalities.

During the twentieth century, national and international policies have largely focused on intergroup-achievement disparities in order to favor educational equality for all. For example, *Brown versus Board of Education of Topeka* (1954) represents a landmark decision in the American policy fight against segregation and ethnic inequalities. Commissioned by the U.S. Department of Education and the Civil Rights Act (1964), the “Coleman Report” or “Equality of Educational Opportunity” (Coleman et al. 1966) is one of the most famous studies that emphasized the contribution of socioeconomic status in determining educational outcomes. Regarding gender, many countries have also progressed in terms of expected equality between men and women. School separated by gender is now dead in most countries.

As a symbol of this political interest for educational equality, many states have developed what can be equally called compensatory education or positive discrimination (e.g., Head Start, Follow Through or No Child Left Behind in the

United States, Educational Priority Areas in England, or Zones d'Éducation Prioritaire in France). Through general or specific programs, compensatory education aims at establishing more equality in education.

Despite these political decisions, we can but observe a remaining achievement gap between historically minority groups and others. Different indicators reveal the difficulties encountered by minority groups. School marks, standardized tests, grade retention, dropout rates, or academic orientations confirm that educational inequalities are far from removed. Moreover, this intergroup-achievement gap is at stake during the whole of students' curriculum. Access to education has undoubtedly positively evolved for minority groups. But enrollment in education does not mean equality of treatment no equality of results. In other words, higher quantitative access to education does not amount to higher education quality for all.

Do Schools Make a Difference?

The Coleman report (1966) can be considered as the starting point of scientific inquiry concerning educational inequality. In “Equality of Educational Opportunity,” Coleman et al. (1966) tested reading performances of more than 150,000 students in the USA and observed huge differences between pupils related to racial and/or socio-economical status: in general, socially disadvantaged black pupils have poorer performance than white ones. On the basis of regression analysis, he argued that student background and socioeconomic status weight much more than school resources in determining educational outcomes. More specifically, Coleman et al. concluded that funding variations are not related to outcomes variations. According to these researchers, more important is the school composition: black students take important benefit to be integrated in racially mixed classrooms. This finding gave the impulse to a policy of school desegregation. The busing system that consists of driving lower-class black students into higher-class mixed race schools was the more radical facet of this policy;

this highly disputed procedure had not the wished effects.

The Coleman's findings were largely misunderstood and wrongly diffused. For example, Hodgson (1975) summarized them by the formula: schools make no difference. This assertion and the following debates generated a large current of research on the school effects. Two years after, Good et al. (1975) proposed a reply with the book "*Teachers make a difference.*" On the basis of the synthesis of the process product studies (Brophy and Good 1986), it is possible to confirm that, to some extent, what teachers do in the classroom affects pupils' school learning and can contribute to reduce inequalities related to socioeconomic status.

It is also important to notice that, since the Coleman report, most of the educational research concerned by inequalities assumes implicitly a theory of justice that can be resume by the formula: *academic success in school should not depend on social origin* or ethnicity (Meuret 2001). Gender difference is also a matter of concern for researchers and politicians.

International surveys proceeded by IEA and by PISA contribute to document this debate. In a review of the key findings from *35 Years of IEA Research*, Keeves (1995) observed a link between socioeconomic background and students' achievement, at different grades and in different cognitive areas, in all participating countries. However, the strength of the relationship varies according to school system. Findings from more recent IEA surveys (Mullis et al. 2004a, b; Mullis et al. 2003) and of PISA ones (Organisation for Economic Co-operation and Development [OECD] 2005) confirm this assertion. More precisely, some characteristics of the school systems appear as parameters that amplify or reduce the strength of this relationship. Tracking (or streaming) is regularly pointed out as a factor, which has a negative effect on equality (Hanushek and Woessmann 2005). Similarly, PISA 2003 data (OECD 2006) suggest that in countries with comprehensive systems, the relationship between socioeconomic background and achievement is

weaker than in systems which have implemented some forms of institutional differentiation: age of first selection (i.e., entry into a track or stream), number of programs offered to 15-year-old students, and rate of student retention. More generally, it appears that education systems that group students according to their ability (or any surrogate factor) tend to have a higher correlation between the social background of the pupils and their performance (Baye and Monseur 2006).

According to Keeves' synthesis (1995), some teaching variables have positive effect on student achievement and, in consequence, can contribute to reduce inequalities. Shortly said, there is a positive relationship between opportunities to learn and pupils' learning: the more the teacher allocates time to activities of reading, the more the pupils will learn to read. International surveys also indicate that, especially in less developing countries, the availability of textbooks can positively affect school learning.

How School Contributes to Educational Inequality

Even if it is henceforth demonstrated that some school characteristics can contribute to reduce the social inequalities of academic success, nevertheless, the social origin of the pupils continues to be the most powerful predictor of students' achievement. This apparently universal phenomenon needs to be explained. This is the aim of Bourdieu theory of reproduction (Bourdieu and Passeron 1964). Influenced by Marxist theory, Bourdieu, with his colleague Passeron (1973), introduced the concept of Cultural Capital in order to attempt to explain differences in children's outcomes. In several writings, Bourdieu used some terminology of economics to analyze the process of social and cultural reproduction, of how the various forms of capital tend to transfer from one generation to the next. For the French sociologist, school success mobilizes a large spectrum of cultural behavior, not necessarily directly related to academic learning as accent, dress, postures, and so on. Privileged children have learned at home these behaviors that are considered by the teacher as the

norm. Therefore, the privileged children fit the pattern of their teachers' expectations with ease. This is not the case of unprivileged children.

In the theory of Bourdieu, the notion of *habitus* occupies a central place. It sends back to coherent set of subjective capacities, able at once of structuring representations and of engendering practices. Living in a given social context, each individual sees himself or herself endowed, in the course of his experiences, of some specific habits. These ones are, at first, the product of the socialization of the individual; each child is thus marked by its family tastes and style. Finally, the habitus operates as a schema of assimilation in the sense that it determines, in the form of aspiration and of fashions to act and to feel, the way the individual will approach his later experiences of life. Led by the contexts of socialization, the habit appropriate for a child carries the marks of its social membership. Imposing on all the pupils the habits of the middle class, the school offers an education that can be completely understood only by those who already arrange schemas of thought, action, and perception appropriate for this class. Afterward, the school claims to estimate in the same way at all a range of knowledge and skills, which only a part of them is really capable of acquiring. So, we have the demonstration of the duplicity of the principle of equal treatment: by imposing to all the pupils the cultural habit of the dominant social classes, the system of teaching exercises on a number of them a symbolic violence, which it hides by putting forward the legitimate superiority of this particular culture.

Some sociologists (for example, Husen 1972; Perrenoud 1995) and psychologists (for example, Brophy 1983; Brophy and Good 1974) are explicitly or implicitly opposed to the thesis according to which educational inequality results from the teachers indifference to the pupils' differences. Indeed, many authors argue that teaching is regularly the vector of practices that induce negative discriminations with intergroup-achievement gap as a consequence. According to this theoretical perspective, research has to analyze classroom and school functioning and drive out processes

that generate or increase inequalities and, in a second time, to look for the means to stop the effects.

Intergroup-Achievement Gap as a Consequence of Educational Inequality: Processes and Consequences of Negative Stereotypes

From a psychosocial perspective, social stereotypes constitute one of the main contributors to explain this intergroup-achievement gap. Stereotypes applying in academic contexts deal with supposed inferior intellectual ability of minority groups. For example, African Americans are stereotyped as lazy or ignorant (cf. the Princeton Trilogy and its replications; see, e.g., Devine and Elliot 1995). Similar stereotypes are assigned to people from low socioeconomic backgrounds (e.g., Bullock 1995). Gender stereotypes regarding education are more specific to certain dimensions. Women are notably perceived as less competent than men for scientific domains (and, conversely, men would be less competent in social domains; Eccles 1994). Such stereotypes, implicitly or explicitly, may convey a different way of experiencing education for targeted group members.

A look at past literature reveals that different discriminatory processes, based on social stereotypes, may account for intergroup-achievement disparities. These processes, not mutually exclusive, seem to be of great interest to understand how stereotypes can play a key role in scholastic curriculum. Three largely documented models can illustrate the processes through which stereotypes can hamper groups' school performance and curriculum.

Past literature in social psychology has largely emphasized the consequences of stigma internalization. Indeed, as suggested by Allport from 1954, "one's reputation, whether false or true, cannot be hammered, hammered, hammered into one's head, without doing something to one's character" (p. 142). Expected-value model (Eccles-Parsons et al. 1983) offers an illustration of this theoretical background. This model focuses on women's academic and professional

performances and aspirations. It suggests that gender stereotypes have an effect on teacher's, parent's, and pairs' behaviors and attitudes. Girls' perceptions are influenced by these stereotypic attitudes and behaviors. This corresponds to the phase of internalization. Once internalized, these self-perceptions will influence their academic performances and aspirations.

Pygmalion effect (Rosenthal and Jacobson 1968) and, more generally speaking, self-fulfilling prophecies (Merton 1948) illustrate a more situational role of stereotypes. In their famous Oak school experiment, Rosenthal and Jacobson revealed how inducing false expectations among teachers could affect students' learning outcomes. Teacher expectations are mainly based on individual or stereotyped information, which can lead to differential interactions and opportunities of learning. This differential treatment, when perceived by students, would influence their level of achievement. Stereotyped expectations are largely relevant to point out the intergroup treatment inequalities that may be at stake in the classroom. Research reveals that teacher expectations impact more minority than majority students. The frequent exposure to stereotyped information increases minority students' susceptibility to Pygmalion effect. So, even if teacher expectations are not consciously conveyed, they may participate in educational inequalities in the classroom.

Stereotype threat theory (Steele 1997) offers an explanation for difficulties encountered by minority group members, even when they have overcome many barriers. Pernicious effects of stereotypes are revealed by the fact that the mere implicit presence of stereotypes in an academic situation may undermine students' intellectual functioning, as well as students' aspirations. Even if relevant at each level of school, stereotype threat theory furnishes a complementary explanation to understand how even low status group members who have a past history of school success may still experiment achievement difficulties. Inequality then arises from the additional pressure resulting from the risk of confirming the negative social stereotype about their social

group. When exposed to an evaluative situation, minority students have to deal concurrently with the evaluative pressure and with an extra pressure rooted in their group membership. As such, they may encounter additional difficulties in academic achievement.

Negative Discrimination Throughout the School Program

According to Boudon (1973), "a school system, whatever it is, can be likened to a suite of points of bifurcation (possibly, of trifurcation, etc.)" (p. 105). Now, the risk to take a wrong way given to a point of fork varies according to the social origin of the pupils. In other words the decision-making crossroads inherent to the school organization could be translated in events during which the individual differences of cultural heritage are transformed into social inequalities of success. In a system in which grade retention is annually allowed, the risk of being retarded is high for socially at-risk children. At the beginning of the secondary level, when instructional tracks exist, there is again a risk for those children to miss the best way. And so on.

This schema of thought leads to assimilate the school course of the children to a jump race; in each of these, a part of the children stemming from lower social categories knock over and borrow an impasse or a way of relegation. Among others, a longitudinal study of Duru-Bellat et al. (1993) illustrates this process with multiple discriminations. These researchers followed approximately 2000 pupils since their entrance to the school until the level of the sixth year of high school. Their main objective was to explain factors affecting the probability to reach the long cycle of the secondary education in France. In their publication, they showed that grade retention, educational guidance, and the social origin mix their effects to produce inequalities.

First important finding: the probability to reach the long cycle is dependent on the success at the first grade: grade retention at this level is a highly negative predictor of school success (measured by the access to the long cycle of the secondary education).

The weight or more exactly the part of variance explained by the success in the first year of primary school is relatively low (32.9%). For the authors, it is excessive to proclaim that everything takes place at the beginning of the primary sector. The statistical analysis highlights the contribution of success at the fifth year of primary school and at the end of the fifth grade. Exactly, when explaining the access to the long cycle, it seems that success at school increases as the pupil advances in the program: this one explains 32.9% of the variance in the first year of primary school, rises to 45% at the end of the fifth year of primary school, and to 54% at the end of the class of fifth.

To progress in the understanding of the process, Duru-Bellat et al. (1993) calculated the average probability of access to the upper long cycle of the children from high or low social classes according to their school results at various levels: grade 1, 5, 6, and so on. The most significant information is given by the social distance from access to the long cycle. This index is obtained by calculating the difference between the probability of access observed between both categories. So, the probability of access to the long cycle is estimated, according to the results in the first year of primary school, at 55.2% for the children of upper social classes, and at 39.6% for those of workers; the social distance from access to the long cycle is, at this stage of the program, 15.6%. At the end of primary school, the probability of access to the long cycle is estimated at 58.8% for the children of upper social classes and 38.5% for those of workers; the social distance from access to the long cycle is, at this stage, 20.3%, that corresponds with regard to the previous stage to a 4.7% increase.

As regards to the school future of the pupils, these findings break down the widespread ideas that everything takes place before 6 years (Dodson 1970) or at the beginning of the primary schools.

The mechanism by which educational guidance introduces social bias was notably studied by Duru-Bellat (1988). Considering France, she located the main problem in the weight that is tuned to the family requests: educational guidance

organized in the end of the first cycle of high school is only confirming the wishes of parents. Now, the aspirations of these as regards the schooling of their children are widely dependent on their social and occupational status. In brief, the request of the parents conveys unmistakably social inequalities and the way education guidance operates strengthens this process (Duru-Bellat 1988). Proof of this: the data taken in by Duru-Bellat et al. (1993), which show that the requests of entrance to second long cycle (after the '*Collège unique*') vary not only according to notes obtained by the children, but also according to their family circle. So, the council of educational guidance corrects little the weight of social origin. Moreover, Duru-Bellat (1988) showed that this council operates mainly in the decline with regard to the wishes of the parents from lower social classes. This observation is crucial since it has been demonstrated that the families of lower socioeconomic level accuse a lack of ambition compared with the families of high socioeconomic status. This phenomenon contributes to maintain the process of socioeconomic and socio-cultural reproduction.

Finally, all these studies indicate that generation of educational inequalities is a complex and multidimensional social process.

Cross-References

- [Education](#)
- [Measures of Social Cohesion](#)
- [Social Mobility](#)

References

- Allport, G. W. (1954). *The nature of prejudice*. Cambridge, MA: Addison-Wesley.
- Baye, A., & Monseur, C. (2006). Equity of achievement, a matter of education structures? In *The second IEA international research conference: Proceedings for the IRC-2006* (Vol. 2, pp. 199–214). Washington, DC.
- Boudon, R. (1973). *L'inégalité des chances*. Armand Colin: La mobilité sociale dans les sociétés industrielles. Paris.

- Bourdieu, P., & Passeron, J. C. (1964). *La reproduction*. Paris: Les Editions de Minuit.
- Bourdieu, P., & Passeron, J. C. (1973). Cultural reproduction and social reproduction. In R. K. Brown (Ed.), *Knowledge, education and cultural change*. London: Tavistock.
- Brophy, J. (1983). Research on the self-fulfilling prophecy and teacher expectations. *Journal of Educational Psychology*, 70, 631–661.
- Brophy, J., & Good, T. (1974). *Teacher-student relationships: Causes and consequences*. New York: Holt, Rinehart, and Winston.
- Brophy, J., & Good, T. (1986). Teacher behavior and student achievement. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (pp. 328–375). Wittrock: Merlin.
- Bullock, H. E. (1995). Class acts: Middle-class responses to the poor. In B. Lott & D. Maluso (Eds.), *The social psychology of interpersonal discrimination* (pp. 118–159). New York: Guilford.
- Coleman, J. S., Campbell, E. Q., Hobson, C. J., McPartland, J., Mood, A., Weinfeld, F. D., & York, R. L. (1966). *Equality of educational opportunity*. Washington, DC: Government Printing Office.
- Devine, P. G., & Elliot, A. J. (1995). Are racial stereotypes really fading? The Princeton Trilogy revisited. *Personality and Social Psychology Bulletin*, 21, 1139–1150.
- Dodson, F. (1970). *How to parent*. Los Angeles: Nash.
- Duru-Bellat, M. (1988). *Le fonctionnement de l'orientation. Genèse des inégalités sociales à l'école*. Delachaux & Niestlé: Neuchâtel.
- Duru-Bellat, M., Jarousse, J. P., & Mingat, A. (1993). Les scolarités de la maternelle au lycée. Etapes et processus dans la production des inégalités sociales. *Revue Française de Sociologie*, XXXIV, 43–60.
- Eccles, J. (1994). Understanding women's educational and occupational choices: Applying the Eccles et al model of achievement-related choices. *Psychology of Women Quarterly*, 18, 585–609.
- Eccles-Parsons, J., Adler, T. F., Futterman, R., Goff, S. B., Kaczala, G. M., Meece, J. L., et al. (1983). Expectancies, values, and academic behaviors. In J. T. Spence (Ed.), *Perspective on achievement and achievement motivation* (pp. 75–146). San Francisco: W. H. Freeman.
- Good, T. L., Biddle, B. J., & Brophy, J. E. (1975). *Teachers make a difference* (p. 267). New York: Holt, Rinehart, & Winston.
- Hanushek, E. A., & Woessmann, L. (2005). *Does educational tracking affect performance and inequality: Differences-in-differences evidence across countries*. CESifo Working Paper No. 1415.
- Hodgson, G. (1975). Do schools make a difference? In D. M. Levine & M. J. Bane (Eds.), *The inequality controversy: Schooling and distributive justice*. New York: Basic Books.
- Husen, T. (1972). *Origine sociale et éducation. Perspectives et recherches sur l'égalité devant l'éducation*. Paris: OCDE.
- Keeves, J. (1995). *The world of school learning. Selected key findings from 35 years of IEA research*. The Hague: International Association for the Evaluation of Educational Achievement.
- Merton, R. K. (1948). The self-fulfilling prophecy. *The Antioch Review*, 8, 193–210.
- Meuret, D. (2001). School equity as a matter of justice. In W. Hutmacher, D. Cochrane, & N. Bottani (Eds.), *In pursuit of equity in education: Using international indicators to compare equity policies* (pp. 93–111). Dordrecht: Kluwer.
- Mullis, I. V. S., Martin, M. O., Gonzales, E. J., & Kennedy, A. M. (2003). *PIRLS 2001 international report: IEA's study of reading literacy achievement in primary schools in 35 countries*. Chestnut Hill: Boston College.
- Mullis, I. V. S., Martin, M. O., Gonzales, E. J., & Chrostowski, S. J. (2004a). *TIMSS 2003 international mathematics report: Findings from IEA's Trends in International Mathematics and Science Study at the fourth and eighth grades*. Chestnut Hill, MA: Boston College.
- Mullis, I. V. S., Martin, M. O., Gonzales, E. J., & Chrostowski, S. J. (2004b). *TIMSS 2003 international science report: Findings from IEA's Trends in International Mathematics and Science Study at the fourth and eighth grades*. Chestnut Hill: Boston College.
- Organisation for Economic Co-operation and Development (OECD). (2005). *Education at a glance: OECD indicators*. Paris: Author.
- Organisation for Economic Co-operation and Development (OECD). (2006). *Education at a glance: OECD indicators*. Paris: Author.
- Perrenoud, P. (1995). *La pédagogie à l'école des différences*. Paris: ESF.
- Rosenthal, R., & Jacobson, L. (1968). *Pygmalion in the classroom*. New York: Holt, Rinehart & Winston.
- Steele, C. M. (1997). A threat in the air: How stereotypes shape the intellectual identities and performance of women and african Americans. *American Psychologist*, 52, 613–619.

Educational Product Degradation

► Institutional Quality and State Budget Cuts

EEG Training

► Neurotherapy

e-Exclusion

► [Digital Divide](#)

EFA Global Monitoring Report

► [Education for All Global Monitoring Report](#)

EFA GMR

► [Education for All Global Monitoring Report](#)

Effect Modifiers

► [Moderators](#)

Effect Size

► [Eta Squared](#)

Effect-Measure Modifiers

► [Moderators](#)

Effects of Happiness

► [Consequences of Happiness](#)

Effort-Reward Imbalance Model of Work Stress

► [Occupational Stress in a Multicultural Workplace](#)

Egalitarian Dating over 35 Years

Benjamin Fay¹ and Asia A. Eaton²

¹Department of Psychology, Florida International University, Miami, FL, USA

²Psychology and Women’s Studies, Florida International University, Miami, FL, USA

Definition

Egalitarian dating is courtship by romantically interested partners that is not structured by gender role ► [norms](#) but instead favors and promotes equality between partners and the sharing of power and responsibilities.

Description

Dating is a form of public courtship undertaken by romantically interested partners for the purpose of getting to know one another better. The practice of dating in the USA goes back about a century and is well documented and researched by social scientists (e.g., Bailey 1988). Sociologists, for example, published scientific research on dating as early as the 1940s covering topics such as courtship ► [attitudes](#) (e.g., Rockwood and Ford 1945), courtship behavior and personality (e.g., Nimkoff and Wood 1948), and courtship behavior and demographic variables (e.g., Winch 1946).

Gender Roles in Dating

Early norms and scripts for heterosexual dating relied heavily upon gender roles, depicting the male partner as active and assertive and portraying the female partner as reactive and passive (Ehrmann 1959). For example, the man was expected to plan date events and make sexual advances, while the woman was expected to serve as the “gate keeper” for sexual activity and accept or reject the man’s efforts. This distinction between activity and passivity is at the heart of

global gender stereotypes in which men are characterized by agentic traits and the possession of social power and status and women are characterized by communal traits and a relative lack of social power and status (see Eagly 1987 for a comprehensive discussion of the content and origin of gender roles).

Since that time, dating norms and practices in the USA appear to have undergone some meaningful changes. For example, men and women's explicit attitudes toward sex and romance have become more egalitarian and permissive (e.g., Garcia et al. 2012). Dating is no longer the direct path to marriage that it once was (Libby 1976), and first marriage is becoming increasingly delayed, taking place at a later mean age and well after sexual involvement (Sassler 2010). Dating is also no longer the only (or even primary) type of initial romantic encounter young singles engage in today, with hookups and hanging out becoming increasingly prominent (e.g., Bogle 2008; Eaton and Rose 2012). The last 10 years have also witnessed new approaches to initiating first dates, such as Internet dating and speed dating (e.g., Finkel and Eastwick 2008).

The addition of these new scripts and approaches along with an increase in young adults' experience with and acceptance of ► **casual sex** may mean that dating today is less gender typed. That is, if the avenues for finding mates, interacting with mates, and expressing sexuality have broadened, then perhaps the standards for acceptable dating behavior for men and women have become wider and more overlapping. However, a thorough review of dating research over the last 35 years reveals that young adults in the USA have not regularly embraced egalitarian practices on dates (for a review, see Eaton and Rose 2011).

reflected in studies of actual dating, where men reported outer-directed orientations toward intimacy and women reported inner-directed orientations (Stephen and Harrison 1985). Examinations of influence strategies used in dating relationships also revealed strong gender-typed behavior, with men using more direct and bilateral strategies such as bargaining and reasoning, possibly reflecting men's greater power in relationships than women (Falbo and Peplau 1980).

1990–1999

In the 1990s, dating research continued to uncover gender-typed behavior in dates, with men being more proactive on first dates, including picking up the woman, paying for the date, and taking her home, and women being more reactive (Rose and Frieze 1993). Research by Felmlee (1994) revealed that participants felt men made more of the decisions on dates, were less emotionally involved, and in general were “getting a better deal” on dates. Even laboratory-based efforts at challenging gender roles in dates were unsuccessful (e.g., Gilbert et al. 1999). When women participants were instructed to initiate dates and sexual intimacy in role-playing exercises, men still asked for the date 31% of the time, and discourse about male sex drive was prevalent in both the gender-typical and gender atypical conditions. Additional research showed dating and gender roles to be so intertwined that discussions about relationship intimacy among dating couples produced increased endorsement of traditional gender roles for both men and women participants (Vogel et al. 1999).

2000–2010

Research in the last decade has shown that the traditional dyadic dating script has remained stable. Morr Serewicz and Gale (2008) found that the hypothetical first-date scripts produced by young heterosexual adults heavily emphasized gender roles regardless of who initiated the date, replicating the hypothetical scripts generated by young

1980–1989

In the 1980s, research on hypothetical dating scripts revealed that the male partner was expected to be in control of the public domain while the female partner was concerned with the private domain (e.g., Rose and Frieze 1989). This dichotomy was also

adults 20 years earlier (Rose and Frieze 1989). Despite young adults' professions of egalitarian attitudes about dating, men and women today continue to ascribe the active date behaviors (e.g., asking for the date, picking up the date, and paying for the date) for men and reactive behaviors (e.g., primping during the date and waiting for the date to arrive) to women (Laner and Ventrone 2000). Moreover, in spite of some evidence that young adults today have moved away from a dating culture (e.g., Bogle 2008), dates continue to be the dominant form of getting together in some samples of young adults (e.g., Eaton and Rose 2012).

The Persistence of Gender Roles in Dating

Several explanations may contribute to the continued gender role norms in dating relationships. Gender disparities may be a reflection of prevailing gender discrimination in society. Regardless of improvements in women's status and power in recent decades, the median annual full-time earnings for women continue to be 77% of that of men (Institute for Women's Policy Research 2012). Additionally, women serve as CEOs of only 4% of Fortune 500 companies, despite earning about one third of MBAs each year in the USA over the last decade (Catalyst 2012; Leahey 2012).

The persistence of long-held gender stereotypes in dating scripts may also serve cognitive and social functions. In early dating encounters, scripts and stereotypes may provide couples with a familiar and mutually agreed upon backdrop that helps to reduce the ► [anxiety](#) associated with getting to know a new person. The heavy reliance of these scripts on gender may merely be a remnant of the explicit sexism that was more prevalent when the institution of dating was founded. Following well-established social scripts may also be a way of demonstrating ► [social competence](#) to a potential romantic partner. Finally, most early romantic encounters revolve around how to reduce uncertainty about the relationship and the partner (Afifi and Lucas 2008). The use of social

scripts and stereotypes provides a common and low-effort means of interpersonal synchronization in a situation otherwise full of ambiguity.

Problems with Gender Roles in Dating

Regardless of the cause, the persistence of gender inequalities in dating may be related to poor relational outcomes. Unequal power in a romantic relationship, as reflected in prevalent gender stereotypes in dating scripts, tends to motivate both partners to hide the thoughts, feelings, and needs that are inconsistent with their gender role norms (Beavers 1985), leading to lower levels of intimacy between partners and higher levels of relationship dissatisfaction (Schwartz 1994). The exercise of power and dominance of one partner over another is a deterrent to relationship success (Greenberg and Goldman 2008). People who try to embody gender ideals in the bedroom experience diminished ► [sexual satisfaction](#) (Sanchez et al. 2005). Gender differences in sexual passivity and dominance are also of concern. Attitudes toward traditional sexual roles are linked with increased sexual passivity for women, which predicts poor ► [sexual functioning](#) and satisfaction (Kiefer and Sanchez 2007b). Investment in meeting gender ideals is associated with an automatic sex-dominance association in men (Kiefer and Sanchez 2007a), and associating dominance with sexual relations is predictive of likelihood to rape and self-reported history of sexual coercion (Murnen et al. 2002).

The Friendship Script

A reduction in the reliance of relationships on gender stereotypes and a move toward egalitarianism may require a shift away from the use of traditional dating scripts all together. The friendship script provides an alternative to the dating script for initial romantic encounters. Friendships tend to be characterized by reciprocal liking, mutual involvement, and equality, even in the early stages of a developing friendship (Fehr 2008). In fact, the majority of both male and

female cross-gender friends report that power and control are either shared equally within their friendship or irrelevant to the friendship (Monsour et al. 1994), and the friendship script appears to prioritize equality more so than other relationship scripts (see Fehr 1996, for review).

An initial romantic encounter based on the friendship scripts would be characterized by mutual responsiveness and shared responsibility for all the date events, from asking for the date and paying for it, to monitoring the date conversation and its emotional undercurrent. Although the traditional dating script involves gender role norms, women and men appear to be equally competent and socially skilled at initiating friendships – an important factor in early friendship development (Fehr 2008).

Evidence suggests that the friendship script is easily applicable to romantic relationships. Self-reports among heterosexuals about relationships show Storge (friendship) love style to be the most common, with college students often citing their romantic partner as their closest friend (e.g., Hendrick and Hendrick 1993). There is also considerable overlap between the ideal characteristics of a romantic partner and friendships (e.g., Cann 2004). Men and women tend to agree on the qualities that are most important in a spouse, and many of those qualities correspond to qualities desired in a friend (Laner and Russell 1998).

Further, the friendship script already appears to be the predominant script in use in gay and lesbian relationships (e.g., Rose and Zand 2000). Gay and lesbian couples are often more egalitarian than heterosexual couples. For example, they often divide household labor more equitably (Peplau and Fingerhut 2007). This may be a result of same-sex couples' increased likelihood of basing romantic relationships on friendships (e.g., Schwartz 1994).

Given the apparent dominance of the friendship script and egalitarianism in gay and lesbian relationships and the potential for friendship as the basis for romantic relationships among heterosexual couples (e.g., heterosexuals report wanting similar qualities in their spouse that they want in a friend), the friendship script may prove a useful tool for exploring more egalitarian forms of

heterosexual relationships. Changing the script used as the basis for romantic relationship formation may be easier to do than adjusting global gender stereotypes.

Cross-References

- Gender and Health
- Marriage, Cohabitation, and Child Care in the USA
- Marriage, Cohabitation, and Well-Being in 30 Countries
- Women's Empowerment
- Women's Health

References

- Afifi, W. A., & Lucas, A. A. (2008). Information seeking in initial stages of relational development. In S. Sprecher, A. Wenzel, & J. Harvey (Eds.), *Handbook of relationship initiation* (pp. 197–215). New York: Psychology Press.
- Bailey, B. L. (1988). *From front porch to back seat: Courtship in twentieth-century America*. Baltimore: Johns Hopkins University Press.
- Beavers, W. R. (1985). *Successful marriage: A family systems approach to couples therapy*. New York: WW Norton.
- Bogle, K. A. (2008). *Hooking up: Sex, dating, and relationships on campus*. New York: New York University Press.
- Cann, A. (2004). Rated importance of personal characteristics across four relationships. *Journal of Social Psychology, 144*, 322–334.
- Catalyst. (2012). *Women MBAs*. Retrieved from <http://www.catalyst.org/publication/250/women-mbas>
- Eagly, A. H. (1987). *Sex differences in social behavior: A social-role interpretation*. Hillsdale: Lawrence Erlbaum Associates.
- Eaton, A. A., & Rose, S. (2011). Has dating become more egalitarian? A 35 year review using sex roles. *Sex Roles, 64*(11–12), 843–862.
- Eaton, A. A., & Rose, S. (2012). Scripts for actual first date and hanging-out encounters among young heterosexual Hispanic adults. *Sex Roles, 67*, 285–299.
- Ehrmann, W. (1959). *Premarital dating behavior*. New York: Henry Holt.
- Falbo, T., & Peplau, L. A. (1980). Power strategies in intimate relationships. *Journal of Personality and Social Psychology, 38*(4), 618–628.
- Fehr, B. (1996). *Friendship processes*. London: Sage.
- Fehr, B. (2008). Friendship formation. In S. Sprecher, A. Wenzel, & J. Harvey (Eds.), *Handbook of*

- relationship initiation* (pp. 29–54). New York: Psychology Press of Taylor and Francis.
- Felmlee, D. H. (1994). Who's on top? Power in romantic relationships. *Sex Roles*, 31, 275–295.
- Finkel, E. J., & Eastwick, P. W. (2008). Speed-dating. *Current Directions in Psychological Science*, 17(3), 193–197.
- Garcia, J. R., Reiber, C., Massey, S. G., & Merriwether, A. M. (2012). Sexual hookup culture: A review. *Review of General Psychology*, 16(2), 161–176.
- Gilbert, L. A., Walker, S. J., McKinney, S., & Snell, J. L. (1999). Challenging discourse themes reproducing gender in heterosexual dating: An analog study. *Sex Roles*, 41, 753–774.
- Greenberg, L. S., & Goldman, R. N. (2008). *Emotion-focused couples therapy: The dynamics of emotion, love, and power*. Washington, DC: American Psychological Association.
- Hendrick, S. S., & Hendrick, C. (1993). Lovers as friends. *Journal of Social and Personal Relationships*, 10, 459–466.
- Institute for Women's Policy Research. (2012). *The gender wage gap: 2011*. Retrieved September, 2012, from <http://www.iwpr.org/publications/recent-publications>
- Kiefer, A. K., & Sanchez, D. T. (2007a). Men's sex-dominance inhibition: Do men automatically refrain from sexually dominant behavior? *Personality and Social Psychology Bulletin*, 33, 1617–1631.
- Kiefer, A. K., & Sanchez, D. T. (2007b). Scripting sexual passivity: A gender role perspective. *Personal Relationships*, 14, 269–290.
- Laner, M. R., & Russell, J. N. (1998). Desired characteristics of spouses and best friends: Do they differ by sex and/or sex? *Sociological Inquiry*, 68, 186–202.
- Laner, M. R., & Ventrone, N. A. (2000). Dating scripts revisited. *Journal of Family Issues*, 21(4), 488–500.
- Leahey, C. (2012). Update: Fortune 500 women CEOs hits a record 20. *Fortune*. Retrieved July, 2012, from <http://postcards.blogs.fortune.cnn.com/2012/07/18/fortune-500-women-ceos-2/>
- Libby, R. (1976). Social scripts for sexual relationships. In S. Gordon & R. Libby (Eds.), *Sexuality today and tomorrow: Contemporary issues in human sexuality* (pp. 172–173). North Scituate: Duxbury Press.
- Monsour, M., Harris, B., Kurzweil, N., & Beard, C. (1994). Challenges confronting cross-sex friendships: "Much ado about nothing?". *Sex Roles*, 31, 55–77.
- Morr Serewicz, M. C., & Gale, E. (2008). First-date scripts: Gender roles, context, and relationship. *Sex Roles*, 58, 149–164.
- Murnen, S. K., Wright, C., & Kaluzny, G. (2002). If "boys will be boys," then girls will be victims? A meta-analytic review of the research that relates masculine ideology to sexual aggression. *Sex Roles*, 46, 359–375.
- Nimkoff, M. F., & Wood, A. L. (1948). Courtship and personality. *The American Journal of Sociology*, 53, 263–269.
- Peplau, L. A., & Fingerhut, A. W. (2007). The close relationships of lesbians and gay men. *Annual Review of Psychology*, 58, 405–424.
- Rockwood, L. D., & Ford, M. E. N. (1945). *Youth, marriage, and parenthood: the attitudes of 364 university juniors and seniors towards courtship, marriage, and parenthood*. Oxford: Chapman & Hall, Oxford.
- Rose, S., & Frieze, I. H. (1989). Young singles' scripts for a first date. *Gender and Society*, 3, 258–268.
- Rose, S., & Frieze, I. H. (1993). Young singles' contemporary dating scripts. *Sex Roles*, 28, 499–509.
- Rose, S., & Zand, D. (2000). Lesbian dating and courtship from young adulthood to midlife. *Journal of Gay and Lesbian Social Services*, 11, 77–104.
- Sanchez, D. T., Crocker, J., & Boike, K. R. (2005). Doing gender in the bedroom: Investing in gender norms and the sexual experience. *Personality and Social Psychology Bulletin*, 31, 1445–1455.
- Sassler, S. (2010). Partnering across the life course: Sex, relationships, and mate selection. *Journal of Marriage and Family*, 72(3), 557–575.
- Schwartz, P. (1994). *Peer marriage: How love between equals really works*. New York: The Free Press.
- Stephen, T. D., & Harrison, T. M. (1985). A longitudinal comparison of couples with sex-typical and non-sex-typical orientations to intimacy. *Sex Roles*, 12, 195–206.
- Vogel, D. L., Wester, S. R., Heesacker, M., & Madon, S. (1999). Dating relationships & the demand/withdraw pattern of communication. *Sex Roles*, 41, 297–306.
- Winch, R. F. (1946). Interrelations between certain social background and parent-son factors in a study of courtship among college men. *American Sociological Review*, 11, 333–343.

Egalitarianism

► Sex-Role Egalitarianism Scale

Eigenvalues

Ralph L. Piedmont
 Pastoral Counseling Department, Loyola
 University Maryland, Columbia, MD, USA

Synonyms

Autovectors

Definition

The term “eigenvalues” refers to the variance of a data matrix. While a common term in matrix algebra, in statistics, eigenvalues are commonly discussed in factor analysis. Here, an eigenvalue represents the amount of variance contained by a factor. It is an important index for determining the number of factors to retain in the analysis. Factors should contain a substantive amount of variance if they are to warrant being retained and interpreted. There are at least three ways that eigenvalues are used for determining how many factors to retain. The simplest, and now discredited method, is the *Kaiser criterion* which only keeps factors with eigenvalues greater than 1. The idea behind this method is that any factor should explain as much variance in the overall matrix as any single item. A second application is the *scree plot*, which is a simple graphical line plot of the eigenvalues of each successive factor (Tabachnick and Fidell 2001).

Given that each successive factor extracts less variance than the one before it, the graph of the line will quickly decline and eventually flatten out. The point at which the line plot stops dropping and begins to flatten out (much like the rocky scree on the side of a mountain) is the cutting point for selecting factors. A third application is *parallel analysis*, a technique that involves a Monte Carlo simulation of the data. Here, multiple random matrices (usually 5000–10,000) are created of the same magnitude as the real data and eigenvalues are extracted. The average amount of variance (the eigenvalues) extracted from each factor is then plotted and compared to the eigenvalues obtained in the real data. Factors with eigenvalues larger than the average eigenvalue found in the random data are retained for interpretation (Lee and Ashton 2007). Eigenvalues should not be confused with the term *eigenvector*, which refers to the factor loadings obtained for items in a factor analysis. Eigenvectors are the correlations between observed items and the factor dimensions.

Cross-References

- ▶ [Bi-factor Analysis](#)
- ▶ [Exploratory Factor Analysis](#)
- ▶ [Factor Analysis](#)

References

- Lee, K., & Ashton, M. C. (2007). Factor analysis in personality research. In R. Robin, R. Fraley, & R. Krueger (Eds.), *Handbook of research methods in personality psychology* (pp. 424–443). New York: Guilford Press.
- Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4th ed.). Needham Heights: Allyn and Bacon.

E

Elder Abuse

Susan Crichton

Manitoba Healthy Living, Seniors and Consumer Affairs, Seniors & Healthy Aging Secretariat, Winnipeg, MB, Canada

Synonyms

[Abuse of older adults](#); [Elder mistreatment](#); [Senior abuse](#); [Senior’s abuse](#)

Definition

The World Health Organization defines elder abuse as any action or inaction by a person in a relationship of trust that causes harm or distress to an older person (Krug et al. 2002). Commonly recognized types of elder abuse include physical abuse, psychological abuse, financial abuse, sexual abuse, and neglect.

Description

The first reference to elder abuse in the literature was in Britain in the mid-1970s when it was termed “granny battering” and recognized as

systematic physical abuse of an older person by a relative (McCreadie 1993). It is now recognized that elder abuse occurs within many different contexts and that a relationship of trust is key in defining it. This differs from other types of victimization of older adults, including frauds and scams and other crimes where the perpetrator is a stranger. Perpetrators of abuse of older adults are often adult children, grandchildren, spouses (which may be ► [domestic violence](#) “grown old,” i.e., abuse which started earlier in a relationship and continues into the later years or abuse which begins in a new relationship), other family members, friends, or professionals.

Although individuals and organizations struggle with increasing awareness and recognition of elder abuse, it has grown in recent years and is now being recognized by many as a significant social problem. It is also expected that the incidence of elder abuse will increase along the aging of our population. Therefore, there is more attention being paid to education, awareness, and training frontline workers in elder abuse prevention and intervention.

There have been few large-scale studies to measure the prevalence of elder abuse, and it is generally recognized that statistics commonly cited likely represent only a small proportion of actual cases. Results of the only national prevalence study in Canada, along with a few smaller scale studies, suggest that 4–10% of older adults are affected by abuse (Department of Justice Canada 2009; Podnieks 1992; Statistics Canada 2007). However, it has also been suggested that for every incident of elder abuse disclosed to authorities, five more go undisclosed (National Center on Elder Abuse 1998). Older people are often reluctant to disclose abuse due to shame, fear, embarrassment, isolation, do not know where to get help, do not recognize they are being abused, fear of having to move, and a belief that no one can help.

Abuse of older adults occurs in many different types of relationships and contexts. However, it is recognized that regardless of the type of abuse perpetrated, the abuser uses power and control to take advantage of the older adult. Early theoretical

perspectives suggested that abuse of older adults occurred in relationships where a frail older adult was dependent on a caregiver, which caused stress in the relationship and was exhibited in the form of abuse (Pillemer and Finkelhor 1989). This has been challenged over the last number of years, and it is now recognized that it is the abuser who is more often dependent on the older adult for food, money, housing, etc. This may be related to a change in life circumstance (loss of job, divorce) or mental health issues. It is also suggested that personality traits of abusers are key factors in situations of elder abuse, including psychological issues or substance abuse and/or gambling problems.

Given the complexity of the dynamics of abuse of older adults and issues with defining it, it has also been challenging to establish key risk factors that make older adults vulnerable to abuse by others. It is acknowledged that there are significant limitations with the current research base (i.e., using different definitions, varying age cut-offs, differing sampling methods). However, one of the most comprehensive analyses of the research to date included an examination of risk factors and those that are validated by substantial evidence. They categorized risk factors into three groups: risk factors validated by substantial evidence, possible risk factors for which evidence is limited or mixed, and contested risk factors for which there is a lack of evidence (Bonnie and Wallace 2003).

Risk factors for which there is substantial evidence include:

Living arrangement – a shared living arrangement is a major risk factor for elder abuse. Living with someone else increases contact and potential for conflict (see ► [Domestic Violence](#)).

Social isolation – older adults who are socially isolated are more at risk of abuse due to fewer opportunities for detection by an outsider and a limited social network to offer assistance.

Dementia – there is substantial evidence that older adults affected by dementia are more at risk of abuse. However, there is question as to whether it is the dementia itself or disruptive behaviors that result from the dementia that

place an older person more at risk (Bonnie and Wallace 2003).

Mental illness, hostility, and alcohol abuse of abusers are also risk factors validated by substantial research. In addition, as previously noted, abuser dependency on the older person (particularly financial dependence and for housing) is well substantiated in both research and practice (Bonnie and Wallace 2003).

It is often difficult to detect elder abuse due to the secrecy, shame, and isolation associated with this issue. This is why increasing awareness and education is key to prevention. This includes educating neighbors, friends, and family members along with professionals and frontline workers to recognize the signs that an older person may be affected by abuse. Signs may include:

Behavior

- Anxious, withdrawn, evasive, depressed
- Appears fearful in the presence of another person

Habits

- Sudden/unexpected change in social habits
- Sudden/unexpected change in living arrangements
- Unexplained or sudden inability to pay bills, account withdrawals, changes to a will or power of attorney, or disappearance of possessions
- Refusal to spend money without consulting the suspected abuser
- Missed/cancelled appointments
- Confusion about legal or financial documents

Health/Well-Being

- Sudden/unexpected decline in health or cognitive ability
- Decline in personal hygiene
- Dehydration or malnutrition
- Signs of over-/under-medication
- Suspicious injuries (e.g., bruising in various stages of healing, unusually shaped bruises)
- Sexually transmitted disease; itching, pain, or bleeding in genital area; difficulty sitting or walking

- Unexplained delay in seeking treatment
- Explanation of injury does not fit with evidence
- Previous reports of similar injury

Environment

- Poor living conditions in comparison to assets
- Inappropriate or inadequate clothing
- Lack of food
- Lack of required medical aids (glasses, hearing aid, walker) or medications

Suspected Abuser

- Is verbally aggressive, insulting, or threatening toward older person
- Shows unusual amount of concern over older person (either too little or too much)
- Speaks for older person and does not permit involvement in decision making
- Is reluctant to leave older person alone with professional.

In recent years, there has been significant activity in ensuring that resources and supports are available and accessible to older adults affected by abuse. Currently, approaches that seem to be effective are termed “promising approaches” as very little has been evaluated to provide evidence to indicate “best practices.” So, promising approaches are those that practitioners in the field feel are effective but which have not been evaluated (Canadian Network for the Prevention of Elder Abuse 2007).

In 2010, A WorldView Environmental Scan was undertaken to collect information about the nature of elder abuse and responses to it from a global perspective (Podnieks et al. 2010). The scan received responses from 53 countries representing all six WHO regions. Questions were asked regarding knowledge of elder abuse, laws pertaining to elder abuse, agencies leading initiatives, services available, resources for information, training, and research. The scan provides a good snapshot of promising approaches that are being used on a global scale at all levels of prevention.

Results of the scan indicate that on a global level, definitions of abuse vary and differing factors are recognized as “causes of abuse.” For example, in developing countries, poverty is recognized as a “cause” of elder abuse, while this was not identified in developed countries. The scan also found that few countries have age-specific laws to prevent elder abuse. Protection and criminal laws are the two most common approaches used in developed countries, while criminal and constitutional laws are used in developing countries. Agencies leading prevention efforts are mostly NGOs and government agencies in developing countries and social services, police, and government in developed nations. However, all countries report limited funding as a key challenge. The scan found that both developing and developed countries have services in place for prevention, detection, and intervention. In developing countries, services include counseling programs, help lines, legal assistance, and medical assistance. In developed countries, help lines, education, legal assistance, and reporting agencies are the most common approaches.

The scan also found that there is a significant difference among countries regarding resources available for information. It was identified that resources are very limited in developing countries due to barriers including literacy levels, poverty, cultural factors, and lack of education. Most developed countries indicated that resources for information are available and that internet accessibility and poor understanding of elder abuse were the key barriers. Both developed and developing countries indicated that training for front-line responders is lacking and what is available is extremely limited. Finally, both developing and developed countries indicated that further research is needed on prevalence, etiology, and evaluation. Developed countries also indicated a need for further research on abuse in institutional settings (Podnieks et al. 2010).

In North America, key points of contact to learn more about promising approaches in this field include the National Center on Elder Abuse (US) http://www.ncea.aoa.gov/NCEAroot/Main_Site/Index.aspx and the Canadian Network for the Prevention of Elder Abuse <http://www.cnpea.ca>.

World Elder Abuse Awareness Day

Given that elder abuse continues to be an under-recognized issue, the International Network for the Prevention of Elder Abuse held the first World Elder Abuse Awareness Day (WEAAD) on June 15th, 2006, and it is now recognized each year. It provides an opportunity for individuals, communities and organizations to collectively raise awareness of elder abuse. More information about WEAAD is available at www.inpea.net.

Cross-References

- [Domestic Violence](#)
- [Same-Sex Partner Violence](#)
- [Violence](#)
- [Violence Against Women](#)

References

- Bonnie, R., & Wallace, R. (Eds.). (2003). *Elder mistreatment: Abuse, neglect, and exploitation in an aging America*. Washington, DC: National Academies Press.
- Canadian Network for the Prevention of Elder Abuse. (2007). *Outlook 2007: Promising approaches in the prevention of abuse and neglect of older adults*. Ottawa: Public Health Agency of Canada.
- Department of Justice Canada. (2009). *Abuse of older adults: Department of Justice Canada overview paper*. Ottawa: Justice Canada.
- Krug, E., Dahlberg, L., Mercy, J., Zwi, A., & Lozano, R. (Eds.). (2002). *World report on violence and health*. Geneva: World Health Organization.
- McCreadie, C. (1993). From granny battering to elder abuse: A critique of U.K. writing, 1975–1992. *Journal of Elder Abuse & Neglect*, 5(2), 7–25.
- National Center on Elder Abuse. (1998). *National Elder Abuse Incidence Study: Final report*. Washington, DC: American Public Human Services Association in collaboration with Westat.
- Pillemer, K., & Finkelhor, D. (1989). Causes of elder abuse: Caregiver stress versus problem relatives. *The American Journal of Orthopsychiatry*, 59(2), 179–187.
- Podnieks, E. (1992). National survey on abuse of the elderly in Canada. *Journal of Elder Abuse & Neglect*, 1(2), 5–58.
- Podnieks, E., Anetzberger, G., Wilson, S., Teaster, P., & Wangmo, T. (2010). Worldview environmental scan on elder abuse. *Journal of Elder Abuse & Neglect*, 22, 164–179.

Statistics Canada. (2007). *Family violence in Canada: A statistical profile*. Ottawa: Canadian Centre for Justice Statistics.

Elder Abuse and Neglect, Institutional

Bridget Penhale

School of Health Sciences, Faculty of Medicine and Health Sciences, University of East Anglia, Norwich, UK

Synonyms

[Institutional elder abuse](#)

Definition

Institutional abuse of older people refers to forms of abuse that occur within institutional care settings for older people. It is the term used to denote physical or psychological harms, as well as violations of rights in any setting where treatment, care, and assistance are provided to dependent older adults or others. Neglect refers to depriving a person of food, heat, clothing, medication, or other items essential for daily living and includes deprivation of needed services or equipment to an individual. The deprivation may be intentional (active neglect) or happen due to lack of knowledge, understanding, or resources (passive neglect). In relation to institutional neglect, it is more likely to occur in intentional than unintentional forms. Increasingly, the word “mistreatment” is used to denote abuse and neglect; thus, use of the term institutional mistreatment may be found in place of institutional abuse.

Description

Abuse found in institutional settings may be physical, including sexual abuse and harassment; psychological and emotional types of abuse are also

apparent and may often occur with situations of physical mistreatment. Situations of racial and other forms of discriminatory abuse are also included. Neglect, either active or passive, is usually included within definitions, as is financial abuse. This latter form of abuse is also known as material abuse or exploitation as it includes the misappropriation of money, property, or possessions. Abusive acts in institutions may include physical restraint, depriving residents of dignity (for example, leaving individuals in soiled clothes) and choice over daily affairs; intentionally providing insufficient care (such as allowing pressure ulcers to develop); misuse, or inappropriate use of medication through over- or undermedication or withholding medication from patients/residents; and emotional neglect and abuse. Such abuse may be a criminal act, a violation of human rights, or an almost imperceptible individual interaction in which the older person feels degraded. This range of behaviors is linked in that they happen in situations in which the victim is dehumanized, and the abuser relates to the older person through a misuse of power.

Elder abuse can lead to physical injuries – covering a range from minor scratches and bruises to broken bones and severe injuries resulting in disability – and/or major, sometimes long-lasting, psychological consequences, including depression and anxiety. For older people, the consequences of abuse can be particularly serious, and it may take individuals longer to recover from these. Even comparatively minor injuries may cause serious and/or permanent damage, or even lead to death.

Institutional settings in which abuse or neglect may occur include those run by public, private and voluntary, or not-for-profit organizations. The breadth of settings includes hospitals, residential and nursing homes, known by a number of terms in different countries, day hospitals and day care settings, and congregate living centers. Occupational training centers may also be included where older people with mental or physical disabilities are in attendance. All older people who live in or use such institutions could be at risk of experiencing abuse or abusive regimes. While some of the mistreatment may be individual in

nature, targeted at one particular resident or patient, often the mistreatment arises through the organizational and systemic culture that exists and operates within the setting, and affects a number of people in the same setting, due to the nature of the regime in place.

The mistreatment may therefore be indicative of the type of regime that occurs within the institution, whereby individual residents or patients are mistreated, and various rights, for example, rights to dignity, privacy, and respect, are denied. Abuse may be committed by relatives, care or ancillary staff members, other residents, volunteers, or other visitors to the institution. It may be a continuation of a preexisting abusive situation, for example, from family members, or it may occur for the first time in this type of setting.

Abuse in institutional settings is more likely to happen when the standards of care within such facilities (including health care) are generally low; staff are inadequately trained, poorly paid, and often work long hours with inadequate supervision (WHO 2018). In addition, other factors of note pertain if the physical “care” environment is of a poor standard, and the policies, procedures, and practices within the setting operate in the interests of the institution rather than those that concern residents and their well-being. Additional factors such as the size of the institution, levels of staff education, and staff-resident ratios appear associated with abuse (McDonald et al. 2012). Many countries have developed systems of inspection and regulation for institutions, which specify the standards that must be adhered to by care providers and provide registration and licensing of such provision. Required regular inspection and reporting about the settings helps to ensure that required standards are met and that necessary improvements can be identified and specified that providers must address.

The abuse of older individuals receiving care in institutions is not a new phenomenon. Reports of institutional abuse appear regularly but are often only superficially covered by the media. In recent years, it has become increasingly apparent that abuse or neglect of older people who live in institutions is part of the experience of many

residents in a number of different settings, and that such abuse may be both widespread and systematic. However, there is not currently any absolutely reliable epidemiological evidence relating to the prevalence and incidence of institutional mistreatment, particularly from the perspective of self-reported data obtained from older people living in care homes (Yon et al. 2018), although a systematic review and meta-analysis indicate that estimates based on reports by care staff suggest that almost two-thirds of staff (64%) admitted to some form of elder abuse in the past year (Yon et al. 2018).

There has been a lengthy tradition in the UK and elsewhere of scandals in institutional care relating to older people. Such scandals tend to have been investigated and treated as separate inquiries into standards of care rather than as directly concerned with mistreatment. Coverage concerning such scandals and inquiries tends to be short-lived and rather cursory. There are a number of reasons for this, but these include the nature and impact of societal ageism and ambivalence concerning the care afforded to older people. A lack of sufficient attention within society, in general terms, to the quality of life of older people in their final years of life also appears an important factor.

This entry concerns institutions that provide care, protection, and sometimes treatment for older people. In such places, the duty of care is conceivably of foremost concern, perhaps specifically when in relation to those older people who are particularly frail and vulnerable and in the latter stages of life. When abuse happens in such settings, therefore, it may be perceived as particularly at variance with the institution’s stated aims and objectives. Abuse that occurs within penal settings is not usually included within considerations of institutional abuse. Definitions of abuse in such settings need to be constructed in the context of different institutional objectives such as punishment and crime prevention, which are the predominant focus for such environments.

When considering institutional abuse, it is also necessary to recognize that abuse may occur between individual service users. Residents of

institutions live together, often in conditions of some intimacy, but will not necessarily be in close or intimate relationships with one another, and situations of abuse may arise between individuals (McDonald et al. 2015; Rosen et al. 2008). Additionally, within institutional settings there may also be risks of abuse being directed by residents at members of staff or at relatives (Department of Health 1996).

During much of 2020, the Coronavirus pandemic affected many countries and regions across the world. Older people, particularly those living in institutions were particularly adversely affected by the virus and much more likely to become severely ill or die from the viral infection. In some instances, the situations that developed in care and nursing homes (in particular) were identified as constituting elder abuse (Beaulieu et al. 2020) and formed part of calls made to develop a UN Convention on the Human Rights of Older People to combat such violations of human rights (see UN 2020).

Discussion

In general terms, the definition of abuse remains a contested area, and there is an absence of agreement as to what comprises abuse and neglect. There is no universal, standardized definition, although that which was developed by the UK charity, Action on Elder Abuse (1995), and subsequently adopted by the World Health Organization (2002) tends to be the most frequently cited, even if this definition does not specifically refer to particular settings in which abuse and neglect may occur. Controversy also exists about the definition of institutional abuse, indicators of abuse, and the role of neglect within the spectrum of institutional mistreatment. While existence and use of different definitions need not be problematic, it is important that there is clarity from the outset about which definition is being used and for what purposes. In relation to institutional settings, definitions need to establish some distinction between individual acts by abusers within institutions, abusive regimes that arise and are perpetuated, and

examples of poor, or indeed bad, practice of management and care. This latter point relates to organizational and structural problems within the institution in which abuse occurs (Bennett et al. 1997; Utting 2000).

Although there are differences between abuse in domestic settings and that which occurs within institutions, power relations are central to all abusive situations. What needs to be considered are the dynamics and variables, which inform the abuse of power within different settings. The work of Goffman (1961) provides an essential and relevant background, which any exploration of the working of power within institutions must take account of.

Structural factors, including the potential roles of gender, race, disability, and class, are clearly of major importance within examination of abuse as much as within quality of life. The intersections of such factors with violence, abuse, and neglect must also be taken into account. Considerations of gender are of particular relevance in relation to sexual and physical forms of abuse, as men predominantly perpetrate these. Perspectives of race and class are notable as relevant structural factors within many situations of institutional abuse. Factors regarding disability, where there may be an emphasis on vulnerability and dependency, which may itself be an oppressive concept, are also of note. Many of the models of causation that have been developed concerning institutional abuse have tended to focus on perpetrators and their associated pathology; this is the so-called “bad apple” approach (Biggs et al. 1995; Stanley and Manthorpe 2004).

Use of such approaches has meant that the identification of and responses to institutional abuse has tended to focus on flushing out individual abusers and that other, arguably more critical factors have not been accorded sufficient attention. Factors that concern wider structural oppressions and inequalities require much more detailed consideration within identified situations.

In considering definitions, meanings, and understanding, it is also necessary to explore what is understood by the term “institution.” As with abuse, there is no standard definition.

Dictionary definitions provide a number of different meanings. Institution may mean a society or organization. The term concerns structure, function, and process, not just the presence of a physical entity or building (Jack 1998). In an examination of residential provision, Jack (1998) posits that the concept of an “institution” has become identical to a particular form of service provision and processes of institutionalization. He argues that a rather simple, dualistic concept can be identified in public and professional arenas and suggests that this concept equates “community” with good features and “institutions” with all that is bad. While Jack (1998) is surely correct to challenge such oversimplifications, the alternative model which contrasts neglect in the community with high-quality institutional care appears equally misleading. It is also noteworthy that his analysis fails to include any detailed consideration of institutional abuse.

For our purposes, institution in terms of residential and/or nursing care refers to care provided within a home which is not owned by the individual, and where the locus of control lies beyond the individual living in that environment. Also central to the definition is that the individual lives with others, and there is likely to be little, often no, choice as to who those individuals are. Control over the structure, function, and organization of the home is not within the power of the individual but is owned by members of staff who are not ordinarily resident in that environment. Indeed, the extent of control, or lack of control by individuals, in relation to their living environment appears to be a key defining element of an institution, although the degree of control available to them is likely to vary between different settings.

Much of the care given in institutional settings is valuable, of good quality, and provided well. A polarization between community living as first choice and institutional care as last resort seems evident in many statements about institutional care and quality of life in old age. This has not been helped by much of the rhetoric surrounding community care, which has tended to suggest that community provision is the only appropriate form of care that is relevant for individuals in later life.

However, in avoiding the oversimplified conflict model of community care versus institutions, we must not ignore the testaments of service users in general, and of survivors of institutional abuse in particular. Such testaments tend to affirm views that care in community settings is more desirable for individuals than continuing or long-term care in institutions. This appears particularly apposite if those settings are ones in which abuse occurs and is sometimes perpetuated and where people experience harm in the very settings in which they are supposed to be cared for and safe.

A number of approaches have been taken to establishing understandings of institutional abuse. Institutional abuse can be conceived of as existing at three different levels. The following schema can be used to structure the concept of institutional abuse:

- Level 1: abuse between individuals within the institutional setting
- Level 2: abuse arising due to the regime of the institution
- Level 3: abuse arising at a system level (broader social structure)

This type of approach is also suggested within the work of Gil (1982), which identified three different forms of institutional abuse in relation to children: The first form was the overt or direct abuse of a child by a care worker; the second form of abuse identified was termed “Programme Abuse” and referred to the existence of an abusive regime or treatment program within an institution; and the third form of abuse was called “System abuse,” which corresponds to the third level, that of the broader social system, and refers to abuse which is perpetrated and perpetuated by the system, and in which the safety of individuals (within institutional care) cannot be assured. By changing the first part of the definition proposed by Gil (1982) from child to individual, the definition of institutional abuse can be considered in a rather more holistic way than either the different types of abuse or the range of settings in which abuse occurs.

Any discussion of institutional abuse must also take into account sociological perspectives on institutionalization. This term refers to the generally negative aspects of institutional life, which some individuals experience while in institutions. Psychiatrist Barton (1959), following work undertaken in the 1950s, developed the concept of institutional neuroses, in an attempt to understand the ways in which many patients of psychiatric institutions became dependent and apathetic. Later, it became apparent that the term could equally apply to the behaviors of many older people and adults with disabilities living in care settings. Subsequent to this, in the early 1960s, a seminal work on institutions was produced (Goffman 1961). In this influential text, a model of the “total institution” was constructed, which explored the processes of institutionalization as experienced by “inmates.” The work examined the processes of depersonalization which individuals experience when living in such institutions. In this work, the routines and structures of institutions were interrogated, and five basic types of institutions were identified:

- Institutions designed to care for the “incapable and harmless” (e.g., homes for the “blind, aged or orphaned”)
- Institutions established to care for the “incapable” who present an unintended threat to the community (e.g., sanatoria, mental hospitals)
- Institutions organized to protect the community from “intentional dangers” (e.g., prisons)
- Institutions established for some “worklike task” (e.g., army barracks, boarding schools)
- Institutions set up as retreats from the world (e.g., monasteries)

It is with the first two types of institution as delineated above that this entry is principally concerned. In Goffman’s opinion (1961), all these different types of institutions shared some common characteristics, albeit to varying degrees. The key features of total institutions were:

First all aspects of life are conducted in the same place, and under the same single authority. Second, each phase of the members’ daily activity is carried

on in the immediate company of a large batch of others, all of whom are treated alike and required to do the same thing together. Third, all phases of the day’s activities are tightly scheduled with one activity leading at a pre-arranged time into the next, the whole sequence of activities being imposed from above by a system of explicit formal rulings and a body of officials. (Goffman 1961 p. 17)

For Goffman (1961), it was the fundamental nature of institutions and institutional care that lead to a degradation of that care. He argued that the removal of normal, everyday patterns of activity and identities for individuals provided a specific cultural and social context within which institutions operated. Further, it was within those specific contexts for particular institutions that individuals became depersonalized (Goffman 1961). And it is within this context of depersonalization that abuse may occur, as Wardhaugh and Wilding (1993) suggest in their exposition on the corruption of care and associated consequences. In settings where there is a predominant perspective in which individuals are viewed as in some way less than human and are seen as “other” or “not like us,” then abuse of those individuals becomes more understandable, if not justifiable (Wardhaugh and Wilding 1993).

There has been some criticism of the work on “total institutions,” with proponents arguing that the account did not really examine the relationship between the institution and the broader social and societal context in which care was provided (Perring 1992). Moreover, few current institutions fit within Goffman’s original definition (Goffman 1961). However the basic tenets of institutionalization remain instructive when considering mistreatment within institutional settings.

The move toward smaller community-based institutions, which have developed in many countries in recent years, may imply an underlying change in the nature of institutional care. Smaller institutions often lack the elaborate hierarchies that made it so difficult to achieve change in the larger institutions. It may also mean that it is easier to intervene to achieve change and that the boundaries between the home and the community are more permeable. However, in some instances the person responsible for the daily management of

the unit may own the institution, which can present particular areas of difficulty. It is arguable, too, that in smaller units the balance of power and the opportunities for abuse of that power continue to be potentially problematic. Within smaller institutions, however, the population of residents/patients and staff may change more frequently than in larger, more traditionally run units, and this may bring different perspectives on the care and treatment of individuals.

Institutions do not stand alone, but increasingly work in partnership with other forms of care provision. The potential partnerships with short-term provision such as respite care (also called “short-breaks”) and fostering or shared-care and of residential and nursing care homes providing day and domiciliary care services to older people within a locality may be indicative of positive developments. Care homes have also been developing a much more person-centered and “homely” style of provision (Peace 1998). There have, additionally, been moves to make care homes more open, with more links to communities; this may act in a protective way (if the environment is more open, then it is less likely that abusive situations will occur or go unrecognized).

This leads to a challenge: How to provide a home which is more “homely,” yet also more open to public scrutiny and regulatory mechanisms in a way in which domestic homes are not. It is also the case that the existence of smaller homes, which are often more integrated in the local community, does not necessarily mean that the home will be more open or free from abuse or abusive practices, nor should we assume that this will be the case.

The response to institutional abuse does not just concern improving standards of care. Awareness of the possibility of abuse occurring within institutions and the risk factors involved can affect decisions about the provision of care, and, for individuals, decisions about choice of care. Within the field of child-care, the publicized failure of care provided in some residential homes and schools, together with scandals relating to abuse within such settings, has led to an increasing loss of public confidence in the ability of such homes to provide safety and protection for their

residents. It is possible that to a lesser extent this is also the case in relation to perceptions about institutional care of older people and adults with disabilities.

Developments that are taking place or are likely to happen, such as improvements in regulatory mechanisms, including regulation of the workforce and protection of adults who may be vulnerable and at risk of harm in care homes, may go some way toward restoring confidence. It will take some time, however, for the public to feel sufficiently assured that institutional care is anything other than a last resort for older individuals who need care and support. This in itself may be a key factor in the development and perpetuation of elder abuse happening within institutions.

Cross-References

- ▶ [Care, Long-Term](#)
- ▶ [Care, Residential](#)
- ▶ [Dimensions and Values of Elderly People, Quality of Life](#)
- ▶ [Elder Abuse](#)
- ▶ [Health and Violence](#)
- ▶ [Quality of Life and Quality of Care: An Integrated Model](#)
- ▶ [Quality of Life for Older Adults, an Integrated Conceptual Model](#)
- ▶ [Violence](#)

References

- Action on Elder Abuse. (1995). Definition of elder abuse. *AEA Bulletin*, 5, 11.
- Barton, R. (1959). *Institutional neurosis*. Bristol: Wright.
- Beaulieu, M., Cadieux Genesse, J., & St-Martin, K. (2020). Covid-19 and residential care facilities: Issues and concerns identified by the International Network for the Prevention of Elder Abuse (INPEA). *Journal of Adult Protection*, 22, (6), 385–389. <https://doi.org/10.1108/JAP-08-2020-0034>.
- Bennett, G., Kingston, P., & Penhale, B. (1997). *The dimensions of elder abuse: Perspectives for practitioners*. Basingstoke: Macmillan.
- Biggs, S., Phillipson, C., & Kingston, P. (1995). *Elder abuse in perspective*. Basingstoke: Macmillan.
- Department of Health. (1996). *Responding to residents*. London: HMSO.

- Gil, E. (1982). Institutional abuse of children in out-of-home care. In R. Hanson (Ed.), *Institutional abuse of children and youth*. New York: Haworth Press.
- Goffman, E. (1961). *Asylums: Essays on the social situation of mental patients and other inmates*. New York: Anchor/Doubleday.
- Jack, R. (Ed.). (1998). *Residential versus community care*. Basingstoke: Macmillan.
- McDonald, L., Beaulieu, M., Harbison, J., Hirst, S., Lowenstein, A., Podnieks, E., & Wahl, J. (2012). Institutional abuse of older adults: What do we know, what do we need to know. *Journal of Elder Abuse and Neglect*, 24(2), 138–160.
- McDonald, L., Sheppard, C., Hitzig, S. L., Spalter, T., Mathur, A., & Mukhi, J. S. (2015). Resident-to-resident abuse: A scoping review. *Canadian Journal on Aging*, 34, 215–236.
- Peace, S. (1998). Caring in place. In A. Brechin, J. Walmsley, J. Katz, & S. Peace (Eds.), *Care matters: Concepts, practice and research in health and social care*. London: Sage.
- Perring, C. (1992). The experience and perspectives of patients and care staff of the transition from hospital to community based care. In S. Ramon (Ed.), *Psychiatric hospital closure: Myths and realities*. London: Chapman Hall.
- Rosen, T., Pillemer, K., & Lachs, M. (2008). Resident-to-resident aggression in long-term care facilities: An understudied problem. *Aggression and Violent Behavior*, 13(2), 77–87.
- Stanley, N., & Manthorpe, J. (Eds.). (2004). *The age of the inquiry: Learning and blaming in health and social care*. London: Routledge.
- UN. (2020). *Secretary-General's policy brief: The impact of Covid-19 on older persons*. New York: UN. Issued May 2020. Available from: <https://www.un.org/development/desa/ageing/news/2020/05/covid-19-older-persons/>
- Utting, W. (2000). *People like us*. London: HMSO.
- Wardhaugh, J., & Wilding, P. (1993). Towards an explanation of the corruption of care. *Journal of Social Policy*, 13(37), 4–31.
- World Health Organization. (2002). *World report on violence and health*. Geneva: WHO.
- World Health Organization. (2018). *Elder abuse*. Geneva: WHO.
- Yon, Y., Ramiro-Gonzalez, M., Mikton, C., Huber, M., & Sethi, D. (2018). The prevalence of elder abuse in institutional settings: A systematic review and meta-analysis. *European Journal of Public Health*, 29(1), 58–67.

Elder Care

- [Quality of Life and Quality of Care: An Integrated Model](#)

Elder Mistreatment

- [Elder Abuse](#)

Elderly Activity and Engagement with Life

Jacqueline A. Liffiton and Patricia L. Weir
Department of Kinesiology, University of Windsor, Windsor, ON, Canada

Synonyms

[Normal aging](#); [Successful aging \(SA\)](#); [Usual aging](#)

Definition

SA is mainly defined from two different approaches. The first reflects a continuous ► [adaptation](#) to age-related change, where the aging process presents unavoidable declines in performance as well as function. The aging individual adapts to these changes through a process of selection, optimization, and compensation to continue to live productively (Baltes and Baltes 1991). The second and more common definition describes SA as a state of being that may be objectively measured at a particular moment in any stage of life. These measures include disease and ► [disability](#) (Fries 1980; Rowe and Kahn 1997), cognitive performance (Rowe & Kahn; Salthouse 1991), physical functioning (Rowe and Kahn 1997; Schulz and Heckhausen 1996; Strawbridge et al. 1996), ► [life satisfaction](#) (Palmore 1979), and overall quality of life (Strawbridge et al. 2002).

Description

Rowe and Kahn's (1987) model of SA has been the most commonly used and widely accepted in

research (Depp and Jeste 2006; Strawbridge et al. 2002). Rowe and Kahn (1987) believe that some pathological changes are age-determined and inevitable; however, normal aging is usually reserved for situations when disease-related physiological changes are not present. Normal aging is divided into two different categories: usual aging and successful aging. Usual aging is defined as experiencing typical non-pathological age-related losses Rowe and Kahn (1987). While these older individuals are fortunate to be disease-free, decreases in cognitive and physical function are still present which puts them at risk for illness/disability. Successful aging, on the other hand, is when an individual exhibits minimal or no cognitive and physical losses when compared to the average younger individual. They are at low risk for any disease and are high-functioning adults (Rowe and Kahn 1997).

Rowe and Khan's model of SA contains three main components (Rowe and Kahn 1997). The first is a low probability of disease and disease-related disability. This not only includes the absence of disease but also the absence of risk factors for disease. Disease or disease-related disability is considered to be any physical- or health-related problem that lasts for at least six months and limits daily tasks and occupations (Gilmour and Park 2004). Common risk factors for disease include changes in abdominal fat, changes in systolic blood pressure, or decreases in organ and immune function (Rowe and Kahn 1987). The second component of the model is high cognitive and physical functioning. This includes the potential for function and activity, as it is more important to know what an individual is capable of doing, not simply what they are doing. Physical functioning is typically assessed using functional performance on tasks such as the ability to walk $\frac{1}{4}$ mile, the ability to stand without feeling faint, and the ability to climb one flight of stairs (Strawbridge et al. 2002), while cognitive functioning is assessed using memory or recall-based items (Strawbridge et al.). The final component is active engagement with life. This component of Rowe and Khan's model primarily focuses on interpersonal relations and productive activity. Interpersonal relations are classified as

contact with others (i.e., emotional support), whereas productive activities must create societal value, whether it is paid or volunteer work, caring for others, or household activities. All three of Rowe and Khan's components work together as a hierarchy to create successful aging. When disease/disability is absent, cognitive and physical functions are easier to maintain. In turn, the maintenance of function helps individuals stay engaged with their lives (Rowe and Kahn 1998). One of the most important features of the Rowe and Kahn model is the recognition that older adults have some control over their physical and cognitive functioning through the adoption of healthy lifestyle choices such as physical activity and diet.

In research, when older adults have been subjectively asked their views of SA, the importance of the third component of Rowe and Khan's model seems to stand out. Older adults often believe social engagement and a positive outlook towards life rather than physical health are important factors contributing to SA (Strawbridge et al. 2002). For example, Knight and Ricciardelli (2003) used semi-structured interviews to ask seniors "what they thought successful aging was." Fifty-three percent of the participants responded "health" with "activity" a close second, being mentioned by 50% of participants. After Knight and Ricciardelli's interview, they asked their participants to rate the importance of ten common criteria of SA that emerge from the literature. Their rank-ordered answers were as follows: health, happiness, mental capacity, adjustment, life satisfaction, physical activity, close personal relationships, social activity, sense of purpose, and withdrawal. Similarly, Fisher (1995) employed a similar interview methodology where participants reported that SA was described as a person's ability to adjust to their present as well as future conditions. Activity, income, health, interactions with others, and a positive attitude were the common factors leading to SA in their study. Tate, Lah, and Cuddy (2003) surveyed a group of retired individuals from an Air Force crew and asked, "What is your definition of SA and would you say you have aged successfully?" Of the participants, 83.8% felt

they were successfully aging based on components such as health, life satisfaction, keeping active, and keeping fit. In all three of these studies, the seniors included the importance of remaining physically and socially active as important factors for SA, running parallel with the third component of Rowe and Kahn's SA model, remaining actively engaged with life. Throughout research active engagement, social participation, interpersonal relationships, productive activities, leisure activities, social activities, and physical activities are all terms that have been used to describe different components of engagement with life (Bukov et al. 2002; Glass et al. 1995; Menec 2003; Palmore 1979; Rowe and Kahn 1997; Strawbridge et al. 1996). The many forms of engagement all have positive influences on maintaining functioning with age. Engaging in productive activities has been associated with better health and functioning (Glass et al. 1995), while social activities were predictive of increased physical function and a slower decline in functional status (Unger et al. 1997) and passive and active leisure activities have been associated with better overall functioning and survival (Glass et al. 1999). Conversely older adults with higher levels of physical activity exhibit higher levels of social engagement (Mendes de Leon et al. 2003).

It is known that participation in active leisure activities or physical activities has positive effects on improving and maintaining mental health, preventing and minimizing effects of chronic diseases, enhancing physical health and functioning, as well as overall quality of life in older adults (National Advisory Council of Canada 2006). Quality of life (QOL), or health-related quality of life (HRQL) (Acree et al. 2006), includes a person's physical health, psychological state, personal beliefs, social relationships, and their relationship to salient features of the environment (Oort 2005). Depp and Jeste (2006) surveyed 29 peer-reviewed studies of adults over the age of 60 years that included a definition of successful aging. The top three independent variables/predictors of SA were disability/physical functioning, cognitive functioning, and life satisfaction/well-being. All three of these variables fall under the quality of life definition.

Adopting a broad conceptual framework is consistent with the early work of Stewart and King (1991) that QOL is composed of two domains: (1) functioning (physical, cognitive, engagement with life, and objective health measures) and (2) well-being (bodily well-being, emotional well-being, ► [self-concept](#), and global perceptions of well-being). QOL is subjective, and the value of various components differs not only among individuals but within individuals at different stages of life. A number of systematic and meta-analytic reviews have been published, and have consistently reported that engagement in physical activity or exercise can contribute to an enhanced quality of life in older adults. Specifically, older adults aged 65+ years that engage in long-term physical activity postpone disability and tend to live an independent lifestyle resulting in a higher quality of life (Spirduso and Cronin 2001). Healthy aging was also achieved if individuals were engaged several times per week in walking, ► [gardening](#), and/or vigorous exercise at a rate of >500 kcals per week (Peel et al. 2005). Netz, Wu, Becker, and Tenenbaum (Netz et al. 2005) concluded that participation in either aerobic or resistive ► [exercise](#) training, across all age groups (54–75+ years), led to improved psychological well-being. For adults aged 75+ years, moderate-intensity exercise benefitted psychological well-being, suggesting that high-intensity exercise is not required to promote either physical or psychological health.

Linking these ideas back to successful aging and engagement, Everard, Lach, Fisher, and Baum (2000) surveyed older adults to examine the relationship between the maintenance of performing leisure, social, physical, productive, and instrumental activities and active engagement with life. When older individuals remained involved in high-demand leisure activities (i.e., swimming, walking, gardening), higher physical function scores, as measured by the SF-12, were maintained. It was further noted that low-demand leisure activities were associated with better mental health and contributed to the maintenance of function.

In a longitudinal study of Canadian seniors spanning 6 years, Menec (2003) examined the

relationship between different types of activities, activity level, function, well-being, and mortality. Well-being was measured based on happiness as well as life satisfaction, while function was defined using a measure which combined physical as well as cognitive functioning. Participants were instructed to indicate the types of activities they participated in throughout the past week via a 21-item checklist. The activities were then divided into three different categories: social activities (i.e., visiting family), solitary activities (i.e., collecting hobbies), and productive activities (i.e., housework or volunteering). All activities including sports and games were related to happiness. In contrast, the only activity that significantly contributed to life satisfaction was participating in sport or games.

The association between types of participation and intensity of participation is important because as an individual experiences age-related changes in health, they will have to give up more physically demanding activities for these lower-intensity leisure activities (Everard et al. 2000; Menec 2003; Netz et al. 2005). This is consistent with Baltes and Baltes (1991) model of compensation, where the goal is to remain flexible and open in terms of adapting to changing roles and activities.

While aging is associated with inevitable changes in both physical and cognitive systems, the successful aging framework provides an opportunity to examine the influence that lifestyle has on the aging process. While a great deal of time has been spent understanding the disease-related changes and their impact on physical and cognitive functioning, engagement with life is becoming recognized as a key component to success. It is well known that participation in regular physical activity and active leisure activities is important for the maintenance of physical and cognitive well-being. It is important for future research to continue to examine the impact of many different types of engagement (productive, social, active leisure, and passive leisure) and how they relate to overall functioning and well-being.

Cross-References

- ▶ [Relationship Satisfaction](#)
- ▶ [Social Participation](#)
- ▶ [Successful Aging \(SA\)](#)

References

- Acree, L. S., Longfors, J., Fjeldstad, A. S., Fjeldstad, C., Schank, B., Nickel, K. J., et al. (2006). Physical activity is related to quality of life in older adults. *Health and Quality of Life Outcomes*, 4(1), 37.
- Baltes, P. B., & Baltes, M. M. (1991). Psychological perspectives on successful aging: The model of selective optimization with compensation. *Successful Aging: Perspectives from the Behavioral Sciences*, 1, 1–34.
- Bukov, A., Maas, I., & Lampert, T. (2002). Social participation in very old age: Cross-sectional and longitudinal findings from BASE. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 57(6), P510–P517.
- Depp, C. A., & Jeste, D. V. (2006). Definitions and predictors of successful aging: A comprehensive review of larger quantitative studies. *The American Journal of Geriatric Psychiatry*, 14(1), 6–20.
- Everard, K. M., Lach, H. W., Fisher, E. B., & Baum, M. C. (2000). Relationship of activity and social support to the functional health of older adults. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 55(4), S208–S212.
- Fisher, B. J. (1995). Successful aging, life satisfaction, and generativity in later life. *International Journal of Aging & Human Development*, 41(3), 239–250.
- Fries, F. J. (1980). Aging, natural death, and the compression of morbidity. *The New England Journal of Medicine*, 303, 130–135.
- Gilmour, H., & Park, J. (2004). Dependency, chronic conditions and pain in seniors. *Health Report* (Statistics Canada Catalogue No. 82–003), 16, 21–31.
- Glass, T. A., De Leon, C. M., Marottoli, R. A., & Berkman, L. F. (1999). Population based study of social and productive activities as predictors of survival among elderly Americans. *BMJ*, 319(7208), 478–483.
- Glass, T. A., Seeman, T. E., Herzog, A., Kahn, R., & Berkman, L. F. (1995). Change in productive activity in late adulthood: MacArthur studies of successful aging. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 50(2), S65.
- Knight, T., & Ricciardelli, L. A. (2003). Successful aging: Perceptions of adults aged between 70 and 101 years. *International Journal of Aging & Human Development*, 56(3), 223–246.
- Mendes de Leon, C. F., Glass, T. A., & Berkman, L. F. (2003). Social engagement and disability in a community population of older adults The New Haven

- EPESE. *American Journal of Epidemiology*, 157(7), 633–642.
- Menec, V. H. (2003). The relation between everyday activities and successful aging: A 6-year longitudinal study. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 58(2), S74–S82.
- National Advisory Council on Aging. *Seniors in Canada: 2006 Report Card* (Cat.HP301/2006E). Ottawa: Author.
- Netz, Y., Wu, M. J., Becker, B. J., & Tenenbaum, G. (2005). Physical activity and psychological well-being in advanced age: A meta-analysis of intervention Studies. *Psychology and Aging*, 20(2), 272–284.
- Oort, F. (2005). Using structural equation modeling to detect response shifts and true change. *Quality of Life Research*, 14(3), 587–598.
- Palmore, E. (1979). Predictors of successful aging. *The Gerontologist*, 19(5), 427–431.
- Peel, N. M., McClure, R. J., & Bartlett, H. P. (2005). Behavioral determinants of healthy aging. *American Journal of Preventive Medicine*, 28(3), 298–304.
- Rowe, J. W., & Kahn, R. L. (1987). Human aging: Usual and successful. *Science*, 237, 143–149.
- Rowe, J. W., & Kahn, R. L. (1997). Successful aging. *The Gerontologist*, 37(4), 433–440.
- Rowe, J. W., & Kahn, R. L. (1998). *Successful aging: The MacArthur Foundation Study*. New York: Pantheon.
- Salthouse, T. A. (1991). Cognitive facets of aging well. *Generations*, 15, 35–38.
- Schulz, R., & Heckhausen, J. (1996). A life span model of successful aging. *American Psychologist*, 51(7), 702–714.
- Spirduso, W. W., & Cronin, D. L. (2001). Exercise dose–response effects on quality of life and independent living in older adults. *Medicine and Science in Sports and Exercise*, 33(6; SUPP), 598–608.
- Stewart, A. L., & King, A. C. (1991). Evaluating the efficacy of physical activity for influencing quality-of-life outcomes in older adults. *Annals of Behavioral Medicine*, 13(3), 108–116.
- Strawbridge, W. J., Cohen, R. D., Shema, S. J., & Kaplan, G. A. (1996). Successful aging: predictors and associated activities. *American Journal of Epidemiology*, 144(2), 135–141.
- Strawbridge, W. J., Wallhagen, M. I., & Cohen, R. D. (2002). Successful aging and well-being self-rated compared with Rowe and Kahn. *The Gerontologist*, 42(6), 727–733.
- Tate, R. B., Lah, L., & Cuddy, T. E. (2003). Definition of successful aging by elderly Canadian males: The Manitoba follow-up study. *The Gerontologist*, 43(5), 735–744.
- Unger, J. B., Johnson, C. A., & Marks, G. (1997). Functional decline in the elderly: Evidence for direct and stress-buffering protective effects of social interactions and physical activity. *Annals of Behavioral Medicine*, 19(2), 152–160.

Elderly Couples

► Older Couples

Elderly People

► Spanish Social Service Recipients

Elderly Rental Housing Satisfaction

► Elderly Tenants, Residential Satisfaction of

Elderly Tenants, Residential Satisfaction of

Russell N. James III
Texas Tech University, Lubbock, TX, USA

Synonyms

[Elderly rental housing satisfaction](#)

Definition

The residential satisfaction of elderly tenants refers to the self-reported satisfaction with the living units of residents over age 65 of rented property.

Description

One common approach in quality of life research is to separately consider life satisfaction in different major life domains, rather than simply relying on a single summative measurement of global life satisfaction (Cummins 2005). Thus, a person's quality of life may be influenced by domains

such as ► [job satisfaction](#), ► [relationship satisfaction](#), and health satisfaction. One such significant domain is that of environmental satisfaction, also known as ► [residential satisfaction](#). Residential satisfaction deals with one's happiness with one's home and the associated physical environment.

Several general theories have been advanced to explain how the interaction of a person with his or her physical residential environment can result in satisfaction or dissatisfaction. Morris and Winter (1978) describe residential satisfaction as the result of comparing one's needs and expectations with the realities of the residential environment. Expectations can be influenced by one's childhood experiences and family norms, the norms of one's social group, and cultural convention. These expectations are typically related to one's position in the family life cycle. So, for example, a young college student may see renting as the ideal tenure, whereas the same person, after becoming an established professional, may prefer homeownership. Not only do housing expectations change over the family life cycle but so do housing needs. Thus, a family with small children will have different housing preferences based on the needs of the children. Issues such as a large yard and good school district may be paramount to families with children, where earlier or later in life these may be of little interest.

One theory that has been used in a variety of life satisfaction domains is Rotter's (1966) ► ["locus of control"](#) approach. The basic premise of this model is that satisfaction is greater to the extent that a person perceives himself or herself as being in control of his or her environment (known as internalized locus of control). Conversely, satisfaction is lesser to the extent that a person perceives himself or herself as being controlled by his or her environment (i.e., externalized locus of control). One attraction of this model is that it has been successfully applied in a variety of life satisfaction domains such as ► [job satisfaction](#) (Spector 1986), political satisfaction (Frey and Stutzer 2000), ► [body image](#) satisfaction (Furnham and Greaves 1994), and ► [residential satisfaction](#) (James, 2008).

Whether the residential satisfaction model is based upon locus of control (Rotter 1966) or needs and expectations (Morris and Winter 1978), it is clear that housing satisfaction is subject to change with age. For example, the physical realities of aging can influence the suitability of housing. The presence of stairs is of no major consequence for younger families, but may be an insurmountable barrier for elderly residents. Accordingly, there is much emphasis in the residential design community on the concept of universal design accommodating those with and without physical disabilities (Iwarsson and Stahl 2003).

Along with greater needs in some areas, elderly residents may have diminished needs and expectations in other areas. As elderly residents are much less likely to have children, the need for space may be significantly diminished. Accordingly, the typical housing environment of older adults is also different from younger individuals. Among apartment dwellers, elderly residents are more likely to have fewer bedrooms, bathrooms, and other rooms. This corresponds with the reality that such households have fewer people living in them (whether from absence of children or death of a spouse). Additionally, these apartments are, on average, newer and located in much larger buildings (James, 2008).

The consequences and correlates of aging may also influence housing satisfaction in more subtle ways. For example, advanced age may limit one's ► [mobility](#), including diminishing the ability to drive. This limited mobility may make neighborhood characteristics much more important to an older resident (McAndrew 1993). A more mobile, younger resident may be less concerned with neighborhood availability of social relationships or retail shopping. However, an older resident with mobility concerns will naturally be more closely tied with the neighborhood. In an examination of satisfaction of rental housing residents, James (2008) found that rating of the neighborhood was significantly more important as a predictor of residential satisfaction for older adults (65+) than for younger residents. The growing importance of neighborhood social connections may result not only from reduced mobility but

also from diminished social contacts in other contexts due to retirement from work or death of friends. Accordingly, age-restricted senior housing in larger apartment buildings that provides for convenient community services and age-appropriate social interaction may be especially attractive. Thus, increased housing density (i.e., the number of people within a certain area) is often undesirable at younger ages, but may be preferable at older ages. This is especially likely given previous research suggesting that higher density living arrangements encourage the formation of social connections among residents (Baldassare 1979).

As with a variety of other life domains, problems in satisfaction with the residential environment can influence other areas of life satisfaction. So, for example, housing with poor accessibility or universal design features can significantly increase the likelihood of injuries related to falls, thus impacting health-related satisfaction. Or, as another example, the limited ability to make social contacts within the neighborhood (due to inaccessibility or neighborhood age mismatch) can diminish social connectedness. Elderly people with a weaker ► [social network](#) are then at increased risk of dementia (Holmen and Furukawa 2002). These potential side effects of residential dissatisfaction issues may be more significant for older adults as such dissatisfaction appears to be more damaging to health outcomes in an elderly population than in a younger group (Lawton and Nahemow 1973).

Homeownership is a particularly important factor influencing residential satisfaction. Elsinga and Hoekstra (2005) found tenant residential satisfaction to be significantly lower than homeowner residential satisfaction, even after controlling for housing quality. This was consistently true in Ireland, the United Kingdom, the Netherlands, Denmark, Greece, Italy, and Spain. Only in Austria was there no significant difference between homeowner and tenant satisfaction. Other studies in the United States have also found that homeowners reported a higher degree of housing satisfaction than did similarly situated tenants (Rohe and Stegman 1994). This near universal difference, however, appears to be

substantially related to age. The general relationship between age and residential satisfaction is positive (James, 2008). This corresponds with a wide variety of studies finding that self-reported life satisfaction increases with age (Carstensen and Turk-Charles 1994; Lawton 1996). Of special note in residential satisfaction is that the gap between tenant residential satisfaction and homeowner residential satisfaction remains fairly constant throughout life until about age 65; when the gap begins to shrink dramatically until at the oldest ages (90+), apartment tenants report greater residential satisfaction than do homeowners (James 2008). In other words, residential satisfaction increases with age, but after age 65, it increases with age at a much faster rate for tenants than for homeowners. Indeed, residential satisfaction among homeowners peaks in the 1970s and declines thereafter, whereas residential satisfaction for apartment dwelling tenants continues to increase into the 1990s and beyond.

This may relate both to tenure status and to the kind of housing structure. So, for example, in younger ages (below 50), self-reported satisfaction is greater among tenants of single-family houses than among apartment tenants. However, this gap disappears from age 50 to 69 and reverses at the oldest ages (70+) where apartment tenants report being more satisfied than do single-family residence tenants. Thus, part of this age-related difference in satisfaction may come from the increased benefits of apartment living for older adults, especially in the context of large age-restricted apartment communities offering a number of opportunities for social interaction.

Aside from the issue of density, this change in housing satisfaction with age may also relate to home maintenance. In the context of Rotter's (1966) locus of control model, homeownership has a natural advantage in that it provides greater potential for controlling one's immediate environment. A homeowner may choose to modify a home at any point. A homeowner can paint a wall, add a room, change the flooring, and so forth. The tenant typically has no such abilities to alter the environment in these ways. The homeowner's greater control can naturally lead

to a greater sense of internalized locus of control and thus greater satisfaction. However, this advantage may be substantially age related. Whereas homeownership gives one the ability to make residential alterations, it also gives one the responsibility to maintain the home. This may be a minor issue for physically capable younger homeowners, but could become a major issue for elderly residents who may not be able to perform such chores. In some cases, the homeowner may resolve the issue by hiring outside contractors. And yet, this solution is fraught with difficulty as home repair can often be a source of fraud targeting the elderly (Smith 1999). For the current generation of elderly, the problem may be exacerbated by the traditional role of women in the household. Having men be primarily responsible for household repairs creates a substantial knowledge deficit for widows and divorced women. This may partially explain the reality that nearly two-thirds of all tenants over the age of 65 are unmarried women.

Further, the unexpected and substantial financial impacts from major repairs may be particularly difficult for older adults on a fixed income. James (2008) found that tenants age 65 and over had average household incomes approximately half that of tenants under age 65. Thus, at the older ages, homeownership becomes more likely to place the owner in situations where the environment is seemingly in control (external locus of control), as each new unexpected repair brings with it potentially unmanageable physical and financial challenges. In contrast with this, a tenant of a well-managed apartment has stable housing expenses and, in the event of a maintenance issue, need only pick up the phone to advise the management of the problem. Correspondingly, James (2008) found that among a wide variety of factors potentially influencing the satisfaction of elderly tenants (including neighborhood satisfaction, noise problems, building age, number of rooms, rent, building entry system, central air conditioning, dishwasher, disposal, fireplace), the most important factor was the resident's satisfaction with maintenance. This makes sense in the context of a locus of control model. To the extent that maintenance issues are handled

quickly and efficiently, the resident is more likely to feel as if he or she is in control of his or her environment. This can be superior to the feeling of control where one has limited physical and financial resources to deal with maintenance problems of an owned home. However, this superiority rapidly diminishes when the maintenance issues are not dealt with by management, leaving the resident in the unenviable position of living with environmental problems that he or she has no ability to change.

Other environmental factors may be also differentially important for residential satisfaction of the elderly. For example, elderly apartment residents were significantly less likely to complain of hearing noise from neighboring apartments than were non-elderly apartment residents. This may be driven in part by reduced noise problems in age-restricted apartment communities and perhaps by age-related reduction in hearing abilities. However, aside from the differential importance of neighborhood quality and maintenance quality discussed previously, a variety of other factors influencing residential satisfaction (such as building age, size, number of rooms, rent, subsidization, and the presence of a building or community entry system, central air conditioning, dishwasher, disposal, garage, and fireplace) were not significantly different for elderly tenants than for younger tenants (James 2008). Thus, while many factors contributing to residential satisfaction are important to both young and old alike, the few points of distinction are critical to understanding the determinants of residential satisfaction among the elderly.

Cross-References

- [Body Image](#)
- [Good Neighborhood Index](#)
- [Job Satisfaction](#)
- [Locus of Control](#)
- [Mobility](#)
- [Relationship Satisfaction](#)
- [Residential Satisfaction](#)
- [Social Network](#)

References

- Baldassare, M. (1979). *Residential crowding in urban America*. Berkeley: University of California Press.
- Carstensen, L. L., & Turk-Charles, S. (1994). The salience of emotion across the adult life span. *Psychology and Aging*, 9, 259–264.
- Cummins, R. A. (2005). The domains of life satisfaction: An attempt to order chaos. In A. C. Michalos (Ed.), *Citation classics from social indicators research: Social indicators research* (Vol. 26, pp. 559–584). Netherlands: Springer.
- Elsinga, M., & Hoekstra, J. (2005). Homeownership and housing satisfaction. *Journal of Housing and the Built Environment*, 20, 401–424.
- Frey, B. S., & Stutzer, A. (2000). Happiness prospers in democracy. *Journal of Happiness Studies*, 1(1), 79–102.
- Furnham, A., & Greaves, N. (1994). Gender and locus of control correlates of body image dissatisfaction. *European Journal of Personality*, 8(3), 183–200.
- Holmen, K., & Furukawa, H. (2002). Loneliness, health and social network among elderly people – A follow-up study. *Archives of Gerontology and Geriatrics*, 35, 261–274.
- Iwarsson, S., & Stahl, A. (2003). Accessibility, usability and universal design-positioning and definition of concepts describing person-environment relationships. *Disability and Rehabilitation*, 25(3), 57–66.
- James, R. N., III. (2008). Residential satisfaction of elderly tenants in apartment housing. *Social Indicators Research*, 89, 421–437.
- Lawton, M. P. (1996). Quality-of-life and affect in later life. In C. Magai & S. McFadden (Eds.), *Handbook of emotion, adult development and aging* (pp. 327–348). San Diego: Academic Press.
- Lawton, M. P., & Nahemow, L. (1973). Ecology and the aging process. In C. Eisdorfer & M. P. Lawton (Eds.), *The psychology of adult development and aging* (pp. 619–674). Washington, DC: American Psychological Association.
- McAndrew, F. T. (1993). *Environmental psychology*. Pacific Grove: Brooks/Cole.
- Morris, E. W., & Winter, M. (1978). *Housing, family, and society*. New York: Wiley.
- Rohe, W. M., & Stegman, M. A. (1994). The effects of homeownership on the self-esteem, perceived control and life satisfaction of low-income people. *Journal of the American Planning Association*, 60(2), 173–184.
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, 80(1), 1–28.
- Smith, R. G. (1999). *Fraud and financial abuse of older persons, trends and issues in crime and criminal justice*, no. 132. Canberra: Australian Institute of Criminology.
- Spector, P. E. (1986). Perceived control by employees: A meta-analysis of studies concerning autonomy and participation at work. *Human Relations*, 39(11), 1005–1016.

Elderly Workers' QoL

► Aging Workers and the Quality of Life

Elections

Ron Johnston

School of Geographical Sciences, University of Bristol, Bristol, UK

Description

Democracy, in Abraham Lincoln's famous phrase, involves "government of the people, by the people, for the people." Whereas in institutions where the number of people involved is small – a sport club, for example – all of the members can be involved in the decision-making, in most, including nation-states and their subsidiary institutions, this is not feasible. Thus, decisions have to be made by a body representing and acting on behalf of the larger population.

Although one way of ensuring that the decision-making body acted on behalf of the larger population would be to choose its members by random lots, and change the membership regularly, this rarely – if ever – happens. Instead, elections are used; candidates indicate their willingness to act on behalf of those to be represented (e.g., as members of a legislative body) and the electorate (the "people") select from among them those that they consider best suited for the position.

If there are only two candidates for a position, the selection of the person considered best is straightforward – it is the one of the pair who gets most votes. But if there are more than two candidates, it is quite possible that the "wrong" candidate gets elected (i.e., he/she is not the most popular or considered best for the role). Consider the situation where three candidates – *A*, *B*, and *C* – stand for election, and there are nine voters. If each just indicates her/his preferred candidate, the outcome may be:

ABDFI	BEGHJ	CDEFG	ADEHI	BCEHI
45.4	48.4	46.4	46.8	47.0

in which case *A* would be declared the winner, although getting only a minority of all the votes cast. What, however, if the voters had been asked to rank order all of the candidates? The rankings might have been:

- A, B, C* – 3 voters
- A, C, B* – 1 voter
- B, C, A* – 3 voters
- C, B, A* – 2 voters

Here it is clear that all of those who placed either *B* or *C* first placed *A* last; five voters would have preferred either *B* or *C* to *A*. Since *B* got more first preferences than *C*, then perhaps *B* should be elected as the “most popular” candidate? *A* has most first preferences, but cannot win overall, it seems (she is either the most or the least popular of the three for each of the electors).

This situation could be resolved in the following way. In the first round of voting, *A* and *B* get more votes than *C*, so for the next round *C* is eliminated: *B* would presumably then get 5 votes (i.e., *C*’s two supporters would switch their votes to *B*) and *A* 4 – with *B* declared the winner. (This two-round system is what is done in the election of French Presidents and Parliaments).

If a second round of voting is not undertaken, then the preferences could be expressed and analyzed to find a winner in a variety of ways. One is to identify what is generally known as the Condorcet winner, by restructuring the election as a series of two-way contests. Thus, in the above example, *A* is preferred to *B* by four voters, and *B* is preferred to *A* by five – so *B* wins the contests between *A* and *B*. In the contest between *A* and *C*, again *A* has four preferences and *C* five, so *C* is the winner. Finally, in the contest between *B* and *C*, *B* is preferred to *C* by six voters, with just three preferring *C* to *B*, so *B* is the winner. *B* thus wins two of the sets of three two-way contests, *C* one and *A* none, so *B* is the Condorcet winner.

An alternative procedure is to apply what is known as the Alternative Vote (AV) – used in

elections to the Federal House of Representatives in Australia, for example, and rejected in a referendum in 2011 for elections to the UK House of Commons. When the first preference votes are counted and no candidate has a majority – as in our example – the candidate with fewest first preferences is eliminated as the least popular candidate and her second preferences distributed among the remaining two. In this case, *C* is eliminated, both of her second preferences go to *B*, and *B* is elected. Alternatively – in what is known as the Coombs variation – *A* could be eliminated as being the most unpopular candidate by getting most third places (so not the same as the least popular), and his second preferences allocated; three go to *B* and 1 to *C*, so *B* is again declared the winner.

Although the AV system is widely used for elections in a range of organizations, it has not been widely adopted for Parliamentary contests; objections include the equal weighting given to first and lower preferences (third, fourth, and even lower preferences may be used when there are more than a few candidates) and against a compromise candidate (one with many second but few first preferences) winning. An even more fundamental objection, however, is that in some situations there may be no winner – whether Condorcet, alternative vote, or . . . Take the situation where the votes for three candidates in ranked order are:

- A, B, C* – 3
- B, C, A* – 3
- C, A, B* – 3

In this case, if the alternative vote procedure were being used, there is no candidate to exclude because all have three first preference votes (nor can the Coombs variation be used). And using the Condorcet procedure, all of the two-way contests are tied (*A* is preferred to *C* by three voters and *C* to *A* by three, for example). Such an outcome is unlikely in elections with large electorates, but could be the case in a small one; it is however widely cited as indicating the impossibility of devising a system that will always identify a clear winner.

This situation – known as Arrow’s paradox – means that there is no perfect voting system, no way of ensuring that the most preferred candidate is identified and elected in every circumstance. As a consequence, all electoral systems are compromises – although the nature of those compromises may not be always apparent – and people continue to design new systems to produce the ‘best’ (‘most acceptable’) outcome. (The history of those attempts is described in Poundstone (2009), and Szpiro (2010); for a more recent analysis, see Balinski and Laraki 2010).

References

- Balinski, M., & Laraki, R. (2010). *Majority judgment: Measuring, ranking and electing*. Cambridge, MA: The MIT Press.
- Poundstone, W. (2009). *Gaming the vote: Why elections aren’t fair (and what we can do about it)*. New York: Hill and Wang.
- Szpiro, G. (2010). *Numbers rule: The vexing mathematics of democracy from Plato to the present*. Princeton: Princeton University Press.

Electorate

- [Voting Behavior](#)

Electric Folk Music

- [Folk Music](#)

Electric Light

- [Light and Quality of Life](#)

Eliciting

- [Values Clarification Exercises](#)

Emancipatory Research

- [Community-Based Participatory Research](#)

Embodied Subjectivity

Oli Williams¹ and Ellen Annandale²

¹Florence Nightingale Faculty of Nursing, Midwifery & Palliative Care, King’s College London, London, UK

²Department of Sociology, University of York, York, UK

Synonyms

[Subjective embodiment](#)

Definition

“Subjective embodiment” denotes the fusion of mind, body, and society. We experience our bodies both subjectively and objectively in a reflexive process informed by socio-cultural norms. Bodily norms, both medically and culturally defined, influence a person’s experience of their body and inform their sense of well-being and perceived quality of life. As such, self-perceived quality of life and a personal sense of well-being are socially formed and subjectively embodied.

Description

Seventeenth-century philosopher René Descartes maintained that, “my mind, by which I am what I am, is entirely and truly distinct from my body, and may exist without it”; ergo, “I think, therefore I am” (Descartes, 1637/2008, p. 115). With this he intended to convey that our bodies are not a constant presence; they change over time, as we age, suffer injury, and so on. Thus, for Descartes, who we *are as a person* is essentially separate from our body. In what became known as Cartesian mind-

body dualism, the mind was elevated and the body relegated to the status of mere matter.

In *The Phenomenology of Perception*, philosopher Merleau-Ponty (1962, p. 145) emphasized the irreducible fusion of mind and body. He depicted the body as a “mediator of the world” that shapes a person’s perception and consciousness, or to use his term, their way of “being-in-the-world” (p. 78). He argued that the body is not simply a vessel controlled by the mind but that the mind realizes itself through the body. Therefore, the body actually shapes our perceptions of, and our way of being in, the world. This is known as “embodiment” (Csordas 2003; Leder 1990). The concept of embodiment, therefore, supersedes the Cartesian mind-body binary. It depicts the fusion of the mind and body in a process whereby the society and culture within which we live are experienced in bodily terms and internalized by us: they are embodied.

Our experience of the body is at once objective and subjective. Crossley (2006) uses the term “reflexive embodiment” to capture this interdependent state: we *are* our bodies but also sometimes perceive our bodies as objects that we possess. When the body is experienced as an object, it can be understood as something that has “failed us” or “let us down” by becoming ill or by doing something beyond our control that causes us to feel embarrassed in the company of others, for example, having a nosebleed at a social occasion. Our body as an object can also be perceived as a project to be controlled, acted upon, and improved. Examples of this include dieting or exercising to lose or gain weight or undergoing cosmetic surgery. As the notion of reflexivity implies, these objective experiences of our bodies are informed by, but also themselves inform, our subjective bodily experience.

This process of reflexive embodiment is informed by the norms and values of the societies and communities we live in. It is through this process that mind-body-society are connected. All societies and cultures have established norms and expectations which affect our understanding of our bodies, our state of personal well-being, and our quality of life. These norms derive from medical systems and from wider society. Health

and quality of life are neither objective nor fixed states; rather we calibrate our assessments relative to others. For example, although we might expect persons suffering from chronic illnesses to report poor health and low quality of life, they often adapt to their circumstances and report better than expected health and well-being. While persons in lower socioeconomic groups usually are found to be in poorer health than those in higher socioeconomic groups by objective measures, lower expectations of health can prompt more positive self-assessments (Beam Dowd 2012). In a seminal text, Engel (1977) outlined how the traditional approach to medicine (i.e., the biomedical model) is incapable of acknowledging the interconnectivity of mind-body-society. He proposed the need for a “biopsychosocial model” of health and illness to better account for how the biological, psychological, and social are entwined.

Obesity is a useful example to illustrate the subjective embodiment of social norms. Someone will be medically labeled as “obese,” and therefore considered to be at an increased risk of illness and disease, if they score 30 or above on the body mass index (BMI). A person with a BMI between 18.5 and 24.9 is considered to have a reduced risk of developing illness and disease and therefore to be a “healthy” weight. Awareness of these medical norms, and where someone lies in relation to them, is likely to contribute to a person’s understanding of their body and influence their sense of well-being and quality of life regardless of whether a state of ill health is actually experienced. Being labeled obese is likely to negatively affect a person’s sense of well-being. Conversely, having/being a BMI score that is considered healthy is likely to affect someone’s sense of well-being positively. This will also be informed by the wider socio-cultural norms that ascribe aesthetic appeal to slimness and stigmatize fatness (Bordo 1993; Lupton 2018; Orbach 1978). Social stigma may lead to feelings of personal irresponsibility for putting one’s body at risk. Additionally, due to fear of negative judgments by others, people may also feel unable to engage in social activities that others take for granted, for example, swimming in public. Alternatively, if an

individual is considered healthy and attractive, they may feel liberated and fulfilled. Obesity stigma has been shown to confuse people's objective and subjective experiences of their bodies, such as in research which demonstrated that weight-loss group members *felt* heavier after engaging in negatively moralized behaviors associated with weight gain even when this "weight" did not register on the weighing scales (Williams and Annandale 2018). This is an example of how sociocultural and medical norms and expectations which are external to the individual become subjectively embodied and affect their sense of well-being and quality of life.

The established theories of George Herbert Mead (1934) and Charles Horton Cooley (1902) contribute to our understanding of why and how people are affected by norms. By taking "the attitude of the other" in social interaction, we are able cognitively to step outside of ourselves and to see ourselves as others see us through what Cooley (1902) called the "reflected" or "looking-glass self." In doing so we engage in a kind of "inner conversation" assuming the attitudes of others and acquiring the ability to see our world from their perspectives. In its most developed form, this involves absorbing attitudes that belong to the "generalized other" (Mead 1934), or the wider moral order, such as adopting the social and moral connotations of obesity, for example, gluttony and sloth, and slenderness, for example, restraint and vigor. This particular form of subjective embodiment has become known as weight bias internalization (Williams and Annandale 2019). More generally, feelings of pride or shame are brought about because of the imagined judgment and reaction of others. In this sense, we subjectively embody the imagined/perceived judgments of others.

Thus, subjective embodiment, the reflexive process of both *being* a body and *having* a body within a social world that differentially attributes value to bodies, has a great effect on how people understand, assess, and feel about themselves and hence on perceptions of well-being and quality of life. This can be further illustrated in current approaches to health promotion which stress "healthy lifestyles" (Petersen and Lupton 1996).

In Western societies in particular, good health increasingly is understood as a state achieved through the prudence and individual efforts of conscious and responsible citizens (Howell and Ingham 2001; Lupton 1995). Behavior and appearances that contradict what is understood as being "healthy" can therefore be understood as lazy, irresponsible, and immoral (Cheek 2008; Crawford 1980). This creates a situation whereby "good health" is visualized in people's physical form and behavior, for example, what they choose to eat, how often they exercise, and whether they smoke tobacco.

To return to the example of body weight, the widely accepted notion that much of the developed world is currently experiencing an obesity epidemic frames big(ger) bodies as risky and/or unhealthy. Obesity is one of the more obvious examples of how within popular, contemporary conceptions of health "death is written on the body" (Prior 2000, p. 195). As such, being a big (ger) body in a society perceived to be in the grips of an obesity epidemic is likely to negatively affect someone's sense of well-being and perceived quality of life. Equally, being a body and acting in a way that is considered "healthy" is likely to do the opposite (Zanker and Gard 2008). For instance, individuals may experience a sense of well-being if they exercise regularly because of the positive health effects that are associated with physical activity. This exemplifies how, through particular definitions of "health," the body is centrally positioned in a process that positively influences some people's sense of well-being and perceived quality of life while negatively influencing others.

Conclusion

"Subjective embodiment" helps us to understand how the body and people's perception of the body are intimately tied to a sense of well-being and perceived quality of life. It is a concept that avoids Cartesian mind-body dualism by acknowledging that bodies are experienced objectively and subjectively in a reflexive process. This reflexive process means that bodies are both our possession

and project as well as who we are. Our understanding of our bodies as objects and as who we are is contingent on the social conditions that we find ourselves in and are part of creating. These conditions envisage different bodies positively and negatively and this informs our sense of self. These evaluations are therefore likely to be intimately entwined with a person's perception of the quality of their life and to feed into their general sense of well-being. Subjective embodiment, therefore, describes the centrality of the body in a process whereby the social and the personal interact in such a way as to shape a person's sense of well-being and perceived quality of life.

References

- Bordo, S. (1993). *Unbearable weight: Feminism, western culture, and the body*. London: University of California Press.
- Cheek, J. (2008). Healthism: A new conservatism. *Qualitative Health Research*, 18, 974–982.
- Cooley, C. H. (1902 [1983]). *Human nature and the social order*. London: Transaction Publishers.
- Crawford, R. (1980). Healthism and the medicalization of everyday life. *International Journal of Health Services*, 10, 365–388.
- Crossley, N. (2006). *Reflexive embodiment in contemporary society*. Berkshire: Open University Press.
- Csordas, T. (2003). *Embodiment and experience*. Cambridge, UK: Cambridge University Press.
- Descartes, R. (2008). *A discourse on method* (J. Veitch, Trans.). New York: Cosimo Inc. (Original work published 1637).
- Beam Dowd, A. (2012). Whiners, deniers, and self-rated health: What are the implications for measuring health inequalities? A commentary on Layes et al. *Social Science & Medicine*, 75(1), 10–13.
- Engel, G. L. (1977). The need for a new medical model: A challenge for biomedicine. *Science*, 196(4286), 129–136.
- Howell, J., & Ingham, A. (2001). From social problem to personal issue: The language of lifestyle. *Cultural Studies*, 15, 326–351.
- Leder, D. (1990). *The absent body*. London: University of Chicago Press.
- Lupton, D. (1995). *The imperative of health*. London: Sage.
- Lupton, D. (2018). *Fat* (2nd ed.). Oxford: Routledge.
- Mead, M. (1934). *Mind, self and society: From the standpoint of a social behaviourist*. London: University of Chicago Press.
- Merleau-Ponty, M. (1962). *The phenomenology of perception* (C. Smith, Trans.). London: Routledge & Kegan Paul.
- Orbach, S. (1978). *Fat is a feminist issue: How to lose weight permanently – Without dieting*. London: Paddington Press.
- Petersen, A., & Lupton, D. (1996). *The new public health: Health and self in the age of risk*. London: Sage.
- Prior, L. (2000). Reflections on the “mortal” body in late modernity. In S. J. Williams, J. Gabe, & M. Calnan (Eds.), *Health, medicine and society: Key theories, future agendas* (pp. 186–202). London: Routledge.
- Williams, O., & Annandale, E. (2018). Obesity, stigma and reflexive embodiment: Feeling the ‘weight’ of expectation. *Health*, 14, 1363459318812007. <https://doi.org/10.1177/1363459318812007>.
- Williams, O., & Annandale, E. (2019). Weight bias internalisation as an embodied process: Understanding how obesity stigma gets under the skin. *Frontiers in Psychology*, 10, 953.
- Zanker, C., & Gard, M. (2008). Fatness, fitness, and the moral universe of sport and physical activity. *Sociology of Sport Journal*, 25, 48–65.

Embroidery/Needlepoint

► [Arts in British Columbia, Canada](#)

Emergency Workers' Quality of Life

Elvira Cicognani

Department of Psychology, University of Bologna, Bologna, Italy

Synonyms

[Avoidance coping](#); [Burnout scale](#); [Compassion satisfaction and fatigue subscales-revision IV](#); [Compassion satisfaction scale](#); [Emotion-focus coping among workers](#); [Problem-focused coping](#); [Professional quality of life scale \(PROQoL\)](#); [Trauma/compassion fatigue scale](#)

Definition

The phrase refers to ► [quality of life \(QoL\)](#) of individuals engaged in emergency work, either professionally (e.g., health-care workers, fire

fighters) or as volunteers. Dimensions of QoL that have been proposed in the literature include PTSD, compassion ► [fatigue](#), burnout, and compassion satisfaction. Recent perspectives advocate the adoption of a multidimensional approach including both negative and positive outcomes (Stamm 2005).

Description

The scientific literature on emergency work has put an increasing focus on psychological ► [distress](#) resulting from repeated exposure to critical incidents and traumatic events experienced as part of a person's everyday professional activity. A critical incident may be any event that has a stressful impact sufficient enough to overwhelm an individual's sense of control, connection, and meaning in his/her life.

Experience of trauma for emergency workers comes also from helping suffering people (Beaton et al., 1998): in this sense, a major issue concerns secondary exposure to extremely stressful events which results in a secondary traumatic stress or compassion fatigue (Figley 1995). A further issue stemming from the helping nature of emergency work, arising from an excessive and prolonged job stress, is the risk of developing a ► [burnout](#) syndrome. Emergency work characteristics that are consistently related to burnout are perceived workload and ► [time pressure](#), client-related stressors (e.g., problems in interacting with victims, confrontation with death and dying), emotional demands of working with other people in a ► [caregiving](#) role, and other emotion-work variables (e.g., requirement to suppress emotions on the job and/or to be emotionally empathic) (Maslach et al. 2001).

More recently, it has been emphasized that emergency workers' quality of life should not be reduced to the absence of negative consequences but also on the positive effects of a helping profession. For example, research findings evidenced that emergency ambulance personnel reported positive post-trauma changes (post-traumatic growth) as the result of the experience of occupational trauma (Shakespeare-Finch 2003). Stamm

(2002) introduced the concept of compassion satisfaction, defined as the benefits that individuals derive from working with traumatized or suffering persons. These benefits include positive feelings about helping others, contributing to the work setting and even to the greater good of society, and the overall ► [pleasure](#) derived from being able to do one's work well.

A multidimensional instrument introduced to measure professional quality of life of emergency workers is the PROQoL (Professional Quality of Life Scale. Compassion Satisfaction and Fatigue Subscales-Revision IV) (Stamm 2005), including 30 items corresponding to three scales: Compassion Satisfaction Scale, Burnout Scale, and Trauma/Compassion Fatigue Scale (Stamm 2005).

Research on quality of life among emergency workers has focused increasing attention on correlates, mediators, and ► [moderators](#) of reactions to critical incidents (Marmar et al. 1999; Regehr et al. 2000; Weiss et al. 1995), particularly among professional rescue workers (e.g., fire fighters, health personnel).

Among correlates of QoL, the role of coping strategies has been extensively investigated, as the way emergency workers cope with the exposure to critical incidents plays a crucial role in the development of the different QoL outcomes. Emergency workers can be considered a self-selected occupational group which faces unusual demands and may not be compared with the general population in terms of coping strategies use and effectiveness (Beaton et al. 1999).

Results concerning the relationship between coping strategies and mental health in rescue personnel are contradictory (except for avoidance coping). There is evidence that the use of cognitive and behavioral avoidance, commonly observed after a trauma, predicts greater psychological distress among professional fire fighters and ambulance personnel (Brown et al. 2002; Chang et al. 2003; Cicognani et al. 2008; Prati et al. 2010), but denial and behavioral distraction coping have not been related to mental health (Beaton et al. 1999; Clohessy and Ehlers 1999). Problem-focused coping has been found associated both to high (Marmar et al. 1996) and low

levels of distress (Brown et al.) among fire fighters. The use of emotion-focused coping has been associated to lower psychological distress (Brown et al.), but seeking social support for emotional reasons and venting of emotions are not (Clohessy and Ehlers 1999). Finally, fostering positive attitudes does not predict future changes in self-reports of post-traumatic stress (Clohessy and Ehlers 1999) while positive reappraisal has been found to predict a post-traumatic symptomatology (Chang et al. 2003). In their review focused on negative mental health outcomes, Sterud, Ekeberg and Hem (2006) concluded that some studies identified maladaptive coping strategies, but no studies have been able to identify any adaptive coping strategies. However, there is currently sufficient literature supporting the independence of positive and negative outcomes (Shakespeare-Finch 2003) and the use of differential coping strategies in emergency service workers as an initial protective mechanism (McCammon et al. 1988).

The literature has initially focused on post-traumatic psychological difficulties, such as ► **post-traumatic stress disorder (PTSD)**, as the main effect of exposure to critical incidents. Findings range from the prevalence of PTSD diagnoses (e.g., Wagner et al. 1998) to the longitudinal presence of post-traumatic symptomatology (e.g., Marmar et al. 1999; Ursano et al. 1995).

References

- Beaton, R., Murphy, S., Johnson, C., Pike, K., & Cornell, W. (1999). Coping responses and posttraumatic stress symptomatology in urban fire service personnel. *Journal of Traumatic Stress, 2*, 293–308.
- Brown, J., Mulhern, G., & Joseph, S. (2002). Incident-related stressors, locus of control, coping, and psychological distress among firefighters in Northern Ireland. *Journal of Traumatic Stress, 15*, 161–168.
- Chang, C. M., Lee, L. C., Connor, K. M., Davidson, J. R., Jeffries, K., & Lai, T. J. (2003). Posttraumatic distress and coping strategies among rescue workers after an earthquake. *The Journal of Nervous and Mental Disease, 191*, 391–398.
- Cherniss, C. (1980). *Staff burnout job stress in the human services*. New York: Praeger.
- Cicognani, E., Pietrantonio, L., Palestini, L., & Prati, G. (2008). Emergency workers' quality of life: The protective role of sense of community, efficacy beliefs and coping strategies. *Social Indicators Research, 94*(3), 449–463.
- Clohessy, S., & Ehlers, A. (1999). PTSD symptoms, response to intrusive memories and coping in ambulance service workers. *The British Journal of Clinical Psychology, 38*, 251–265.
- Figley, C. R. (1995). Compassion fatigue as secondary traumatic stress disorder. An overview. In C. R. Figley (Ed.), *Compassion fatigue* (pp. 1–20). New York: Brunner Mazel.
- Marmar, C. R., Weiss, D. S., Metzler, T. J., Delucchi, K. L., Best, S. R., & Wentworth, K. A. (1999). Longitudinal course and predictors of continuing distress following critical incident exposure in emergency services personnel. *The Journal of Nervous and Mental Disease, 187*, 15–22.
- Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology, 52*, 397–422.
- McCammon, S., Durham, T., Jackson Allison, E., & Williamson, J. (1988). Emergency workers' cognitive appraisal and coping with traumatic events. *Journal of Traumatic Stress, 1*(3), 353–372.
- Prati, G., Pietrantonio, L., & Cicognani, E. (2010). Self-efficacy moderates the relationship between stress appraisal and quality of life among rescue workers. *Anxiety, Stress and Coping, 23*(4), 463–470.
- Regehr, C., Hill, J., & Glancy, G. D. (2000). Individual predictors of traumatic reactions in firefighters. *The Journal of Nervous and Mental Disease, 188*, 333–339.
- Shakespeare-Finch, J. (2003). The prevalence of post-traumatic growth in emergency ambulance personnel. *Traumatology, 9*(1), 58–71.
- Stamm, B. H. (2002). Measuring compassion satisfaction as well as fatigue: Developmental history of the compassion fatigue and satisfaction test. In C. R. Figley (Ed.), *Treating compassion fatigue* (pp. 107–119). New York: Brunner-Routledge.
- Stamm, B. H. (2005). *The professional quality of life scale: Compassion satisfaction, burnout, and compassion fatigue/secondary trauma scales*. Latherville: Sidran Press.
- Sterud, T., Ekeberg, Ø., & Hem, E. (2006). Health status in the ambulance services: A systematic review. *BMC Health Services Research, 6*, 82.
- Ursano, R. J., Fullerton, C. S., Tzu-Cheg, K., & Bhartiya, V. R. (1995). Longitudinal assessment of posttraumatic stress disorder and depression after exposure to traumatic death. *The Journal of Nervous and Mental Disease, 183*, 36–42.
- Wagner, D., Heinrichs, M., & Eckert, U. (1998). Prevalence of symptoms of posttraumatic stress disorder in German professional firefighters. *The American Journal of Psychiatry, 155*, 1727–1732.
- Weiss, D. S., Marmar, C. R., Metzler, T. J., & Ronfeldt, H. M. (1995). Predicting symptomatic distress in emergency services personnel. *Journal of Consulting and Clinical Psychology, 63*, 361–368.

Emerging Adults

- ▶ [Life Satisfaction and Youth Developmental Assets](#)

Emotional Abuse and Neglect

- ▶ [Child Maltreatment: Psychological Maltreatment](#)

Emerging and Developing Economies

- ▶ [Developing Countries](#)

Emotional Affinity Toward Nature

- ▶ [Affective Connection to Nature](#)

Emerging Territories

- ▶ [Sharing Space in the Contemporary City](#)

Emotional Affliction

- ▶ [Poverty and Psychological Distress](#)

Emigrate

- ▶ [Migrations: An Overview](#)

Emotional Bond

- ▶ [Attachment](#)

Emigres

- ▶ [Refugees, Quality of Life](#)

Emotional Commitment to Nature

- ▶ [Affective Connection to Nature](#)

Emotion Rules

- ▶ [Emotions, Sociology of](#)

Emotional Concordance

- ▶ [Affective Contagion](#)

Emotional Abuse

- ▶ [Child Maltreatment: Psychological Maltreatment](#)

Emotional Contagion

- ▶ [Affective Contagion](#)

Emotional Disorder

- ▶ [Mental Illness](#)

Emotional Harm

- ▶ [Child Maltreatment: Psychological Maltreatment](#)

Emotional Instability

- ▶ [EPI \(Eysenck Personality Inventory\) Neuroticism Scale](#)

Emotional Intelligence

- ▶ [Measuring Emotion Recognition Ability](#)

Emotional Intimacy over 25 Years

- ▶ [Marital Adjustment over 25 Years](#)

Emotional Maltreatment

- ▶ [Child Maltreatment: Psychological Maltreatment](#)

Emotional Security

- ▶ [Attachment](#)

Emotional Suffering and Poverty

- ▶ [Poverty and Psychological Distress](#)

Emotional Support and Self-Worth

- ▶ [Social Support and Self-Worth Among African-American Youth](#)

Emotional Well-Being

Eva Langeland
Faculty of Health and Social Sciences, Western Norway University of Applied Sciences, Bergen, Norway

Synonyms

[Subjective](#); [Well-being](#)

Definition

Emotional well-being (EWB) includes a positive balance of pleasant to unpleasant affect and a cognitive appraisal of satisfaction with life in general (Keyes [2003](#)).

Description

Crucial aims for all age groups are to ensure healthy lives and promote well-being (United Nations [2021](#)). Emotional well-being (EWB) and mental health are therefore issues of everyday life. Supporting EWB is an important responsibility for different arenas such as schools (Hanley et al. [2020](#)) and different groups such as children, adolescents, and women (Ross et al. [2020](#)). EWB is an important dimension in mental health.

However, research indicate that EWB also is correlated to physical health as findings clearly show that there are physiological correlates of mental well-being in terms of positive affect and positive emotions that are central to physical health (Lindfors 2014; Fredrickson 2004). Emotional well-being may be seen as a component of positive mental health. A tripartite positive mental health concept including emotional well-being (EWB), psychological well-being (PWB), and social well-being (SWB) is suggested (Keyes 2002, 2010). The presence of mental health may be defined as “flourishing,” a condition characterized by the presence of high levels of EWB and positive functioning. This is consistent with the following definition by WHO of mental health: “a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community” (World Health Organization [WHO] 2005, p. 2). The absence of mental health may be called “languishing,” a condition characterized by low levels of EWB and low levels of positive functioning (Keyes 2002).

According to the hedonic tradition, EWB comprises happiness, emotional vitality and the experience of pleasant emotions and good feelings. Research on EWB reflects this affective aspect of the hedonic tradition. In addition, EWB also includes a cognitive appraisal of satisfaction with life in general (Lamers et al. 2011). Accordingly, EWB focuses on subjective well-being in terms of overall life satisfaction and happiness. This is different from PWB that mainly draws on formulations from human development and existential challenges of life such as self-acceptance, personal growth, purpose in life, positive relations with others, autonomy (Ryff 1989), and environmental mastery and from SWB that consists of dimensions describing functioning optimally in life such as social integration, social contribution, social coherence, social actualization, and social acceptance (Keyes 1998, 2002). Accordingly, while EWB belongs to the hedonic tradition, PWB and SWB belong to the eudaemonic tradition.

EWB is a cluster of signs reflecting the presence and absence of positive feelings about life.

The positive feelings may be operationalized as positive affect, happiness, and life satisfaction. Positive affect may be such as regularly cheerful, in good spirits, happy, calm, peaceful, satisfied, and full of life. Happiness may be to feel happiness toward past or about present life overall or in domains of life. Life satisfaction may be a sense of contentment, or satisfaction with past or present life overall or in life domains. Examples of life domains are employment, marriage, neighborhood (Keyes 2003), and education (Hanley et al. 2020). One definition of overall life satisfaction is given by Revicki et al. (2000, p. 888): “a broad range of human experiences related to one’s overall subjective well-being. It implies value based on subjective functioning in comparison with personal expectations and is defined by subjective experiences, states and perceptions. Quality of life is inherently idiosyncratic to the individual but intuitively meaningful and understandable to most people.”

Positive emotions are one of the pillars in Positive Psychology. It sheds light on the importance to have goals in therapy that give attention to factors that promote positive well-being including EWB. Practitioners must no longer be content with merely relieving symptoms because EWB contributes directly to mental health (Huppert and Whittington 2003). Having a positive sense of emotional well-being can be looked at as both the experience of emotions and the regulations of emotions. EWB includes positive subjective experience of the past, present, and future. EWB related to the past is contentment and satisfaction. Positive subjective experience about the present is happiness, flow, ecstasy, and the sensual pleasures. EWB related to the future is optimism and hope. Positive emotions trigger upward spirals toward EWB (Fredrickson and Joiner 2002). This prediction stems from the broaden-and-build theory of positive emotions (Fredrickson 2004). This theory, together with research review (Fredrickson 2004), suggests that positive emotions broaden people’s attention and thinking and thought-action repertoires, undo lingering negative emotional arousal and fuel psychological resilience, build consequential personal resources, become more creative, change people for the

better, be more trustful, take better decisions, regulate feelings and behavior, see the whole picture, and fuel psychological and physical well-being. These factors will again trigger upward spirals toward EWB and thus seed human flourishing. The broaden-and-build theory thus conveys how positive emotions move people forward and lift them to higher ground of optimal EWB and healthy longevity.

Positive institutions such as democracy, strong families that support the virtues, will in turn support the positive emotions and emotional well-being. The strengths and virtues of emotional well-being function as a buffer against misfortune and mental health problems, and they may be the key to building resilience (Seligman 2003).

A questionnaire measuring EWB, PWB, and SWB is the Mental Health Continuum Long Form (MHC-LF) where EWB is included as one dimension measuring how much of the time during the past 30 days you felt cheerful, in good spirits, extremely happy, calm and peaceful, satisfied, and full of life. There is also a short form the Mental Health Continuum Short Form (MHC-SF) where EWB is included as one dimension measuring happiness with life, interest in life, and satisfaction with life (Keyes 2002). Studies show that these dimensions are strongly correlated although separate dimensions. This means that to improve EWB it is also vital to strengthen PWB and SWB. To promote EWB, it is necessary to have the ability to regulate own feelings, and have good social skills and the active desire to achieve well-defined targets (Rosenbaum and Ronen 2014). This might be defined as a reciprocal feeding system.

References

- Fredrickson, B. L. (2004). The broaden-and-build theory of positive emotions. *Philosophical Transactions of the Royal Society of London. Series B, Biological Science*, 359(1449), 1367–1378.
- Fredrickson, B. L., & Joiner, T. (2002). Positive emotions trigger upward spirals toward emotional well-being. *Psychological Science*, 13(2), 172–175.
- Hanley, T., Winter, L. A., & Burrell, K. (2020). Supporting emotional Well-being in schools in the context of austerity: An ecologically informed humanistic perspective. *British Journal of Educational Psychology*, 90, 1–18.
- Huppert, F. A., & Whittington, J. E. (2003). Evidence for the independence of positive and negative well-being: Implications for quality of life assessment. *British Journal of Health Psychology*, 8, 107–122.
- Keyes, C. L. M. (1998). Social well-being. *Social Psychology Quarterly*, 61(2), 121–140.
- Keyes, C. L. M. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior*, 43(2), 207–222.
- Keyes, C. L. M. (2003). Complete mental health: An agenda for the 21st century. In C. L. M. Keyes & J. Haidt (Eds.), *Flourishing: Positive psychology and the life well-lived* (pp. 293–312). Washington, DC: American Psychological Association.
- Keyes, C. L. M. (2010). The next steps in the promotion and the protection of positive mental health. *Canadian Journal of Nursing Research*, 42(3), 17–28.
- Lamers, S. M. A., Westerhof, G. J., Bohlmeijer, E. T., ten Klooster, P. M., & Keyes, C. L. M. (2011). Evaluating the psychometric properties of the mental health continuum-short form (MHC-SF). *Journal of Clinical Psychology*, 67(1), 99–110.
- Lindfors, P. (2014). Physiological correlates of mental well-being. In C. Keyes (Ed.), *Mental well-being. International contributions to the study of positive mental health* (pp. 259–274). Dordrecht: Springer.
- Revicki, D. A., Osoba, D., Fairclough, D., Barovsky, I., Berzon, R., Leidy, N. K., et al. (2000). Recommendations on health-related quality of life research to support labeling and promotional claims in the United States. *Quality of Life Research*, 9, 887–900.
- Rosenbaum, M., Ronen, T. (2014). Emotional well-being and self-control skills of children and adolescents: The Israeli perspective. In: Keyes C.: *Mental well-being. International contributions to the study of positive mental health*, pp. 209–229. Dordrecht: Springer.
- Ross, et al. (2020). Adolescent well-being: A definition and conceptual framework. *Journal of Adolescent Health*, xxx, 1–5, in press.
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological wellbeing. *Journal of Personality and Social Psychology*, 57(6), 1069–1081.
- Seligman, M. (2003). Foreword. In C. L. M. Keyes & J. Haidt (Eds.), *Flourishing: Positive psychology and the life well-lived* (pp. xi–xx). Washington, DC: American Psychological Association.
- United Nations. (2021). *Sustainable development goals*. New York: United Nations. Available at: <https://www.un.org/sustainabledevelopment/sustainable-development-goals>. Accessed 30 Nov 2021.
- WHO. (2005). *Promoting mental health: Concepts, emerging evidence, practice: A report of the World Health Organization, Department of Mental Health and Substance Abuse in collaboration with the Victorian Health Promotion Foundation and The University of Melbourne*. Geneva: Author.

Emotional Work

► [Emotions, Sociology of](#)

Emotion-Focus Coping Among Workers

► [Emergency Workers' Quality of Life](#)

Emotions, Sociology of

Scott Grills

Department of Sociology, Brandon University,
Brandon, MB, Canada

Synonyms

[Affective states](#); [Cultural bases of emotion](#); [Emotion rules](#); [Emotional work](#); [Feelings](#); [Gender and emotions](#); [Sentiments](#); [Social rules for emotion](#)

Definition

The sociological study of emotions examines the expression and experience of emotions in everyday life. Areas of study include, in part, ► [social interaction](#) and emotions, identity and emotions, the cross-cultural study of emotions, and emotions and ► [deviance](#).

Description

A sociological interest in the study of human emotions draws attention to the cultural and interactional basis of emotion. Emotions and emotion sets are framed in the context within which they are learned and enacted (Turner and Stets 2005). Drawing on Cooley's notion of the looking-glass self, Scheff (2000) suggests that human actors operate within the context of a constant state of

self-feeling. As social actors participate in face-to-face interactions, they are capable of engaging in taking the role of the other and attempting to view themselves as others see them. Emotions such as pride and shame, therefore, are directly tied to the social self – the attempt to see ourselves as others see us and to attribute affective qualities to how we see ourselves and how we think others see us. As Shields (2002) has suggested, the emotive experience of everyday life involves the very real experience of taking things personally – of caring, hurting, lamenting, and rejoicing. All require the person to reflectively make an affective turn toward the self and assign personal meaning toward an interaction sequence or outcome. An appreciation of the sociology of emotion encourages actors to more fully attend to the extent to which the emotional life of the person is created and sustained in a relational context.

Cultural Basis of Emotion

In the classic article “The Cultural Basis of Emotion and Gesture,” Lebarre (1947) argued that in addition to the physiological, anatomical, and psychological determinants of emotions, cultural determinants are in play as well. Eurocentric theories of emotions had tended to assume an ethnocentric approach to the study of emotion. By, in essence, writing culture out of the study of emotion, theorists could and did advance the notion that western idealized accounts of emotions and emotionality provided models of the preferred emotional sets for given life experiences. Such approaches are additionally problematic (and potentially harmful to individuals) when associated with the notion that emotions require particular stages of experience (e.g., Kübler-Ross (1969) model of denial, anger, bargaining, depression, and acceptance with respect to grief and ► [death](#)). Such models may allow for medicalized/pharmacological interventions when expected “natural” or “normal” emotive experiences were not enacted by the individual.

The problem with all of this is that there is no universal human response to death. Grief, deep and profound, tied to a sense of crushing personal loss is one response. However, so too is joy, the joy that comes with an assurance of the elevation

of the person to another form of existence. The world's cultures offer many versions of next-life narratives, many of which allow for a non-grief-based response to death. There can be pride in inflicting death on others in a time of war or as an act of revenge or the shame of believing that one is somehow responsible for the death by suicide of a loved one. The Kwaio of the Solomon Islands may come to see death as an act inflicted by the hands of deceased ancestors and indicative of taboo practices on the part of the group and therefore associated with the emotion of guilt. (Keesing 1982) Rosaldo (1989) writes eloquently about the unique emotive sets of the Ilongot, a headhunting culture of the Philippines. When experiencing the death of his wife in the field, Rosaldo writes, of sharing with the Ilongot, an emotive experience for which there is no word in English. This unique culturally located experience is best captured as a combination of grief and rage – an emotive cocktail best remedied by the practice of headhunting (a solution to grief/rage that Rosaldo did not elect). While one could go on, hopefully the point is clear. Culture, both writ large and more localized, is vital for the understanding of human emotionality. Importantly for ► [quality of life](#) studies, the cultural basis of emotion moves us away from the notion that emotive experiences are inherently appropriate or inappropriate, natural or unnatural, and allows us to find our joys in multiple ways and to marry who we ► [love](#).

Emotions, Occupations, and Involvements

Another important contribution to the study of emotions that has been made by the sociological tradition is the study of emotions in occupational settings and in various subculture involvements (e.g., prostitution, drug dealing, strip clubs, mushroom gatherers, and extreme sports enthusiasts). In order for individuals to become involved in an activity initially and to maintain their involvements in whatever it is they are undertaking, they need to learn to manage the emotional aspects of the activity. Simply put, if the recruitment and socialization activities of those who are promoting the involvements of others into a particular activity fail to allow the person to learn the

perspectives and emotions of the group, then their ability to maintain involvements will be compromised.

The emotions work undertaken in the socialization of participants may be marked and distinct. Studies of two occupations illustrate the point: strippers/lap dancers and high iron-steel workers. Hass (1977) essay “Learning Real Feelings” made an important early contribution to the study of emotion in occupational settings. Hass’ detailed ethnographic work with high iron-steel workers examined the reactions of participants to the fear and danger that accompanied their workplace. Ironworkers define much of their work situation as dangerous and experience the uncertainty of workplace fatalities. Unlike, for example, professional firefighters whose work month may involve relatively few high-risk activities but when they do occur are recognized as such, high iron-steel workers live with the ever-present risk of “falling in the hole.” It is an inescapable fact of the work. In response to this uncertainty, Hass notes that high iron-steel workers have developed strategies to gain some interactional control in the setting. These processes of control include testing and assessing other workers, communicating these evaluations to others, and establishing worker reputations. These forms of social control allow workers some emotive control of the setting.

Prus and Irini (1988) and Colosi (2010), while writing a generation apart, nevertheless provide a detailed portrait of the emotion work that accompanies the everyday practices of strippers and lap dancers. Drawing in part on Goffman’s (1959) dramaturgical model, both studies draw out the emotion work that is required of those working in this side of the sex industry. Dancers may adopt a variety of strategies to manage intimacy, ensure that their definition of the situation prevails, and engage in emotion work with others in the setting. Persistence in the sex industry requires the development of skills in the management of performer/customer interactions. The dancer’s sense of self, success in the industry, and indeed personal safety are influenced by developing these interactional skills. As Goffman (1959) notes, the distinction between cynical and sincere performances is a helpful one. Actors can and do distance the self

and thereby manage emotions by engaging in cynical performances – performances where the actor is giving off one set of impressions, but their relationship, instrumental or otherwise, to the performance is different from those impressions. For lap dancers, emotions in the setting may be managed by a series of cynical performances intended to encourage customers to purchase their services. Such performances, according to Colosi (2010) may include (1) the ego boost (deceiving the client into believing that he is special, attractive, or otherwise stands out from others in the setting), (2) the bimbo act (self-portrayal as vulnerable, “thick,” and naïve for the purpose of allowing the customer to believe that he is in control of the setting), (3) the empty promise (using verbal and nonverbal cues to allow the customer to believe that the purchase of a lap dance will lead to further sexual relations), and (4) the pity plea (appealing to a customer on the basis of financial hardship). Interactional strategies of these types allow those engaged in activities considered deviant, demeaning, or degrading by others to manage the stigma of their roles and the accompanying emotional challenges by maintaining an interactional and at times moral superiority over their mark or intended target. We find similar emotive work done by card and dice hustlers (Prus and Sharper 1977), muggers (Katz 1988), and motorcycle gang members (Wolf 1991).

It is rather essential for those interested in quality of life issues to attend to the emotive relationship that participants have to the work that accompanies the accomplishment of everyday life. Unlike those who may argue that meaning is inherent in an activity, attentiveness to the perspectives of subcultural members allows for an examination of the emotions learned within the setting and the accompanying sense of self that is developed and sustained.

Emotions, Gender, and Emotion ► Norms

Like other forms of human action, the expression of emotion is accompanied by performance ► norms. While these expectations of behavior vary over time and across various settings, the work of doing emotions is accompanied by various rules and shared understandings about the acceptable performance of emotion. Crying is

not only acceptable in some settings but is encouraged (Katz 1999). Displays of ► anger and aggression may be encouraged on the sports field but may be considerably less welcome in the classroom. Children may be allowed access to emotive outbursts that, if performed by an adult, would be viewed as an indicator of a lack of interactional competence that would require some form of account. The words we use around such behaviors point to the cultural rules around the expression of emotion: “temper tantrum,” “cry baby,” “hysterical” and “emotional wreck.” The absence of the expression of culturally appropriate emotion may also be viewed by self and others as deviant or disreputable in various ways. As previously noted, those who do not express “appropriate” remorse or grief over the death of a loved one may experience various stigmas. A relative absence of grief performance may in fact be used in courts as evidence supporting a homicide conviction. Those who are considerably less emotively expressive may endure various stigmas of the person as they may be labeled as “shy,” “frigid,” “emotional eunuch,” or “refrigerator mother.”

The rules for the expression of emotion are complex, varied, and situationally specific. There are different rules for the workplace and the home, for subordinates and superordinates, for sacred spaces, and for profane ones. And as those working within the tradition of ethnomethodology have pointed out, these rules are often so taken for granted that we rarely attend to them, unless they are breached. Many candidates for head of state have found their fitness for office judged relative to their ability to appropriately do emotion work. A serious misstep can undo a campaign.

But in all of this, we need to attend to the gendering of emotions. The culturally available emotional palate available to women and men varies. Taking all of the other very important experiences that influence the affective person (sexual orientation, subcultural affiliations, generational affiliations, and the like), we nevertheless return again and again to the gendering of emotion as a salient rule type for doing emotion work for both men and women. Any discussion of emotion rules and gender risks moving toward an overly

simplified dichotomy, one Sydnie (1994) dissects in her appropriately titled book “Natural Women, Cultured Men.” It would be misleading to suggest that there are women’s emotions and men’s emotions, but rather it is closer to the interactional reality that we live in to note that the rules in place for doing emotion are intimately interwoven with the rules for doing gender. When one is doing emotion, one is doing gender at the very same time. To do emotion “properly” is to engage in gender appropriate behavior.

Shields (2002) attends to the gendering of emotion rules by suggesting the distinction between two emotional styles: (1) extravagant expressiveness and (2) manly emotion. The distinction here is a long-standing one in the western tradition; it draws us back to the classic distinction between passion and reason. Extravagant expressiveness is the emotive set most closely associated with nurturance, while manly emotion is “strongly felt emotion under control” (Shields 2002, p. 173). To the extent that audiences attend to these general sets of emotion rules, those engaging in extravagant expressiveness in non-nurturance settings may experience a variety of deviance designations. Women’s abilities to hold leadership positions in organizations may be questioned on emotive grounds, and men who seek to teach in elementary schools may have their emotive and professional suitability questioned in multiple ways. In both cases, the gender/affect disjunction may limit the life chances of the person. This creates what Shields (2002) refers to as a double bind for both men and women.

For women, doing emotion may involve moving between nurturing and therefore more expressive roles (e.g., mother, sister, wife, lover) and more emotively constrained roles of the workplace. For men the challenge is found in changing cultural expectations to be more expressive, more nurturing, and more sensitive – in essence to be more feminine, while at the same time, modeling inexpressiveness – to be the keeper of reason and to be calm under pressure. In both cases, but for differing reasons, women and men experience the challenge of sharing real feelings in the context of authentically expressing the self.

In Sum

A sociological interest in emotions and emotionality contributes much to our understanding of the human condition and the lives we live. Importantly, a sociological perspective resists the notion that emotions can be understood outside of the social and cultural context of the person. Notions of self that are held by the person are informed by self/other identities. Therefore, self-feelings, feelings that are central to quality of life issues, arise through interaction with others and are modified through processes of self-reflection. An attentiveness to the social construction of emotions in the context of occupations and gender illustrates the social work that goes into the practical accomplishment of emotions in everyday life.

Cross-References

- [Affective Component of Happiness](#)
- [Feeling Safe](#)
- [Feelings of Justice](#)
- [Occupation Influence on Satisfaction/Happiness](#)

References

- Colosi, R. (2010). *Dirty dancing? An ethnography of lap-dancing*. London: Routledge.
- Goffman, E. (1959). *The presentation of self in everyday life*. Garden City, NY: Doubleday.
- Hass, J. (1977). Learning real feelings: A study of high steel ironworkers’ reactions to fear and danger. *Work and Occupations*, 4, 147–170. <https://doi.org/10.1177/073088847700400202>.
- Katz, J. (1988). *Seductions to crime: Moral and sensual attractions in doing evil*. New York: Basic Books.
- Katz, J. (1999). *How emotions work*. Chicago: University of Chicago Press.
- Keesing, R. (1982). *Kwaio religion: The living and the dead in a Solomon Island Society*. New York: Columbia University Press.
- Kübler-Ross, E. (1969). *On death and dying*. New York: Routledge.
- Lebarre, W. (1947). The cultural basis of emotions and gestures. *Journal of Personality*, 16, 49–68.
- Prus, R., & Irini, S. (1988). *Hookers, rounders and desk clerks: The social organization of the hotel community*. Salem, WI: Sheffield Publishing Company.
- Prus, R., & Sharper, C. R. D. (1977). *Road hustler*. Toronto, ON: Gage.
- Rosaldo, R. (1989). *Culture and truth: The remaking of social analysis*. Boston: Beacon.

- Scheff, T. (2000). Shame and the social bond: A sociological theory. *Sociological Theory*, 18, 84–99.
- Shields, S. A. (2002). *Speaking from the heart: Gender and the social meaning of emotion*. Cambridge University Press.
- Sydie, R. (1994). *Natural women, cultured men: A feminist perspective on sociological theory*. Vancouver, BC: UBC Press.
- Turner, J. H., & Stets, J. E. (2005). *The sociology of emotions*. Cambridge, UK: Cambridge University Press.
- Wolf, D. R. (1991). *The rebels: A brotherhood of outlaw bikers*. Toronto, ON: University of Toronto Press.

Emotivist Value Theories

► Value Theories

Empathic Concern

► Compassion, Happiness, and Self-Esteem

Empedocles

Alex C. Michalos
University of Northern British Columbia, Prince
George, BC, Canada
Residence, Brandon, MB, Canada

Birth, Education, Work History, and Main Contributions

Empedocles of Acragas (c.492–c.432 BCE) was a gifted son of relatively wealthy aristocrats, who displayed enough sympathy for democracy to get himself exiled from his native home in Sicily. In McKirahan's (1994, p. 290) view,

Empedocles sparkles like a diamond among the Presocratics – many-faceted and appearing different from different directions. A poet and a politician, a physician and a philosopher, a scientist and a seer, a showman and a charlatan, he was a fallen divinity who proclaimed himself already a god, and a visionary who claimed to control nature.

Broadly speaking, his poetic fragments described a universe whose basic material building blocks are the four everlasting elements, earth, air, fire, and water, which are brought together by Love to form compounds and subsequently divided and subdivided by Strife to form other kinds of compounds. “Love” and “strife” are names used to describe cosmic forces that are not only physical but psychological and moral as well. Love is sometimes referred to as friendship, joy, and harmony. It is love that makes the basic elements “yearn for one another,” and the harmony produced by love’s activity is morally good. On the contrary, it is strife and “evil quarrels” that cause compounds to “split apart,” producing war and other kinds of wretchedness. Human bodies are animated by DAIMONES, which function like souls but have an ontological status which is grander than souls. DAIMONES are not immortal, but they are relatively “long-lasting” compounds subject to the forces of love and strife. Empedocles told an elaborate story of the origins of all species, including such memorable fragments as the following:

By her [Love] many neckless faces sprouted, and arms were wandering naked, bereft of shoulders, and eyes were roaming alone, in need of foreheads. . . . Many came into being with faces and chests on both sides, man-faced ox-progeny, and some to the contrary rose up as ox-headed things with the form of men. . . . (McKirahan 1994, p. 246)

At some time, the DAIMONES enjoyed a state of bliss overseen by love that was eventually shattered as a result of an act of murder provoked by Strife. Human beings are the product of that Fall, with human bodies wrapped around DAIMONES as “an alien garb of flesh.” Depending on individuals’ own behavior, their DAIMONES might be reincarnated in greater or lesser beings. When Empedocles wrote “I have already once become a boy and a girl and a bush and a bird and a fish,” he was implying that his DAIMON carried the essence of his personal identity and was the ultimate unobservable recipient of any rewards and punishments due to him. Such soul-like essences might be reincarnated as

. . . prophets and bards and physicians and chiefs among men on earth, and from there they arise as gods mightiest in honors. Sharing the same hearth

and table with other immortals relieved of human distress, unwearied. (McKirahan 1994, p. 253)

The next step-up from being able to dine “with other immortals” would bring some kind of closure to the process of reincarnation, at which point one’s individuality would be blended with that of a supreme being conceived of as “only mind, holy, and indescribable.” Important features of Empedocles’ vision of a ► [good life](#) are clearly discernable in this sketch of his metaphysics, which is fully informed by his ethics. ► [Love](#), friendship, harmony, peace, social and ► [self-esteem](#), and joy are all positively valued, while strife, quarrels, murder, war, and “human distress” are all negative. Other fragments add familiar themes. Following the Fall, the “wretched race of mortals” found themselves “quarreling” in a “joyless place, where Murder, ► [Anger](#). . .and squalid Diseases and Rottings. . .wander in darkness.” “False oaths” are condemned, along with eating meat and beans (McKirahan 1994, pp. 252–254).

Cross-References

- [Multiple Discrepancies Theory](#)
- [Quality of Life, Two-Variable Theory](#)
- [Social Indicators](#)

References

- Annas, J. (1993). *The morality of happiness*. Oxford: Oxford University Press.
- Dover, K. J. (1974). *Greek popular morality in the time of Plato and Aristotle*. Indianapolis: Hackett Publishing.
- Kahn, C. H. (1998). Pre-platonic ethics. In S. Everson (Ed.), *Companions to ancient thought: 4 ethics*. Cambridge: Cambridge University Press.
- McKirahan, R. D. (1994). *Philosophy before Socrates: An introduction with texts and commentary*. Indianapolis: Hackett Publishing.

Employee Engagement

- [Psychological Stress and Employee Engagement](#)

Employee Insecurity

- [Employment Insecurity](#)

Employee Satisfaction

Klaus Schömann

Jacobs Centre for Life-long Learning, Jacobs University Bremen, Bremen, Germany

Synonyms

[Job satisfaction](#)

Definition

Job satisfaction is defined as “an internal state that is expressed by affectively and/or cognitively evaluating an experienced job with some degree of favor or disfavor” (Brief 1998, p. 86). It is one dimension of overall satisfaction with life, happiness, or subjective well-being. As other subjective measures of quality of life, job satisfaction is collected in surveys through self-reports of participants. Data collection is made using a hierarchical scale ranging from very satisfied with your current job to not satisfied at all.

Description

As much as job satisfaction constitutes a subdomain of overall life satisfaction, subjective well-being, or happiness, it consists itself of several subdomains (Kalleberg and Loscocco 1983). Over the life course the importance of subdomains of job satisfaction changes in the view of individuals. Commonly the following domains are combined into an overall measure of job satisfaction. These are directly job-related satisfaction levels like satisfaction with one’s salary, the type of work contract, the working hours, and future career prospects. Additional components of job

satisfaction are satisfaction with commuting time to work, the content of a job, collaboration with colleagues, as well as training opportunities. Encompassing measures of job satisfaction include satisfaction with the work-life balance and with health and safety conditions at the workplace into the full set of measures summarized under the overall concept of job satisfaction (Vandenbrande et al. 2006). Recently explanations of country differences of job satisfaction focus attention on single items from the encompassing components of job satisfaction. Research has demonstrated that different labor market and household dynamics are driving job satisfaction levels in subdomains of job satisfaction (Fasang et al. 2012).

Explaining Differences

Major theoretical contributions with relevance to the explanation of why job satisfaction differs between persons and over time are reference group theory, multiple discrepancies theory, adaptation level theory also known as “hedonic treadmill model” (Brickman and Campbell 1971), and the revision of the model (Diener et al. 2006). Related to job satisfaction, the hedonic treadmill leads to the honeymoon-hangover hypothesis formulated by Boswell et al. (2005) which states that job satisfaction rises after a voluntary job shift (honeymoon) and declines as the person stays on the new job (hangover). The job reward hypothesis put forward by Quinn et al. (1974) proposed that job satisfaction increases as persons move up on the job ladder very much in line with increasing age. Kalleberg and Mastekaasa (2001) contributed the values-rewards perspective, which holds that job satisfaction is most importantly determined by rewards in the job like pay and content but co-determined by a person’s values or needs. Values are seen as changing little over time, comparable to so-called set points; hence, changes in job satisfaction will be largely determined by short-term differences in job rewards or through job mobility.

Results

Whereas for satisfaction with life, it is generally reported that there is an inverse U-shape

relationship with age, meaning that the younger and older age groups are more satisfied than the middle age group. For job satisfaction age is less suited as a predictor as more direct links exist with tenure on the job rather than age as such. For example, empirical results show a negative effect on tenure on the satisfaction with career prospects. However, as tenure increases persons report higher satisfaction with their work-life balance (Fasang et al. 2012). Whereas the effects of tenure are domain specific, the effect of previous periods of unemployment has negative effects across most domains of job satisfaction. Voluntary job mobility works as a mechanism to boost job satisfaction, whereas subdued job changes seem to affect job satisfaction in a negative way. Kalleberg and Mastekaasa (2001) coined already the statement that movers were more satisfied in their new jobs but stayers were more committed to their current job.

It is no surprise that promotions lead to higher job satisfaction and higher commitment to the job. In most cases job rewards are likely to change in line with a promotion. Similarly, moving to a lower-status job lowers job satisfaction substantially. However, the evidence on lateral moves or horizontal career changes is mixed as some of these moves compromise career prospects or salary with the aim to achieve a better work-life balance.

Macro-level indicators like growth rates and unemployment levels can influence individual job satisfaction levels as well, although these effects seem to be moderated through social policies or specific institutional arrangements of the welfare state. More generous welfare state provisions can lower the negativity of experienced unemployment on job satisfaction in the next job.

Cross-References

- ▶ [Adaptation-Level Theory](#)
- ▶ [Happiness](#)
- ▶ [Hedonic Treadmill](#)
- ▶ [Job Satisfaction](#)
- ▶ [Life Satisfaction](#)

- [Meaningfulness of Work](#)
- [Multiple Discrepancies Theory](#)
- [Subjective Well-Being](#)
- [Work-Life Balance](#)

References

- Boswell, W. R., Boudreau, J. W., & Tichy, J. (2005). The relationship between employee job change and job satisfaction: The honeymoon-hangover effect. *Journal of Applied Psychology*, 90, 882–892.
- Brickman, P., & Campbell, D. T. (1971). Hedonic relativism and planning the good society. In M. H. Appley (Ed.), *Adaptation level theory: A symposium* (pp. 287–302). New York: Academic.
- Brief, A. P. (1998). *Attitudes in and around organizations*. London: Sage.
- Diener, E., Lucas, R. E., & Scollon, C. N. (2006). Beyond the hedonic treadmill. Revising the adaptation theory of well-being. *American Psychologist*, 61, 305–314.
- Fasang, A., Geerdes, S., & Schömann, K. (2012). Which type of job mobility makes people happy? A comparative analysis of European welfare regimes. *International Sociology*, 27, 349–383.
- Kalleberg, A. L., & Loscocco, K. A. (1983). Aging, values, and rewards: Explaining age differences in job satisfaction. *American Sociological Review*, 48, 78–90.
- Kalleberg, A. L., & Mastekaasa, A. (2001). Satisfied movers, committed stayers. *Work and Occupations*, 28, 183–209.
- Quinn, R. P., Staines, G. L., & McCullough, M. R. (1974). *Job satisfaction: Is there a trend?* Washington, DC: Department of Labor.
- Vandenbrande, T., Coppin, L., Van der Hallen, P., Ester, P., Fouarge, D., Fasang, A., et al. (2006). *Mobility in Europe: Analysis of the 2005 eurobarometer survey on geographical and labour market mobility*. Dublin: European Foundation for the Improvement of Living and Working Conditions.

Employee Well-Being

- [Well-Being at Work](#)

Employee-Oriented Flexibility

- [Work, Alternative/Flexible Arrangements](#)

Employment Commitment

Mikael Nordenmark

Department of Health Sciences, Mid Sweden University, Östersund, Sweden

Synonyms

[Commitment to the labor market](#); [Nonfinancial employment commitment](#)

Definition

Employment commitment can be defined as the perceived values of employment other than financial ones. This means that a person's level of employment commitment is mainly determined by the psychosocial value of paid work in a general sense (Hult and Svallfors 2002; Nordenmark 1999a; Warr 1982).

Description

Employment commitment does not include the financial value of paid work and is not a measure of the nonfinancial value of a particular job. It refers mainly to the nonfinancial or psychosocial meaning of a paid job in general. To get a more detailed picture of what employment commitment includes and not includes, one can use Marie Jahoda's (1982) theory about the latent functions of employment. Jahoda maintains that a paid job fulfills five psychosocial or latent functions, in addition to the economic or the manifest function. First, employment provides a time structure in that it offers a time schedule that organizes daily activities. In spite of this structure being in some sense understood as a burden, it is often traumatic for the individual when it no longer exists. Furthermore, a paid job provides social contacts. It is in the workplace that adults have most of their daily contacts outside of the family. Third, employment also offers participation in collective purposes, which means that a paid job offers the opportunity

to work together with others toward collective goals. According to Jahoda, people also need to be engaged in a regular activity, which is the fourth latent function of employment, and finally, employment also provides status and identity in a society where employment is seen as the norm. This means that a high employment commitment indicates that employment is important because it provides a social and meaningful activity as well as a status and identity.

The level of employment commitment is mostly measured by survey questions or statements about the nonfinancial values of employment. One of the most commonly used measurements is the work involvement scale (WIS). The scale was developed by Warr et al. (1979) to measure subjective work orientation. The WIS consists of six statements measuring in what sense paid work in general is a central part of life. Studies of relationships between the WIS and various functions of work show that the WIS is a valid measure of the psychosocial meaning of paid work and not of the economic meaning. There is no significant connection between the WIS and the statement "the money is very important." However, people who emphasize the activity, the coworkers, and the status that employment provides also have high scores on the WIS. The conclusion is that a high score on the WIS indicates that employment is important because it provides social contacts, a meaningful activity, status, and identity. These are basically the same functions that Jahoda focuses on in her theory about the latent functions of employment (Nordenmark 1999a).

Research has shown the level of employment commitment seems to be high among people in general, at least in the western world (Hult and Svallfors 2002; Nordenmark 1999a, b; Snir and Harpaz 2002; Warr 1982). Results indicate that employment commitment is highest among people living in the Scandinavian countries. One possible explanation for these results is the extensive labor market policy in these countries which has a strong focus on paid labor for all (Gallie and Alm 2000; Hult and Svallfors 2002). Most studies show that high education, high occupational position, and having a stimulating job are associated

with a relatively high employment commitment. Analyses of differences between women and men, between employed and non-employed, and between short-term and long-term unemployed show small differences and varying results (Gallie and Alm 2000; Halvorsen 1999; Hult 2008; Hult and Svallfors 2002; Nordenmark 1999a, 1999b). Results from studies of unemployed people have shown that the experience of the former job and to what extent the unemployed have been successful in replacing employment with other activities strongly influence the commitment to employment. Those who have had a stimulating job and find it hard to replace this job with meaningful activities also have a high level of employment commitment, compared to those who have a more instrumental attitude to the job and find it more easy to adapt to the unemployment situation (Nordenmark).

The level of employment commitment has shown to be of major importance for the level of mental well-being among unemployed (Creed et al. 2009; Nordenmark and Strand 1999). In the light of previous research, it is possible to distinguish two main dimensions of employment that structure the level of mental health among the unemployed, namely, the psychosocial and economic dimensions. Unemployed who are both strongly committed to employment and have a strong economic need for employment have a high risk for experiencing a poor mental well-being. On the other hand, unemployed who have both a low employment commitment and a weak economic need for employment (for instance, unemployed living with a well-paid partner and strongly involved in activities not directly connected to employment) feel quite well and may adapt relatively well to their situation as unemployed (Nordenmark & Strandh).

References

- Creed, P. A., Lehman, K., & Hood, M. (2009). The relationship between core self-evaluations, employment commitment and well-being in the unemployed. *Personality and Individual Differences*, 47, 310–315.
- Gallie, D., & Alm, S. (2000). Unemployment and attitudes to work. In D. Gallie & S. Paugam (Eds.), *Welfare*

regimes and the experience of unemployment in Europe (pp. 109–133). New York: Oxford University Press.

- Halvorsen, K. (1999). Employment commitment among the long-term unemployed in Norway: Is a “culture of dependency” about to develop? *European Journal of Social Work*, 12, 177–192.
- Hult, C. (2008). Gender, culture and non-financial employment commitment in Great Britain and Sweden. *European Societies*, 10, 73–96.
- Hult, C., & Svallfors, S. (2002). Production regimes and work orientations: A comparison of six western countries. *European Sociological Review*, 18, 315–331.
- Jahoda, M. (1982). *Employment and unemployment. A social-psychological analysis*. Cambridge, UK: Cambridge University Press.
- Nordenmark, M. (1999a). Employment commitment and psychological well-being among unemployed men and women. *Acta Sociologica*, 42, 135–146.
- Nordenmark, M. (1999b). Non-financial employment motivation and well-being in different labour market situations – A longitudinal study. *Work, Employment and Society*, 13, 601–620.
- Nordenmark, M., & Strand, M. (1999). Towards a sociological understanding of mental well being among the unemployed – the role of economic and psychosocial factors. *Sociology*, 33(3), 577–597.
- Snir, R., & Harpaz, I. (2002). To work or not to work: Nonfinancial employment commitment and the social desirability bias. *Journal of Social Psychology*, 142, 635–644.
- Warr, P. (1982). A national study of non-financial employment commitment. *Journal of Occupational Psychology*, 55, 297–312.
- Warr, P., Cook, J., & Wall, T. (1979). Scales for the measurement of some work attitudes and aspects of psychological well-being. *Journal of Occupational Psychology*, 52, 129–148.

Employment Discrimination

Raul Ramos
AQR–IREA, Department of Econometrics,
Statistics and Applied Economics, University of
Barcelona, Barcelona, Spain
IZA Institute of Labor Economics, Bonn,
Germany

Synonyms

Labor market discrimination; Workplace discrimination

Definition

Employment discrimination is the situation where two identical workers are treated differently in terms of access to a particular job, internal promotion, tasks assignment, wages, or firing decisions. Usually, employment discrimination is related to gender, racial, ethnic, or religious discrimination.

Description

Since the publication of Gary Becker’s (1957) book titled *The Economics of Discrimination*, economists and other social scientists have devoted considerable attention to the analysis of labor market discrimination. These analyses include theoretical formulations for the foundations of discrimination, studies about its consequences and how to measure it, and more recently, on policy advice to fight against discrimination.

Theories of Discrimination

According to the survey by Altonji and Blank (1999), the economic literature has suggested three different explanatory theories of employment discrimination: tastes and preferences of economic agents, monopsonistic labor markets, and statistical discrimination.

The tastes and preferences theory was initially formulated by Becker (1957). It is based on neo-classical theory, and according to this theory, preferences for discrimination are oriented to minimize economic transactions with members of certain demographic groups. Discrimination arises here because employers, coworkers, and/or final customers have a preference to work or buy goods to people from their own group and they are willing to pay a price in terms of economic efficiency to avoid contact with other groups (Bodvarsson and Partridge 2001).

In the case a monopsonistic employer, in the presence of two different group of workers who are perfect substitutes (i.e., men and women are equally productive) and the elasticity of worked hours to wages is lower for one of the two groups, a profit-maximizing employer would offer lower

wages to this group in order to equate the incremental labor costs of the two groups (Hirsch 2016).

Last, the theoretical explanation based on statistical discrimination is related to the fact that employment decisions are made on the basis of real or imagined distinctions between the average characteristics of individuals in each of the two groups and not only on the basis of individual characteristics.

Consequences

Employment discrimination can have negative consequences for individuals, groups, and organizations.

Regarding individuals, several studies have found that perceiving discrimination or prejudice can negatively affect the psychological and physical health of workers (see Goldman et al. 2006 for a survey). Moreover, there are also economic negative effects both at the individual and the group levels. Discrimination may result in differences in pay, job status, and job type between discriminated groups and not discriminated groups.

Several studies have shown that several minority groups, including not only several race and ethnic groups but also women, earn less for jobs with the same performance levels and responsibilities as white males. The evidence is fairly stable across countries and across time (OECD 2008a). According to Oaxaca (2001), most wage discrimination tends to occur in lower-paying positions and involves minorities “who may not feel empowered to file a discrimination lawsuit or complain.” Discrimination can also be found in hiring decisions. Employers tend to hire a white male over a minority or a female similar candidate to carry out a particular task.

Last, the negative effects from employment discrimination at the organizational level can also be of different nature. For instance, legal battles can be very expensive for an organization and the corporate image can also be negatively affected by discriminatory practices, reducing the number of consumers and having a negative effect on sales and profits.

Measuring Discrimination

While different forms of discrimination exist, employment discrimination is usually measured through the comparison between employment rates of individuals from different groups. According to the OECD (2008a) on average, 20% fewer women than men have a job in OECD countries. Smaller gaps tend to be found in the Nordic countries, while in the rest of countries, more than 30% fewer women are in employment. Labor market gaps between minority and nonminority race groups are as large as between men and women, while second-generation immigrants – that is, the native-born with at least one foreign-born parent – appear to have on average 10% fewer chances to have a job than their native-born counterparts with no immigration background.

But discrimination is also usually measured in terms of wages. In particular, the comparison between wages for equally productive workers from different groups is usually implemented through the estimation of wage differentials conditional on human capital characteristics that reflect productivity potential of the considered individuals. The raw wage gap is then decomposed into a portion explained by differences in human capital endowments and a residual or unexplained part that is interpreted as an estimate of discrimination. The Oaxaca-Blinder method or more sophisticated methods such as the JMP decomposition technique are usually applied (see Fortin et al. 2011 for a review).

Weichselbaumer and Winter-Ebmer (2005) carried out a meta-analysis of 263 research papers applying decomposition techniques to measure the gender wage gap in different countries and time periods. Their results show that between the 1960s and the 1990s, wage differentials between men and women have fallen substantially worldwide from around 65 to only 30%. The bulk of this decline, however, must be attributed to better labor market endowments of females which came about by better education, training, and work attachment (including segregation). However, when looking at the estimates for the unexplained component of the wage gap, the results show a very slow decline in discrimination

over time. The recent survey by Blau and Kahn (2017) confirms the relevance of the traditional explanations of the gender wage gap, but new factors such as psychological attributes or non-cognitive skills also seem to play a role in explaining these differences.

However, there have been several criticisms (Kunze 2008) to the use of decomposition techniques to measure discrimination, and most researchers are quickly adopting more innovative approaches such as field experiments (see Bertrand and Mullainathan 2004; Baert 2017). The most common approach in this context is to use “correspondence tests,” in which fictitious written applications are sent in response to real job advertisements and discrimination is measured by comparing invitations to interviews among different groups. As regards ethnic or racial minorities, virtually all available experiments point in the same direction: Discrimination in the hiring process is far from uncommon. According to the OECD (2008b), typically, with strictly equivalent diplomas, qualifications, work experiences, areas of residence, etc., ethnic minorities receive about 30% points less callbacks for interview than the rest of the population when applying for a particular job vacancy. This implies that they need to search between 40% and 50% longer to find a job, which makes them much more vulnerable to the risk of long-term unemployment.

Antidiscrimination Laws

According to OECD (2008a), virtually all developed and some developing countries have enacted antidiscrimination laws in recent decades, mainly to improve equity and social cohesion but also to make the economy more efficient. By outlawing barriers to employment for underrepresented groups, these policies are likely to raise labor supply and thus help counteract the effect of population aging. However, there is no consensus on how antidiscrimination laws should be designed (see Donohue 2007 for a review). In particular, should the purpose of antidiscrimination laws be to provide equal opportunity for all, or should it ensure some sort of equality of resources? As

Goldman et al. (2006) argue, those who defend that antidiscrimination law should address equal treatment tend to focus on society’s deep commitment to economic efficiency and individual fairness, while those who believe that employment discrimination laws should redress past wrongs or seek economic equality for minorities are not content with equal treatment but argue for affirmative action policies. However, according to the OECD (2008b), the main issue in relation to antidiscrimination legislation is related to victims’ willingness to claim their rights, an aspect that should clearly be improved in the future from a policy perspective.

An alternative approach consists in the use of anonymous job applications (or blind recruitment) to combat hiring discrimination. As Rinne (2018) highlights, available evidence shows the potential of this practice to reduce some of the discriminatory barriers to hiring for minority and other disadvantaged groups. However, the implementation of these procedures can be costly, and it may simply postpone discrimination to later stages in the work career.

Cross-References

- [Gender Discrimination](#)
- [Meta-analysis](#)
- [Occupational Sex Segregation](#)
- [Workplace Discrimination Among Older American Workers](#)

References

- Altonji, J. G., & Blank, R. (1999). Race and gender in the labor market. In O. Ashenfelter & D. Card (Eds.), *Handbook of labor economics* (Vol. 3, pp. 3144–3259). Amsterdam: Elsevier.
- Baert, S. (2017). *Hiring discrimination: An overview of (almost) all correspondence experiments since 2005*. IZA Discussion Paper No. 10738.
- Becker, G. S. (1957). *The economics of discrimination*. Chicago: University of Chicago Press.
- Bertrand, M., & Mullainathan, S. (2004). Are Emily and Greg more employable than Lakisha and Jamal? A field experiment on labour market discrimination. *American Economic Review*, 94(4), 991–1011.

- Blau, F., & Kahn, L. (2017). The gender wage gap: Extent, trends, and explanations. *Journal of Economic Literature*, 55(3), 789–865.
- Bodvarsson, Ö., & Partridge, M. D. (2001). A supply and demand model of co-worker, employer and customer discrimination. *Labour Economics*, 8(2), 389–416.
- Donohue, J. J. (2007). Chapter 18 antidiscrimination law. In *Handbook of Law and Economics* (Vol. 2, pp. 1387–1472). Amsterdam: Elsevier.
- Fortin, N., Lemieux, T., & Firpo, S. (2011). Decomposition methods in economics. In O. Ashenfelter & D. Card (Eds.), *Handbook of labor economics* (Vol. 4A). Amsterdam: Elsevier.
- Goldman, B. M., Gutek, B. A., Stein, J. H., & Lewis, K. (2006). Employment discrimination in organizations: Antecedents and consequences. *Journal of Management*, 32(6), 786–830.
- Hirsch, B. (2016). Gender wage discrimination. *IZA World of Labor*, 2016, 310. <https://doi.org/10.15185/izawol.310>.
- Kunze, A. (2008). Gender wage gap studies: Consistency and decomposition. *Empirical Economics*, 35(1), 63–76.
- Oaxaca, R. (2001). Discrimination, economics of. In N. J. Smelser & P. B. Baltes (Eds.), *International encyclopedia of the social and behavioral sciences* (pp. 3756–3762). Oxford: Pergamon.
- OECD. (2008a). The price of prejudice: Labour market discrimination on the grounds of gender and ethnicity. In *OECD employment outlook (chap. 3)*. Paris: OECD.
- OECD. (2008b). The price of prejudice: Labour market discrimination on the grounds of gender and ethnicity. Legal and institutional framework in force in 2007. In *OECD employment outlook (annex to chap. 3)*. Paris: OECD.
- Rinne, U. (2018). Anonymous job applications and hiring discrimination. *IZA World of Labor*, 2018, 48. <https://doi.org/10.15185/izawol.48.v2>.
- Weichselbaumer, D., & Winter-Ebmer, R. (2005). A meta-analysis on the international gender wage gap. *Journal of Economic Surveys*, 19(3), 479–511.

Employment Insecurity

Stefani Scherer
Department of Sociology and Social Research,
University of Trento, Trento, Italy

Synonyms

Employee insecurity; Job insecurity

Definition

Employment insecurity relates to the subjective or objective risk of (involuntary) reduction of welfare coming from employment, most drastically from the loss of employment.

Description

Employment insecurity in its most general form is conceived as “the loss of welfare that comes from uncertainty at work” (Green 2009, p. 347). The term is most easily framed in terms of absence of “security” of employment in general and of income and job continuity in particular. Employment insecurity is thus a broader concept than “job insecurity,” indicating the job loss risk, comprising also insecurities associated with job continuity regarding mainly the reduction of income (De Witte 2005; Green 2009). Employment insecurity has been discussed within the ► **flexicurity** debate (European Union 2013; Wilthagen and Tros 2004; Muffels and Luijkx 2008), with emphasis on the importance of the institutional setting, especially the welfare state and the labor market, for shaping the flexibility-security trade-off (Barbieri and Cutuli 2016; Barbieri 2009; Anderson and Pontusson 2007; OECD 1999). Job security is also viewed as an aspect of job quality (OECD 2015) and strictly related to economic uncertainty.

Notwithstanding this broader concept of employment security, research is almost exclusively concerned with the future continuity of the current employment, i.e., the risk of involuntary job termination. This job insecurity consists of three aspects: the probability of job loss, the expected costs of this loss (moderated by the access to other sources of income such as unemployment benefits), and the chance of subsequent reemployment.

In contrast to job loss, job insecurity is a product of the interpretation of information about the environment. The literature distinguishes between *objective* insecurity, referring to the observed job loss risk, and *subjective* insecurity, meaning the subjectively assessed job loss risk. These overlap

(at the individual level), emphasizing that people usually have a fairly clear idea of their situation. Subjects interpret the risks and consequences as a function of their employment situation, available resources, access to other income sources, and their chance of finding a new (equivalent) job (De Witte and Näswall 2003). Job security is obviously much lower among non-standard employed and those in the secondary labor market (OECD 2015). It comes with high economic uncertainty and often with psychological distress, though these effects vary with the position in the income distribution.

Insecurity has been depicted as a multi-dimensional concept, comprising cognitive aspects (the estimated probability of job loss) and affective aspects (the worry or anxiety resulting from this assessment, like the ► [fear of job loss](#)).

Developments

The recent economic crisis contributed significantly to the increase in objective as well as subjectively perceived employment insecurity (OECD 2019; Bloom 2014), and young, low-skilled workers have been affected most. Decades prior to the crisis have already seen a marked increase in subjective employment insecurity (European Commission 2006; OECD 1999, 2004). Most of the rise has been attributed to changes in the economic systems, changing employment forms – especially the extension of ► [temporary employment](#) contracts – and changing relations, linked to developments in the economic environment, like internationalization of trade, and growing competition in the process of globalization, as well as changes in production through technological change, and the restructuring of the welfare state and a dualization of the labor market in turn of deregulation (Blossfeld 2009; Butrica 2013; Autor 2015).

These changes require that workers take on greater shares of individual risks, a trend denoted also as re-commodification of labor (Green 2009).

Determinants

A range of factors influence employment insecurity: (1) individual level factors, education and skills, and psychological factors and personality traits; (2) employment situation, contract and organization; and (3) macro aspects: welfare, labor market, and economic cycle.

Comparative research has underlined the important role played by social security systems (welfare systems and the allocation of welfare resources to cover different social groups against differentiated social risks) and labor market flexibility in moderating the fears, risks, and the consequences of job loss for the individual worker (Barbieri and Cutuli 2016; Chung and Mau 2014; Anderson and Pontusson 2007; Erlinghagen 2008; OECD 2004; Barbieri 2009). Side by institutional factors, particularly important are the level and duration of unemployment, available unemployment benefit (higher replacement rates reduce the costs associated with loss of employment), and the diffusion of temporary and part-time employment contracts, which increase economic insecurity. Changes in these aspects account for the observed rise in insecurity over the recent decades. Interestingly, higher employment protection legislation of national labor markets is associated with higher insecurity perception of individuals, which may be due to reduced chances for reemployment. The issue of how to balance flexibility and security in an increasingly international and competitive environment is known in the European policy debate as ► [“flexicurity.”](#)

In particular, research shows that temporary contracts come with considerably higher insecurity, that there is considerable variation in employment insecurity between countries, that the level of unemployment in a country plays a crucial role for the level of insecurity and that an important role is played by unemployment replacement rates (the percentage of previous wage covered by unemployment benefits) for moderating fears, and that insecurity is differentiated by the classic dimensions of stratification such as age, gender, and ► [education](#) (OECD 1999, 2004, 2008; European Commission 2006; Erlinghagen 2008).

Consequences

Employment insecurity is detrimental for the ► **subjective well-being** of workers and their families (Chung and Mau 2014; Green 2015; Tattarini et al. 2018) and even hinder fertility decisions in some contexts (Alderotti et al. 2021; Barbieri et al. 2015; Busetta et al. 2019). Insecurity was found to be associated with lower ► **job satisfaction**, less organizational and job commitment, poorer ► **health** in general and psychological health in particular, inferior work performance, and low social ► **trust**. The impact may be less in countries where temporary employment and unemployment are a common experience (OECD 1999, 2004, 2008; Virtanen et al. 2005).

Cross-References

- Education
- Fear of Job Loss
- Flexicurity
- Health
- Human Capital
- Job Satisfaction
- Job Security
- Social Trust
- Subjective Well-Being
- Temporary Employment
- Unemployment
- Welfare State(s)

References

- Alderotti, G., Vignoli, D., Baccini, M., & Matysiak, A. (2021). Employment instability and fertility in Europe: A meta-analysis. *Demography*, 58(3), 871–900.
- Anderson, C. J., & Pontusson, J. (2007). Workers, worries and welfare states: Social protection and job insecurity in 15 OECD countries. *European Journal of Political Research*, 46, 211–235.
- Autor, D. H. (2015). Why are there still so many jobs? The history and future of workplace automation. *Journal of Economic Perspectives*, 29(3), 3–30.
- Barbieri, P. (2009). Introduction: Flexible employment and inequality in Europe. *European Sociological Review*, 25(6), 621–628.
- Barbieri, P., & Cutuli, G. (2016). Employment protection legislation, labour market dualism, and inequality in Europe. *European Sociological Review*, 32, 501–516.
- Barbieri, P., Bozzon, R., Scherer, S., Grotti, R., & Lugo, M. (2015). The rise of a Latin model? Family and fertility consequences of employment instability in Italy and Spain. *European Societies*, 17(4), 423–446.
- Bloom, N. (2014). Fluctuations in uncertainty. *Journal of Economic Perspectives*, 28(2), 153–176.
- Blossfeld, H.-P. (2009). Globalization. In D. Carr (Ed.), *Encyclopedia of the life course and human development* (Adulthood) (Vol. 2, pp. 174–178). Farmington Hills: Gale.
- Butrica, B. (2013). Aging Populations, Globalization and the Labor Market: Comparing Late Working Life and Retirement in Modern Societies. Hans-Peter Blossfeld, Sandra Buchholz, and Karin Kurz, eds. Edward Elgar Publishing, 2011, ISBN 978-1-84980-372-4, 338 pages. *Journal of Pension Economics & Finance*, 12(4), 457–459. <https://doi.org/10.1017/S1474747213000103>
- Busetta, A., Mendola, D., & Vignoli, D. (2019). Persistent joblessness and fertility intentions. *Demographic Research*, 40(8), 185–218.
- Chung, H., & Mau, S. (2014). Subjective insecurity and the role of institutions. *Journal of European Social Policy*, 24(4), 303–318.
- De Witte, H. (2005). Job insecurity: Review of the international literature on definitions, prevalence, antecedents and consequences. *SA Journal of Industrial Psychology*, 31(4), 1–6.
- De Witte, H., & Näswall, K. (2003). “Objective” and “subjective” job insecurity: Consequences of temporary work for job satisfaction and organizational commitment in four European countries. *Economic and Industrial Democracy*, 24, 149–188.
- Erlinghagen, M. (2008). Self-perceived job insecurity and social context: A multi-level analysis of 17 European countries. *European Sociological Review*, 24(2), 183–197.
- European Commission. (2006). *Employment in Europe*. Brussels: European Commission.
- European Commission. (2013). Flexicurity in Europe. Final Report JRC - FLEXICURITY 2. European Union.
- Green, F. (2009). Subjective employment insecurity around the world. *Cambridge Journal of Regions, Economy and Society*, 2(3), 343–363.
- Green, F. (2015). *Health effects of job insecurity* (p. 212). IZA World of Labor 2015. <https://doi.org/10.15185/izawol.212> | Francis Green | December 2015 | wol.iza.org
- Muffels, R. J. A., & Luijkx, R. (2008). Labour market mobility and employment security of male employees in Europe: “Trade-off” or “flexicurity”. *Work, Employment and Society*, 22(2), 221–242.
- OECD. (1999). *Job insecurity on the increase in OECD countries?* (Employment outlook). Paris: OECD.
- OECD. (2004). *Employment protection: The costs and benefits of greater job security* (Policy brief). Paris: OECD.
- OECD. (2008). *Are all jobs good for your health? The impact of work status and working conditions on mental health* (Employment outlook). Paris: OECD.

- OECD. (2015). *In it together: Why less inequality benefits all*. Paris: Organization for Economic Co-operation and Development.
- OECD. (2019). *OECD economic outlook* (Vol. 2019, Issue 2). Paris: OECD Publishing. <https://doi.org/10.1787/9b89401b-en>.
- Tattarini, G., Grotti, R., & Scherer, S. (2018). The buffering role of the family in the relationship between job loss and self-perceived health: Longitudinal results from Europe, 2004–2011. *Health and Place*, 52, 55–61.
- Virtanen, M., Kivimäki, M., Joensuu, M., Virtanen, P., & Elovainio, M. (2005). Temporary employment and health: A review. *International Journal of Epidemiology*, 34, 610–622.
- Wilthagen, T., & Tros, F. (2004). The concept of “flexicurity”: A new approach to regulating employment and labour markets. *Transfer, European Review of Labour and Research*, 10(2), 166–186.

Employment Status and Schedule

► [Paid Work and Parent–Child Relationship Quality](#)

Employment, Quality of

► [Work and Employment, Quality of](#)

Empowerment

Michael L. Wehmeyer
Department of Special Education, University of
Kansas, Lawrence, KS, USA

Synonyms

[Control](#); [Hopefulness](#); [Learned hopefulness](#); [Self-determination](#)

Definition

Empowerment is “a mechanism by which people, organizations and communities gain mastery over

their affairs” (Rappaport 1987, p. 122) and “an intentional, ongoing process centered in the local community, involving mutual respect, critical reflection, caring and group participation, through which people lacking an equal share of valued resources gain greater access to and control over those resources” (Cornell University Empowerment Group 1989, p. 2).

Description

Empowerment refers to a process by which people who are marginalized gain power or control. The usage note in The American Heritage Dictionary of the English Language (1994) stated that the mid-seventeenth-century use of the term referred to the legal right to invest with authority or to authorize, but that its modern use has shifted to reflect the civil rights agenda in which marginalized people have greater control of their lives and destinies. Both meanings introduce the difficulty in social or educational services efforts “to empower” marginalized people; when understood to mean “to invest with power,” such efforts put the loci for that power outside the individual. In the end, when one has the power to invest someone else with authority, one also has the power, presumably, to withhold granting that authority (Wehmeyer 2004). Power and control remain, fundamentally, with the granter. Defining (and describing) “empowerment” is complicated in large measure because of the lack of consensus as to what terms like “power” and “control” mean.

Despite the ambiguities of defining and acting upon an empowerment framework, empowerment, as a construct, is clearly connected to social and civil rights movements and refers to actions that “enhance the possibilities for people to control their lives” (Rappaport 1981, p. 15). Cattaneo and Chapman (2010) suggested that one can classify most understandings of empowerment in the literature as reflecting (1) mastery (e.g., Rappaport 1987), (2) participation (e.g., Cornell University Empowerment Group 1989), or (3) as forwarding a meaning pertaining to social good. McWhirter (1991) defined empowerment consistent with the latter as “the process by which people, organizations, or

groups who are powerless (a) become aware of the power dynamics at work in their life context, (b) develop the skills and capacity for gaining some reasonable control over their lives, (c) exercise this control without infringing up on the rights of others, and (d) support the empowerment of others in their community” (p. 224). Zimmerman (1990) proposed psychological empowerment as referring to multiple dimensions of perceived control, including its cognitive (personal efficacy), personality (locus of control), and motivational dimensions, and linked psychological empowerment to learned helpfulness.

Cattaneo and Chapman (2010) proposed an empowerment process model that defines empowerment as goal achievement, with the construct referring to “an iterative process in which a person who lacks power sets a personally meaningful goal oriented toward increasing power, takes action toward that goal, and observes and reflects on the impact of this action, drawing on his or her evolving self-efficacy, knowledge, and competence related to the goal” (p. 647). This aligns empowerment with a host of goal-oriented constructs emphasized in positive psychology, including hope (Wehmeyer and Shogren 2018), intrinsic or autonomous motivation (Ryan and Deci 2017), self-regulation (Vohs and Baumeister 2016), and self-determination (Wehmeyer et al. 2017).

Empowerment is closely associated with self-determination and autonomy, where self-determination refers to acting as the causal agent in one’s life (Wehmeyer et al. 2017). Wehmeyer (2004) argued that it is by enabling people to become more self-determined that one avoids the conundrum associated with relinquishing power mentioned previously. By supporting people who are marginalized to engage in goal setting and attainment, to direct problem-solving and decision-making in their lives, to engage in self-advocacy, and to promote equitable opportunities for people to engage in these actions, people can empower themselves.

Cross-References

- [Goal Achievement](#)
- [Self-Determination Theory](#)

References

- Cattaneo, L. B., & Chapman, A. R. (2010). The process of empowerment: A model for use in research and practice. *American Psychologist*, 65(7), 646–659.
- Cornell University Empowerment Group. (1989). Empowerment and family support. *Networking Bulletin*, 1(2), 1–23.
- McWhirter, E. H. (1991). Empowerment in counseling. *Journal of Counseling and Development*, 69, 222–227.
- Rappaport, J. (1981). In praise of paradox: A social policy of empowerment over prevention. *American Journal of Community Psychology*, 9, 1–25.
- Rappaport, J. (1987). Terms of empowerment/exemplars of prevention: Toward a theory for community psychology. *American Journal of Community Psychology*, 15, 121–148.
- Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. New York: Guilford Press.
- The American Heritage Dictionary of the English Language. (1994). New York: Houghton Mifflin Company. p. 871.
- Vohs, K. D., & Baumeister, R. F. (2016). *Handbook of self-regulation: Research, theory, and applications* (3rd ed.). New York: Guilford Press.
- Wehmeyer, M. L. (2004). Self-determination and the empowerment of people with disabilities. *American Rehabilitation*, 28, 22–29.
- Wehmeyer, M. L., & Shogren, K. A. (2018). Self-determination and hope. In M. W. Gallagher & S. J. Lopez (Eds.), *The Oxford handbook of hope* (pp. 59–68). Oxford, UK: Oxford University Press.
- Wehmeyer, M. L., Shogren, K. A., Little, T. D., & Lopez, S. J. (2017). *Development of self-determination through the life course*. New York: Springer.
- Zimmerman, M. A. (1990). Toward a theory of learned helpfulness: A structural model analysis of participation and empowerment. *Journal of Research in Personality*, 24, 71–86.

Enabling

- [Accessibility](#)

Enabling State

- [Welfare State\(s\)](#)

Enculturation

- [Australian Indigenous Peoples: Culture and Well-Being](#)
-

End of Life Comfort Care

- [Care, Palliative](#)
-

End-of-Life Care

- [Care, End of Life](#)
-

Endogenous Economic Growth

- [Economic Growth](#)
-

Endurance Exercise Training

- [Behavioral Conditioning](#)
-

Energy Consumption per GDP

Donglan Zha
College of Economics and Management, Nanjing
University of Aeronautics and Astronautics,
Nanjing, China

Definition

Energy consumption per GDP always called energy intensity is a way to measure the energy consumption of per gross domestic production. It emphasizes the efficiency of energy use and is recognized as the reciprocal of energy efficiency.

Description

Behind the background of soaring energy prices and global climate change, energy conservation is being paid more attention internationally. One of the most eminent examples of this is the energy per GDP. Interpret the amount of work gained by using energy quantity.

Energy consumption per GDP can be used in economy-wide, sector and subsector, named economy-wide energy intensity, sector energy intensity, and subsector energy intensity. Economy-wide energy intensity is also referred to as aggregate energy intensity. It is the aggregate of the intensity of the major energy consuming end-use sectors, for example, transportation, industrial, residential buildings, commercial buildings, and the electricity producing sector. Sector energy intensity is calculated at the sector level. Subsector energy intensity is the energy intensity for subsectors within a given sector (US Department of energy).

High energy intensities indicate a high price or cost of converting energy into GDP. While low energy intensity indicates a lower price or cost of converting energy into GDP. However, there are big differences in energy intensity around the world. Generally poor countries are more energy intensive than rich, and the USA, Canada, and Australia are more energy intensive than Europe and Japan; see the detailed data from International Energy Agency (IEA) or Energy Information Association (EIA). Some researchers also do comparisons between countries, regions, or sectors, for example, (Brantley 2010) for world, (Jan and Samuel 2004) for transition countries, (Anil et al. 2006) for OECD countries, and (Yutaka 1997) for USA/Japan. It should be mentioned there is no international consensus for GDP when comparing the energy intensity from different countries or regions, always using market exchange rate (MER) or purchasing power parities (PPP). The Organization for Economic Co-operation and Development (OECD) points out that there are four necessary conditions when numerically comparing GDP among countries: (1) the definition of GDP must be the same, (2) the measuring methodologies must be the

same, (3) the currency units used must be the same, and (4) the evaluated levels of prices must be the same. Generally, the MER tends to be higher than PPP in economically advanced countries.

At the level of a specific technology, energy consumption per GDP is simply the inverse of energy efficiency. When multiple technologies or multiple products underlie what is being compared, the difference between efficiency and energy intensity is insignificant.

Many factors influence an economy's energy intensity. Till now extensive research focused on the driving forces of energy intensity evolution over recent years. Theoretical and empirical studies have shown that there are five main factors that impact energy intensity of an economy: energy price (Birol and Keppler 2000), energy composition (in terms of hydro, coal, oil, nuclear, etc.), technological change (in manufacturing, transport, and other consuming sectors), industrial structure (in terms of ratio of output by small units compared to that of larger units; composition of imports in terms of raw materials, components, and finished goods; and other similar factors), and the final demand structure (consumption by different segments of the economy, such as transport, manufacturing, and commercial). See (Zha et al. 2009) for China, (Lescaroux 2008) for the USA, (Bhattacharyya and Ussanarassamee 2004) for Thailand, (Mendiluce et al. 2010) for Spain and for the EU15, (Andrade Silva and Guy Guerr 2009) for Brazil, and (Tiwari 2001) for India. The commonly used method is the index decomposition; see (Ang and Zhang 2000; Ang 2004) for a survey of the research carried out with this methodology.

Discussion

Energy consumption per GDP reflects the economic structure, fuel mix, and the level of technology in a country, region, or sector. This should not be a surprise; all the entities want to reduce it to develop low-carbon society. Therefore, country, region, or sectors can adopt the corresponding measures to make the energy use more efficiently according to their major driving forces.

Cross-References

- [Energy Efficiency Indicator](#)
- [GDP Growth](#)
- [Low-Carbon Development](#)

References

- Andrade Silva, F. I., & Guy Guerr, S. M. (2009). Analysis of the energy intensity evolution in the Brazilian industrial sector-1995 to 2005. *Renewable and Sustainable Energy Review*, 13, 2589–2596.
- Ang, B. W. (2004). Decomposition analysis for policymaking in energy: Which is the preferred method? *Energy Policy*, 32, 1131–1139.
- Ang, B. W., & Zhang, F. Q. (2000). A survey of index decomposition analysis in energy and environmental studies. *Energy*, 25, 1149–1176.
- Anil, M., Pedroso-Galinato, S., & Dalia, S. (2006). Energy intensity in transition economies: Is there convergence towards the EU average? *Energy Economics*, 28, 121–145.
- Bhattacharyya, S. C., & Ussanarassamee, A. (2004). Decomposition of energy and CO₂ intensities of Thai industry between 1981 and 2000. *Energy Economics*, 26, 765–781.
- Birol, F., & Keppler, J. H. (2000). Prices, technology development and the rebound effect. *Energy Policy*, 28, 457–469.
- Brantley, L. (2010). Revisiting world energy intensity convergence for regional differences. *Applied Energy*, 87, 3218–3225.
- Jan, C., & Samuel, F. (2004). The energy intensity of transition countries. *Energy Economics*, 26, 283–295.
- Lescaroux, F. (2008). Decomposition of US manufacturing energy intensity and elasticities of components with respect to energy prices. *Energy Economics*, 30, 1068–1080.
- Mendiluce, M., Pérez-Arriaga, I., & Ocaña, C. (2010). Comparison of the evolution of energy intensity in Spain and in the EU15. Why is Spain different? *Energy Policy*, 38, 639–645.
- Tiwari, P. (2001). An analysis of sectoral energy intensity in India. *Fuel and Energy Abstracts*, 42, 69.
- U.S. Department of energy. Retrieved from 20 July 2011 http://www1.eere.energy.gov/ba/pba/intensityindicators/trend_definitions.html
- Yutaka, N. (1997). The US/Japan comparison of energy intensity. Estimating the real gap. *Energy Policy*, 2, 683–691.
- Zha, D. L., Zhou, D. Q., & Ding, N. (2009). The contribution degree of sub-sectors to structure effect and intensity effects on industry energy intensity in China from 1993 to 2003. *Renewable and Sustainable Energy Reviews*, 13, 895–902.

Energy Efficiency Indicator

Beng Wah Ang and Xiaoyan Xu
Department of Industrial and Systems
Engineering, National University of Singapore,
Singapore, Singapore

Synonyms

Energy intensity indicators; Energy performance indicators

Definition

Energy efficiency indicators are statistics that quantify how efficient energy is used in various human activities.

Description

Energy plays an essential role for meeting ► [human needs](#) and ► [economic development](#). Many studies have shown that energy consumption and ► [quality of life](#) are closely related. As household income rises, its energy consumption also increases. Likewise, on a per capita basis, more energy is consumed in industrial countries than in developing countries. However, it is also known that the production, transformation, distribution, and utilization of all forms of energy have, in one way or another, environmental, health, and safety impacts. The relationship between energy needs and quality of life is therefore a complex one.

Fossil fuels have been supplying the bulk of the world's energy needs. Emissions of carbon dioxide resulting from the combustion of these fuels are believed to be the main cause of global warming. The possible effects and consequences of global warming on human life and the environment have been widely reported. Countries now see the need to reduce their energy consumption and carbon emissions. A widely adopted strategy is to improve energy efficiency. At the same time,

energy efficiency improvement helps to enhance energy security and industrial competitiveness. All these are important public policy considerations in the face of rising world energy prices and increased volatility in global energy supply.

Despite the growing interest worldwide, “energy efficiency” is a term that has no single universally accepted definition. Engineers and physicists view it as a technical efficiency, but economists treat it as an economic efficiency. In a more encompassing form, energy efficiency has been defined by national energy agencies and international organizations as how effective energy is used to produce a certain level of output or service. It has been defined as “how effectively energy is being used for a given purpose” (Office of Energy Efficiency 2009); “the ratio of the amount of energy services provided to the amount of energy consumed” (Energy Information Administration 1995); and “a ratio between an output of performance, service, goods or energy, and an input of energy” (European Commission 2006).

Energy efficiency improvement means using less energy to produce the same level of output or service without lowering output or service quality, that is, without lowering the quality of life. It is different from energy conservation where a reduction in energy consumption can be achieved through lowering the level of output or service, such as by traveling less or by reducing the level of comfort in space heating/cooling. There can be an increase in the energy efficiency for a specific energy application when more energy is actually consumed, provided that the growth in energy consumption is less than that in the output or service derived from the application.

Appropriate indicators are needed in order to measure changes in energy efficiency. In the literature these indicators, expressed as a ratio of useful output of a process to energy input into the process, fall into the following four categories: thermodynamic, economic, physical-thermodynamic, and economic-thermodynamic (Patterson 1996). The first category is indicators which are entirely science and engineering based, while the second is indicators given in terms of economic measures for both

process input and output. The last two categories are hybrid indicators where the output is measured in physical and economic units, respectively, with energy input measured in terms of conventional thermodynamic units.

In the energy literature, it is a common practice to treat energy efficiency as the inverse of energy intensity. Energy intensity is the direct energy consumption per unit of an activity that represents the energy services derived. The activity defined can be a physical or economic measure of the energy services. The terms “energy efficiency indicator” and “energy intensity indicator” can be used interchangeably. It is assumed that, other factors being equal, an increase in energy intensity implies a decline in energy efficiency. More generally, the term “energy performance indicator” can be used to represent either energy efficiency indicator or energy intensity indicator (Ang et al. 2010).

Energy intensity indicators have been proposed and applied at different levels of sector aggregation. At the most aggregate level, the ratio of a country’s total primary energy consumption to its gross domestic product (GDP), or simply the energy/GDP ratio, is the best known energy intensity indicator. Annual statistics on this ratio are tabulated in national and international statistical sources. For a specific country, a decrease in the ratio is often treated as an improvement in energy efficiency, and countries with a lower ratio are taken to be more efficient in energy use. Prior to 1990, how the energy/GDP ratio evolves as a country develops was a widely studied topic (Ang 2006).

Although easy to compute, the energy/GDP ratio is too aggregate to be useful as an indicator for studying energy efficiency. Gross domestic product covers a wide spectrum of economic activities and a country’s total energy consumption is influenced by not only its total GDP value but also the activity mix of GDP. It is a standard practice in energy efficiency analysis to disaggregate a country’s total energy consumption by major sector, subsector, and end use and develop appropriate energy intensity indicators accordingly (Office of Energy Efficiency 2009; Ang 2006). The four major energy-consuming sectors

are transport, industry, residential, and service. The transport sector, for example, is often disaggregated into passenger and freight transport. Passenger transport is disaggregated into road, rail, water, and air transport modes, and road transport is further broken down into vehicle types. An example of such hierarchical structure for the IEA countries can be found in International Energy Agency (2007). A myriad of energy intensity indicators have been proposed by researchers. In general, the finer the level of sector disaggregation, the better the corresponding energy intensity indicators are as a proxy for energy efficiency.

How good an energy intensity indicator in measuring energy efficiency depends on the choice of the activity indicator that represents the energy services derived. The Office of Energy Efficiency and Renewable Energy (2011) website provides a useful guide on the choice of such indicators. For the transport sector, transport needs are generally measured in terms of passenger-kilometers for passenger transport and tonne-kilometers of goods moved for freight transport. The respective energy intensity indicators are energy requirements per passenger-kilometer and per tonne-kilometer. In the case of industry, energy intensity indicators are often given by energy requirements per value added or per unit of gross output. Several different energy intensity indicators have been proposed and used for the residential sector and the service sector. They include energy requirements per person, dwelling, unit of floor space, and appliance.

Energy intensity indicators have been used for different purposes. Simple indicators such as the energy/GDP ratio, energy requirements per passenger-km for passenger transport, and energy consumption per square meters of floor space for buildings may be used for cross-country comparisons and ► [benchmarking](#). When time-series data for such indicators are collected, performance in energy efficiency over time may be monitored. Specific international initiatives on the development of these energy intensity indicators can be found in Asia Pacific Energy Research Centre (2000), International Atomic Energy Agency (2005), World Energy Council (2010). Reviews on the methodology, best practice, and

potential use of energy efficiency indicators are discussed in de la Rue du Can et al. (2010), Phylipsen (2010).

Economy-wide composite energy intensity indicators can be constructed from subsector and end-use energy intensity indicators. An accounting framework is needed and it comprises several components, including a hierarchical sector classification structure, a basket of activity indicators defined at the subsector or end-use level, and an appropriate decomposition or aggregation technique (Asia Pacific Energy Research Centre 2000). Examples of such accounting systems are International Energy Agency (2007), Office of Energy Efficiency and Renewable Energy (2011), ODYSSEE (2008), Petchey (2010). International Energy Agency (International Energy Agency 2007) and ODYSSEE (2008) are multi-country, while the rest are country-specific initiatives. A comparison of various energy efficiency accounting systems is given in Ang et al. (2010).

As an indicator for studying energy efficiency change, composite energy intensity indicators derived from intensity indicators at finer levels are superior to aggregate indicators such as the energy/GDP ratio. Composite energy intensity indicators can be derived using two different approaches, namely, the index decomposition analysis approach and the unit consumption approach. The differences between them, including their strengths and weaknesses, are discussed in Ang et al. (2010). The index decomposition analysis approach is more commonly used and it is described in Ang et al. (2010). Examples of studies using the unit consumption approach are given in ODYSSEE (2008).

Studies on energy efficiency indicators appear in many different types of information sources. The three principal ones are energy journals; reports or websites of national energy agencies and international organizations; and research reports of academic institutions, research institutes, think tanks, nongovernmental organizations, and consultancy firms. Among the energy journals, the following four are the most relevant: *Energy Policy* which addresses policy issues of energy supply, demand, and utilization; *Energy Economics* which focuses on the economic and

econometric modeling and analysis of energy systems and issues; *Energy* which has a multidisciplinary focus for activities relating to the development, assessment, and management of energy-related programs; and *Energy Efficiency* which is a relatively new journal that covers various aspects of energy efficiency in the residential, tertiary, industrial, and transport sectors.

Discussion

Improving the quality of life generally leads to increases in energy demand. With the need to ensure energy security, cost competitiveness, and environmental sustainability, energy efficiency now plays a more and more important role in the energy policy agenda of a country. An essential tool of a national energy efficiency program is an accounting and assessment system for tracking energy efficiency performance supported by a systematic database of energy intensity indicators. Much progress has been made over the past two decades on the development and application of such energy intensity indicators and accounting and assessment system. Such work, which is of direct relevance to research in quality of life, is conducted in an increasingly number of countries. The concept and techniques have also been extended to study energy-related carbon emission trends.

Cross-References

- [Benchmarking](#)
- [Economic Development](#)
- [Gross Domestic Product \(GDP\) and Happiness](#)
- [Household Income and Wealth](#)
- [Human Needs](#)
- [Quality of Life](#)

References

- Ang, B. W. (2006). Monitoring changes in economy-wide energy efficiency: From energy-GDP ratio to composite efficiency index. *Energy Policy*, 34, 574–582.
- Ang, B. W., Mu, A. R., & Zhou, P. (2010). Accounting frameworks for tracking energy efficiency trends. *Energy Economics*, 32, 1209–1219.

- Asia Pacific Energy Research Centre. (2000). *Energy efficiency indicators: A study of energy efficiency indicators for industry in APEC economies*. Tokyo: Author.
- de la Rue du Can, S., Sathaye, J., Price, L., & McNeil, M. (2010). *Energy efficiency indicators methodology booklet*. Berkeley: Lawrence Berkeley National Laboratory, University of California.
- Energy Information Administration. (1995). *Measuring energy efficiency in the United States' economy: A beginning*. Washington, DC: Author.
- European Commission. (2006). Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services and repealing Council Directive 93/76/EEC. *Official Journal of the European Union*, 114, 64–85.
- International Atomic Energy Agency. (2005). *Energy indicators for sustainable development: Guidelines and methodologies*. Vienna: Author.
- International Energy Agency. (2007). *Energy use in the new millennium*. Paris: OECD.
- ODYSSEE. (2008). Definition of energy efficiency indicators in ODYSSEE Data Base.
- Office of Energy Efficiency. (2009). *Energy Efficiency Trends in Canada 1990 to 2007*. Ottawa: Natural Resource.
- Office of Energy Efficiency and Renewable Energy. (2011). Indicators of energy intensity in the United States. US Department of Energy. <http://www1.eere.energy.gov/ba/pba/intensityindicators/>. Retrieved on April 7, 2011.
- Patterson, M. G. (1996). What is energy efficiency? Concepts, indicators and methodological issues. *Energy Policy*, 24, 377–390.
- Petchey, R. (2010). *End-use energy intensity in the Australian economy*. ABARE-BRS research report 10.08. Canberra: ABARE.
- Phylipsen, G. J. M. (2010). *Energy efficiency indicators: Best practice and potential use in developing country policy making*. Washington, DC: Phylipsen Climate Change Consulting.
- World Energy Council. (2010). *Energy efficiency: A recipe of success*. London: Author.

Energy Intensity Indicators

- [Energy Efficiency Indicator](#)

Energy Performance Indicators

- [Energy Efficiency Indicator](#)

Energy, Public Concern with

Anne Schiffer

Leeds School of Arts, Leeds Beckett University,
Leeds, UK

Definition

Energy, public concern with describes attitudes, everyday practices, or impacts experienced by members of the general public in relation to energy.

Description

Energy can be described as the ability to do work and may refer to electricity, heating/cooling, energy used for cooking as well as mobility. As such, “energy, public concern with” is shaped by the culmination of contextual concerns, including political (e.g., renewable energy targets), economic (e.g., employment opportunities), environmental (e.g., changing seasons), technical (e.g., infrastructure), and cultural (e.g., gendered household practices) factors that influence energy-related attitudes, everyday practices, and impacts on the general public.

Energy Democracy and Justice

Regarding quality of life and well-being, public concern with energy is strongly related to questions of justice that deal with actual or perceived levels of fairness and equity (Jenkins et al. 2016; Sovacool et al. 2017). This includes equitable access to energy resources and services (distributional justice); recognition of marginalized groups and their rights in energy systems (recognition justice) as well as political processes that foster equitable distribution and recognition (procedural justice) (Walker and Day 2012; McCauley et al. 2013).

The notion of energy democracy has emerged as an expression for more equitable and just distribution of benefits derived particularly from

renewable energy projects. Here members of the public act as *energy* citizens or *prosumers* instead of mere consumers, participating in generation and/or supply of energy as well as decision-making processes (Vansintjan 2015; Burke and Stephens 2017).

Energy Poverty

Large parts of the Global South continue to suffer from *energy poverty* or *energy scarcity*, especially regarding first-time and reliable access to *modern energy services* such as electricity. This is exacerbated by inequitable distribution between rural and urban areas as well as access inequalities within communities, for example, where electrification programs cover settlements only in part (Schiffer 2020). Furthermore, settlements that have been officially electrified may suffer from so-called *load shedding* – usually unscheduled rolling blackouts between different parts of an electricity grid to compensate for a lack of overall generating capacity to meet demand. Here, it is also useful to differentiate between access to basic levels of energy such as lighting and sufficient energy access that enables dignified and fulfilled lives.

In the Global North, barriers to accessing sufficient amounts of energy largely relate to limited purchasing power at household level to pay energy bills rather than a lack of infrastructure. Geopolitical tensions over the supply of energy resources such as natural gas and other fossil fuels may contribute to increased costs and potential energy or fuel poverty for consumers. The term *fuel poverty* is used to describe a household that spends more than 10% of its income on fuel (BEIS 2019). Other factors that contribute to fuel poverty in addition to lack of purchasing power include low-quality housing stock, especially with regard to poor energy efficiency measures such as adequate insulation.

Energy and Gender

Energy justice including *energy poverty* can have a strong gender dimension. In patriarchal contexts

distinct gender roles may continue to shape how men and women consume energy differently at household and community levels. Here women's use of energy tends to be more centered around domestic as opposed to public settings (Greene and Schiffer 2021). However, in areas of the Global South that are currently underserved, "grid extension programmes have often ignored gender inequalities seeing households as an ungendered unit" (Practical Action 2018, p. 66). At community level, energy needs may also be gendered, for example, with women expressing relatively higher need for public street lighting due to safety concerns (Rahm et al. 2021).

In addition to potentially gendered consumption practices, women may also be underrepresented in energy-related supply chains and decision-making processes (ENERGIA 2019; Van Veelen 2018). So-called gender mainstreaming policies are increasingly employed as tools to put greater emphasis on addressing gender inequities in energy systems.

Finally, women also play an active role in *energy conflict*, where local and indigenous lands are threatened by large-scale developments.

Energy Conflict and Security

There is a connection between energy conflict and security, including where nations wish to ensure reliable and affordable access to energy resources for their own use (Månsson 2014) or countries use their energy resources to ascertain political and economic power of other nations (Tollefson 2022). As such, energy resources can become both a reason and a weapon for energy conflicts.

However, energy conflict also plays out at community level where infrastructure can be the cause of community tensions. Opposition to renewable energy projects such as wind farms highlights tensions between impact on local people (e.g., visual) and wider benefits such as increased energy security (Boyle et al. 2019). The term *NIMBY* (from "not in my backyard") is sometimes used to dismiss opponents by those clearly in favor (CSE 2011). More democratic ownership models of renewable energy can help

overcome this type of conflict (Bauwens and Devine-Wright 2018).

Furthermore, large-scale infrastructure developments such as oil pipelines and mega dams can be associated with the displacement and violent persecution of local people (Pearce 2012; Marriott and Minio-Paluello 2012), especially when the construction of infrastructure projects is prioritized over rights of local and indigenous people (Hanna et al. 2016). Women are often at the front-line of fighting such energy developments. Examples include a group known as the “Nanas” who campaign against unconventional gas extraction (fracking) in the UK and activist Berta Cáceres who was murdered for fighting a large hydro dam in Honduras (Watts 2016).

Energy, Environment, and Climate

Finally, public concern for energy considers localized as well as global impacts on the environment associated with the extraction, generation, and supply of energy. This includes environmental impacts resulting from energy disasters such as the 2010 Deepwater Horizon oil spill in the Gulf of Mexico.

Public concern can lead to individual or collective action such as participation of young people in the School Strike for Climate movement started by Greta Thunberg.

Such environmental concerns often closely correspond with questions of social or *climate justice*. For example, protests over the Keystone oil pipeline in North America demonstrated public concerns over local environmental impacts such as air pollution and contamination from oil spills, impact on climate, and the rights of indigenous peoples and their lands.

Concluding Remarks

Considerations of justice provide a useful entry point to unpack *public concern with energy* in relation to people’s attitudes, practices, and experiences. This includes questions related to energy poverty, gender, conflict, security, environment,

and climate. Contextual insights are crucial to understanding complex dynamics of public concerns with energy and wider factors that shape it including political, economic, environmental, technical, and cultural dimensions.

Cross-References

- [Developing Countries](#)
- [Europe, Quality of Life](#)
- [Land Use](#)
- [Wind Power](#)

References

- Bauwens, T., & Devine-Wright, P. (2018). Positive energies? An empirical study of community energy participation and attitudes to renewable energy. *Energy Policy*, 118, 612–625. <https://doi.org/10.1016/j.enpol.2018.03.062>.
- BEIS. (2019). *Annual fuel poverty statistics in England, 2019 (2017 data)*. London: Department for Business, Energy and Industrial Strategy.
- Boyle, K. J., Boatwright, J., Brahma, S., & Xu, W. (2019). NIMBY, not, in siting community wind farms. *Resource and Energy Economics*, 57, 85–100. <https://doi.org/10.1016/j.reseneeco.2019.04.004>.
- Burke, M. J., & Stephens, J. C. (2017). Energy democracy: Goals and policy instruments for sociotechnical transitions. *Energy Research and Social Science*, 33, 35–48. <https://doi.org/10.1016/j.erss.2017.09.024>.
- CSE. (2011). *Common concerns about wind power*. Bristol: Centre for Sustainable Energy.
- ENERGIA. (2019). *Gender in the transition to sustainable energy for all: From evidence to inclusive policies*. London: International Network on Gender and Sustainable Energy.
- Greene, M., & Schiffer, A. (2021). “Women don’t ride bicycle[s], only men ride bicycles” – Gender and justice in mobility transitions. In A. Kumar, J. Höffken, & A. Pols (Eds.), *Dilemmas of energy transitions in the global south – Balancing urgency and justice*. London: Routledge.
- Hanna, P., Langdon, E. J., & Vanclay, F. (2016). Indigenous rights, performativity and protest. *Land Use Policy*, 50, 490–506. <https://doi.org/10.1016/j.landusepol.2015.06.034>.
- Jenkins, K., McCauley, D., Heffron, R., Stephan, H., & Rehner, R. (2016). Energy justice: A conceptual review. *Energy Research and Social Science*, 11, 174–182. <https://doi.org/10.1016/j.erss.2015.10.004>.
- Månsson, A. (2014). Energy, conflict and war: Towards a conceptual framework. *Energy Research and Social*

Science, 4, 106–116. <https://doi.org/10.1016/j.erss.2014.10.004>.

- Marriott, J., & Minio-Paluello, M. (2012). *The oil road: Journeys from the Caspian Sea to the city of London*. London: Verso.
- McCauley, D. A., Heffron, R. J., Stephan, H. & Jenkins, K. (2013). Advancing energy justice: the triumvirate of tenets. *International Energy Law Review*, 32(3), 107–110.
- Pearce, F. (2012). *The landgrabbers: The new fight over who owns the Earth*. London: Eden Project.
- Practical Action. (2018). *Poor people's energy outlook 2018: Achieving inclusive energy access at scale*. Rugby: Practical Action Publishing. <https://doi.org/10.3362/9781780447544>.
- Rahm, J., Sternudd, C., & Johansson, M. (2021). "In the evening, I don't walk in the park": The interplay between street lighting and greenery in perceived safety. *Urban Design International*, 26, 42–52. <https://doi.org/10.1057/s41289-020-00134-6>.
- Schiffer, A. (2020). *Reframing energy access: Insights from the Gambia*. London: Routledge.
- Sovacool, B. K., Burke, M., Baker, L., Kotikalapudi, C. K., & Wlokas, H. (2017). New frontiers and conceptual frameworks for energy justice. *Energy Policy*, 105, 677–691. <https://doi.org/10.1016/j.enpol.2017.03.005>.
- Tollefson, J. (2022). What the war in Ukraine means for energy, climate and food. *Nature*, 604, 232–233.
- Van Veelen, B. (2018). Negotiating energy democracy in practice: Governance processes in community energy projects. *Environmental Politics*, 27(4), 644–665. <https://doi.org/10.1080/09644016.2018.1427824>.
- Vansintjan, D. (2015). The energy transition to energy democracy: Power to the people: Final results oriented report of the REScoop 20-20-20 Intelligent Energy Europe project. REScoop 20-20-20.
- Walker, G. & Day, R. (2012). Fuel poverty as injustice: Integrating distribution, recognition and procedure in the struggle for affordable warmth. *Energy Policy*, 49, 69–75. <https://doi.org/10.1016/j.enpol.2012.01.044>
- Watts, J. (2016). Berta Cáceres, Honduran human rights and environment activist, murdered. *The Guardian* [online], 4 March. Available from: <https://www.theguardian.com/world/2016/mar/03/honduras-berta-caceres-murder-environment-activist-human-rights>. Accessed 27 Sept 2019.

Engaged Scholarship

- [Community-University Partnership\(s\)](#)

Engagement

- [Stuporism: The Philosophy of Wonder](#)

Engagement Coping

- [Active Coping](#)

Enjoying Food During Childhood

- [Food in Childhood, Satisfaction with](#)

Enjoyment

Jennifer L. Smith¹, Patrick R. Harrison² and Fred B. Bryant³

¹Mather Institute, Evanston, IL, USA

²Department of Psychology and Neuroscience, University of North Carolina, Chapel Hill, NC, USA

³Department of Psychology, Loyola University Chicago, Chicago, IL, USA

Definition

Enjoyment is a positive affective state that occurs when a person engages in an experience or activity that satisfies a desire, goal, or need, including but not limited to the need for pleasure, meaning, security, safety, sustenance, esteem, belongingness, or love.

Description

History. The study of enjoyment has its earliest roots in the field of philosophy. In particular, Aristotle (384 BC–322 BC) distinguished two forms of happiness: *hedonia* and ► [eudaimonia](#). Hedonia refers to pleasure derived from the gratification of needs, whereas eudaimonia refers to the pursuit of self-realization and the meaningful life (Deci and Ryan 2008; Waterman 1993). Enjoyment is most closely associated with the hedonic conception of happiness. The modern-

day concept of enjoyment was also shaped by Epicurus (341 BC–270 BC), who argued that a happy life could be obtained through seeking pleasure and avoiding pain. Traditionally, social scientists have studied enjoyment only informally, and there has been little systematic attention directed toward developing a formal conceptual definition and rigorous psychology of enjoyment. However, the recent emergence of ► [positive psychology](#) as a social science subdiscipline has legitimized the study of enjoyment, and psychologists have now begun to investigate enjoyment systematically. In this empirical research, enjoyment is typically measured using a single-item indicator (e.g., “How much did you enjoy X?”) or small composite clusters of several related items assessing enjoyment of a specific experience. Physiological experiments have also found that smiles expressing enjoyment have smoother zygomatic major actions that consistently last longer, compared to nonenjoyment smiles (Ekman et al. 1990; Frank et al. 1993).

Definition. As with many constructs in the social sciences, there is no universally accepted definition of enjoyment. Enjoyment is a higher-order term that encompasses a wide variety of lower-order experiences, psychological processes, and affective responses. Enjoyment can be studied at different levels that vary in abstractness (Goetz et al. 2006). At its most general (macro) level, enjoyment can be defined as a positive affective state that occurs when a person engages in an experience that satisfies a desire, goal, or need. At the most specific (micro) level, researchers can assess people’s enjoyment of engaging in a concrete task or activity (e.g., sports or exercise). At this microlevel, enjoyment is an immediate, transient affective response to a positive experience.

People typically experience enjoyment when they engage in a satisfying activity. This activity may fulfill ► [basic needs](#), such as physiological, safety, belongingness, and esteem needs, or higher-order needs, such as curiosity and spirituality (Maslow 1943). Nevertheless, need fulfillment in and of itself does not always elicit feelings of joy. For example, consuming bland food may alleviate feelings of hunger; however,

there may be little satisfaction or positive emotion with the experience. Furthermore, enjoyment may decrease when needs are met or when people become habituated to a particular positive experience. The specific experiences that produce enjoyment may also vary over time and across the life span. For example, physical ► [pleasure](#) is the primary source of enjoyment for infants, while the capacity to enjoy feelings of ► [gratitude](#) develops later during middle childhood, typically between ages 7 and 10 (Peterson and Seligman 2004). There are also individual differences in the degree to which people value pleasure and enjoyment in life (Rokeach 1973), and these value preferences have been found to predict a variety of consumer behaviors, including choice of leisure activities, recreational options, and vacation destinations (Kahle 1996). Some activities, such as photo-taking, can lead to greater enjoyment as long as it does not interfere with one’s engagement in the experience (Diehl et al. 2016).

People’s affective forecasts tend to underestimate the extent to which they will enjoy repeat experiences, primarily due to the perception that there is nothing new to discover about the experience (O’Brien 2019). For complex experiences, such as visiting a museum, repeat experiences enable people to find new details that they did not notice or remember from the first experience. In addition, repeating familiar experiences in new ways, such as eating popcorn with chopsticks, can enhance the enjoyment of the experiences (O’Brien and Smith 2019).

The primary outcome of enjoyment is ► [positive affect](#), such as pleasure, satisfaction, gratification, fulfillment, joy, awe, pride, or gratitude. The specific types of positive emotions that are activated during enjoyment depend largely on the situation. Experiences that elicit feelings of enjoyment are often intrinsically rewarding (e.g., Csikszentmihalyi 1990; Warner 1980). Relatedly, enjoyment is an important motivator in people’s decisions to engage in healthy behaviors (e.g., Van Cappellen et al. 2018), and enjoyment of physical activity prospectively predicts greater engagement in physical activity behaviors (Lewis et al. 2016).

Processes underlying enjoyment. Enjoyment can occur as the result of different psychological processes, such as savoring (Bryant et al. 2011; Bryant and Veroff 2007) and flow (Csikszentmihalyi 1990). Savoring is a meta-cognitive process in which people regulate their reactions to positive experience through specific thoughts and behaviors that influence the intensity and duration of enjoyment. Through the process of savoring, people derive enjoyment in the present. While savoring, people's awareness of a positive experience becomes heightened, and they may engage in cognitive and behavioral responses that influence enjoyment of the positive experience (e.g., sharing with others, memory building, counting blessings, and sensory-perceptual sharpening). During savoring experiences, people may alternate between engrossment in the experience (i.e., experiential absorption) and contemplation of the experience (i.e., cognitive reflection). Encompassing three possible temporal orientations, savoring enables people to experience enjoyment in the present either before (anticipation), during (in the moment), or after (reminiscence) the actual positive experience occurs. Compared to levels of enjoyment experienced in the moment, people often report greater enjoyment in anticipation of a pleasant experience (a phenomenon termed "rosy propection") and after the experience is over (a phenomenon termed "rosy retrospection"; Mitchell and Thompson 1994). In addition, savoring an upcoming consumption experience can increase in-the-moment enjoyment of the experience as well as retrospective enjoyment (Chun et al. 2017). Bryant and Veroff (2007) note several necessary preconditions that must exist in order for savoring to occur. In particular, savoring is more likely to occur when a person is free of worries, esteem concerns, and distractions. In addition, experiences that last longer provide more opportunities for savoring.

In contrast, flow refers to the process through which individuals become so immersed and engaged in an experience that they lose awareness of self and time (Csikszentmihalyi 1990). Flow is most likely to occur when people are engaged in a

challenging task that they are skilled at performing. People tend to feel anxious when task demands exceed their capabilities and bored when the activity provides too little challenge relative to their skill level. Situations with clear goals, immediate feedback, and few distractions are most likely to promote flow. Because of decreased self-awareness during flow experiences, people are unlikely to be aware of their enjoyment while they are absorbed in the activity. Afterward, however, people tend to indicate that the flow experience was highly enjoyable. Thus, in flow experiences, enjoyment is primarily a retrospective phenomenon. This is in stark contrast to enjoyment that occurs in the present when consciously savoring the way one feels while anticipating, enjoying the moment, or reminiscing.

Distinguishing enjoyment from related concepts. The concept of enjoyment is related to, but distinct from, ► [quality of life](#), ► [subjective well-being](#), life satisfaction, and ► [happiness](#). Quality of life is a general multifaceted assessment of the degree to which one's life is "good," as measured in terms of either "objective" social indicators (Hagerty et al. 2001) or subjective self-evaluations of physical, functional, emotional, and social well-being (Diener and Suh 1997). Similarly, subjective well-being is a broader concept than enjoyment that includes affective responses (e.g., happiness) as well as cognitive evaluation of life satisfaction and domain satisfaction (Diener et al. 1999). Although enjoyment and happiness are both affective responses, enjoyment is specific to emotional responses that are tied to a particular experience or activity, while happiness is a broader affective experience that includes a variety of positive emotions, such as contentment and amusement (Lyubomirsky and Kurtz 2009). Although joy is one manifestation of enjoyment, people may well experience enjoyment without experiencing joy. For example, a person might well enjoy the refreshment of a cool drink of water that satisfies their thirst on a hot summer day but might not experience the emotion of joy per se.

Cross-References

- Basic Needs
- Eudaimonia
- Flow
- Gratitude
- Happiness
- Hedonism
- Intrinsic Motivation
- Pleasure
- Positive Affect
- Positive Psychology
- Quality of Life
- Subjective Well-Being

References

- Bryant, F. B., & Veroff, J. (2007). *Savoring: A new model of positive experience*. Mahwah: Lawrence Erlbaum Associates.
- Bryant, F. B., Chadwick, E. D., & Kluwe, K. (2011). Understanding the processes that regulate positive emotional experience: Unsolved problems and future directions for theory and research on savoring. *International Journal of Wellbeing*, 1, 107–126.
- Chun, H. H., Diehl, K., & MacInnis, D. J. (2017). Savoring an upcoming experience affects ongoing and remembered consumption enjoyment. *Journal of Marketing*, 81, 96–110.
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York: Harper & Row.
- Deci, E. L., & Ryan, R. M. (2008). Hedonia, eudaimonia, and well-being: An introduction. *Journal of Happiness Studies*, 9, 1–11.
- Diehl, K., Zauberman, G., & Barasch, A. (2016). How taking photos increases enjoyment of experiences. *Journal of Personality and Social Psychology*, 111, 119–140.
- Diener, E., & Suh, E. (1997). Measuring quality of life: Economic, social, and subjective indicators. *Social Indicators Research*, 40, 189–216.
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125, 276–302.
- Ekman, P., Davidson, R. J., & Friesen, W. V. (1990). The Duchenne smile: Emotional expression and brain physiology: II. *Journal of Personality and Social Psychology*, 58, 342–353.
- Frank, M. G., Ekman, P., & Friesen, W. V. (1993). Behavioral markers and recognizability of the smile of enjoyment. *Journal of Personality and Social Psychology*, 64, 83–93.
- Goetz, T., Hall, N. C., Frenzel, A. C., & Pekrun, R. (2006). A hierarchical conceptualization of enjoyment in students. *Learning and Instruction*, 16, 323–338.
- Hagerty, M. R., Cummins, R. A., Ferriss, A. L., Land, K., Michalos, A. C., Peterson, M., et al. (2001). Quality of life indexes for national policy: Review and agenda for research. *Social Indicators Research*, 55, 1–96.
- Kahle, L. R. (1996). Social values and consumer behavior: Research from the list of values. In C. Seligman, J. M. Olson, & M. P. Zanna (Eds.), *The psychology of values: The Ontario symposium* (Vol. 8, pp. 135–151). Mahwah: Lawrence Erlbaum.
- Lewis, B. A., Williams, D. M., Frayeh, A. L., & Marcus, B. H. (2016). Self-efficacy versus perceived enjoyment as predictors of physical activity behavior. *Psychology & Health*, 31, 456–469.
- Lyubomirsky, S., & Kurtz, J. L. (2009). Happiness. In D. Sander & K. R. Scherer (Eds.), *The Oxford companion to emotion and the affective sciences*. Oxford, UK: Oxford University Press.
- Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, 50, 370–396.
- Mitchell, T., & Thompson, L. (1994). A theory of temporal adjustments of the evaluation of events: Rosy prospect and rosy retrospection. In C. Stubbart, J. Porax, & J. Meindl (Eds.), *Advances in managerial cognition and organizational information-processing* (Vol. 5, pp. 85–114). Greenwich: JAI Press.
- O'Brien, E. (2019). Enjoy it again: Repeat experiences are less repetitive than people think. *Journal of Personality and Social Psychology: Attitudes and Social Cognition*, 116, 519–540.
- O'Brien, E., & Smith, R. W. (2019). Unconventional consumption methods and enjoying things consumed: Recapturing the “first-time” experience. *Personality and Social Psychology Bulletin*, 45, 67–80.
- Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification*. Washington, DC: American Psychological Association.
- Rokeach, M. (1973). *The nature of human values*. New York: Free Press.
- Van Cappellen, P., Rice, E. L., Catalino, L. I., & Fredrickson, B. L. (2018). Positive affective processes underlie positive health behavior change. *Psychology & Health*, 33, 77–97.
- Warner, R. (1980). Enjoyment. *Philosophical Review*, 89, 507–526.
- Waterman, A. S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology*, 64, 678–691.

Enjoyment of Life

- Happiness

Entrepreneurship

Celeste Amorim Varum¹ and Caroline Rizza^{2,3}

¹Department of Economics, Management, Industrial Engineering, and Tourism, University of Aveiro, Aveiro, Portugal

²European Commission, Joint Research Centre, Ispra, Italy

³Telecom ParisTech, Paris, France

Definition

Entrepreneurship is the knowledge, ability and willingness of an individual to turn ideas into action, exploring novel opportunities.

Description

Early contributions to the field of entrepreneurship go back to Adam Smith in the early eighteenth century, being however largely ignored theoretically until the early decades of the twentieth century. In the twentieth century, the field of entrepreneurship developed considerably following the work of the economist Joseph Schumpeter in the 1930s. For Schumpeter, an entrepreneur is a person who is willing and able to apply a new idea or invention to satisfy markets successfully. Entrepreneurship is at the center of the dynamics of industries and economic growth, through a process of creative destruction.

Interest and attention to entrepreneurship has heightened in the last 50 years or so, reflected, for example, in the explosion of courses and research on the matter (Ács and Audretsch 2003; European Commission 2007; Hytti and O’Gorman 2004; Rizza and Varum 2011). Contributions emerge from a broad spectrum of fields such as management, economics, education, and psychology. Professionals, educators, or researchers on entrepreneurship arise from different backgrounds, academic and nonacademic areas, and many different academic disciplines, leading to high diversity in perspectives, in language and in definitions (Ács and Audretsch 2003).

According to the European reference framework for key competences (European Commission 2007), entrepreneurship includes creativity, innovation, and risk-taking, as well as the ability to plan and manage projects in order to achieve objectives. These ► [capabilities](#) support individuals, not only in their everyday lives at home but also at their work and as active citizens in society. Entrepreneurship is indispensable for those starting or running a business and also for ► [active citizenship](#).

Entrepreneurship, understood as a competence, is based on knowledge, skills and attitudes. The knowledge necessary for entrepreneurship is wide and diverse, including the ability to identify opportunities, to assess and take risks, under appropriate conditions. An entrepreneurial attitude is characterized by initiative, autonomy, and innovation in personal life, in society and at work, motivation and determination to meet objectives, ability to work both individually and along with other colleagues.

Given entrepreneurship’s importance for economic growth and for the well-being of future generations, the development of entrepreneurial thinking became a policy goal of many governments. While the importance of entrepreneurship and of economic and financial literacy are recognized, for many countries, there are substantial deficiencies in population’s knowledge on these matters. Hence, actions to enhance population general knowledge and interest on entrepreneurship and on economics are to be supported.

Entrepreneurship is now understood as a key competence, that can (and has to) be taught (Bosma et al. 2009; Global entrepreneurship monitor special report 2010; Hytti and O’Gorman 2004). ► [Education](#) and entrepreneurship are not two separate fields, and there growing ties between the two. Training may occur at University or school level, or within life-long learning initiatives, contributing to the well-being of future generations. According to the global entrepreneurship monitor (Bosma et al. 2009; Global entrepreneurship monitor special report 2010; Hytti and O’Gorman 2004), entrepreneurship ► [education](#) refers to:

<<the building of knowledge and skills either “about” or “for the purpose of” entrepreneurship in general, as part of recognized education

programs at primary, secondary or tertiary-level educational institutions>> and the entrepreneurship training is <<the building of knowledge and skills in preparation for starting a business>>.

However, it is recognized that entrepreneurship education is wider and goes deeper than training on starting a business. It should be more ambitious than that.

There is a need to understand how countries are performing on these matters, if (and how) policies affect entrepreneurship, if (and how) wider objectives for the society are being achieved. Hence, it is necessary to collect systematized data on these matters. Data on entrepreneurship will also allow for benchmarking and comparisons across countries. The OECD developed The OECD-Eurostat Entrepreneurship Indicators Programme a framework for indicators on entrepreneurship, split into determinants, entrepreneurial performance and impact of entrepreneurship.

Along this framework, entrepreneurship education is determinant for countries' entrepreneurial performance. At this level, there is a clear lack of indicators, internationally comparable data is scarce, and when it exists it is not systematic.

The Global entrepreneurship monitor (GEM) studies and others provide insights into business training, but more data is necessary to understand the spread/intensity of entrepreneurship education. Another set of indicators relates to qualitative aspect of entrepreneurship education. Here, there is clearly a need for data on where and how entrepreneurship is taught, which are the broad objectives and teaching methods. A final set of indicators relates to the direct outcomes and impact of entrepreneurship education on higher-level goals such as ► [economic efficiency](#), firm creation and job creation, well-being and poverty reduction, entrepreneurial attitudes, and growth. Information on these matters will allow the development of ► [cost-efficiency indicators](#), so critical in times of constraints on the ► [public spending for education](#).

- [Economic and Financial Literacy](#)
- [Economic Efficiency](#)
- [Education](#)
- [Indicators, Quality of Life](#)
- [Lifelong Learning](#)
- [Public Spending in Education](#)
- [Self-Employment](#)

References

- Ács, Z. J., & Audretsch, D. B. (Eds.). (2003). *Handbook of entrepreneurship research: An interdisciplinary survey and introduction*. Dordrecht: Kluwer Academic.
- Bosma, N. S., Ács, Z. J., Autio, E., Coduras, A., & Levie, J. (2009). *Special topic 2008: Entrepreneurship Education and Training*. Global Entrepreneurship Monitor 2008. Executive Report, Chapter 4.GEM.
- European Commission. (2007). *Key competences for life-long learning – European reference framework*, 2007.
- Global entrepreneurship monitor special report. (2010). *A global perspective on entrepreneurship education and training*.
- Hytti, U., & O’Gorman, C. (2004). What is “enterprise education”? An analysis of the objectives and methods of enterprise education programmes in four European countries. *Education and Training*, 46(1), 11–23.
- Rizza, C., & Varum, C. A. (2011). Directions in entrepreneurship education research in Europe. In Antonio Caparrós Ruiz (ed.) *Investigaciones de Economía de la Educación*, Asociación de Economía de la Educación, edition 1st, 6(6), 1.

Environment and Health

Sophie A. Miller¹ and Gavin Turrell²

¹School of Public Health and Social Work and the Institute of Health and Biomedical Innovation, Queensland University of Technology, Brisbane, QLD, Australia

²Public Health and National Health and Medical Research Council Senior Research Fellow, Brisbane, QLD, Australia

Synonyms

Determinants of health; Ecology; Ecosystem; Environment and quality of life; Habitat; Milieu; Neighborhood and health; Well-being

Cross-References

- [Active Citizenship](#)
- [Capabilities](#)
- [Cost-Efficiency Indicators](#)

Definition

Environment

One broad definition of the environment includes “all factors that are external to the individual including the social, political, economic, built or biophysical spheres” (Pearce and Witten 2010, p. 5).

Health and Quality of Life

The concept of health is being redefined from the commonly used 1948 WHO definition which describes health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (World Health Organization [WHO] 2006, p. 1). The current conceptual focus emphasizes health as “the ability to adapt and self manage in the face of social, physical, and emotional challenges” (Huber et al. 2011, p. 1). This definition takes into account one’s ability to age with chronic disease. Further, adaptive coping strategies can help sustain quality of life despite age or disability. This new conception of health highlights the varying emotional, social, and physical challenges across the life span and the ability to feel and function with fulfillment despite disease or disability (Huber et al. 2011).

The WHO (1996, p. 5) defines quality of life as “individuals’ perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns.” Due to the subjective nature of quality of life, being based in environmental, cultural, and social contexts, the multilevel nature of the definition becomes apparent. Specifically, quality of life can be categorized into a conceptual framework of four domains: physical health (e.g., mobility, energy, and fatigue), psychological (e.g., self-esteem, personal beliefs), social relationship (e.g., social support and personal relationships), and environment (e.g., transport, climate, and leisure activities). Both quality of life and health are influenced positively and negatively by the global, natural, built, and social environments.

Determinants of Health Framework

Barton and Grant’s (2006) determinants of health framework conceptualize the environment in

terms of a global ecosystem, natural environment, and built environment. In this chapter, the first three outer layers from the framework will be defined and then described in relation to their impacts on health and quality of life outcomes (Fig. 1).

Defining the Outer Layers of the Determinants of Health Framework

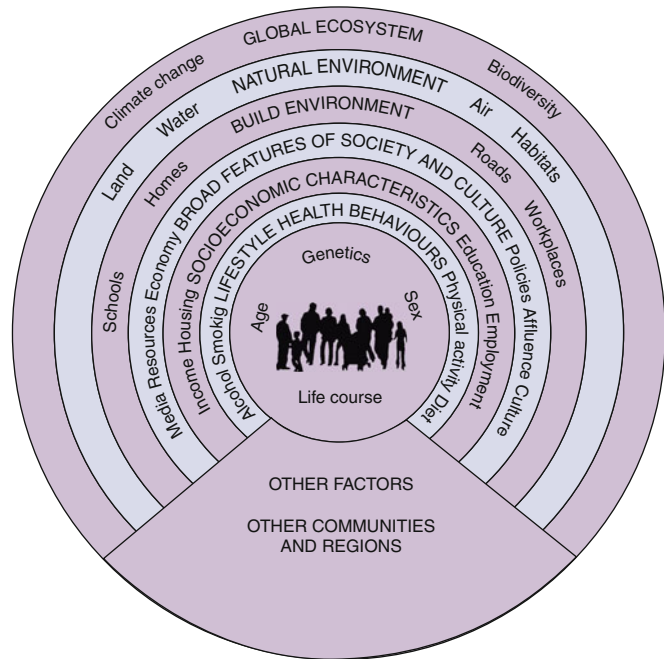
The Global Ecosystem: An ecosystem has been defined as an interacting system comprised of an animate biological community (i.e., animals, plants, and microorganisms) and the inanimate environment (i.e., water, soil, and atmosphere) (Alcamo and Bennett 2003). Of contemporary concern to the global ecosystem are biodiversity and climate change. Biodiversity describes the variability between and within species and the diversity of ecological systems (Alcamo and Bennett 2003). According to the Intergovernmental Panel on Climate Change (Intergovernmental Panel on Climate Change [IPCC] 2007), climate change describes any climatic alteration that occurs either as a result of human activity or natural variability over time.

The Natural Environment: Ecological dimensions of the environment like soil, rocks, animals, and vegetation are also considered a part of the natural environment (Australian Institute of Health and Welfare [AIHW] 2011). The term ecosystem services can be used to describe the benefits people receive from their natural environment (IPCC 2007). Ecosystem services can be broken into four dimensions: provisioning services (e.g., fiber, water, biochemicals), cultural services (e.g., knowledge system, sense of place, aesthetic values), supporting services (e.g., nutrient cycling, oxygen production, soil formation), and regulating services (e.g., invasion resistance, pollination, climate, pest, and disease regulation) (Millennium Ecosystem Assessment 2005a).

The Built Environment and Social Environment: The built environment relates to the modifiable physical factors (i.e., structural, geographical, and material) including urban form, land use mix, and transportation infrastructure (Saelens and Handy 2008). Within the literature, the concepts of built environment and physical environment are used interchangeably

Environment and Health,

Fig. 1 The determinants of health: a conceptual framework. (Source: Australian Institute of Health and Welfare (2011) framework adapted from “A health map for the local human habitat” by H. Barton and M. Grant, (2006))



E

(Diez-Roux and Mair 2010; McCormack et al. 2004; Turrell 2010).

A myriad of human interaction and activity is enabled through engagement with the built environment. Thus, the social environment can be conceptualized as being a subset of the built environment. According to McNeill, Kreuter, and Subramanian’s (2006) conceptual review, the social environment broadly incorporates five main areas:

- Social support and networks
- Socioeconomic status and income disparity
- Racial/ethnic discrimination
- Social cohesion and capital
- Neighborhood environment

All environments develop and evolve as a result of complex interactions between the following:

- The built and social elements
- The social dynamics that occur between group and individual behaviors
- The natural and built components (US Department of Health and Human Services 2010; Yen and Syme 1999)

These environmental dimensions are further impacted by historical, economic, political, and cultural influences (McNeill et al. 2006).

Description

Why Is the Environment and Health Important?

The World Health Organization (WHO) has recognized that the environment and health are linked (Prüss-Üstün and Corvalán 2006). Modifiable built environmental factors, such as sanitation and land use practices, are responsible for approximately one-quarter of the burden of disease globally (Prüss-Üstün and Corvalán 2006). The impact of the built environment on health is extremely important, given that in 2007 over half the world’s population lived in urban areas, and it is predicted that six out of ten people will reside in cities by 2030 (WHO 2010). Aligned with a built environment and health initiative, the WHO selected the theme *Urbanization and Health* for World Health Day held in April 2010. This year-long theme aimed to recognize the effect urbanization may have on collective and individual health outcomes in relation to safety, water

supply, disease outbreaks, and climate change (among others). In conjunction with the World Health Day initiative, the *1000 cities, 1000 lives* campaign encouraged cities to make public spaces available for one day health-focused events.

International Initiatives

Governments worldwide are recognizing the importance of the relationship between health and the environment. For instance, the *Healthy People 2020* campaign (an extension from *Healthy People 2010*) was launched in December 2010 by the United States Department of Health and Human Services with the goal of developing social and physical environments to improve and promote health and quality of life (US Department of Health and Human Services 2010). The Department for Communities and Local Government in the United Kingdom completed their 2001 launched *National Strategy for Neighbourhood Renewal* which addressed area-based disadvantage goals (Department for Communities and Local Government 2010a). This strategy aimed to improve health and quality of life outcomes in the most deprived neighborhoods through the domains of the following: housing and the physical environment, crime, health, education and skills, work and enterprise, and liveability (Department for Communities and Local Government 2010b). Currently, the United Kingdom has undertaken another strategy called *Health is Global*, which will run until 2013. The *Health is Global* program contains a cross-government strategy to enhance global health security using environmental factors and climate change as two mechanisms (HM Government 2008). Meanwhile, Australia has implemented the *National Environmental Health Strategy 2007–2012* that aims to protect health through supporting and developing infrastructure through the environmental health sector. The strategy recognizes that activities and policies are typically established by non-health agencies and aims to highlight key health determinants in these processes. Some important environmental health concerns include climate change, disasters and emergencies, and urban development (Commonwealth of Australia 2007). While these

initiatives have been undertaken in developed countries, they are nonetheless examples that highlight the global need to develop sustainable environments and infrastructure to ensure the highest quality of life and health outcomes can be attained.

The next section will focus on health and quality of life in relation to physical and mental health dimensions within Barton and Grant's (2006) determinants of health framework.

Global Ecosystem and Physical Health

Arguably climate change is the greatest global threat for health (Costello et al. 2009). Climate change has direct and indirect impacts on human health in areas of biological, physiological, and systematic functions (Beggs and Bennett 2011). Direct impacts include heat waves and temperature changes that may alter the severity and frequency of diseases and pests, ecological cycles (Hanna et al. 2011), droughts that may reduce stock capacity, water resources and soil moisture needed for agriculture (Dai 2010), floods and storms which may interfere with crops and stock compromising food security (Friel et al. 2011), and loss of life on a large scale (Smith and Petley 2009). The environments that are influenced via climate change can produce aeroallergens that have indirect impacts on population health. Airborne allergens, such as mold spores and pollen, are associated with allergic rhinitis, bronchitis, and asthma. Further, natural particles caused by dust storms, volcanic eruptions, and bushfires are linked with adverse health outcomes (Beggs and Bennett 2011). Friel and colleague's (2011) review highlights the potential for increases in noncommunicable diseases, such as respiratory disease, cardiovascular disease, autoimmune diseases, and mental health, as a result of climate change. Biophysical system changes to the earth brought about via climate change will profoundly impact population health and quality of life.

Global Ecosystem and Mental Health

Extreme weather events resulting from climate change are predicted to increase in severity, duration, and frequency (Berry et al. 2010). Adverse

natural disasters have the potential to deplete available natural resources through fires, droughts, tsunamis, hurricanes, floods, earthquakes, and heat waves. The direct impact of a natural disaster can result in adverse mental health outcomes. Post-traumatic stress disorder (PTSD) is one condition that can result from a traumatic event (Nerida et al. 2008). Despite not experiencing the immediate impact of a disaster, first responders, such as police officers and fire fighters, can also be affected by PTSD (Nerida et al. 2008). Thus, mental health can be impacted directly or indirectly through climate change (Berry et al. 2010). There may also be indirect implications for mental health as populations experience increased social inequities through the distribution of scarce resources in the aftermath of an event (Friel et al. 2011). During periods of first response, recovery, and reconstruction after a disaster, research indicates that people with lower socioeconomic status experience greater psychological problems compared to people with higher socioeconomic status. Social exclusion, disruption of social connections, type of residence, ability to rebuild or relocate and access to psychological assistance in a disaster aftermath are factors that amplify the onset of mental health issues preceding a disaster recovery (Berry et al. 2010; Fothergill and Peek 2004).

Natural Environment and Physical Health

Biodiversity has an important link in ecosystem services of provisions, support, regulation, and culture in the natural environment. Human health and quality of life rely on ecosystem services. If changes occur in biodiversity, this will inevitably impact ecosystem services and ultimately influence human health outcomes. Ecosystem services are largely influenced by species variability as opposed to the quantity of species. The variability of species is vital to the ecosystem's ability to process energy and matter. For example, photosynthesis is vital for life on earth and the rate of photosynthesis will differ depending on the plant species. Plant species also differ in their size, leaf decomposition, wood density, and longevity. Specifically in terrestrial ecosystems, biodiversity impacts the processes of water and nutrient

cycling, soil retention and formation, and biomass production. If biodiversity is compromised through functional, local, or global extinction, the stability and level of ecosystem services may be reduced. In fact, some ecosystem service changes have forced social groups into poverty resulting in subsequent health and quality of life declines (Millennium Ecosystem Assessment 2005a).

Communities rely on biodiversity in a globalized world. Impacts such as the 2007–2008 food and fuel price crisis and the global financial crisis have had wide ranging impacts on food security, energy security, clean water, poverty, and social relations (Millennium Ecosystem Assessment 2005b; Ruel et al. 2010). The adverse health impacts are dependent on adaptability and the type of coping strategies employed. For instance, food security coping mechanisms include reducing food intake, switching to cheap staples, and substituting foods. However, these strategies typically result in reduced quality (i.e., micronutrients) and quantity (i.e., energy) of food intake which has subsequent ill health effects ranging from short-term nutritional deficiencies to long-term developmental effects for young children and newly born infants (Ruel et al. 2010).

Natural Environment and Mental Health

The ecosystem can also have mental health benefits by providing inspiration, recreational opportunities, a sense of place, and aesthetic appreciation. These services are important to help increase social well-being and develop social capital (Millennium Ecosystem Assessment 2005b). For instance, natural Green and Blue Gyms (i.e., conservation and coastal-related physical activities, respectively) are being used for their health benefits. A review investigated the health benefits of physical activity conducted in natural environments compared to synthetic environments. Results indicated that exercising in natural environments provided superior mental health benefits compared to indoor exercise. Specifically, natural environments were associated with reduced anger, confusion, tension, and depression alongside increased energy levels and

a greater sense of revitalization and engagement (Coon et al. 2011).

Built Environment and Physical Health

The physical characteristics of the built environment can influence health and quality of life (AIHW 2011). Physical features which have been investigated for their health influences include housing conditions (e.g., exposure to mold, lead paint poisoning) (Jacobs et al. 2007), accessibility and availability of health services (Irfan et al. 2012; Macintyre et al. 1993), environmental noise, safety from crime and walkability (Saelens et al. 2003), and transport (Commonwealth of Australia 2010). An important lifestyle behavior which improves long-term health outcomes of chronic diseases and reduces risk factors for overweight and obesity is physical activity (National Health Priority Action Council 2006; Turrell 2010). Two systematic reviews demonstrated associations between environmental characteristics, such as mixed land use, housing type, population density, proximity to open space and nonresidential destinations, and increased levels of physical activity, specifically walking behaviors (Durand et al. 2011; Saelens and Handy 2008). These findings highlight the need to foster healthy environments, especially as walking behaviors increase ones exposure to environmental influences (Saelens et al. 2003). Another review explored the link between diet and food stores. Results indicated that easier access to supermarkets compared to convenience stores resulted in lower obesity levels and healthier dietary intakes in neighborhood residents (Larson et al. 2009). It is clear that the design of the built environment influences health behaviors.

The social characteristics of the built environment are equally important for health and quality of life. A range of health-related behaviors, such as smoking, physical activity, and alcohol use, are impacted by social features (Diez-Roux and Mair 2010). Kunitz's (Kunitz 2004) review outlined that when community integration and social support is high, mortality rates typically decline. Social support networks can also have adverse outcomes on health. For example, if social service support is not available to family caregivers, a

range of ill health outcomes may result compared to those who do not provide care (Kunitz 2004). In terms of social capital, research finds an association between communities with high levels of social capital and better self-reported health (Shortt 2004). In a review article, Shortt (2004) outlined three mechanisms through which health may be influenced by social capital: immune system functions, an association between social capital and health-related behaviors, and an association between social capital and access to health services. These reviews support the idea that place and group networks are important etiological factors for health.

Built Environment and Mental Health

The built environment can have an impact on mental health. The common features that have been linked to mental health are the aesthetics of the environment, physical decay, and environmental problems (i.e., services, public transportation, traffic, green space). In a review article, Diez-Roux and Mair (2010) found that depressive symptoms were associated with perceived disordered neighborhoods, poor housing quality and neighborhood environments, and environmental problems. Mixed results were derived from studies investigating the characteristics of the service environment, while neighborhoods which encouraged walkability indicated reduced rates of depressive symptoms in elderly residents. After adjusting for individual level factors, Truong and Ma's (2006) research found that 27 out of the 29 studies reviewed supported positive associations between mental health and neighborhood features ranging from subjective to objective measurements of the built environment which included measures of area poverty, housing structure, violence, living in a deprived location, crime, and social support. Caution was however given in the interpretation of the results as the measurements and research designs across the studies varied making the generalizability of the results challenging.

Social characteristics of the built environment can also affect mental health. Out of the 45 studies reviewed by Mair, Diez-Roux and Galea (2008), 37 indicated an association between depressive

symptoms and neighborhood features. Compared to structural neighborhood characteristics, social processes (inclusive of interactions, violence and disorder) were the most consistently associated with depressive symptoms (Mair et al. 2008). Another review conducted by Diez-Roux and Mair (2010) supported these findings as six of 12 studies linked violence, residential instability, and hazardous conditions with depressive symptoms. In contrast, social capital, social cohesion, and reciprocity were the social characteristics identified in 11 of 16 studies that provided protective mechanisms against depression (Diez-Roux and Mair 2010).

Discussion

Health and quality of life cannot be improved through medical care alone (Braveman et al. 2011). Instead approaches need to focus on the environments in which people live. As illustrated in Barton and Grant's (Barton and Grant 2006) determinants of health framework, people's health and quality of life are affected by different environments: the global ecosystem, the natural environment, and the built and social environments. These environmental levels reflect the upstream social determinants of health – factors which provide the greatest opportunities to improve health through informed healthy policies and evidence-based practice (Braveman et al. 2011; Turrell et al. 1999). Each environmental level does not exist in a vacuum however. Instead, interactions between and within these environments occur to shape and influence health and quality of life through direct and indirect pathways (McNeill et al. 2006; US Department of Health and Human Services 2010; Yen and Syme 1999). For better or worse, each environmental level has distinct implications for health and quality of life.

Cross-References

- Adaptation
- Built Environment
- Caregiver
- Crime
- Food Security

- Green Exercise
- Health
- Health Determinants
- Healthy People 2010
- Land Use
- Obesity, an Overview
- Physical Activity
- Population Density
- Quality of Life
- Sense of Place
- Social Cohesion
- Transportation
- Urban Design
- Walkability

References

- Alcamo, J., & Bennett, E. M. (2003). *Ecosystems and human well-being: A framework for assessment* (Millennium ecosystem assessment). Washington, DC: Island Press.
- Australian Institute of Health and Welfare. (2011). *Health and the environment: A compilation of evidence* (Cat. No. PHE 136). Canberra: AIHW.
- Barton, H., & Grant, M. (2006). A health map for the local human habitat. *Journal of the Royal Society for the Promotion of Health*, 126(6), 252–253. <https://doi.org/10.1177/1466424006070466>.
- Beggs, P. J., & Bennett, C. M. (2011). Climate change, aeroallergens, natural particulates, and human health in Australia: State of the science and policy. *Asia-Pacific Journal of Public Health*, 23(2), 46S–53S. <https://doi.org/10.1177/1010539510391771>.
- Berry, H. L., Bowen, K., & Kjellstrom, T. (2010). Climate change and mental health: A causal pathways framework. *International Journal of Public Health*, 55, 123–132. <https://doi.org/10.1007/s00038-009-0112-0>.
- Braveman, P., Egerter, S., & Williams, D. R. (2011). The social determinants of health: Coming of age. *Annual Review of Public Health*, 32, 381–398.
- Commonwealth of Australia. (2007). *National environmental health strategy 2007–2012*. Canberra: Department of Health and Ageing. Retrieved 9 July, 2011, from [http://www.health.gov.au/internet/main/publishing.nsf/content/798726839F2B2FA6CA2572D40008D566/\\$File/enHealth%20NEHS%20final%20for%20web%20Nov%2007.pdf](http://www.health.gov.au/internet/main/publishing.nsf/content/798726839F2B2FA6CA2572D40008D566/$File/enHealth%20NEHS%20final%20for%20web%20Nov%2007.pdf).
- Commonwealth of Australia. (2010). *State of Australian cities 2010*. Canberra: Major Cities Unit, Infrastructure Australia. Retrieved 11 July, 2011, from http://www.infrastructureaustralia.gov.au/publications/files/MCU_SOAC.pdf.
- Coon, J. T., Boddy, K., Stein, K., Whear, R., Barton, J., & Depledge, M. H. (2011). Does participating in physical

- activity in outdoor natural environments have a greater effect on physical and mental wellbeing than physical activity indoors? A systematic review. *Environmental Science and Technology*, 45(5), 1761–1772.
- Costello, A., Abbas, M., Allen, A., Ball, S., Bell, S., Bellamy, R., et al. (2009). Managing the health effects of climate change. *The Lancet*, 373, 1693–1733.
- Dai, A. (2010). Drought under global warming: A review. *Wiley Interdisciplinary Reviews: Climate Change*, 2(1), 45–65. <https://doi.org/10.1002/wcc.81>.
- Department for Communities and Local Government. (2010a). *Evaluation of the National Strategy for Neighbourhood Renewal: Local research project*. London: Communities and Local Government Publications. Retrieved 3 July, 2011, from <http://www.communities.gov.uk/documents/communities/pdf/1490532.pdf>.
- Department for Communities and Local Government. (2010b). *Evaluation of the National Strategy for Neighbourhood Renewal: Final report*. London: Communities and Local Government Publications. Retrieved 3 July, 2011, from <http://www.communities.gov.uk/documents/communities/pdf/14901551.pdf>.
- Diez-Roux, A. V., & Mair, C. (2010). Neighborhoods and health. *Annals of the New York Academy of Sciences*, 1186, 125–145. <https://doi.org/10.1111/j.1749-6632.2009.05333.x>.
- Durand, C. P., Andalib, M., Dunton, G. F., Wolch, J., & Pentz, M. A. (2011). A systematic review of built environment factors related to physical activity and obesity risk: Implications for smart growth urban planning. *Obesity Reviews*, 12, e173–e182. <https://doi.org/10.1111/j.1467-789X.2010.00826.x>.
- Fothergill, A., & Peek, L. A. (2004). Poverty and disasters in the United States: A review of recent sociological findings. *Natural Hazards*, 32, 89–110. <https://doi.org/10.1023/B:NHAZ.0000026792.76181.d9>.
- Friel, S., Bowen, K., Campbell-Lendrum, D., Frumkin, H., McMichael, A. J., & Rasanathan, K. (2011). Climate change, noncommunicable diseases, and development: The relationships and common policy opportunities. *Annual Review of Public Health*, 32, 133–147. <https://doi.org/10.1146/annurev-publhealth-071910-140612>.
- Hanna, E. G., Bell, E., King, D., & Woodruff, R. (2011). Climate change and Australian agriculture: A review of the threats facing rural communities and the health policy landscape. *Asia-Pacific Journal of Public Health*, 23(2), 105S–118S. <https://doi.org/10.1177/1010539510391459>.
- HM Government. (2008). *Health is global: A UK government strategy 2008–2013*. London: Department of Health. Retrieved 9 July, 2011, from http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_088753.pdf.
- Huber, M., Knottnerus, J. A., Green, L., van der Horst, H., Jadad, A. R., Kromhout, D., et al. (2011). How should we define health? *British Medical Journal*, 343, 1–3. <https://doi.org/10.1136/bmj.d4163>.
- Intergovernmental Panel on Climate Change [IPCC]. (2007). *Climate change 2007: Synthesis report*. Contribution of working groups I, II and III to the fourth assessment report of the Intergovernmental Panel on Climate Change. Geneva: Intergovernmental Panel on Climate Change. Retrieved 6 August, 2011, from http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf.
- Irfan, F. B., Irfan, B. B., & Spiegel, D. A. (2012). Barriers to accessing surgical care in Pakistan: Healthcare Barrier Model and quantitative systematic review. *Journal of Surgical Research*, 176(1), 84–94. <https://doi.org/10.1016/j.jss.2011.07.046>.
- Jacobs, D. E., Kelly, T., & Sobolewski, J. (2007). Linking public health, housing, and indoor environmental policy: Successes and challenges at local and federal agencies in the United States. *Environmental Health Perspectives*, 115(6), 976–982. <https://doi.org/10.1289/ehp.8990>.
- Kunitz, S. J. (2004). Social capital and health. *British Medical Bulletin*, 69, 61–73. <https://doi.org/10.1093/bmb/ldh015>.
- Larson, N. I., Story, M. T., & Nelson, M. C. (2009). Neighborhood environments: Disparities in access to healthy food in the U.S. *American Journal of Preventative Medicine*, 36(1), 74–81.
- Macintyre, S., Maciver, S., & Sooman, A. (1993). Area, Class and health: Should we be focusing on places or people? *Journal of Social Policy*, 22(2), 213–234.
- Mair, C., Diez-Roux, A. V., & Galea, S. (2008). Are neighbourhood characteristics associated with depressive symptoms? A review of evidence. *Journal of Epidemiology and Community Health*, 62, 940–946. <https://doi.org/10.1136/jech.2007.066605>.
- McCormack, G., Giles-Corti, B., Lange, A., Smith, T., Martin, K., & Pikora, T. J. (2004). An update of recent evidence of the relationship between objective and self-report measures of the physical environment and physical activity behaviours. *Journal of Science and Medicine in Sport*, 7(1), 81–92.
- McNeill, L. H., Kreuter, M. W., & Subramanian, S. V. (2006). Social environment and physical activity: A review of concepts and evidence. *Social Science & Medicine*, 63, 1011–1022.
- Millennium Ecosystem Assessment. (2005a). *Ecosystems and human well-being: Biodiversity synthesis*. Washington, DC: World Resources Institute. Retrieved 6 August 2011, from <http://www.maweb.org/documents/document.354.aspx.pdf>.
- Millennium Ecosystem Assessment. (2005b). *Ecosystems and human well-being: Human health synthesis*. Washington, DC: World Resources Institute. Retrieved 6 August, 2011, from <http://www.maweb.org/documents/document.357.aspx.pdf>.
- National Health Priority Action Council. (2006). *National Chronic Disease Strategy*. Canberra, ACT: Australian Government Department of Health and Ageing. Retrieved 6 August, 2011, from <http://www.health.gov.au/internet/main/publishing.nsf/content/7E7E914>

0A3D3A3BCCA257140007AB32B/\$File/strata13.pdf.

- Neerida, Y., Nandi, A., & Galea, S. (2008). Post-traumatic stress disorder following disasters: A systematic review. *Psychological Medicine*, 38, 467–480. <https://doi.org/10.1017/S0033291707001353>.
- Pearce, J., & Witten, K. (2010). Introduction: Bringing a geographical perspective to understanding the “obesity epidemic”. In P. Jamie & K. Witten (Eds.), *Geographies of obesity: Environmental understandings of the obesity epidemic* (pp. 3–14). Farnham/Surrey Burlington: Ashgate.
- Prüss-Üstün, A., & Corvalán, C. (2006). *Preventing disease through healthy environments. Towards an estimate of the environmental burden of disease*. Geneva: WHO.
- Ruel, M. T., Garrett, J. L., Hawkes, C., & Cohen, M. J. (2010). The food, fuel, and financial crises affect the urban and rural poor disproportionately: A review of the evidence. *The Journal of Nutrition*, 140, 170S–176S.
- Saelens, B. E., & Handy, S. L. (2008). Built environment correlates of walking: A review. *Medicine & Science in Sports & Exercise*, 40(Suppl. 7), S550–S566. <https://doi.org/10.1249/MSS.0b013e31817c67a4>.
- Saelens, B. E., Sallis, J. F., & Frank, L. D. (2003). Environmental correlates of walking and cycling: Findings from the transportation, urban design and planning literatures. *Annals of Behavioral Medicine*, 25(2), 80–91.
- Shortt, S. E. D. (2004). Making sense of social capital, health and policy. *Health Policy*, 70, 11–22. <https://doi.org/10.1016/j.healthpol.2004.01.007>.
- Smith, K., & Petley, D. N. (2009). *Environmental hazards: Assessing risk and reducing disaster* (5th ed.). New York: Routledge.
- Truong, K. D., & Ma, S. (2006). A systematic review of relations between neighbourhoods and mental health. *The Journal of Mental Health Policy and Economics*, 9(3), 137–154.
- Turrell, G. (2010). Understanding the local physical activity environment and obesity. In P. Jamie & K. Witten (Eds.), *Geographies of obesity: Environmental understandings of the obesity epidemic* (pp. 151–174). Farnham/Surrey Burlington: Ashgate.
- Turrell, G., Oldenburg, B., McGuffog, I., & Dent, R. (1999). *Socioeconomic determinants of health: Towards a national research program and a policy and intervention agenda*. Canberra: Queensland University of Technology, School of Public Health, Ausinfo. isbn: 0642393990.
- US Department of Health and Human Services and Office of Disease Prevention and Health Promotion. (2010). *Healthy People 2020: Framework*. Washington DC: HHS. Retrieved 9 July, 2011, from <http://www.healthypeople.gov/2020/Consortium/HP2020Framework.pdf>.
- World Health Organization [WHO]. (1996). *WHOQOL-BREF: Introduction, administration, scoring and generic version of the assessment*. Geneva: WHO. Retrieved 9 July, 2011, from http://www.who.int/mental_health/media/en/76.pdf.
- World Health Organization [WHO]. (2006). Constitution of the World Health Organization. In *Basic documents* (45th ed.). Geneva: WHO. Retrieved 9 July, 2011, from http://www.who.int/governance/eb/who_constitution_en.pdf.
- World Health Organization [WHO]. (2010). *Why urban health matters: 1000 cities 1000 lives*. Geneva: WHO. Retrieved 10 July, 2011, from <http://www.who.int/world-health-day/2010/media/whd2010background.pdf>.
- Yen, I. H., & Syme, S. L. (1999). The social environment and health: A discussion of the epidemiologic literature. *Annual Review of Public Health*, 20, 287–308.

Environment and Quality of Life

► Environment and Health

Environment Friendly Index

Dionisis Philippas

European Commission, Joint Research Centre,
Unit of Econometrics and Applied Statistics,
Ispra, Italy

Synonyms

Eco-friendly Index; Index of environmental friendliness; Nature-friendly index

Definition

The term “environmentally friendly” is a label for goods and services, laws, guidelines, and policies that do not harm the environment. Sometimes, companies use this term to promote goods and services in order to adjust with environmental marketing policies. The Index of Environmental Friendliness is an indicator that evaluates the environmental friendliness of goods and services in order to create new and more diversified

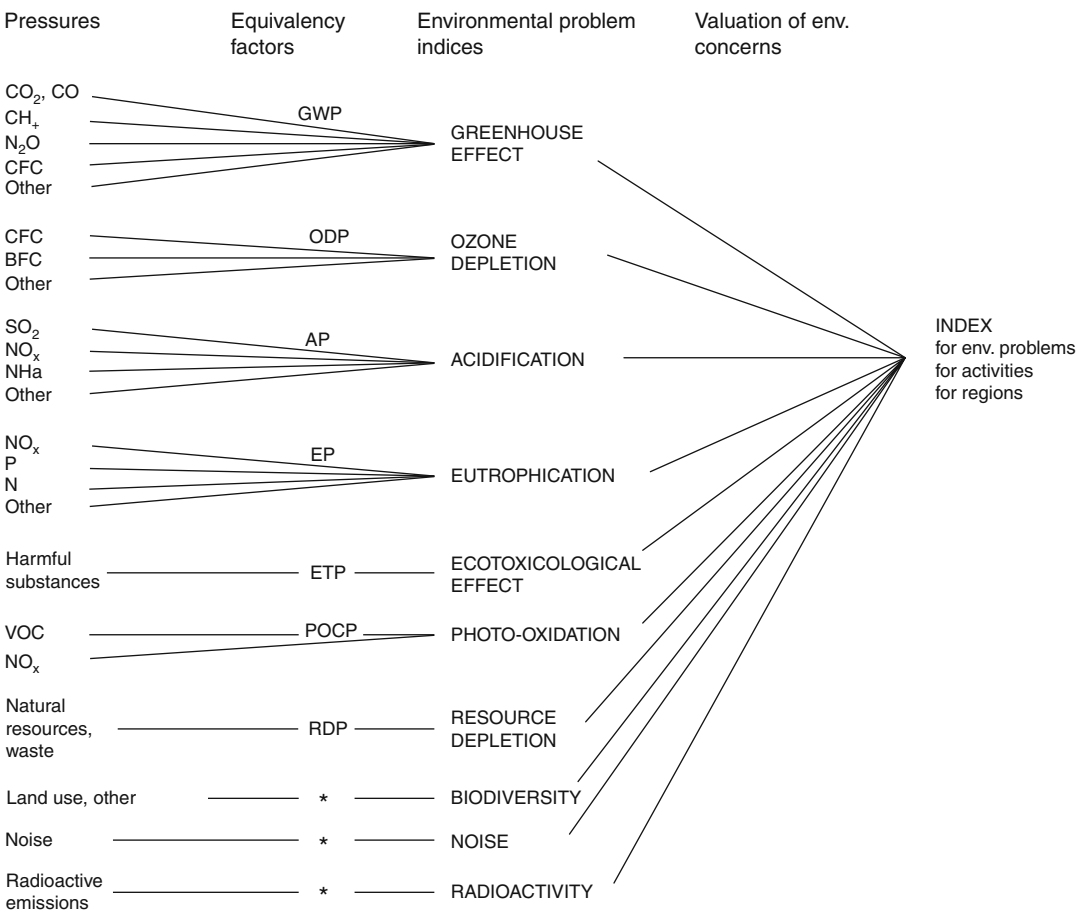
information on environmental issues, goods, services, and eco labels.

Description

The environmental policies are quite important for all countries that contribute to sustainable development and the establishment of a sustainable and an integrated economic and environmental system (Hammond et al. 1995). In the last decades, the international research focused on the development of environmental indicators as proxies for environmental and economic decision-making on the

ongoing debate. The term “environmentally friendly” has been used as a reference in various fields of research and practice (finance, marketing, etc.). For example, the term can describe the awareness of the environment or a medium- to long-term investment interest (e.g., eco-friendly equity index) that judged on six fields of interest: the environment, the community involvement, the good corporate governance, respect for ► [human rights](#), ► [business ethics](#), and labor practices.

In general, the Index of Environmental Friendliness is a proxy that describes the aggregation of direct and indirect environmental, social, and economic pressure data of partial indices. The



GWP Climate Warming Potential, ODP Ozone Depletion Potential, AP Acidification Potential, EP Eutrophication Potential, ETP EcoToxicity Potential, POCP Potential for Photo-oxidant formation, RDP depletion potential for biotic/abiotic natural resources, * no existing equivalency factors

Environment Friendly Index, Fig. 1 Aspects of environmental friendly index. (Source: Puolamaa et al. 1996)

approach is applicable to the life-cycle assessments of products and production (Puolamaa et al. 1996). The Index of Environmental Friendliness also captures the overall impact of economic activities associated with the overall assessment of environmental activity. Assuming that the environmental issues need a feasible basis for a comprehensive assessment in life cycle, the scope of the Index of Environmental Friendliness is to cover the key environmental problems of partial indices such as the greenhouse effect, ozone depletion, acidification, eutrophication, eco-toxicological effect, resource depletion, photooxidation, biodiversity, radiation and noise, electricity and heat consumption, and wastewater treatment. In order to prevent overlaps in impact assessments of various concerns, the evaluation is made according to their primary impact potential.

The Index of Environmental Friendliness compresses detailed pressure data into a number of new information categories and their potential individual and/or joint impacts, combining the indices with numeric data on the societal preferences of environmental concerns. The Index of Environmental Friendliness provides the following aspects (see Fig. 1):

- Basic statistics on direct total pressures
- Problem indicators (scores and normalized scores)
- Valuation of environmental concerns
- The overall Index of Environmental Friendliness

Discussion

The main advantage of the Index of Environmental Friendliness has to do with the comprehensive and future-oriented assessment of environmental problems in each economic activity. On the other hand, there are several shortcomings due the structure of the index. Significant problems in evaluation process concern the overlaps in the aggregation of pressures to the indices and several weighting issues. Thus, the quality of the information provided by the Index of Environmental Friendliness depends on the quality of the basic pressure data and the aggregated methods. The minimization of the overlap problems on data aggregation and

evaluation is considered to be essential for the quality of the Index of Environmental Friendliness. Thus, aggregation methods of pressure data are necessary to evaluate the environmental concerns. That will also require systematic data improvements (e.g., biodiversity, harmful substances, waste materials, and photooxidant formation) and structuring data, according to economic and environmental activities.

Cross-References

- [Environmental Management](#)
- [Environmental Sustainability](#)
- [Environmental Sustainability Index \(ESI\)](#)

References

- Hammond, A., Adriaanse, A., Rodenburg, E., Bryant, D., & Woodward, R. (1995). *Environmental indicators: A systematic approach to measuring and reporting on environmental policy performance in the context of sustainable development*. Washington, DC: World Resources Institute.
- Puolamaa, M., Kaplas, M., & Reinikainen, T. (1996). *Index of environmental friendliness: A methodological study*. Helsinki: Eurostat.

Environmental Amenities and Disamenities

Vicente Royuela

AQR-IREA Research Group, University of Barcelona, Barcelona, Spain

Synonyms

[Environmental benefits and costs](#); [Facilities](#); [Services](#)

Definition

Generally speaking an amenity is a useful or enjoyable feature. In urban economics, an

amenity is referred to any benefits that increase the attractiveness of a place by increasing its comfort or convenience. Examples of amenities are pleasant views, good schools, or even a low crime rate.

Description

Glaeser, Kolko, and Saiz (2001) define “urban amenity” as a desirable package of goods demanded by the “consumers” of urban space. In the context of interurban competition, recent research attempts to explain the internal mechanism through which quality of life plays a role in economic growth and consequently urban growth. In this framework, Florida (2002) discusses the importance of high-quality goods and services – referring to them as “quality of place.” Florida underlines the importance of “a bundle of **amenities**, lifestyle options, type of people (...)” (Florida 2002, p. 6) as driving forces of the location decisions of the highly skilled labor force.

In a list of works, the amount of amenities has been used as proxies of quality of life and subsequently as engines of economic growth:

- Roback (1982) finds that differences in local amenities (QoL as defined in the study) can explain to a great extent regional wage differentials.
- Gyourko and Tracy (1991) uses as quality of life indicators natural amenities, such as climate/weather variables and closeness to the Great Lake or to the Gulf of Mexico, and human-made amenities, such as access to alternative labor market, non-land cost of living, and urban size.
- Florida (2002) proxies his concept of amenities with the following indicators: “coolness factor,” proportion of population aged 22–29, number of bars and nightclubs per capita, number of art galleries and museums per capita, and the median house value.
- Royuela et al. (2003) approach urban quality of life considering a wide list of indicators of what they call urban amenities, such as education and health facilities.

Faggian and Royuela (2010) understand that individual/household circumstances are important in defining quality of life and they define aspirational amenities, in the sense that people consider a feature as a valuable good according to their particular circumstances. One example would be the different consideration that an amenity would have for individuals over their life course.

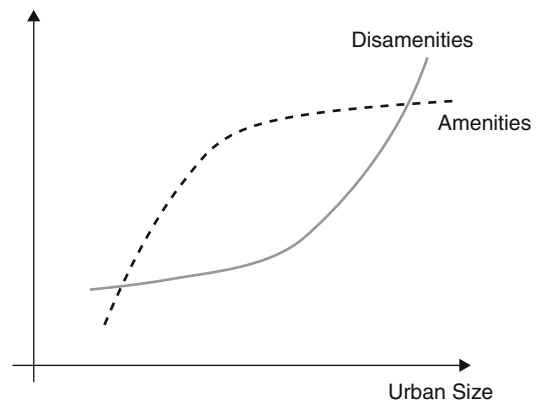
Disamenities

There are certain features that individuals face that may be valued as bads rather than as goods. In such cases people talk about disamenities rather than amenities. Examples of disamenities are lower levels of environmental quality and increasing congestion.

Despite one can talk about safety (amenity) rather than criminality (disamenity), it is the case that in many situations the social evolution drives to a decrease in quality of life. The typical example is the growth in cities: as urban size increases, lower levels of environmental quality, increasing congestion, etc., may arise.

The relationship between amenities and disamenities and urban size (see Fig. 1) has been investigated in a list of works (Capello and Camagni 2000; Royuela and Suriñach 2005).

According to Royuela and Suriñach (2005), big municipalities in the province of Barcelona (Spain) enjoy better public transportation and more and better cultural, educational, and health



Environmental Amenities and Disamenities, Fig. 1 Relationship between amenities and disamenities and urban size

facilities but higher congestion and pollution and few social and old age services.

The concept of amenity has also played a role in the migration literature. Economists have long modelled households as maximizing utility subject to income constraints. Utility is synonymous with well-being, QoL, or “happiness” to economists. Noneconomic aspects include the quality of public services, natural amenities, and access to man-made or urban amenities. In making a migration decision and choosing their preferred location, households “vote with their feet,” revealing their preference for locations and for a particular combination of natural or man-made amenities. This stream of the literature is due to Tiebout (1956) and has been analyzed, for instance, in Faggian and Royuela (2010; Faggian et al. 2011).

Finally, real estate and housing literature has used the concepts of amenities and disamenities to analyze different features of the housing market or similar related issues.

The traditional tool has been the use of the hedonic model, which has been also used extensively in the environmental and urban literatures. It allows for the estimation of the implicit prices of housing, neighborhood attributes, and, of course, amenities and disamenities.

Some examples are the measures of environmental quality (Cheshire and Sheppard 1995; Din et al. 2001), safety in cities (Bishop and Murphy 2011), value of green areas (Gunn 2007), forests (Hand et al. 2008), transport improvements (Yiu and Wong 2005), and public goods (Gravel et al. 2006).

Cross-References

- [City Competitiveness and Quality of Life](#)
- [Facilities](#)
- [Hedonic Price Model](#)
- [Public Good\(s\)](#)

References

Bishop, K. C., & Murphy, A. D. (2011). Estimating the willingness to pay to avoid violent crime: A dynamic

- approach. *American Economic Review*, 101–3, 625–629.
- Capello, R., & Camagni, R. (2000). Beyond optimal city size: An evaluation of alternative urban growth patterns. *Urban Studies*, 37(9), 1479–1496.
- Cheshire, P., & Sheppard, S. (1995). On the price of land and the value of amenity. *Econometrica*, 62, 247–267.
- Din, A., Hoesli, M., & Bender, A. (2001). Environmental values and real estate prices. *Urban Studies*, 38(100), 1989–2000.
- Faggian, A., & Royuela, V. (2010). Migration flows and quality-of-life in a metropolitan area: The case of Barcelona-Spain. *Applied Research in Quality of Life*, 5(3), 241–259.
- Faggian, A., Olfert, M. R., & Partridge, M. D. (2011). Inferring regional well-being from individual revealed preferences: The ‘voting with your feet’ approach. *Cambridge Journal of Regions, Economy and Society*, 5(1), 163–180.
- Florida, R. (2002). The economic geography of talent. *Annals of the Association of American Geographers*, 92, 743–775.
- Glaeser, E. L., Kolko, J., & Saiz, A. (2001). Consumer city. *Journal of Economic Geography*, 1, 27–50.
- Gravel, N., Michelangeli, A., & Trannoy, A. (2006). Measuring the social value of local public goods: An empirical analysis within Paris metropolitan area. *Applied Economics*, 38(16), 1945–1961.
- Gunn, S. C. (2007). Green belts: A review of the regions’ responses to a changing housing agenda. *Journal of Environmental Planning and Management*, 50(5), 595–616.
- Gyourko, J., & Tracy, J. (1991). The structure of local public finance and the quality-of-life. *Journal of Political Economy*, 99(4), 774–806.
- Hand, M. S., Thacher, J. A., & McCollum, D. W. (2008). Intra-regional amenities, wages, and home prices: The role of forests in the southwest. *Land Economics*, 84(4), 635–651.
- Roback, J. (1982). Wages, rents, and quality-of-life. *Journal of Political Economy*, 90, 1257–1278.
- Royuela, V., & Suriñach, J. (2005). Constituents of quality-of-life and urban size. *Social Indicators Research*, 74(3), 549–572.
- Royuela, V., Suriñach, J., & Reyes, M. (2003). Measuring quality-of-life in small areas over different periods of time. Analysis of the province of Barcelona. *Social Indicators Research*, 64(1), 51–74.
- Royuela, V., Moreno, R., & Vayá, E. (2010). The influence of quality-of-life on urban growth. A case study of Barcelona. *Regional Studies*, 44(5), 551–567.
- Tiebout, C. M. (1956). A pure theory of local expenditures. *Journal of Political Economy*, 64, 416–424.
- Yiu, C. Y., & Wong, S. K. (2005). The effects of expected transport improvements on housing prices. *Urban Studies*, 42(1), 113–125.

Environmental Ascription and Health

- [Industrial Toxins Proximity and Childhood Health and Learning](#)

Environmental Assessment

- [Environmental Impact Assessment](#)
- [Strategic Environmental Assessment](#)

Environmental Benefits and Costs

- [Environmental Amenities and Disamenities](#)

Environmental Design

- [Design](#)

Environmental Footprint

- [Ecological Footprint](#)

Environmental Health Indicators

- [Indicators for Assessing Environmental Status](#)

Environmental Identity

- [Nature Relatedness and Subjective Well-Being](#)

Environmental Impact Analysis

- [Environmental Impact Assessment](#)

Environmental Impact Assessment

Carys Jones
School of Environment and Development
(Planning & Environmental Management),
University of Manchester, Manchester, UK

Synonyms

[Environmental assessment](#); [Environmental impact analysis](#); [Impact analysis](#); [Impact assessment](#)

Definition

Environmental impact assessment (EIA) refers to the process of evaluating the potential environmental impacts of a project undertaken prior to the granting of approval and implementation of that project.

Description

Environmental impact assessment (EIA) is recognized worldwide as a formal ex ante process with specific procedural stages that incorporates consideration of the environment into the design and development of projects. Most countries now have some form of legislation or guidance to set their framework for implementing EIA, with the process also adopted by a range of institutions (Hanna 2005; Lee and George 2000; Shrivastava 2003; Thomas and Elliott 2005), for example, the World Bank. The US National Environmental Policy Act of 1969 (CEQ 2011) is generally regarded as the first legislation to codify formal

procedures for EIA, and this proved to be the basis and inspiration worldwide, for subsequent initiatives to take a proactive stance on dealing with the environmental consequences of development (Wood 2003).

The EIA process is made up of several stages (Glasson et al. 2005), and while these are not necessarily all contained within the legislation and process of any one country or jurisdiction, they are regarded as essential “good practice” elements. The responsibility for the EIA ultimately rests with the project proponent, but the assessment is commonly undertaken by consultants, although this varies by jurisdiction.

Figure 1 summarizes the generic EIA process, and while this implies a sequential procedure, it should be, and often is, an iterative process.

The issue of “significance” underpins much of the process and plays a role in screening, scoping, and evaluation of the importance of potential

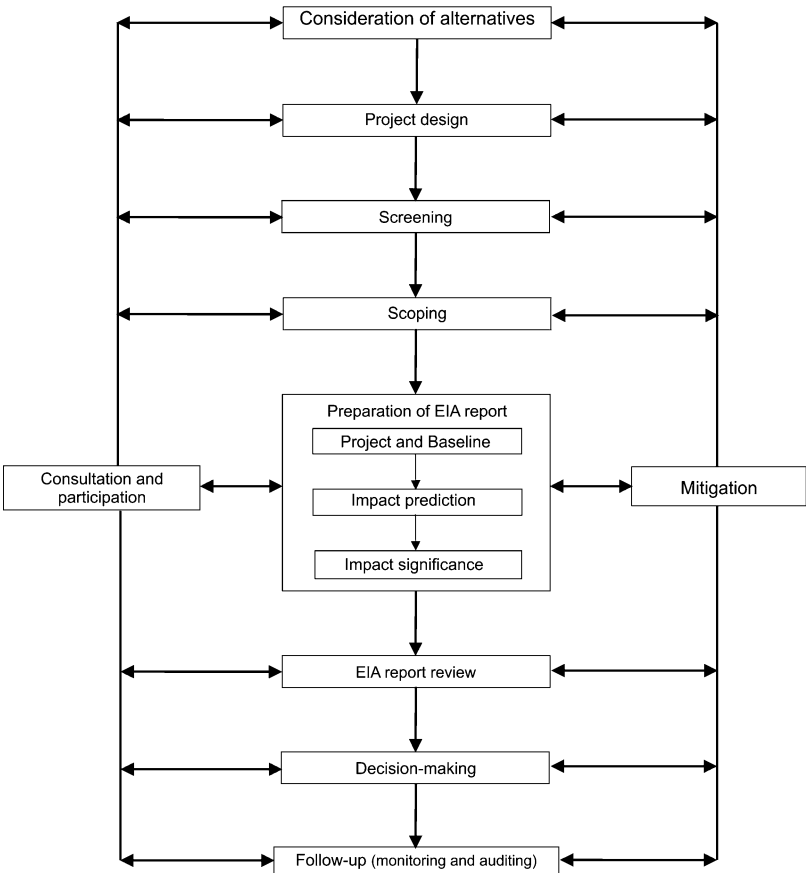
impacts and, ultimately, in the overall decision on project implementation. This can be relatively straightforward, as where quantitative standards exist (e.g., regarding air or water quality), but less so where judgments have to be made on a more qualitative basis (e.g., landscape impacts). It should also be borne in mind that all evaluations of significance are in some way qualitative as even quantitative standards reflect a political dimension.

The preliminary stages consist of:

- Screening – deciding if an EIA is required
- Scoping – deciding what the EIA should cover
- Consideration of alternatives – both to, and in design of, the project
- Project design – finalizing options

Screening usually takes place on the basis of predetermined lists of project types (often

Environmental Impact Assessment, Fig. 1 EIA process

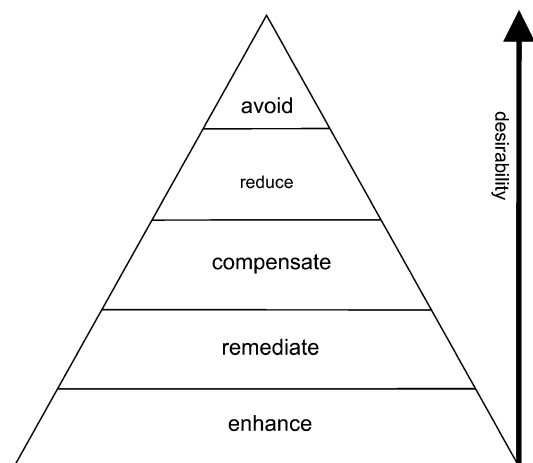


incorporating thresholds and criteria), a case-by-case consideration of each project, or some combination of the two approaches. Thresholds and criteria usually relate to project size or production parameters (e.g., quarrying of x tons per annum), to proximity to areas of importance (e.g., national parks, or sensitive receptors, including humans), or to financial costs of the project (as in India, France). The scope of an EIA primarily focuses on biophysical aspects but is increasingly drawing on wider social and economic parameters as the concepts of ► [sustainable development](#) and ► [sustainability](#) increasingly underpin our interventions in the environment. Scoping can involve a range of techniques such as use of checklists, analogous projects, and consultation with experts and locals. One of the key outputs is often a scoping report or terms of reference that set the agenda for the subsequent assessment stages. The alternatives and project design are important early considerations, as the opportunities to deal with potential environmental consequences later on are often foreclosed by choices made during early decisions on design. These early stages of EIA often proceed simultaneously and draw on similar information concerning the project and the environment likely to be affected, reinforcing the iterative nature of the EIA process. The emphasis is to focus the EIA on major projects that warrant commitment of resources due to the nature, extent, and likely consequences of their impacts. This is then reinforced by scoping the assessment to focus on issues and impacts likely to be key in the decision taken on project approval.

The assessment stages cover:

- Establishing the baseline – for a range of environmental, and often social, parameters
- Prediction – the extent of the physical changes to affected parameters
- Evaluation of significance – the importance of the effects on the environment caused by the project's impacts
- Mitigation measures – how the significant impacts will be prevented or ameliorated

In order to predict the changes to the environment likely to be caused by the project, it is necessary to understand the baseline for any change and therefore establish current conditions in relation to a range of parameters; ideally the baseline should also take into account potential future changes, but this is rarer in practice. The use of a range of tools (e.g., various modeling techniques, expert opinion, analogous projects) then allows the prediction of potential impacts to be undertaken (Morris and Therivel 2009). Once the extent of an impact has been predicted, there needs to be an evaluation of its significance based on current standards or expert opinion. The importance of an impact is a product of its magnitude and context; an impact of high magnitude will not necessarily also have a great significance, and conversely a low magnitude impact may be of great significance. Mitigation measures then lead directly from this evaluation of the significance of impacts – the greater the importance of the impacts on the environment, then the greater the need for mitigation of their effects. Mitigation measures form a hierarchy (Fig. 2) with those at the top being the preferable form of dealing with the impact; alternatives can be regarded as a form of mitigation. The output of the assessment is a document, known variously as an Environmental Statement, Environmental Impact Statement, and Environmental Report, which contains the



Environmental Impact Assessment, Fig. 2 Hierarchy of mitigation types

methods used to assess the impacts and their findings, as well as detailing the EIA process (e.g., scoping, consultation).

The document then feeds into the decision-making process on the project and is a key element in consultation with stakeholders and provision of information on the likely consequences of the project should it proceed. This stage may also involve some form of review or evaluation of the document produced to establish whether it provides sufficient information for decision makers to judge the consequences of their decision on the environment.

The final stages of the EIA process – where the project is implemented – relate to the monitoring of project impacts and effects on the environment (Morrison-Saunders and Arts 2004). This may also include monitoring of the project itself and the efficacy of mitigation measures set in place arising from the assessment process.

An overarching “stage” of the process is consultation and public participation which takes place formally or informally throughout the process; particularly at the scoping, assessment, and decision-making stages. This will involve consultation of those individuals and institutions with a statutory role (e.g., nature conservation, public health) for information and their views on the project and its impacts. EIA also sets an important benchmark in terms of public involvement in the process, ranging from basic provision of information about the project, through more active consultation, to active involvement in project formulation and decision-making (e.g., Canada).

The EIA process is now well established worldwide, and while its success is clear, questions are now being raised about its effectiveness and efficiency with the aim to maximize benefits and minimize costs (Holder and McGillivray 2007; Jay et al. 2007). While there is general consensus that benefits do outweigh costs from a broad range of countries, it is also clear that EIA systems do not perform equally well. In many instances, the process is falling short of its potential. Key weaknesses relate to coverage of the relevant project types, limited consideration of mitigation measures, quality of assessment reports, integration of assessment findings into

decision-making, public involvement, post-implementation activity, and broader system monitoring.

Nevertheless, project designs have been changed and mitigation considered proactively rather than reactively at a relatively late stage, various stakeholders have modified their behavior to encompass consideration of the environment, empowerment of many individuals and groups has occurred, and outcome of assessment has been used to further management projects once implemented (Jay et al. 2007). Finally, the acceptance of the approach and its success has led to the transposition of the impact assessment principles to the strategic level and their application to policies, plans, and programs – ► [strategic environmental assessment](#).

Cross-References

- [Strategic Environmental Assessment](#)
- [Sustainability](#)
- [Sustainable Development](#)

References

- CEQ. (2011). *National Environmental Policy Act*, NEPANet. <http://ceq.hss.doe.gov/nepa/nepanet.htm>
- Glasson, R., Therivel, R., & Chadwick, A. (2005). *Introduction to environmental impact assessment* (3rd ed.). London: Routledge.
- Hanna, K. S. (2005). *Environmental impact assessment: Practice and participation*. Oxford: Oxford University Press.
- Holder, J., & McGillivray, D. (Eds.). (2007). *Taking stock of environmental assessment- law, policy and practice*. Abingdon: Routledge Cavendish.
- Jay, S., Jones, C., Slinn, P., & Wood, C. (2007). Environmental impact assessment: Retrospect and prospect. *Environmental Impact Assessment Review*, 27(4), 287–300. <https://doi.org/10.1016/j.eiar.2006.12.001>.
- Lee, N., & George, C. (Eds.). (2000). *Environmental assessment in developing and transitional countries*. Chichester: Wiley.
- Morris, P., & Therivel, R. (Eds.). (2009). *Methods of environmental impact assessment* (3rd ed.). London: University College of London Press.
- Morrison-Saunders, A., & Arts, J. (Eds.). (2004). *Assessing impact- handbook of EIA and SEA follow-up*. London: Earthscan.

- Shrivastava, A. K. (2003). *Environmental impact assessment*. Delhi: APH Publishing Corporation.
- Thomas, I. G., & Elliott, M. (2005). *Environmental impact assessment: Theory and practice*. Annandale: Federation Press.
- Wood, C. M. (2003). *Environmental impact assessment: A comparative review* (2nd ed.). Harlow: Prentice Hall.

Environmental Indicators

- [Indicators for Assessing Environmental Status](#)

Environmental Management

- [Natural Resource Management \(NRM\)](#)

Environmental Planning

- [Land-Use Planning](#)
- [Planning, Spatial](#)

Environmental Protection and Sustainability

- [Life Satisfaction and Sustainable Consumption](#)

Environmental Protection, Satisfaction with

Jarè Struwig
Human Sciences Research Council, Pretoria,
South Africa

Synonyms

[Green politics](#); [Natural environment protection](#)

Definition

Environmental protection is defined as the practice of protecting the environment (including finite and infinite elements such as vegetation, microorganisms, soil, rock, atmosphere, air, water, and energy) by individuals and by broader structures such as organizations and governments. The objectives of environmental protection are therefore not just to conserve but also to repair damage and reverse trends of environmental degradation. Climate change or global warming is defined as changes in the Earth's climate as a result of a rise in average temperatures primarily due to human's use of fossil fuels.

Introduction

Historically, developmental and environmental issues were treated as mutually exclusive, with incompatible agendas in society (Todes et al. 2003). During the latter part of the 1960s, scientists, politicians, and policymakers seriously began to consider the relationship between development and the environment as having interrelated impacts. The need to consider this relationship was highlighted at the United Nations Conference on the Human Environment in Stockholm in 1972 (The Encyclopedia of Earth 2007). At this meeting, the causal relationship between poverty, the environment, and development was explored. It became clear that unsustainable development decisions which ignored environmental protection protocols impacted the lives of people, but more specifically the lives of the poor, leading to increased levels of risk and poverty (Leiserowitz et al. 2004; Mendelsohn et al. 2006; Leichenko and Silva 2014).

Environmental Threats

Today there are widespread acceptance and acknowledgment that there exists a critical and intimate relationship between quality of life and the environment (Streimikiene 2015) and that the preservation of the environment is one of the

most important factors in ensuring well-being and survival of humans over time. As such, environmental protection initiatives have been receiving increased attention. In 2015 alone, four critical multilateralism and international policy shaping arrangements were made which resulted in profound agreements. These included the Sendai Framework for Disaster Risk Reduction in March 2015 (Aitsi-Selmi et al. 2015); the Addis Ababa Action Agenda on Financing for Development in July 2015 (Montes 2016); the Paris Agreement on Climate Change in December 2015 (Dimitrov 2016) and the adoption of the 2030 Agenda for Sustainable Development (Lee et al. 2016). These agreements all acknowledge that sustainable development is attached to a broader set of values such as quality of life, dignity, peace, prosperity, and freedom.

Some environmentalists criticize these agreements for being too simplistic. For instance, the 2030 Agenda for Sustainable Development and specifically the Sustainable Development Goals are believed to have a too narrow focus. The plea is for indicators that are broader, more inclusive, and beyond GDP measures (Dasgupta 2019). One measure that is broader in scope is the Inclusive Wealth Index (IWI) which is an index that expands measurement and provides a tool for countries to measure whether they are developing in a way that allows future generations to meet own needs (Managi 2019; Dasgupta 2019). This massive dataset determines country's stock of assets in three domains, namely manufacturing, human, and natural capital. The latest IWI report (Managi and Kumar 2018) shows that 44 out of the 140 countries in the report have grown their GDP per capita but have suffered a decline in inclusive wealth per capita, thus not having a positive sustainable development path despite showing economic growth. Their natural, human, and/or produced capital stocks are thus depleting at negative rates which will leave future generations worse off. Although a more encompassing index, the IWI also has limitations and according to ecologists does not measure natural critical capitals which are essential and indispensable resources that ecosystems provide. Ecosystems can provide "services" to the

environment to clean air and water or to pollinate plants. An example is bees which make honey (which fetches a price on the market) but also pollinate fruit trees and flowers, a service that is difficult to price (Managi 2019). The measurement of these resources is difficult but clearly critical if true sustainability is the ultimate goal.

Exposures and associated environmental risks are not uniformly distributed within populations (Martin et al. 2010). Environmental threats to human health and quality of life emanate from various sources and vary dramatically by region and level of economic development (Foa 2009). Differences in the quality of the environment across the globe depend on varying pressures from factors such as urbanization, pollution, and natural resource use. Overcrowding and smoky indoor air from burning biomass fuels, for cooking or heating, are for instance specific to developing and poorer countries and contribute to acute respiratory infections that kill approximately four million people a year, mostly children younger than age five (Ezzati and Kammen 2002). Lack of adequate water, sanitation, and hygiene is responsible for an estimated 1.5 million deaths per year and diarrhea claims the lives of some half a million children a year in developing countries (WHO 2016). Altogether, improvements related to drinking water, sanitation, hygiene, and water resource management in these countries could result in the reduction of almost 10% of the total burden of disease worldwide (WHO 2016).

In many newly and rapidly industrializing regions of the developing world, the populations are in double jeopardy, facing both this unfinished agenda of traditional environmental health problems as well as emerging problems of industrial pollution (Smith 1997). Asian and Middle Eastern countries for instance dominate the top 10 list of most polluted countries, with India accounting for seven of the world's ten worst air polluted cities. China has improved markedly in this respect (Griffiths 2019) but more than 1.5 million people are still dying each year in China and approximately 0.5 million in India from the effects of air pollution (Silva et al. 2013).

In the world's wealthiest regions, such as Europe, North America, and Japan, although

environmental risks overall tend to be lower, they have by no means disappeared. The degradation of the environment, through air pollution, noise, chemicals, poor quality water, and loss of natural areas, combined with lifestyle changes, may be contributing to substantial increases in rates of obesity, diabetes, asthma, allergies, diseases of the cardiovascular and nervous systems, and cancer (European Environment Agency 2016). Reproductive and mental health problems are also on the rise (Martin et al. 2010).

Environmental concern issues can be divided into two main streams (McGranahan and Satterthwaite 2000). The first is the “Brown” agenda, which are applicable mostly to developing or emerging countries and are associated with immediate environmental impacts such as unsanitary living conditions, hazardous pollutants in the air and water, and the accumulations of solid waste. Rout (2009) shows that environmental movements that originate from the developing world have localized characteristics. Environmental concern in these localities rely more on traditional networks than official processes and are underwritten by powerful indigenous ideologies of social justice and women tend to have a significant role in these movements. Protection of the environment is often combined with a concern for social justice and conflicts of rights to resources frequently manifest in terms of the defense of livelihoods (McGranahan and Satterthwaite 2000).

The “green” agenda on the other hand is generally championed by environmentalists (often from high-income countries). The green agenda focuses on how urban-based production, consumption, and waste generation contribute to ecosystem disruption, resource depletion, and global climate change. These issues are problems that have more long-term impacts that are dispersed and delayed; in other words, they threaten long-term ecological sustainability (McGranahan and Satterthwaite 2000).

Climate Change Impact

Of all environmental challenges, climate changes remain the biggest risk and according to the Stern

review (2006) the “greatest and widest ranging market failure ever seen.” The review argues that climate change will affect the right to life, the right to food, the right to a decent standard of living, and the right to physical and mental health. Alterations in the climate, or climate change, produce a higher degree of natural disasters which are already responsible for thousands of deaths every year owing to their direct impact on vulnerable communities (Foa 2009). In 1997, the Kyoto Protocol was adapted. The Kyoto Protocol legally binds developed countries to emission reduction targets. Unfortunately, the World Bank (2010) reported that the protocol only had a slight effect in curbing global emissions growth and that energy-related emissions had grown by 24% since the protocol was signed. According to the European Commission section on Energy, Climate Change, and Environment (2019) extreme weather events have become more and more frequent and shifting patterns in rainfall have resulted in water scares situations in certain countries. For instance, Southern Europe are becoming hotter, while the northern parts are becoming wetter with more winter floods. Between 1980 and 2011, floods affected more than 5.5 million people globally and caused a loss of more than 90 billion. Between 2030 and 2050, climate change is expected to cause approximately 250,000 additional deaths per year, from malnutrition, malaria, diarrhea, and heat stress (WHO 2018). While climate change is never seen as a sole cause of poverty, research has identified numerous direct and indirect channels through which climatic variability and change may exacerbate poverty, particularly in less developed countries and regions. In a study undertaken by Leichenko and Silva (2014), they sketch three climate change scenarios and show that overall the poor countries will suffer given any scenario and that some richer countries might actually benefit (Leichenko and Silva 2014).

There is widespread acceptance that environmental protection is also critical to ensure the continued existence of species. Thomas et al. (2004) assessed extinction risks of species for sample regions that cover some 20% of the earth’s surface and show that on a midrange climate-warming scenario for 2050, that 15–37% of

species in the sample of regions will be virtually extinct. Some scientists (Williams et al. 2015) maintain that our current extinction crisis is unique in the Earth's history due to human influence which have (a) taking over a significant percentage of the world's primary production; (b) spread non-native species around the world (and created problems in existing ecological habitats) and (c) increased the directing of evolution (domesticating animals and cultivating crops).

The Intergovernmental Panel on Climate Change (2018) forecasts a temperature rise of 2.5–10 °F (1.25–5 °C) over the next century. Net annual environmental costs will increase over time as global temperatures increase. As a result of climate change, temperatures will continue to rise, frost-free seasons will lengthen, rain patterns will change the frequency and severity of hurricanes and storms will increase, and sea levels will rise and ice caps will continue to melt. Sea temperatures will increase which will be affecting the migration patterns of fish. Higher levels of carbonic acid in oceans will impact the ability of shell fish to survive. Oceanic acidification will further cause a loss of biodiversity and trigger shifts in ecosystem structures and function. These implications of climate change calls for coordinated research efforts and require an urgent coherent response and vision (Riebersell 2008).

The impacts of climate change are not going to be universal for all countries or even for regions inside countries. Impacts will depend greatly on current local climate, local climate changes, and other local conditions such as market access and soil conditions (Leichenko and Silva 2014). Some developing countries with temperate climates may well benefit from warming, while other countries may find they receive increased rains in the future climate scenario. Many countries will be less fortunate, especially those that might suffer large temperature increases, lose needed rain, or be unable to adapt. It is important when addressing programs to assist countries with climate change to take note of specific problems and suggest solutions and actions that would provide the greatest long-term relief for the specific region.

Despite there being overpowering scientific accord that climate change is essentially a result

of human activity (Oreskes 2004; Cook et al. 2013), some people deny that climate change exists or dispute whether climate changes are due to human action (Poortinga et al. 2011). Some people are not convinced that there is an upward trend in the average global temperature, while others believe that the climate is changing but are unsure about whether human activity is the primary cause. Other people agree that climate change and global warming is happening and that it is manmade, but are not convinced that it will have adverse consequences. Since there is a relationship between beliefs about climate change and pro-environmental behavior and climate policies (Tjernström and Tietenberg 2008), it will be difficult to convince people to change their lifestyles, energy consumption patterns, and behavior to support pro-environmental behavior if they do not believe that the climate change exists or that humans are to an extent responsible.

Conclusion

The general approach to environmental challenges has moved from proving the facts to implementing change. All of the treaties, protocols, and change agendas accept that the environmental threat is real and that solutions should rapidly be sought. The challenge is now to implement the vision of a better life for all utilizing the environment responsibly (Leiserowitz et al. 2004) and to accelerate collective action. This can only be done if there is a common global value, vivid imagery, and ready institutions and governments to implement the available options that threaten modern existence. The Intergovernmental Panel on Climate Change (IPCC) (2018) reports that global warming can be reduced by 1.5 °C by reducing global net human-related emissions of carbon dioxide by approximately 45% from 2010 levels by 2030. This would take serious commitment from all role players and a bionetworks approach to environmental protection that will consider the complex interrelationships of an entire system. Government departments, industry, environmental groups, and civil society will have to collectively take action rather than just

responding to specific issues and challenges. As Williams et al. (2015) maintains, humans must move on from the view that they are somehow separate from nature and that nature exists apart from humans and start acting as guards and representatives of the biosphere.

Cross-References

- [Environment and Health](#)
- [Environment Friendly Index](#)
- [Environmental Sustainability](#)
- [Environmental Sustainability Index \(ESI\)](#)
- [Fostering Pro-environmental Behavior for Individual and Societal Well-Being](#)
- [Guilt and Environmental Behavior](#)

References

- Aitsi-Selmi, A., Egawa, S., Sasaki, H., Wannous, C., & Murray, V. (2015). The Sendai framework for disaster risk reduction: Renewing the global commitment to people's resilience, health, and well-being. *International Journal of Disaster Risk Science*, 6(2), 164–176.
- Cook, J., Nuccitelli, D., Green, S. A., Richardson, M., Winkler, B., Painting, R., & Skuce, A. (2013). Quantifying the consensus on anthropogenic global warming in the scientific literature. *Environmental Research Letters*, 8(2), 1–7.
- Dasgupta, P. (2019) Foreword in inclusive wealth report In Managi, S: Measuring sustainability and well-being. United Nations Environment Programme. <https://www.unenvironment.org/resources/report/inclusive-wealth-report-2018>. Accessed 10 Oct 2019.
- Dimitrov, R. S. (2016). The Paris agreement on climate change: Behind closed doors. *Global Environmental Politics*, 16(3), 1–11.
- European Environment Agency. (2016). *The European environment-state and outlook synthesis*. Environment, health and quality of life. <https://www.eea.europa.eu/soer/synthesis/synthesis/chapter5.xhtml>. Retrieved 12 October 2019.
- Ezzati, M., & Kammen, D. (2002). The health impacts of exposure to indoor air pollution from solid fuels in developing countries: Knowledge, gaps, and data needs. *Environmental Health Perspectives*, 110(11), 1057–1068.
- Foa, R. (2009). *Social and governance dimensions of climate change: Implications for policy* (World Bank Policy Research Working Papers no. WPS 4939, May 2009).
- Griffiths, J. (2019) *China has made major progress on air pollution*. Wuhan protests show there's still a long way to go. <https://edition.cnn.com/2019/07/10/asia/china-wuhan-pollution-problems-intl-hnk/index.html>. Retrieved 12 October 2019.
- Intergovernmental Panel on Climate Change. (2018). *Special report: Global warming of 1.5 °C: Summary for policymakers*. Geneva: World Meteorological Organization. <https://www.ipcc.ch/sr15/chapter/summary-for-policy-makers/>. opens in new tab.
- Lee, B. X., Kjaerulf, F., Turner, S., Cohen, L., Donnelly, P. D., Muggah, R., . . . MacGregor, L. S. (2016). Transforming our world: Implementing the 2030 agenda through sustainable development goal indicators. *Journal of Public Health Policy*, 37(1), 13–31.
- Leichenko, R., & Silva, J. A. (2014). Climate change and poverty: Vulnerability, impacts, and alleviation strategies. *Wiley Interdisciplinary Reviews: Climate Change*, 5(4), 539–556.
- Leiserowitz, R. W., Kates, R. W., Parris, T. M. (2004). *Sustainability values, attitudes, and behaviors: A review of multi-national and global trends*. <http://sierraactivist.org/library/990629/islanders.html>. Retrieved March 2012.
- Managi, S. 2019. *Inclusive wealth report 2018: Measuring sustainability and well-being*. United Nations Environment Programme. <https://www.unenvironment.org/resources/report/inclusive-wealth-report-2018>. Accessed 10 Oct 2019.
- Managi, & Kumar, P. (2018). *Inclusive wealth report 2018. Measuring progress towards sustainability*. London/New York: Routledge.
- Martin, J., Henrichs, T., Pirc-Vekavrh, A., Volkery, A., Jarosinska, D., Csagoly, P. et al. (2010). *The European environment-state and outlook 2010*. www.eea.europa.eu/soer/synthesis/synthesis/@.rdf. Retrieved 6 April 2012.
- McGranahan, G and Satterthwaite, D. (2000). Environmental health or ecological sustainability? Reconciling the brown and green agendas in urban development in C. Pugh, Sustainable cities in developing countries, Earthscan, pg. 73–87.
- Mendelsohn, R., Dinar, A., & Williams, L. (2006). The distributional impact of climate change on rich and poor countries. *Environment and Development Economics*, 11(2), 159–178.
- Montes, M. F. (2016). *Five points on the Addis Ababa action agenda*. South Centre Policy Brief, 24.
- Oreskes, N. (2004). The scientific consensus on climate change. *Science*, 306(5702), 1686–1686. <https://doi.org/10.1126/science.1103618>.
- Poortinga, W., Spence, A., Whitmarsh, L., Capstick, S., & Pidgeon, N. F. (2011). Uncertain climate: An investigation into public skepticism about anthropogenic climate change. *Global Environmental Change*, 21(3), 1015–1024.
- Riebersell, U. (2008). Acid test for marine biodiversity. *Nature*, 454(7200), 46–47. <https://doi.org/10.1038/454046a>.
- Rout, S. (2009). Revisiting the Baliraja Dam struggle: A study of an environmental movement in Maharashtra. *Sociological Bulletin*, 58(3), 325–345. (21 pages).
- Silva, R. A., West, J. J., Zhang, Y., Anenberg, S. C., Lamarque, J.-F., Shindell, D. T., . . . Folberth,

- G. (2013). Global premature mortality due to anthropogenic outdoor air pollution and the contribution of past climate change. *Environmental Research Letters*, 8(3), 034005.
- Smith, K. (1997). Development, health and the environmental risk transition. In G. S. Shahi (Ed.), *International perspectives on environment, development and health*. New York: Springer Publishing.
- Stern, N., Peters, S., Bakhshi, V., Bowen, A., Cameron, C., Catovsky, S., et al. (2006). *Stern review: The economics of climate change*. London: HM Treasury.
- Streimikiene, D. (2015). Environmental indicators for the assessment of quality of life. *Intellectual Economics*, 9(1), 67–79.
- The Encyclopedia of Earth. (2007). <http://www.eoearth.org/topics/view/49484/>. Retrieved 17 April 2012.
- Thomas, C. D., Cameron, A., Green, R. E., Bakkenes, M., Beaumont, L. J., Collingham, Y. C., & Williams, S. E. (2004). Extinction risk from climate change. *Nature*, 427(6970), 145–148. <https://doi.org/10.1038/nature02121>.
- Tjernström, E., & Tietenberg, T. (2008). Do differences in attitudes explain differences in national climate change policies? *Ecological Economics*, 65(2), 315–324.
- Todes, A., Oelofse C., Houghton J., & Sowman M. (2003). *National framework document: Strengthening environmental sustainability in the integrated development planning process* (Report prepared for the Department of Environmental Affairs and Tourism. South Africa).
- Williams, M., Zalasiewicz, J., Haff, P., Schwägerl, C., Barnosky, A. D., & Ellis, E. C. (2015). The anthropocene biosphere. *The Anthropocene Review*, 2(3), 196–219.
- World Bank. (2010). World development report: Development and climate change. The International Bank for Reconstruction and Development. <http://go.worldbank.org/UVZOHYFGG0>. Retrieved 6 April 2012.
- World Health Organization. (2016). *Diarrhoeal disease*. <https://www.who.int/news-room/fact-sheets/detail/diarrhoeal-disease>. Retrieved 10 October.
- World Health Organization. (2018). *Climate change and health*. <https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health>. Retrieved 12 October 2019.

Environmental Quality

► Quality of Place

Environmental Racism

► Fostering Pro-environmental Behavior for Individual and Societal Well-Being

Environmental Sustainability

► Indicators of Ecosystem Change

Environmental Sustainability Index (ESI)

Michaela Saisana

Econometrics and Applied Statistics, Joint Research Centre, European Commission, Ispra, Italy

Synonyms

ESI

Definition

The Environmental Sustainability Index (ESI) benchmarks the ability of nations to protect the environment over the next several decades. The 2005 ESI integrates 76 variables into 21 indicators of environmental sustainability for 146 countries (Esty et al. 2005).

These indicators fall into the following five broad categories: environmental systems, reducing environmental stresses, reducing human vulnerability to environmental stresses, societal and institutional capacity to respond to environmental challenges, and global stewardship.

Description

The Yale Center for Environmental Law and Policy (YCELP) and the Center for International Earth Science Information Network (CIESIN) at Columbia University have collaborated with the World Economic Forum to produce four releases of the Environmental ► Sustainability Index (ESI) since the year 2000 (latest release in 2005 in collaboration with Joint Research Centre of the European Commission).

Environmental Sustainability Index (ESI), Table 1 Environmental Sustainability Index 2005: framework

76 variables	21 indicators	5 components
Nitrogen dioxide concentration	Air quality	Environmental systems
Sulfur dioxide concentration		
Particulate concentration		
Indoor air quality		
Eco-regions at risk	Biodiversity	
Threatened birds		
Threatened mammals		
Threatened amphibians		
National Biodiversity Index	Land	
Wilderness area		
Developed area		
Dissolved oxygen		
Electrical conductivity		
Suspended solids		
Phosphorus concentration		
Surface water availability	Water quantity	
Groundwater availability		
Coal consumption	Reducing air pollution	Reducing environmental stresses
Nitrogen oxide emissions		
Sulfur dioxide emissions		
VOC emissions		
Vehicles in use	Reducing ecosystem stresses	
Forest cover change		
Acidification		
Population growth		Reducing population growth
Total fertility rate		
Ecological footprint	Reducing waste and consumption pressures	
Waste recycling rates		
Hazardous waste generation		
Industrial organic effluents	Reducing water stress	
Fertilizer consumption		
Pesticide consumption		
Area under water stress		
Overfishing	Natural resource management	
Sustainably managed forests		
Market distortions		
Salinization due to irrigation		
Agricultural subsidies		
Deaths from intestinal infectious diseases	Environmental health	Reducing human vulnerability
Child mortality rate		
Child mortality due to respiratory infections		
Malnutrition	Basic human sustenance	
Safe drinking water supply		
Casualties due to environmental disasters	Reducing environment-related natural disaster vulnerability	
Environmental Hazard Exposure Index		
Gasoline price	Environmental governance	Social and institutional capacity
Corruption		

(continued)

Environmental Sustainability Index (ESI), Table 1 (continued)

76 variables	21 indicators	5 components
Government effectiveness		
Protected land area		
Environmental governance		
Strength of rule of law		
Local Agenda 21 initiatives		
Civil and political liberties		
Sustainable development data gaps		
International environmental engagement		
Environmental knowledge creation		
Democratic institutions		
Energy consumption/GDP	Eco-efficiency	
Renewable energy production	Private sector responsiveness	
Corporate sustainability (Dow Jones)		
Corporate sustainability (Innovest)		
ISO 14001-certified companies		
ISO 14001-certified companies		
Private sector environmental innovation		
Participation in Responsible Care Program		
Innovation capacity	Science and technology	
Digital Access Index		
Female primary education		
University enrollment		
Research scientists		
Intergovernmental environmental activities	Participation in International Collaborative Efforts	<i>Components global stewardship</i>
Role in international environmental aid		
Participation in international environmental agreements		
Greenhouse gas emissions/GDP	Greenhouse gas emissions	
Greenhouse gas emissions/capita		
Transboundary sulfur dioxide spillovers	Reducing transboundary environmental pressures	
Polluting-goods imports		

The 2005 ESI score is calculated as a simple arithmetic average of 21 normalized indicators (Esty et al. 2005; Saisana et al. 2005; Munda et al. 2009). Each indicator builds on between 2 and 12 variables (total of 76 variables). The 2005 ESI framework is shown in Table 1. Air quality, for example, is a composite indicator that includes variables tracking the concentration of nitrogen oxides, sulfur dioxide, and particulates.

Given the diversity of national priorities and circumstances, full agreement on a universally

applicable set of weights for the aggregation of the 21 ESI indicators is unlikely to be achieved. Indeed, in some countries, water issues will be most pressing; in others, air pollution may be the priority. Developed countries are likely to put more emphasis on longer-term challenges such as climate change, waste treatment and disposal, clean and sustainable energy supply, and the protection of biodiversity. Developing nations will stress more urgent and short-term issues such as access to drinking water and sanitation, environmental health problems, and indoor air pollution.

Environmental Sustainability Index (ESI), Table 2 Environmental Sustainability Index 2005: countries' scores and ranks

ESI rank	Country name	ESI score	OECD rank	Non-OECD rank	ESI rank	Country name	ESI score	OECD rank	Non-OECD rank
1	Finland	75.1	1		77	Guinea-Bissau	48.6		54
2	Norway	73.4	2		78	Kazakhstan	48.6		55
3	Uruguay	71.8		1	79	Sri Lanka	48.5		56
4	Sweden	71.7	3		80	Kyrgyzstan	48.4		57
5	Iceland	70.8	4		81	Guinea	48.1		58
6	Canada	64.4	5		82	Venezuela	48.1		59
7	Switzerland	63.7	6		83	Oman	47.9		60
8	Guyana	62.9		2	84	Jordan	47.8		61
9	Argentina	62.7		3	85	Nepal	47.7		62
10	Austria	62.7	7		86	Benin	47.5		63
11	Brazil	62.2		4	87	Honduras	47.4		64
12	Gabon	61.7		5	88	Cote d'Ivoire	47.3		65
13	Australia	61	8		89	Serbia and Monten.	47.3		66
14	New Zealand	60.9	9		90	Fyrom	47.2		67
15	Latvia	60.4		6	91	Turkey	46.6	24	
16	Peru	60.4		7	92	Czech Rep.	46.6	25	
17	Paraguay	59.7		8	93	South Africa	46.6		68
18	Costa Rica	59.6		9	94	Romania	46.6		69
19	Croatia	59.5		10	95	Mexico	46.6	26	
20	Bolivia	59.5		11	96	Algeria	46		70
21	Ireland	59.2	10		97	Burkina Faso	45.7		71
22	Lithuania	58.9		12	98	Nigeria	45.4		72
23	Colombia	58.9		13	99	Azerbaijan	45.4		73
24	Albania	58.8		14	100	Kenya	45.3		74
25	Central Afr. Republic	58.7		15	101	India	45.2		75
26	Denmark	58.2	11		102	Poland	45	27	
27	Estonia	58.2		16	103	Niger	45		76
28	Panama	57.7		17	104	Chad	45		77
29	Slovenia	57.5		18	105	Morocco	44.8		78
30	Japan	57.3	12		106	Rwanda	44.8		79
31	Germany	56.9	13		107	Mozambique	44.8		80
32	Namibia	56.7		19	108	Ukraine	44.7		81
33	Russia	56.1		20	109	Jamaica	44.7		82
34	Botswana	55.9		21	110	United Arab Em.	44.6		83
35	Guinea P.N.	55.2		22	111	Togo	44.5		84
36	France	54.2	14		112	Belgium	44.4	28	
37	Portugal	54	15		113	Dem. Rep. Congo	44.1		85
38	Malaysia	53.8		23	114	Bangladesh	44.1		86
39	Congo	53.7		24	115	Egypt	44		87
40	Netherlands	53.7	16		116	Guatemala	44		88
41	Mali	53.6		25	117	Syria	43.8		89

(continued)

Environmental Sustainability Index (ESI), Table 2 (continued)

ESI rank	Country name	ESI score	OECD rank	Non-OECD rank	ESI rank	Country name	ESI score	OECD rank	Non-OECD rank
42	Chile	53.5		26	118	El Salvador	43.8		90
43	Bhutan	53.2		27	119	Dominican Rep.	43.7		91
44	Armenia	52.9		28	120	Sierra Leone	43.4		92
45	USA	52.8	17		121	Liberia	43.4		93
46	Myanmar	52.8		29	122	South Korea	43	29	
47	Belarus	52.8		30	123	Angola	42.9		94
48	Slovakia	52.8	18		124	Mauritania	42.6		95
49	Ghana	52.8		31	125	Philippines	42.3		96
50	Cameroon	52.5		32	126	Libya	42.3		97
51	Ecuador	52.4		33	127	Vietnam	42.3		98
52	Laos	52.4		34	128	Zimbabwe	41.3		99
53	Cuba	52.3		35	129	Lebanon	40.5		100
54	Hungary	52	19		130	Burundi	40		101
55	Tunisia	51.8		36	131	Pakistan	40		102
56	Georgia	51.5		37	132	Iran	39.9		103
57	Uganda	51.3		38	133	China	39.8		104
58	Moldova	51.2		39	134	Tajikistan	38.6		105
59	Senegal	51.1		40	135	Ethiopia	37.9		106
60	Zambia	51.1		41	136	Saudi Arabia	37.8		107
61	Bosnia and Herzegovina	51		42	137	Yemen	37.3		108
62	Israel	50.9		43	138	Kuwait	36.6		109
63	Tanzania	50.3		44	139	Trinidad and Tobago	36.3		110
64	Madagascar	50.2		45	140	Sudan	35.9		111
65	UK	50.2	20		141	Haiti	34.8		112
66	Nicaragua	50.2		46	142	Uzbekistan	34.4		113
67	Greece	50.1	21		143	Iraq	33.6		114
68	Cambodia	50.1		47	144	Turkmenistan	33.1		115
69	Italy	50.1	22		145	Taiwan	32.7		116
70	Bulgaria	50		48	146	North Korea	29.2		117
71	Mongolia	50		49					
72	Gambia	50		50					
73	Thailand	49.7		51					
74	Malawi	49.3		52					
75	Indonesia	48.8		53					
76	Spain	48.8	23						

The decision in building the 2005 ESI was to settle on equal weights for the 21 indicators for ease of communication and replicability. Moreover, when leading experts from the governmental, business, and nongovernmental sectors were

asked by the ESI developers to rank the indicators, none stood out as being of substantially higher or lower importance than the others. Similarly, when statistical methods (including principal component analysis) were used to identify appropriate

weights, nearly equal weights were suggested across all 21 indicators. Thus, although on an individual country basis, different prioritizations are likely to exist, on average these differences in weighting are less pronounced.

The higher a country's ESI score, the better positioned it is to maintain favorable environmental conditions into the future. The five highest-ranking countries in 2005 were Finland, Norway, Uruguay, Sweden, and Iceland – all countries that had substantial natural resource endowments and low population density. The lowest-ranking countries were North Korea, Iraq, Taiwan, Turkmenistan, and Uzbekistan (see Table 2). These countries faced numerous issues, both natural and manmade, and had not managed their policy choices well.

Discussion

The indicators and variables underlying the ESI build on the widely used Pressure-State-Response (PSR) indicator model and especially its more recent DPSIR variant that additionally breaks out driving forces and impacts.

While the ESI framework does not provide a definitive vision of sustainability, the collection of indicators and variables that form the 2005 ESI are meant to provide (1) a tool for putting environmental decision making on firmer analytical footing, (2) an alternative to GDP and the ► [Human Development Index](#) for gauging country progress, and (3) a useful mechanism for benchmarking environmental performance.

A number of existing quantitative environmental metrics, including the 2005 ESI, have been criticized for being overly broad – and not focused enough on current results to be useful as a policy guide. The concept of sustainability itself is partly at fault. Its comprehensive and long-term focus requires that attention be paid to natural resource endowments, past environmental performance, and the ability to change future pollution and resource use trajectories – as well as present environmental results.

As a reaction to this criticism, Yale University and Columbia University have been releasing the

Environmental Performance Index (EPI) since 2006 on a biannual basis (Esty et al. 2006; Saisana and Saltelli 2010). The latest release of the EPI took place in January 2012 at the Annual Meeting of the World Economic Forum in Davos (Emerson et al. 2012). The EPI attempts to address the critique above and focuses on countries' current environmental performance within the context of sustainability. It more narrowly tracks actual results for a core set of environmental issues for which governments can be held accountable. In gauging present performance on 22 indicators (EPI 2012) of environmental health and ecosystem vitality, it serves as a complement to other measures of sustainability.

Cross-References

- [Environmental Sustainability](#)
- [Urban Environmental Indicators](#)

References

- Emerson, J. W., Hsu, A., Levy, M. A., de Sherbinin, A., Mara, V., Esty, D. C., et al. (2012). *Environmental Performance Index and Pilot Trend Environmental Performance Index*. New Haven: Yale Center for Environmental Law and Policy.
- Esty, D. C., Levy, M. A., Srebotnjak, T., & de Sherbinin, A. (2005). *Environmental Sustainability Index: Benchmarking national environmental stewardship*. New Haven: Yale Center for Environmental Law and Policy.
- Esty, D. C., Levy, M. A., Srebotnjak, T., de Sherbinin, A., Kim, C. H., & Anderson, B. (2006). *Pilot 2006 Environmental Performance Index*. New Haven: Yale Center for Environmental Law and Policy.
- Munda, G., Nardo, M., Saisana, M., & Srebotnjak, T. (2009). Measuring uncertainties in composite indicators of sustainability. *International Journal of Environmental Technology and Management*, 11, 7–26.
- Saisana, M., & Saltelli, A. (2010). *Uncertainty and sensitivity analysis of the 2010 Environmental Performance Index*. Ispra: European Commission, Joint Research Centre. EUR 56990.
- Saisana, M., Nardo, M., & Srebotnjak, T. (2005). *Robustness analysis of the 2005 Environmental Sustainability Index*. Ispra: European Commission, Joint Research Centre. EUR 21807.

Environmental Sustainability, Eco-feminism, and the Threat of Right-Wing Conservatism

Charles Hostovsky

Resource and Environmental Planning, School of
Resource and Environmental Management,
Simon Fraser University, Burnaby, BC, Canada

Definition

Environmental Sustainability is derived from the term “sustainable development,” coined by the World Commission on Environment and Development (i.e., Brundtland Commission) in 1983. Brundtland said that it is “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” (World Commission on Environment and Development. 1987)

Description

Environmental Sustainability has a rich intellectual history. Aldo Leopold was the first modern western conservationist to point western culture toward sustainability when he published his “sand County Almanac.” Here he conceptualized the “land ethic” – “*that land is a community is the basic concept off ecology, but that land is to be loved and respected is an extension of ethics.*” . . . “*A land ethic changes the role of Homo sapiens from conqueror of the land-community to plain member and citizen of it. . . it implies respect for his fellow-members, and also respect for the community as such.*” (Leopold 1949)

Little attention was paid to Leopold in the popular press until Rachael Carson, the first eco-feminist, among several more female leaders mentioned in this essay, published “Silent Spring” in (Carson 1962). Her seminal piece of modern literature brought sustainability to the populace. Silent Spring launched the modern environmental movement as it identified how the pesticide DDT

bioaccumulates in the food chain, weakening the eggshells of raptors (e.g., eagles) at the top of the nature’s trophic levels, thus endangering these avian species. Indeed, Carson’s work launched the birth of environmental impact assessment (EIA) regulations in the USA – the National Environmental Policy Act of 1969, as well as the US Environmental Protection Agency, and the creation of the first major environmental NGO – the Environmental Defense Fund (through monies left in her estate). These American precedents were followed in Canada with the creation of the Environmental Assessment and Review Process, and EIA spread to every country in the world. Carson influenced changes that set a sustainability precedent that was copied by most nations throughout the world. Silent Spring’s influence was reflected by Canadian folk-rock recording artist Joni Mitchell in her 1970 top 10 hit – “Big Yellow Taxi”:

Hey farmer farmer. Put away that d.d.t. now.

Give me spots on my apples. But leave me the birds and the bees. Please!

Don’t it always seem to go. That you don’t know what you’ve got

Till its gone

They paved paradise. And put up a parking lot

Garret Hardin’s publication of the “Tragedy of the Commons” (1968) was next to promote the paradigm of sustainability. Hardin’s parable illustrates how free access and uncontrolled demand for a finite resource ultimately leads to over-exploitation of that resource. The benefits of exploitation accrue to individuals, each of which is motivated to maximize their own use of the resource. The costs of exploitation are distributed between all those to whom the resource is available as well as third parties – such as pollution – in other words, Hardin made us aware of “environmental externalities.” This concept in sustainability, or lack of, can be seen in the phenomenon of global warming, where the atmosphere is exploited by all nations through rampant CO2 emissions.

In terms of urban planning and engineering, in 1969 Ian McHarg published “Design With Nature.” McHarg (1969) said that form must follow more than just function; it must also respect

the natural environment in which it is placed. He was concerned that the US Interstate Highway System began to spread over ever-increasing swaths of land, indiscriminately removing natural habitat in the process. Hence suburban sprawl increased in scope and intensity as development followed these new roads. Engineers and planners focused almost exclusively on narrow cost-benefit and efficiency considerations in choosing how to implement infrastructure, and McHarg presented ideas whereby we can both develop and protect – the essence of the term sustainable development (to be coined in the 1980s).

Hence the 1960s in particular saw the birth of a popular environmental movement that found its way into regulatory process across the planet throughout the 1970s, culminating in the World Commission on Environment and Development in 1983 (Bruntland Commission). Chair Ms. Gro Harlem Bruntland was largely responsible for popularizing the term “environmental sustainability.” She said it is imperative to “meet the needs of the present without compromising the ability of future generations to meet their own needs (World Commission on Environment and Development. 1987).” The Bruntland Commission led to many more international efforts to make a more sustainable world, including banning HCFC’s through the 1987 Montreal Protocol, protecting the earth’s ozone layer which shields us all from harmful UV radiation. Several other important international agreements led to the creation of the 1992 Agenda 21, Kyoto Protocol, and the 2030 Agenda for Sustainable Development. Most importantly, a vast majority of countries have adopted the Paris Agreement at the COP21 in 2015 in order to control carbon emissions and mitigate the threat of global warming. Most recently, the 2019 “How Dare You!” speech to the UN by then teenager Greta Thunberg received massive worldwide attention, especially motivating the youth toward sustainable living.

Presently the major threat to mitigating climate change and to environmental sustainability is right-wing political extremism in the USA, exemplified in the election of Donald Trump, a “climate-change denier.” While in office, he had pulled America, the world’s largest emitter of CO₂, out of the Paris Climate Accord, weakened EIA

regulations, and clawed back many other sustainability initiatives in the USA. While the Biden administration has reversed many of those “claw backs,” the threat of future right wing White House administrations is a possibility. The New York Times (Popovich et al. 2019) reports that Trump has “rolled back” 95 sustainability regulations. The Associated Press points out that Trump was elected because of the support of eight out of ten American “evangelicals,” the largest faith group in America (Schor 2020). Evangelical eschatology general believes that the world will end soon through the appearance of the Anti-Christ and the apocalypse, but they will be soon “raptured” away before the “great tribulation” and the subsequent destruction of the earth (LaHaye 2001; Wikipedia 2020). Hence any attempt to save the earth and make it more sustainable becomes moot.

Notwithstanding the fluctuating political will in the USA for environmentally sustainable policy making, my students want to know what they can do in their own lives to reduce their ecological footprint, regardless of government and corporate inaction, in other words, the “power of one.” Here I suggest some simple quality of life actions:

- Reduce your consumption of unnecessary goods and services – reject rampant consumerism, materialism, and fashionistas.
- Be wary of product eco-labeling and greenwashing which are largely unregulated (Hostovsky 2009). There are no laws governing the use of the term “green” and “environmentally friendly,” for example.
- Avoid overpackaged foods and products. Reduce the amount of plastic you use and purchase and find alternatives to plastics, such as wax paper for food wrapping. The Great Pacific garbage patch that is threatening our marine ecosystems is evidence of the rampant increase in plastic waste worldwide.
- Purchase used clothing and goods at thrift stores.
- Reuse products rather than buying disposable ones. For example, buy beverages in deposit-return, refillable bottles.
- Recycle what you cannot reduce or reuse.
- Do not cook more than you need. Compost your food waste.

- Live close to work or school.
- Live in a smaller, energy-efficient home. Practice water and electricity conservation in that home. Buy your electricity from a green energy supplier, if available. Install solar panels for your home.
- Walk, bike, and take transit as much as possible. Drive a lot less. When you drive, carpool and combine trips. If you need a car, own a small, fuel-efficient, durable vehicle. Consider a scooter or motorcycle. Better yet, join a car-sharing service if available in your community. Do not buy electric cars if your local electricity is generated by high carbon coal or oil.
- Telecommute – work at home if and when you can.
- Fly less, and take the train or bus for shorter trips which has a much smaller carbon footprint than regional flights.
- Buy locally or regionally grown food (i.e., the 100-mile diet) and grow your own at home or a community garden, organically, if you can. Eat a lot less in restaurants. Do not eat over-packaged factory processed food or fast food from multinational fast-food outlets. This food is neither healthy nor sustainable.
- Become a vegan, or vegetarian, or reduce your consumption of meat.
- Buy locally or regionally produced manufactured goods. If you cannot find a local product, buy goods manufactured in countries that have strict environmental regulations and do not exploit women and child labor. In 2013, over 1000 women died when a Bangladeshi clothing factory collapsed. Be willing to pay more for local or Western made products. Donate to charities that improve the lives of women and children, who disproportionately bear a greater burden than do men in the Global South.
- Do not drink bottled water unless necessary due to poor water supply – use safe tap water in western counties. Carry a durable refillable container manufactured in an environmentally responsible country.
- Avoid disposable diapers, buy cloth diapers, and/or use a local diaper service.
- Consider taking vacations locally.
- Donate generously to reputable charities and relief agencies that help the poor and build capacity in the developing world.

- Donate your time to local NGOs that help women and BIPOC communities who bear a greater burden of environmental degradation. Minority communities often live in or adjacent to toxic “hot spots” due to systemic environmental racism.
- Have less or no children and/or adopt a child who needs a loving parent.

References

- Carson, R. (1962). *Silent Spring*. New York: Crest Books.
- Hardin, G. (1968). The tragedy of the commons. *Science*, 162, 1243–1248.
- Hostovsky, C. (2009). Greenwashing. In P. Robbins, J. R. Mansvelt, & J. Geoffrey Golson (Eds.), *Green society: Toward a sustainable future – Green Consumerism: An A-to-Z guide*. SAGE.
- LaHaye, T. F. (2001). *Charting the end times: A visual guide to understanding bible prophecy*. Harvest House Publishers.
- Leopold, A. (1949). *A Sand County Almanac and sketches here and there*. New York: Oxford University Press.
- McHarg, I. L. (1969). *Design with nature*. John Wiley & Sons.
- Our Common Future, Report of the World Commission on Environment and Development, World Commission on Environment and Development. (1987). Published as Annex to General Assembly document A/42/427.
- Popovich, N., Albeck-Ripka, L., & Pierre-Louis, K. (2019, December 21). 95 rules being rolled-Back under trump. *The New York Times*.
- Schor, E. (2020, January 13). *Donald Trump Trump's faithful: 2020 tests his ties to white evangelicals*. The Associated Press. As viewed <https://apnews.com/2004552db629d9e720761221be3e1209>
- United Nations. (2020). *Sustainable development goals: Climate action*. As viewed at <https://www.un.org/sustainabledevelopment/climate-action/>
- Wikipedia. (2020). The great tribulation. As viewed https://en.wikipedia.org/wiki/Great_Tribulation

Environmentally Friendly Behavior

► Proenvironmental Behavior

Environmentally Friendly Purchases

► Life Satisfaction and Sustainable Consumption

Environmentally Responsible Behavior

► [Proenvironmental Behavior](#)

Environment-Preserving Behavior

► [Proenvironmental Behavior](#)

Environment-Protective Behavior

► [Proenvironmental Behavior](#)

EORTC QLQ-30 Modules

Amélie Anota^{1,2} and Mirjam A. G. Sprangers³

¹Methodology and Quality of Life in Oncology Unit (INSERM UMR1098), University Hospital of Besançon, Besançon, France

²French National Platform Quality of Life and Cancer, Besançon, France

³Department of Medical Psychology, Amsterdam Public Health Research Institute, Location Academic Medical Center, Amsterdam University Medical Centers, Amsterdam, The Netherlands

Synonyms

[European Organisation for Research and Treatment of Cancer \(EORTC\) modules](#)

This entry was authored by Franck Bonnetain (deceased) and Mirjam A. G. Sprangers in the previous edition of this encyclopedia

Definition

The European Organisation for Research and Treatment of Cancer (EORTC) modules are questionnaires designed to supplement the core questionnaire, the ► [EORTC QLQ-C30](#) (Aaronson et al. 1993). The modules assess in more detail topics of relevance to specific cancer patient subgroups. For example, they assess ► [health](#)-related quality of life aspects specific to type of cancer, treatment modality, or ► [quality of life](#) dimensions that are or not sufficiently covered by the QLQ-C30. The modules, like the core questionnaire, are designed for use in cancer clinical trials. The combination of the QLQ-C30 and the modules allows for generalizability (via the core instrument) combined with additional specificity (via the module) (Sprangers et al. 1993, 1998).

Description

Modules may include symptoms related to a specific tumor site (e.g., urinary symptoms in prostate cancer), side effects associated with a given treatment (e.g., chemotherapy-induced neuropathy, symptoms of targeted therapies, such as tyrosine kinase inhibitors), and/or additional quality of life domains affected by the disease or treatment (e.g., ► [sexuality](#), ► [body image](#), and fear of disease recurrence). Modules may be additionally targeted at quality of life issues affecting particular tumor types (e.g., primary site, metastatic site), aspects of care (e.g., information), or patients' psychological needs or experiences (e.g., ► [spirituality](#)). Modules have also been developed for defined patient groups (e.g., elderly, adolescents, and young adults) and for generic cancer symptoms or treatment side effects (e.g., ► [fatigue](#), neurotoxicity).

Modules are developed according to formal guidelines (Johnson et al. 2011) and translation procedures (Kulis et al. 2017a, b) to ensure uniformly high quality across the modules. Modules adopt the same format (e.g., four-point response categories) and scoring procedure (e.g., transformation to a 0–100 scale) as the EORTC QLQ-C30.

Modules that have been internationally validated include those for brain cancer (Taphoorn et al. 2010), ► **breast cancer** (Sprangers et al. 1996), cervical cancer (Greimel et al. 2006), ► **colorectal cancer** (Whistance et al. 2009), colorectal liver metastases (Blazeby et al. 2009), esophageal cancer (Blazeby et al. 2003), esophagogastric cancer (Lagergren et al. 2007), endometrial cancer (Greimel et al. 2010), gastric cancer (Blazeby et al. 2004), head and neck cancer (Bjordal et al. 1999), hepatocellular carcinoma (Chie et al. 2012), lung cancer (Bergman et al. 1994), multiple myeloma (Cocks et al. 2007), ovarian cancer (Greimel et al. 2003), prostate cancer (van Andel et al. 2008), and testicular cancer (Sztankay et al. 2018). Additionally, an internationally validated module addressing information is also available (Arraras et al. 2010).

Since treatments evolve continuously, modules need to be regularly updated to capture treatment side effects. For example, updates of modules for lung cancer (Koller et al. 2017), head and neck cancer (Singer et al. 2015), and breast cancer (Bjelic-Radisic et al. 2018) are currently being validated. Over 60 modules are currently available or in development.

Modules are meant to be completed in conjunction with the QLQ-C30. However, standalone questionnaires have also been developed which include those on satisfaction with cancer care (Brédart et al. 2005), communication (Arraras et al. 2017), spiritual well-being (Vivat et al. 2017), and sexual health (Oberguggenberger et al. 2018).

The modules in conjunction with the EORTC QLQ-C30 may not capture all relevant side effects of the newly and rapidly developing targeted cancer treatments that induce a wide range of side effects. The EORTC Quality of Life Group therefore advocates a flexible approach to quality of life assessment. To that end, the EORTC Item Library has been developed (Kulis et al. 2017a, b). This item library contains all validated questionnaire items and their translations. The item library can be used first to help researchers during the development of new modules, and second to create a customized selection of items, so-called “EORTC item lists.” The Item Library can be used

by both users within and outside the EORTC Quality of Life Group after registration (<https://www.eortc.be/itemlibrary>).

Discussion

Development of new EORTC modules as well as refinement of existing modules is ongoing. Existing and internationally validated modules are regularly updated. The modules have been translated and validated into over 60 languages. Translation is also an ongoing process. All EORTC modules are copyrighted instruments and free of charge to all academic users. An updated list about the available modules and their translations as well as about modules in development can be obtained via <https://qol.eortc.org/questionnaires/>.

All module items and their translations are stored in the central Item Library. This library can be used to devise new EORTC item lists. The combination of the static QLQ-C30 and its modules with the more flexible item lists is currently the EORTC Quality of Life Group’s recommended strategy for quality of life assessment.

References

- Aaronson, N. K., Ahmedzai, S., Bergman, B., Bullinger, M., Cull, A., Duez, N. J., et al. (1993). The European organisation for research and treatment of cancer QLQ-C30: A quality-of-life instrument for use in international clinical trials in oncology. *Journal of the National Cancer Institute*, 85, 365–376.
- Arraras, J. I., Greimel, E., Sezer, O., Chie, W. C., Bergenmar, M., & Costantini, A. (2010). An international validation study of the EORTC QLQ-INFO25 questionnaire: An instrument to assess the information given to cancer patients. *European Journal of Cancer*, 46(15), 2726–2738.
- Arraras, J. I., Wintner, L. M., Sztankay, M., Tomaszewski, K. A., Hofmeister, D., Costantini, A. et al. Conducted on behalf of the EORTC Quality of Life Group. (2017). EORTC QLQ-COMU26: A questionnaire for the assessment of communication between patients and professionals. Phase III of the module development in ten countries. *Supportive Care in Cancer*, 25(5), 1485–1494.

- Bergman, B., Aaronson, N. K., Ahmedzai, S., Kaasa, S., & Sullivan, M. (1994). The EORTC QLQ-LC13: A modular supplement to the EORTC core quality of life questionnaire (QLQ-C30) for use in lung cancer clinical trials. EORTC study group on quality of life. *European Journal of Cancer*, 30(5), 635–642.
- Bjelic-Radisic, V., Bottomley, A., Cardoso, F., Cameron, D., Brain, E., Kuljanic, K., et al. (2018). An international update of the EORTC questionnaire for assessing quality of life in breast cancer patients (EORTC QLQ-BC23)- EORTC QLQ-BR45. *Annals of Oncology*, 29(Suppl 8), 58–86.
- Bjordal, K., Hammerlid, E., Ahlner-Elmqvist, M., de Graeff, A., Boysen, M., Evensen, J. F., et al. for the EORTC Quality of Life Group. Quality of life in head and neck cancer patients. (1999). Validation of the European organization for research and treatment of cancer quality of life questionnaire-H&N35. *Journal of Clinical Oncology*, 17(3), 1008–1019.
- Blazeby, J. M., Conroy, T., Hammerlid, E., Fayers, P., Sezer, O., Koller, M., et al. (2003). Clinical and psychometric validation of an EORTC questionnaire module, the EORTC QLQ-OES18, to assess quality of life in patients with oesophageal cancer. *European Journal of Cancer*, 39(10), 1384–1394.
- Blazeby, J. M., Conroy, T., Bottomley, A., Vickery, C., Arraras, J., Sezer, O., et al. on behalf of the EORTC Gastrointestinal and Quality of Life Group. (2004). Clinical and psychometric validation of questionnaire module, the EORTC QLQ-STO22, to assess quality of life in patients with gastric cancer. *European Journal of Cancer*, 40(15), 2260–2268.
- Blazeby, J. M., Fayers, P., Conroy, T., Sezer, O., Ramage, J., Rees, M., et al. (2009). Validation of the EORTC QLQ-LCM21 questionnaire for assessment of patient-reported outcomes during treatment of colorectal liver metastases. *British Journal of Surgery*, 96(3), 291–298.
- Brédart, A., Bottomley, A., Blazeby, J. M., Conroy, T., Coens, C., D'Haese, S., et al. European Organisation for Research and Treatment of Cancer Quality of Life Group and Quality of Life Unit. (2005). An international prospective study of the EORTC cancer in-patient satisfaction with care measure (EORTC IN-PATSAT32). *European Journal of Cancer*, 41(14), 2120–20131.
- Chie, W. C., Blazeby, J. M., Hsiao, C. F., Chiu, H. C., Poon, R. T., Mikoshiba, N., et al. (2012). EORTC Quality of Life Group. International cross-cultural field validation of an European Organization for Research and Treatment of Cancer questionnaire module for patients with primary liver cancer, the European Organization for Research and Treatment of Cancer quality-of-life questionnaire HCC18. *Hepatology*, 55(4), 1122–1129.
- Cocks, K., Cohen, D., Wisløff, F., Sezer, O., Lee, S., Hippe, E., et al. (2007). EORTC Quality of Life Group. An international field study of the reliability and validity of a disease-specific questionnaire module (the QLQ-MY20) in assessing the quality of life of patients with multiple myeloma. *European Journal of Cancer*, 43(11), 1670–1678.
- Greimel, E., Bottomley, A., Cull, A., Arraras, J., Chauvenet, L., Holzner, B., et al. on behalf of the EORTC Quality of Life Group and the Quality of Life Unit. (2003). An international field study of the reliability and validity of a disease-specific questionnaire module (the QLQ-OV28) in assessing the quality of life of patients with ovarian cancer. *European Journal of Cancer*, 39(10), 1402–1408.
- Greimel, E., Kuljanic, V., Waldenstrom, A. C., Duric, V. M., Jensen, P. T., Singer, S., et al. on behalf of the EORTC Quality of Life Group. (2006). The European Organization for Research and Treatment of Cancer (EORTC) Quality-of-Life questionnaire cervical cancer module – EORTC QLQ-CX24. *Cancer*, 107(8), 1812–1822.
- Greimel, E., Nordin, A., Lanceley, A., Creutzberg, C. L., van de Poll-Franse, L. V., Radisic, V. B., et al. (2010). Psychometric validation of the European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire-Endometrial Cancer Module (EORTC QLQ-EN24). *European Journal of Cancer*, 47(2), 183–190.
- Johnson, C., Aaronson, N., Blazeby, J. M., Bottomley, A., Fayers, P., Koller, M., et al. (2011). *EORTC quality of life group guidelines for developing questionnaire modules* (4th ed.). Brussels: EORTC. ISBN 978-2-930064-413
- Koller, M., Hjermstad, M. J., Tomaszewski, K. A., Tomaszewska, I. M., Hornslien, K., Harle, A., et al. (2017). An international study to revise the EORTC questionnaire for assessing quality of life in lung cancer patients. *Annals of Oncology*, 28(11), 2874–2881.
- Kulis, D., Bottomley, A., Velikova, G., Greimel, E., & Koller, M. (2017a). *EORTC quality of life group translation procedure* (4th ed.). Brussels: EORTC. isbn:978-2-930064-44-4.
- Kulis, D., Bottomley, A., Whittaker, C., van de Poll-Franse, L. V., Darlington, A., Holzner, B., et al. (2017b). The use of the EORTC item library to supplement EORTC quality of life instruments. *Value in Health*, 20(9), A775.
- Lagergren, P., Fayers, P., Conroy, T., Stein, H. J., Sezer, O., Hardwick, R., Hammerlid, E., et al. (2007). European Organisation for Research Treatment of Cancer Gastrointestinal and Quality of Life Groups. Clinical and psychometric validation of a questionnaire module, the EORTC QLQ-OG25, to assess health-related quality of life in patients with cancer of the oesophagus, the oesophago-gastric junction and the stomach. *European Journal of Cancer*, 43(14), 2066–2073.
- Oberguggenberger, A. S., Nagele, E., Inwald, E. C., Tomaszewski, K., Lanceley, A., Nordin, A., et al. (2018). EORTC Quality of Life Group. Phase 1–3 of the cross-cultural development of an EORTC questionnaire for the assessment of sexual health in cancer patients: The EORTC SHQ-22. *Cancer Medicine*, 7(3), 635–645.

- Singer, S., Araújo, C., Arraras, J. I., Baumann, I., Boehm, A., Brokstad Herlofson, B., et al. (2015). Measuring quality of life in patients with head and neck cancer: Update of the EORTC QLQ-H&N Module, Phase III. *Head and Neck*, 37(9), 1358–1367.
- Sprangers, M. A. G., Cull, A., Bjordal, K., Groenvold, M., Aaronson, K., & EORTC Study Group on Quality of Life. (1993). The European organization for research and treatment of cancer approach to quality of life assessment: Guidelines for developing questionnaire modules. *Quality of Life Research*, 2, 287–295.
- Sprangers, M. A. G., Groenvold, M., Arraras, J. I., Franklin, J., te Velde, A., Muller, M., et al. (1996). The EORTC breast cancer specific quality of life questionnaire module (QLQ-BR23): First results from a three-country field study. *Journal of Clinical Oncology*, 14, 2756–2768.
- Sprangers, M. A. G., Cull, A., Groenvold, M., Bjordal, K., Blazeby, J., Aaronson, N. K., et al. (1998). The European organization for research and treatment of cancer approach to developing questionnaire modules: An update and overview. *Quality of Life Research*, 7, 291–300.
- Sztankay, M., Aaronson, N. K., Arraras, J. I., Basso, U., Bumbasirevic, U., Efficace, F., et al. on behalf of the European Organisation for Research and Treatment of Cancer Quality of Life Group (EORTC QLG). (2018). International phase IV validation study of an EORTC quality of life questionnaire for testicular cancer patients: The EORTC QLQ-TC26. *BMC Cancer*, 18(1), 1104.
- Taphoorn, M. J., Claassens, L., Aaronson, N. K., Coens, C., Mauer, M., Osoba, D., et al. on behalf of the EORTC Quality of Life Group, and Brain Cancer, NCIC and Radiotherapy Groups. (2010). An international validation study of the EORTC brain cancer module (EORTC QLQ-BN20) for assessing health-related quality of life and symptoms in brain cancer patients. *European Journal of Cancer*, 46(6), 1033–1040.
- van Andel, G., Bottomley, A., Fosså, S. D., Efficace, F., Coens, C., Guerif, S., et al. (2008). An international field study of the EORTC QLQ-PR25: a questionnaire for assessing the health-related quality of life of patients with prostate cancer. *European Journal of Cancer*, 44(16), 2418–2424.
- Vivat, B., Young, T. E., Winstanley, J., Arraras, J. I., Black, K., Boyle, F., et al. EORTC Quality of Life Group. (2017). The international phase 4 validation study of the EORTC QLQ-SWB32: A stand-alone measure of spiritual well-being for people receiving palliative care for cancer. *European Journal of Cancer Care (England)*, 26(6).
- Whistance, R. N., Conroy, T., Chie, W., Costantini, A., Sezer, O., Koller, M., et al. (2009). Clinical and psychometric validation of the EORTC QLQ-CR29 questionnaire module to assess health-related quality of life in patients with colorectal cancer. *European Journal of Cancer*, 45, 3017–3026.

EORTC QLQ-C30

Amélie Anota^{1,2} and Mirjam A. G. Sprangers³

¹Methodology and Quality of Life in Oncology Unit (INSERM UMR1098), University Hospital of Besançon, Besançon, France

²French National Platform Quality of Life and Cancer, Besançon, France

³Department of Medical Psychology, Amsterdam Public Health Research Institute, Location Academic Medical Center, Amsterdam University Medical Centers, Amsterdam, The Netherlands

Synonyms

[European Organization for Research and Treatment of Cancer core quality of life questionnaire](#)

Definition

The European Organization for Research and Treatment of Cancer core quality of life questionnaire, the EORTC QLQ-C30, is a cancer-specific quality of life instrument applicable to a broad range of cancer patients. The EORTC QLQ-C30 is designed to assess ► [health](#)-related quality of life of cancer patients participating in international ► [oncology](#) clinical trials. The instrument has been developed according to a so-called modular approach, where a generic or “core” instrument is combined with a specific questionnaire, so-called modules, assessing in more detail topics of relevance to specific cancer patient subgroups. The combination of a core instrument and a module allows for generalizability (via the core instrument) combined with additional specificity (via the module) (Aaronson et al. 1996; Bottomley and Aaronson 2007; Velikova et al. 2012).

This entry was authored by Mirjam A. G. Sprangers and Franck Bonnetain (deceased) in the previous edition of this encyclopedia.

Description

The EORTC QLQ-C30 assesses health-related quality of life and symptoms and was designed to be (1) cancer specific, (2) multidimensional in structure, (3) appropriate for self-administration (i.e., brief and easy to complete by the patient), and (4) applicable across a range of cultural settings (Aaronson et al. 1993). The EORTC QLQ-C30 consists of 30 items that are combined to form five functional scales (physical, role, cognitive, emotional, and social), three symptom scales (► [fatigue](#), ► [pain](#), and nausea and vomiting), a global health status/quality of life scale, and a number of single items assessing additional symptoms commonly reported by cancer patients (dyspnea, loss of appetite, insomnia, constipation, and diarrhea) and perceived financial impact of the disease. The scales comprise between two and five items each. All items have four response categories (not at all, a little, quite a bit, and very much), except for the two items of the global health status/quality of life scale that use a seven-point scale (ranging from very poor to excellent). The raw scores are linearly transformed to scores that range from 0 to 100, with a higher score representing a higher (“better”) level of functioning or a higher (“worse”) level of symptoms. Since its general release in 1993, there have been four versions of the EORTC QLQ-C30. The QLQ-C30 Version 3.0 is the most recent version and is used for all new studies.

Additionally, the QLQ-C15-PAL is available, which is an abbreviated 15-item version of the QLQ-C30 developed for use in patients receiving palliative care (Groenvold et al. 2006). The QLQ-C15-PAL includes those elements of the QLQ-C30 that have been found to be most relevant and important for palliative care, i.e., physical and emotional functioning, pain, fatigue, nausea/vomiting, appetite, dyspnea, constipation, sleeping difficulties, and overall ► [quality of life](#).

The QLQ-C30 and the QLQ-C15-PAL can be considered as static questionnaires since they contain a fixed number of items. A more flexible approach is to use Computer Adaptive Testing (CAT) instead of static questionnaires. Hence, a CAT version of the QLQ-C30 has been developed

presenting only the most informative items to each patient, based on their response to preceding items (Petersen et al. 2018). CAT allows flexibility while maintaining measurement precision. Even though patients may complete different sets of items, a score can be computed on a similar metric enabling direct comparison among patients. An item bank was created for all QLQ-C30 domains except for the global health status/quality of life scale. For example, the item bank for the physical functioning domain contains 31 items. CAT-based “*short-forms*” can also be used, which are subsets of items derived from the CAT item bank (e.g., a 9-item physical functioning short form).

The development of CAT was enabled by a separate albeit parallel development of software that allows electronic administration of the EORTC QLQ-C30. In particular, the Computer-based Health Evaluation System (CHES) has been developed in collaboration with the EORTC (Holzner et al. 2012). The use of CAT as well as of the electronic administration is particularly useful for individual and routine assessment of quality of life in daily clinical practice.

A suite of key instruction manuals supporting the application of the EORTC measurement system in research and clinical practice is available. Manuals are documented on the scoring algorithm (Fayers et al. 2001), reference values according to cancer site and stage and other clinical parameters (Scott et al. 2008), guidelines for questionnaire module development (Johnson et al. 2011), translation (Kulis et al. 2017), guidelines on how to conduct clinical trial-based HRQOL investigations (Young et al. 1999), guidelines on how to use EORTC measures in clinical practice (Wintner et al. 2016), and guidelines on how to migrate EORTC questionnaires onto electronic platforms (Kulis et al. 2018). These documents are regularly updated and can be downloaded from https://www.eortc.org/research_field/quality-of-life/

Discussion

The EORTC QLQ-C30 is one of the most widely used instruments designed to assess the quality of

life of cancer patients (Kyte et al. 2019). To date, the EORTC QLQ-C30 has been translated into and linguistically validated in more than 110 languages, with more than 20 additional local adaptations. The questionnaire is available in all major languages across the world. Further translations are continually in progress. The QLQ-C30 can be supplemented by disease-specific modules. Over 60 modules are available or in development. The QLQ-C30 and its modules can also be administered electronically. The QLQ-C30 is a copyrighted instrument and is distributed from the EORTC Quality of Life Department.

To allow a more flexible assessment of health-related quality of life, a CAT version of the EORTC QLQ-C30 is available (Petersen et al. 2018). The EORTC Quality of Life Group supports the combination of static and flexible approaches to quality of life assessment. For example, the full QLQ-C30 or parts of it may be replaced by CAT or CAT-based short forms whenever needed. Academic use of EORTC instruments is free of charge. Further information can be obtained via the website: https://www.eortc.org/research_field/quality-of-life/

References

- Aaronson, N. K., Ahmedzai, S., Bergman, B., Bullinger, M., Cull, A., Duez, N. J., et al. (1993). The European Organisation for Research and Treatment of Cancer QLQ-C30: A quality-of-life instrument for use in international clinical trials in oncology. *Journal of the National Cancer Institute*, 85, 365–376.
- Aaronson, N. K., Cull, A. M., Kaasa, S., & Sprangers, M. A. G. (1996). The European Organization for Research and Treatment of Cancer EORTC modular approach to quality of life assessment in oncology: An update. In B. Spilker (Ed.), *Quality of life and pharmacoeconomics in clinical trials* (2nd ed., pp. 179–189). Philadelphia: Lippincott-Raven.
- Bottomley, A., & Aaronson, N. K. (2007). International perspective on health-related quality-of-life research in cancer clinical trials: The European Organisation for Research and Treatment of Cancer Experience. *Journal of Clinical Oncology*, 25, 5082–5086.
- Fayers, P. M., Aaronson, N. K., Bjordal, K., Groenvold, M., Curran, D., Bottomley, A., et al. (2001). *The EORTC QLQ-C30 scoring manual* (3rd ed.). Brussels: European Organisation for Research and Treatment of Cancer.
- Groenvold, M., Petersen, M. A., Aaronson, N. K., Arraras, J. I., Blazeby, J. M., Bottomley, A., et al. (2006). The development of the EORTC QLQ-C15-PAL: A shortened questionnaire for cancer patients in palliative care. *European Journal of Cancer*, 42(1), 55–64.
- Holzner, B., Giesinger, J. M., Pinggera, J., Zugl, S., Schöpf, F., Oberguggenberger, A. S., et al. (2012). The Computer-based Health Evaluation Software (CHES): A software for electronic patient-reported outcome monitoring. *BMC Medical Informatics and Decision*, 12, 126.
- Johnson, C., Aaronson, N., Blazeby, J. M., Bottomley, A., Fayers, P., Koller, M., et al. (2011). *Guidelines for developing questionnaire modules* (4th ed.). Brussels: European Organisation for Research and Treatment of Cancer.
- Kulis, D., Bottomley, A., Velikova, G., Greimel, E., & Koller, M. (2017). *EORTC quality of life group translation procedure* (4th ed.). Brussels: European Organisation for Research and Treatment of Cancer.
- Kulis, D., Holzner, B., Koller, M., Ruyskart, P., Itani, A., Williams, P. et al. on behalf of the EORTC Quality of Life Group. (2018). *Guidance on the implementation and management of EORTC quality of life instruments in electronic applications*. Brussels: European Organisation for Research and Treatment of Cancer
- Kyte, D., Retzer, A., Ahmed, K., Keeley, T., Armes, J., Brown, J. M., et al. (2019). Systematic evaluation of Patient-Reported Outcome protocol content and reporting in cancer trials. *Journal of National Cancer Institute*. <https://doi.org/10.1093/jnci/djz038>.
- Petersen, M. A., Aaronson, N. K., Arraras, J. I., Chie, W. C., Conroy, T., Costantini, A., et al. (2018). The EORTC CAT Core-The computer adaptive version of the EORTC QLQ-C30 questionnaire. *European Journal of Cancer*, 100, 8–16.
- Scott, N. W., Fayers, P. M., Aaronson, N. K., Bottomley, A., de Graeff, A., Groenvold, M., Gundy, C., Koller, M., Petersen, M., & Sprangers, M. A. G., EORTC Quality of Life Group. (2008). *Reference values manual* (pp. 419). Brussels: European Organisation for Research and Treatment of Cancer. ISBN 2-930064-11-0.
- Velikova, G., Coens, C., Efficace, F., Greimel, E., Groenvold, M., Johnson, C., et al. (2012). Health-related quality of life in EORTC clinical trials – 30 years of progress from methodological developments to making a real impact on oncology practice. *European Journal of Cancer*, 10(1), 141–149.
- Wintner, L. M., Sztankay, M., Giesinger, J. M., Aaronson, N. K., Bottomley, A., Velikova, G., et al. (2016). *Manual for the use of EORTC measures in daily clinical practice*. Brussels: European Organisation for Research and Treatment of Cancer.
- Young, T., de Haes, H., Curran, D., Fayers, P., Brandberg, Y., Vanvoorden, V., et al. (1999). *Guidelines for assessing quality of life in EORTC clinical trials*. Brussels: European Organisation for Research and Treatment of Cancer.

ePDQ

► [Parkinson's Disease Questionnaire \(PDQ-39, PDQ-8\)](#)

EPI (Eysenck Personality Inventory) Neuroticism Scale

Bruce Headey
Melbourne Institute of Applied Economic and Social Research, University of Melbourne,
Melbourne, VIC, Australia

Synonyms

[Emotional instability](#)

Definition

Neuroticism means emotional instability. It is considered by many psychologists to be one of the most fundamental and stable personality traits.

Description

Hans Eysenck, the British psychologist, devoted much of his working life to the measurement of personality traits. He developed the Eysenck Personality Inventory (EPI) which measured extroversion (sociability and impulsiveness), neuroticism (emotional instability), and psychoticism (physiologically based personality disorder) – the three traits which he considered fundamental to human personality (Eysenck and Eysenck 1964). The EPI also contained a lie scale to pick out subjects who appeared to respond in a mendacious way, or whose answers exhibited a high degree of *social desirability bias* (*acquiescence bias*). Eysenck did not necessarily

reject the existence of other personality traits, but tended to regard them as more superficial manifestations of the three fundamental traits. For example, he regarded optimism as a manifestation of extroversion and irritability as a manifestation of neuroticism. Most other classifications of personality include extroversion and neuroticism, but then add additional traits. For example, the widely used NEO-AC (*the “Big Five” personality domains*) adds openness, agreeableness, and conscientiousness to Eysenck's list (Costa and McCrae 1991). It may also be mentioned that the Big Five measure of extroversion focusses on sociability, enthusiasm, and assertiveness; the link that Eysenck saw to impulsiveness has been dropped.

Eysenck's approach, like the work of other personality theorists, has been criticized by psychologists who deny the existence of stable personality traits and regard all behavior as situational (i.e., determined by the rewards and sanctions which apply in specific situations). However, reversing an earlier trend, it did appear that by the 1990s, there was a growing consensus among psychologists that personality traits are substantially hereditary (Bouchard and McGue 2003) and that interpersonal differences are fairly stable in adulthood (Costa and McCrae 1991), although there is some evidence of maturation effects (e.g., neuroticism diminishes with age). The main traits can help to explain a wide range of behaviors, including job performance (Barrick and Mount 1991), and also help to account for clinical disorders (Saulsman and Page 2004).

The EPI and the Big Five have been quite widely used in research on happiness and subjective well-being (SWB). Neuroticism is strongly negatively correlated with measures of SWB, while extroversion is just moderately positively correlated. The *set-point theory* of happiness – the claim that adult happiness is stable – is partly based on the known interpersonal stability of these personality traits. It has been shown that extroverts respond more positively to favorable life events than introverts, and that

relatively neurotic individuals react more negatively to adverse events than emotionally stable people (Larsen and Ketelaar 1991; Lucas and Baird 2004). On this basis, some researchers have suggested that extroverts have better prospects than others of becoming happier over time, while neurotics are at greater risk of becoming less happy (Scollon and Diener 2006; Headey 2008).

Cross-References

- [Set-Point Theory](#)
- [Social Desirability Bias](#)

References

- Barrick, M. R., & Mount, M. K. (1991). The big 5 personality dimensions and job performance: A meta-analysis. *Personnel Psychology*, 44, 1–26.
- Bouchard, T. J., & McGue, M. (2003). Genetic and environmental influences on human psychological differences. *Journal of Neurobiology*, 54, 4–45.
- Costa, P. T., & McCrae, R. R. (1991). *The NEO-AC The NEO PI-R*. Odessa: PAR.
- Eysenck, H. J., & Eysenck, S. B. G. (1964). *Manual of the Eysenck personality inventory*. London: London University Press.
- Headey, B. W. (2008). Subjective well-being: Revisions to dynamic equilibrium theory using national panel data and panel regression methods. *Social Indicators Research*, 79, 369–403.
- Larsen, R. J., & Ketelaar, T. (1991). Personality and susceptibility to positive and negative emotional states. *Journal of Personality and Social Psychology*, 61, 132–140.
- Lucas, R. E., & Baird, B. M. (2004). Extraversion and emotional reactivity. *Journal of Personality and Social Psychology*, 86, 473–485.
- Saulsman, L. M., & Page, A. C. (2004). The five-factor model and personality disorder empirical literature: A meta-analytic review. *Clinical Psychology Review*, 23, 1055–1085.
- Scollon, C. N., & Diener, E. (2006). Love, work and changes in extraversion and neuroticism over time. *Journal of Personality and Social Psychology*, 91, 1152–1165.

EPIC

- [Expanded Prostate Cancer Index Composite \(EPIC\)](#)

Epicurus

Alex C. Michalos
University of Northern British Columbia,
Prince George, BC, Canada
Residence, Brandon, MB, Canada

Birth, Education, Work History, and Main Contributions

According to Diogenes Laertius (2000, p. 529), Epicurus (c.341–271 BCE) was born on the island of Samos, the son of Athenian citizens, and moved to Athens around 306 BCE when he was 18. If the dates of his birth and death are accurate, he was born about 7 years after Plato's death and 19 years before Aristotle's death. The same source reported that "his bodily health was pitiful" (Diogenes Laertius, p. 525) and provided a quotation from Epicurus' letter to Idomeneus saying that he had "continual sufferings from strangury and dysentery" (Diogenes Laertius, p. 549).

DeWitt (1967, p. 3) described him as

...the most revered and the most reviled of all founders of thought in the Graeco-Roman world...The man himself was revered as an ethical father, a savior, and a god. Men wore his image on finger-rings; they displayed painted portraits of him in their living rooms; the more affluent honored him with likenesses in marble. His handbooks of doctrine were carried about like breviaries; his sayings were esteemed as if oracles and committed to memory as if Articles of Faith. His published letters were cherished as if epistles of an apostle...On the twentieth day of every month his followers assembled to perform solemn rites in honor of his memory, a sort of sacrament.

He and his ideas were "the special targets of abuse" by Platonists, Stoics, Christians, and

Jews (DeWitt 1967, p. 3). Critics claimed that Epicurus was a sophist since he aided his itinerant schoolteacher father for a fee, that he plagiarized his atomic theory from ► [Democritus](#) (c.460–c.370 BCE), that he was an adulterer who also had frequent relations “with many courtesans,” “vomited twice a day from overindulgence,” was “a preacher of effeminacy,” a sycophant, atheist, name-caller, drug dealer, and critic of other people’s work without having any original ideas of his own (Diogenes Laertius 2000, pp. 531–537). Still, at the end of his summary of the views of Epicurus’s critics, Diogenes Laertius said that all “these people are stark mad” (p. 537).

As evidence against Epicurus’ critics, Diogenes Laertius (2000, pp. 537–541) provided plenty of direct quotations from the philosopher contradicting charges of his critics and claimed that the

philosopher has abundance of witnesses to attest his unsurpassed goodwill to all men – his native land, which honoured him with statues in bronze; his friends,...his gratitude to his parents, his generosity to his brothers, his gentleness to his servants...and in general, his benevolence to all mankind...Friends...came to him from all parts and lived with him in his garden...a very simple and frugal life...In his correspondence he himself mentions that he was content with plain bread and water...and a little pot of cheese, that, when I like, I may fare sumptuously.

DeWitt (1967, p. 6) reported that the total extant body of Epicurus’s works consists of “a booklet of 69 pages,” although Diogenes Laertius (2000, p. 555) claimed that the philosopher “eclipsed all before him in the number of his writings...[which amounted] to about 300 rolls, and contain not a single citation from other authors.” While none of his writings is complete, Book X of Diogenes Laertius’s text contains substantial parts of four of them. Of these four, three are written to his disciples. The Letter to Herodotus is a summary of Epicurus’s physics and/or metaphysics, the Letter to Pythocles deals with astronomy and meteorology, and the Letter to Menoeceus deals with ethics. The fourth treatise contains his 40 “Principal” or “Authorized Doctrines,” of which “almost all are contradictions of ► [Plato](#)” (DeWitt 1967, p. 48). These four works are conveniently collected in a single volume edited by

Inwood et al. (1994), which also includes some of the “so-called ‘Vatican Sayings’...[which] is a mixture of sayings from Epicurus and other Epicureans” discovered in the Vatican Library, and Testimonia of other scholars, some of which were hostile to his philosophy, like Cicero (106–43 BCE) and Plutarch (46–120 CE).

Epicurus’s school in Athens was called “the Garden” and was not very different from Plato’s Academy and Aristotle’s Lyceum. They contained the residences of the founders and disciples, a library, and some lecture rooms. The emphasis of the curricula at the three schools was different. The island of Samos was politically and culturally very much an Ionian community, making it scientifically and technologically progressive. Besides Epicurus, among the famous names associated with Ionia were Anaximander, Thales, Anaxagoras, ► [Pythagoras](#), ► [Heraclitus](#), Hippocrates, and Asclepius.

Epicurus believed that the chief end or aim of human beings was ► [peace of mind](#) or tranquility (ATARAXIA) and a healthy body (APONIA). Metaphorically speaking, he compared the “turmoils of the soul” with “storms and squalls at sea” (DeWitt 1967, p. 226). For present purposes, what has to be emphasized is that he regarded scientific knowledge and methods as the essential vehicles for the journey to peace of mind and a healthy body. Near the end of his Letter to Herodotus, he wrote “Further, we must hold that to arrive at accurate knowledge of the cause of things of most moment is the business of natural science, and that happiness depends on this...” (Diogenes Laertius 2000, p. 607). In this sentence and many others, “► [happiness](#)” is used to translate MAKARIOS, which sometimes is closer to “blessed” in English, but is often interchangeable in Greek with ► [eudaimonia](#) (Aristotle 1999, p. 318). At the beginning of his Letter to Menoeceus, he wrote “So we must exercise ourselves in the things which bring happiness [EUDAIMONIA], since, if that be present, we have everything, and, if that be absent, all our actions are directed toward attaining it” (Diogenes Laertius 2000, p. 649).

At the beginning of his Letter to Pythocles, he wrote,

In your letter to me,...you try, not without success, to recall the considerations which make for a happy life...you will do well to take and learn...the short epitome in my letter to Herodotus...remember that, like everything else, knowledge of celestial phenomena...has no other end in view than peace of mind and firm conviction. We do not seek to wrest by force what is impossible, nor to understand all matters equally well, nor make our treatment always as clear as when we discuss human life or explain the principles of physics in general...: our one need is untroubled existence. (Diogenes Laertius 2000, pp. 613–615)

Concerning the use of the science of “celestial phenomena,” Epicurus was convinced that inattention to facts and diverse possible naturalistic explanations combined with attention to mythology and religion were jointly responsible for troubled minds. The following passages are representative of many more as he worked his way through possible naturalistic explanations of such “celestial phenomena” as the sun, moon, turnings of the sun and moon, regularity of orbits, variations in the lengths of days and nights, stars, clouds, rain, thunderbolts, winds, hail, and so on:

All things go on uninterruptedly, if all be explained by the method of plurality of causes in conformity with the facts,...But when we pick and choose among them [explanations], rejecting one equally consistent with the phenomena, we clearly fall away from the study of nature altogether and tumble into myth...Those who adopt only one explanation are in conflict with the facts and are utterly mistaken as to the way in which man can attain knowledge...always keep in mind the method of plural explanation and the several consistent assumptions and causes...[For example,] Clouds may form and gather either because the air is condensed under the pressure of winds, or because atoms which hold together and are suitable to produce this result become mutually entangled, or because currents collect from the earth and the waters; and there are several other ways in which it is not impossible for the aggregations of such bodies into clouds may be brought about. (Diogenes Laertius 2000, pp. 615–627)

The upside of his adherence to the “method of plurality of causes” was that it freed him and those who followed him from troublesome beliefs such as that natural phenomena like “solstices, eclipses, risings and settings, and the like” were the result of “the ministration or command, either now or in the future, of any being who at the same time

enjoys perfect bliss along with immortality” (Diogenes Laertius 2000, p. 607). Although he believed that “God is a living being immortal and blessed” and that “verily there are gods” (p. 649), he did not appeal to such beings to account for natural phenomena. The downside, of course, was that many contemporary and later theists regarded such views as heresy.

While he did not need an invisible God or gods to create and maintain the regularities perceived everywhere, like Democritus before him, he did need invisible “atoms and the void.” Early in his Letter to Herodotus, he affirms the standard assumption that “nothing comes into being out of what is non-existent.” Since there are clearly bodies that move, there must be space for them to move in. Some bodies are “composite,” made up of “elements” that have “weight,” “vary indefinitely in their shapes,” are “indivisible and unchangeable, and “necessarily so...[and]...the sum of things is unlimited both by reason of the multitude of the atoms and the extent of the void.” As in Democritus, both human bodies and souls are composites of different sorts of atoms and when people die, their atoms are totally dispersed.

Some atoms are “in continual motion through all eternity” moving linearly “upwards ad infinitum” or “downwards,” some moving in a vibratory fashion in composites or compounds, some swerving a bit inexplicably and others swerving as a result of human beings’ free choices (Diogenes Laertius 2000, pp. 569–593). While randomly swerving atoms might account for collisions and aggregations or combinations, it is unclear why or how they would account for free choice. In any event, freely chosen activities creating swerving atoms were posited as necessary for people to be accountable and held responsible for their own actions. There was nothing comparable to swerves in Democritus’ physics or metaphysics, which made his world thoroughly deterministic and incapable of supporting an institution of morality such that some actions would be morally praiseworthy and others morally blameworthy. Regardless of all his condemnations of mythology and “the gods worshipped by the multitude,” in the interests of ensuring that people are the free agents of their own future, he was even

more critical of a thoroughly deterministic physics. Thus, in his Letter to Menoeceus, he wrote,

Destiny, which some introduce as sovereign over all things, he [who follows Epicurus' teaching] laughs to scorn, affirming rather that some things happen of necessity, others by chance, others through our own agency. For he sees that necessity destroys responsibility and that chance or fortune is inconstant; whereas our own actions are free, and it is to them that praise and blame naturally attach. It were better, indeed, to accept the legends of the gods than to bow beneath that yoke of destiny which the natural philosophers have imposed...the misfortune of the wise is better than the prosperity of the fool. It is better, in short, that what is well judged in action should not owe its successful issue to the aid of chance. (Diogenes Laertius 2000, p. 659)

So, the rabbit of free human agency was pulled out of the apparently thoroughly deterministic hat of his own physics and metaphysics. He may have been the first to perform this trick, but he was certainly not the last. To be clear, atomic swerves were probably not the uncaused causes of free choice as Cicero claimed (Inwood et al. 1994, pp. 47–51). Rather, at least some swerves were the effects of free choice (free human volition) on atoms.

The peace of mind or tranquility that Epicurus insisted was the final aim for humans was in some ways similar to and in others different from all those who came before him. In his introductory material preceding the three letters, Diogenes Laertius (2000, p. 543) said that “in his correspondence,” Epicurus “replaces the usual greeting,” ‘I wish you joy,’ by wishes for welfare and right living, ‘May you do well’ and ‘Live well’.” This is practically the same language that ► Aristotle used, i.e., “for the many and the cultivated...suppose that living well and doing well are the same as being happy” (Aristotle 1999, p. 3). Aristotle’s emphasis on “internal goods...of mind and body” and “external goods” like “wealth and honor” is similar to views expressed by Epicurus. For example, to Menoeceus, he wrote,

We must also reflect that of desires some are natural, others are groundless; and that of the natural some are necessary as well as natural, and some natural only. And of the necessary desires some are

necessary if we are to be happy [EUDAIMONIA], some if the body is to be rid of uneasiness, some if we are even to live. He who has a clear and certain understanding of these things will direct every preference and aversion toward securing health of body and tranquility of mind, seeing that this is the sum and end of a blessed life. (Diogenes Laertius 2000, p. 653)

Between Epicurus’ letters to Pythocles and Menoeceus, Diogenes Laertius inserted a list of characteristics of “the wise man,” providing his readers with an aid “to the conduct of life, what we ought to avoid and what to choose” (p. 643). While some would be affirmed by “the many and the cultivated” Greeks of his day (and by many people today), some would be challenged and rejected:

There are three motives to injurious acts among men – hatred, envy, and contempt; and these the wise man overcomes by reason...He will be more susceptible of emotion than other men; that will be no hindrance to his wisdom...Even on the rack the wise man is happy...[he will not] punish his servants... fall in love... trouble himself about funeral rites... make fine speeches...[engage in] sexual indulgence...marry and rear a family... drive, when drunken... take part in politics... make himself a tyrant...[or commit suicide] when he has lost his sight...[He will] take a suit into court...leave written words behind him...have regard to his property and to the future...never give up a friend...pay just so much regard to his reputation as not to be looked down upon... be able to converse correctly about music and poetry, without however actually writing poems himself...will make money, but only by his wisdom...be grateful to anyone when he is corrected...found a school... give readings in public, but only by request...on occasion die for a friend. (Diogenes Laertius 2000, pp. 643–647)

Supposing that “the wise man” is better than average at “living well and doing well,” it appears that such a person would find the ► **quality of life** good if it were free of mental and physical ► **pain**, full of ► **friendship satisfaction**, and intellectually stimulating. In fact, this is the sort of life Epicurus and his disciples probably would have had in the privacy of his residence and school, “the Garden.” Contrary to Aristotle’s recommendation to actively engage life and the world in all its diversity in the pursuit of excellence, Epicurus

recommended a relatively passive and contemplative life in pursuit of a healthy body and peace of mind.

What, then, is the nature and role of ► [pleasure\(s\)](#) in the ► [good life, theories of](#) envisioned by Epicurus? When Epicurus describes the nature of pleasure, it seems to be inextricably joined to ► [virtue ethics](#). To Menoeceus, he wrote,

When we say, then, that pleasure is the end and aim, we do not mean the pleasures of the prodigal or the pleasures of sensuality, as we are understood to do by some through ignorance, prejudice, or willful misrepresentation. By pleasure we mean the absence of pain in the body and of trouble in the soul...it is sober reasoning, searching out the grounds of every choice and avoidance, and banishing those beliefs through which the greatest tumults take possession of the soul. Of all this the beginning and the greatest good is prudence [PHRONESIS]...from it spring all the other virtues, for it teaches that we cannot lead a life of pleasure which is not also a life of prudence, honour, and justice; nor lead a life of prudence, honour, and justice, which is not also a life of pleasure. For the virtues have grown into one with a pleasant life, and a pleasant life is inseparable from them. (Diogenes Laertius 2000, p. 657)

Taking these passages literally, the analogy of medicine and health is inaccurate. It would be more accurate to say that the relation between pleasure and the virtues is analogous to that between ► [health](#) and a good life. Health is clearly instrumentally valuable for a good life, but also intrinsically valuable and, hence, constitutive of a good life, as Aristotle recognized. Sen (1999, pp. 36–37) makes a similar point about ► [freedom](#).

Annas noticed that the connection Epicurus made between pleasure and virtues was also made by John Stuart Mill in Utilitarianism over 2000 years later:

Mill...fully realizes that in claiming that pleasure is the agent's summum bonum he runs into the problem of completeness. He regards it as comparatively simple to show that happiness (by which he explicitly means pleasure and the absence of pain) is desirable as an end; but he has to show something far harder, namely that happiness thus conceived is the only thing desirable as an end. In particular, he recognizes that he has to square this with the recognition that we seek the virtues for their own sake.

His solution is to expand the notion of happiness in such a way that seeking the virtues for their own sake counts as seeking happiness, since doing the former counts as part of being happy. (Annas 1993, p. 339)

At another point, Annas clearly indicates the importance of these expansions for the ► [moral theories](#) of the hedonism position:

So if, as Epicurus holds, pleasure is our complete final end, and we also need real friendships, then... We need, in our lives, real friendships, which may sometimes involve caring about others as much as about ourselves. What gives this its point in our lives is ultimately pleasure. But this does not lead to selfishness, or to viewing friendship instrumentally; for pleasure as our final end has been expanded to include the pleasure from genuine other-concern. The argument is, as the Epicureans saw, exactly the same as with the virtues; the pleasure we seek is expanded so that we achieve it precisely by having non-instrumental concern for virtuous action and the interests of others. (Annas 1993, p. 240)

This is certainly ethics without tears. If caring for others gave most people as much pleasure as caring for oneself, the average price of moral virtue for most people would probably be reduced considerably and make morally good behavior much easier to sell to most people. One may appreciate the motivation for the position, without being convinced by the expansion. Expansion of ordinary concepts in extraordinary ways often creates more problems than it solves. The expansion of the idea of good health vs a good life to the idea of “complete physical, mental, and social well-being” confounds health with the broader idea of quality of life and makes otherwise reasonable questions about the impact of health on the quality of life redundant (Michalos 2004).

Besides the problem of expanding the meaning of “pleasure” to include concern for others as well as oneself, a problem arises because Epicurus distinguished at least two kinds of pleasure static and kinetic. Peace of mind or tranquility (ATARAXIA) and the absence of physical pain (APONIA) are static pleasures in the sense that they represent ends in themselves, final ends. “Kinetic pleasure is the pleasure of getting to this latter state, static pleasure, the pleasure of

being in it" (Annas 1993, p. 336). For example, a thirsty person finds kinetic pleasure in drinking and static pleasure when thirst is thoroughly quenched; a person with physical pain finds kinetic pleasure as the pain is reduced and static pleasure when it is entirely gone.

The clear implication of Epicurus' remark that "By pleasure we mean the absence pain in the body and of trouble in the soul" is that, contrary to the views of Socrates and Plato, there is no neutral point between pleasure and pain. So far as the latter exists, the former does not, and vice versa. Since people are not always in pain, they must sometimes experience pleasure. What's more, one of Epicurus' Authorized Doctrines says that "The magnitude of pleasure reaches its limit in the removal of all pain" (Diogenes Laertius 2000, p. 665). For example, once one's hunger or thirst is satisfied with food or drink, the pain of wanting both is removed, leaving one in a state of pleasure. If the pain of wanting anything at all, mentally or physically, is removed, then one's life would be "complete and perfect." Armed with these premises, Epicurus was led to one of the most famous and intriguing philosophic arguments ever written. To Menoeceus, he wrote,

Accustom thyself to believe that death is nothing to us, for good and evil imply sentience, and death is the privation of sentience; therefore a right understanding that death is nothing to us makes the mortality of life enjoyable, not by adding to life an illimitable time, but by taking away the yearning after immortality...Whatsoever causes no annoyance when it is present, causes only a groundless pain in the expectation. Death, therefore, the most awful of evils, is nothing to us, seeing that, when we are, death is not come, and, when death is come, we are not. It is nothing, then, either to the living or to the dead, for with the living it is not and the dead exist no longer. (Diogenes Laertius 2000, p. 651)

This argument probably engages contemporary philosophers nearly as much as it has engaged all philosophers since Epicurus, e.g., see Gordon and Suits (2003). The bottom line is that once one experiences freedom from physical and mental pain, that is as good as it gets. Just as one has no interest in eating more or drinking more when one's hunger and thirst are satisfied, one should have no interest in living more because extending

the length of time one is in the state of being free of physical and mental pain will not make it more pleasurable. It can only bring more of the same. If nothing else, this is a very hardy view of death.

This is not the place to examine this notorious argument, but it is worth quoting for readers who have never seen it. For present purposes, the problem arising from the static versus kinetic distinction that merits more attention is that some people believe that Epicurus completely psychologized pleasure and, more generally, the good life by insisting that the final end was the static pleasure described as peace of mind and a healthy body. We have already seen that he claimed that "Even on the rack the wise man is happy."

To suppose that Epicurus psychologized the good life is unfair to Epicurus. After telling us over and over in many contexts that the pleasurable end we seek is peace of mind and a healthy body, it is more than paradoxical to say that he does not, after all, regard the state of his bodily health as important. If what really matters is ► [attitude measurement](#), we would have to say that he did not believe that the good life required objectively good circumstances plus an appropriate attitude toward them. Only attitude mattered to him. All the talk about the importance of scientific knowledge to a good life would have been pointless. One might have reached a proper attitude with the right drugs or the power of positive thinking. Hence, he could not logically distinguish a quality of life, two variable theory from real paradise. His most considered philosophical view about the good life would have been inconsistent with his most frequently used description of it. It is possible, but seems very unlikely. It seems more likely that in those passages about his own suffering and wise men on the rack, he only means to say that regardless of the suffering, he knows that on the whole (not every part) a wise man and he himself have had a good life. It is certainly logically possible and there is now plenty of evidence that objectively catastrophic events in people's lives (e.g., serious physical injury, death of loved ones) are consistent with people's judgments that on the whole, their lives are good (Michalos 2003, 2005, 2010). It also often happens that objectively measured maladies

are found that have been destroying the quality of people's lives, although they have been unaware of it. Such people typically recognize that they have been living in a fool's paradise.

Cross-References

- [Aristotle](#)
- [Democritus](#)
- [Hedonism](#)
- [Multiple Discrepancies Theory](#)
- [Plato](#)
- [Quality of Life, Two-Variable Theory](#)

References

- Annas, J. (1993). *The morality of happiness*. Oxford: Oxford University Press.
- Aristotle. (1999). *Nicomachean ethics* (2nd ed., T. Irwin, Trans.). Indianapolis: Hackett Publishing.
- DeWitt, N. W. (1967). *Epicurus and his philosophy*. Cleveland: World Publishing.
- Gordon, D. R., & Suits, D. B. (Eds.). (2003). *Epicurus: His continuing influence and contemporary relevance*. Rochester: RIT Cary Graphic Arts Press.
- Inwood, B., Gerson, L. P., & Hutchinson, D. S. (Eds.). (1994). *The Epicurus reader: Selected writings and testimonia*. Indianapolis: Hackett Publishing.
- Laertius, D. (2000). *Lives of eminent philosophers*. (Vol. 2, R. D. Hicks, Trans.). Cambridge: Loeb Classical Library/Harvard University Press.
- Michalos, A. C. (2003). *Essays on the quality of life*. Dordrecht: Kluwer Academic Publishers.
- Michalos, A. C. (2004). Social indicators research and health-related quality of life research. *Social Indicators Research*, 65(1), 27–72.
- Michalos, A. C. (Ed.). (2005). *Citation classics from social indicators research*. Dordrecht: Springer Publishers.
- Michalos, A. C. (2010). Stability and sensitivity in perceived quality of life measures: Some panel results. *Social Indicators Research*, 98(3), 403–434.
- Sen, A. (1999). *Development as freedom*. New York: Random House.

Epidemic

- [Human Rights, Religion, and HIV/AIDS in Bangladesh, Indonesia, and Iran](#)

Epidemiologic Measurements

Geoffrey Johnson

Faculty of Medicine, University of British Columbia, Prince George, BC, Canada

School of Health Sciences, University of Northern British Columbia, Prince George, BC, Canada

Synonyms

[Population health measurement](#); [Public health measurements](#); [Study design](#)

Definition

Epidemiology is the study of the determinants, distribution, and frequency of health-related events and processes (i.e., disease, injuries, disability, and mortality) within defined populations. Therefore, epidemiological measurement is the process of collecting data relevant to events of interest and the application of epidemiology-specific tools to the collected data.

Description

History

Hippocrates is commonly cited as the first person to contribute to the field of epidemiology, through his work *On Airs, Waters, and Places*, which espoused the dependence of health on environmental factors and not on magical influences. However, it was not until 1662 that John Graunt began to publish statistical data on mortality (Friis 2010). Practical applications of epidemiology came later, with one of the earliest epidemiological interventions occurring in 1796, when Edward Jenner performed the first vaccination, by inoculating a child with cowpox material in order to protect against the much more deadly smallpox. Another notable intervention took place in 1847 when Ignáz Semmelweis suspected disease-causing particles were being transmitted from cadavers to women in an obstetrical clinic, when

medical students and physicians failed to wash their hands. Based on his theory, Semmelweis implemented a hand-washing policy and subsequently, mortality rates dropped from 12.2 % to 2.4 % (Gordis 2009).

Modern epidemiology traces its roots back to John Snow and his application of epidemiological methods during the cholera outbreaks in nineteenth-century England. Through the use of mapping and forming data tables to describe cholera outbreaks, Snow was able to disprove the miasmatic theory of disease, which purported that disease was transmitted through miasms (clouds that clung low on the surface of the earth). These early techniques were revolutionary and laid the foundation for the current field of epidemiology, which has five objectives (Gordis 2009):

1. Identification of the risk factors for developing a disease
2. Description of the burden of disease within a population
3. Elucidation of the natural history and prognosis of a disease
4. Evaluation of preventive/therapeutic interventions
5. Provision of evidence on which to base public policy for disease prevention and health promotion

Epidemiological Study Models

The process of epidemiological measurement is generally observational (and sometimes experimental) and can be either descriptive or analytic. Descriptive studies are concerned with measuring the frequency and distribution of disease within a population, and they are often for forming hypotheses about the nature of the disease. Analytical studies are used to elucidate the causal relationship between risk factors and disease.

Study designs can be further broken down into the categories of observational and experimental. Experimental studies are often equated with randomized control trials (RCT), where the investigator has control over whether a participant receives an experimental intervention (Last 2001). Within an observational study, the investigator does not

apply an intervention, but rather, the person is either naturally exposed or not exposed to a putative risk factor. In a RCT, the participant is randomly assigned to either get the experimental intervention or act as a control, receiving no intervention (or the current standard intervention).

Within observational analytical studies, people are observed at either the population level or the individual level. Studies utilizing people at the population level are called ecologic studies, where entire populations are analyzed as a whole against aggregate data. Ecologic studies are useful in identifying new potential relationships to explore; however, they are also subject to the potential for ecologic fallacy (Szklo and Nieto 2007).

Studies observing people at the individual level are broken into three groups: cohort, case-control, and cross-sectional. Cohort studies involve following a group of healthy people for a specified period of time and monitoring the occurrence of health events, commonly known as outcomes of interest (OOI). The participants are then classified by whether they were exposed or not exposed to the putative risk factor and whether or not they developed the OOI. One of the most famous cohort studies is the Framingham Heart Study that began in 1948, and it is a major contributor to the current understanding of cardiovascular disease. Case-control studies differ from cohort studies in that rather than starting with healthy individuals, researchers select cases with the OOI and compare them to a control group, made up of people who do not have the OOI. Once the sample is gathered, past exposure to the putative risk factor is assessed. Finally, cross-sectional studies assess OOIs and exposures at a single point in time. Since there is no way to assess temporality within a cross-sectional study, there is no way to determine whether the risk factor actually led to the OOI. Cross-sectional designs are useful for determining the ► [prevalence](#) of an OOI within a population.

With any study model, the quality of data collected is of the utmost importance. ► [Reliability](#) and validity of measurement tools needs to be tested to ensure that the tools are in fact measuring what they are meant to measure. Bias can enter into a study when there is systematic error in the

design or in the way in which the data is collected. Flawed collection of data will lead to results that tend to be erroneous; it is this tendency that is considered to be bias. Another threat to the integrity of a study is confounding, which occurs when a noncausal association between an exposure and an outcome results from the influence of a third variable. The confounder has a causal relationship with the outcome and is also associated (either causally or noncausally) with the exposure, but is not an intermediate between the exposure and the outcome.

Epidemiological Tools

The measures used in epidemiology can be divided into three classes: frequency, association,

and potential impact. The measures of health event frequency can be divided into incidence and prevalence. Incidence measures the number of new events or OOI's arising during a set period of time. Common OOI's are morbidity and [mortality](#). Prevalence measures the number of existing OOI's, either at a point in time (point prevalence) or over a specified period (period prevalence).

Point prevalence is measured simply by taking the number of people within the population who have the OOI, divided by the number of people within the population at a specific time. Period prevalence is simply the proportion of people within a population who had the OOI during the period of interest.

E

$$\text{Point Prevalence per 1,000} = \frac{\text{\# of cases within a population at a specific time}}{\text{\# of persons within a population at that time}} \times 1,000$$

Incidence is calculated using a simple 2 × 2 table in which people are categorized according to whether they were exposed to a risk factor and whether they have the outcome of interest. Incidence in those exposed is equal to the number of people exposed and having the OOI, divided by

the total number of people exposed. Alternatively, incidence among those not exposed is equal to the number of people not exposed who have the OOI, divided by the total number of people who were not exposed.

Exposure	Outcome of Interest		
	Yes	No	
Yes	<i>a</i>	<i>b</i>	<i>a + b</i>
No	<i>c</i>	<i>d</i>	<i>c + d</i>
	<i>a + c</i>	<i>b + d</i>	

$$\text{Incidence in exposed} = I_e = \frac{a}{a + b}$$

$$\text{Incidence in unexposed} = I_o = \frac{c}{c + d}$$

Depending on the data available, incidence can also be presented as incidence rate, incidence density, and attack rate. Incidence rate is

calculated when the researcher has access to aggregate data. Incidence rate is equal to the number of OOI's divided by the average population, where average population is the population at the halfway point of the period of measurement. When researchers have access to individual data, they can calculate incidence density, which is equal to the number of OOI's divided by the total

person-time. Total person-time is obtained by summing the time for which each participant was observed. For example, if a person was monitored in a study for 3 months before dying, they will have contributed 3 person-months, or 0.25 person-years. Attack rate is simply incidence in those people exposed to the risk and is not actually a rate but a proportion.

Measures of association can be divided into measures of absolute difference and measures of relative difference. Two types of absolute difference measures are attributable risk and number needed to treat.

To calculate attributable risk (AR), simply take the incidence in the exposed and subtract the incidence in the unexposed. From the previous formula we can see that

$$AR = I_e - I_o = \frac{a}{a+b} - \frac{c}{c+d}$$

Number needed to treat (NNT) refers to the number of people that would need to be treated with an intervention to prevent one OOI. It is most commonly used to express the results of a randomized trial which tests the efficacy of an intervention at reducing the risk of a negative outcome.

$NNT =$

$$\frac{1}{(\text{rate in untreated group} - \text{rate in treatment group})}$$

Relative difference measures are broken up into relative risk, ► [odds ratio](#), and prevalence ratio. Relative risk (RR), also known as risk ratio, is simply a ratio of risk in those exposed to risk in those not exposed. It can only be calculated with incidence data coming from a longitudinal study, which is either prospective or retrospective.

$$RR = \frac{I_e}{I_o} = \frac{\frac{a}{(a+b)}}{\frac{c}{(c+d)}}$$

Relative risk is interpreted in three different ways:

RR = 1, risk in exposed is equal to risk in unexposed.

RR > 1, risk in exposed is greater than risk in unexposed.

RR < 1, risk in exposed is less than risk in exposed (potentially a protective factor against the OOI).

Odds ratio (OR) is used as an approximation of RR when incidence data is unavailable, as in a case-control study. In order to use OR to approximate RR, three criteria must be satisfied:

- With regard to exposure history, the cases need to be representative of all people with the OOI in the population under study.
- With regard to exposure history, the controls need to be representative of all people without the OOI in the population under study.
- The OOI must not occur frequently within the population of study.

$$OR = \frac{\text{Odds of developing OOI}}{\text{Odds of not developing OOI}} = \frac{a/c}{b/d}$$

Prevalence ratio (PR), also known as point prevalence rate ratio, is the ratio of prevalence in exposed to prevalence in unexposed. PR is used as an approximation of RR in cross-sectional studies where incidence cannot be calculated.

$$PR = \frac{P_e}{P_o}$$

Measures of potential impact assess the effects of removing exposure to a risk factor at two levels: the individual exposed and the population of interest. Attributable risk, also an absolute difference measure, and attributable risk percent (AR%) are both useful for illustrating the reduction of burden when an exposure is removed from an exposed group. AR % is calculated by dividing AR by the incidence in exposed and multiplying the result by 100%.

$$AR\% = \frac{I_e - I_o}{I_e} \times 100\%$$

Intervention Evaluation

Once data have been gathered and analyzed, conclusions need to be made and interventions

developed. Measurement continues after the implementation of the interventions to determine the usefulness of the intervention. These measurements tell the researcher whether the intervention has efficacy, effectiveness, and efficiency. Efficacy is the measure of whether the intervention works under ideal conditions, often in a laboratory setting. Effectiveness is a measure of whether the intervention works within the context of the real world. Efficiency is a measure of cost-benefit, used to determine whether the intervention provides benefits that outweigh the economic, social, and personal costs. Together these measures determine whether an intervention is useful and policy decisions are based on the findings.

Cross-References

- [Ecological Fallacy](#)
- [Mortality](#)
- [Odds Ratio](#)
- [Prevalence](#)
- [Reliability](#)
- [Retrospective Reports](#)

References

- Friis, R. H. (2010). *Epidemiology 101*. Sudbury: Jones and Bartlett.
- Gordis, L. (2009). *Epidemiology* (4th ed.). Philadelphia: Saunders Elsevier.
- Last, J. M. (2001). *A dictionary of epidemiology* (4th ed.). New York: Oxford University Press.
- Szklo, M., & Nieto, F. J. (2007). *Epidemiology* (2nd ed.). Sudbury: Jones and Bartlett.

Epworth Sleepiness Scale

Helen Wright and Leon Lack
School of Psychology, Flinders University,
Adelaide, SA, Australia

Synonyms

[Perceived daytime sleepiness](#)

Definition

Excessive daytime sleepiness is a significant problem that contributes to reduced [quality of life](#) and vehicle and work-related accidents. Daytime sleepiness is associated with various sleep disorders such as sleep-disordered breathing, obstructive sleep apnea (OSA), periodic limb movements in sleep, narcolepsy, and idiopathic hypersomnia. However, it should be noted that the most common causes of excessive daytime sleepiness are insufficient sleep and depression.

The Epworth Sleepiness Scale (ESS) is a self-administered 8-item questionnaire that is summed to give an overall score of daytime sleepiness or more specifically the propensity to fall asleep in certain situations. It has been described as assessing a behavioral component of sleepiness rather than the subjective feelings of sleepiness (Pilcher et al. [2003](#)).

The ESS is widely used in sleep research and clinical practice and has been translated into 52 languages (Buyssee et al. [2008](#)).

Description

The ESS was developed (Johns [1991](#)) to assess the likelihood of falling asleep during the day, in contrast to just feeling tired. Respondents indicate how *likely* they are to fall asleep from 0 = never to 3 = high chance in eight different common situations that vary in their soporific potential (Johns [2002](#)). The situations are:

- Sitting and reading
- Watching TV
- Sitting, inactive in a public place (e.g., theater, meeting)
- Passenger in a car for an hour without a break
- Lying down to rest in the afternoon when circumstances permit
- Sitting and talking to someone
- Sitting quietly after lunch without alcohol
- In a car, while stopped for a few minutes in the traffic

Scores range from 0 to 24. An interpretation guide indicates that an overall score less than 8 is normal, 8–10 signifies mild daytime sleepiness, 11–15 moderate, 16–20 severe, and over 21 excessive daytime sleepiness; however, as yet no studies have been carried out to support the division of these labelled categories (Avidan and Chervin 2002).

► Reliability

When developing the questionnaire, Johns (1992) found test-retest data from 87 healthy adults showed a high correlation of $r = 0.82$ and high internal consistency as measured by Cronbach's alpha ($r = 0.88$).

A stable relationship of $r = 0.76$ was found when the ESS was administered 1 year apart to 600 middle-aged participants in the CARDIA study (Knutson et al. 2006), as well as for 142 untreated patients an average 10-week interval ($r = 0.72$) (Nguyen et al. 2006).

Validity

The evidence for the validity of the ESS is equivocal. It has been compared to the "gold standard" objective measure of sleepiness: the Multiple Sleep Latency Test (MSLT). The MSLT measures the time taken to fall asleep during 4–5 nap opportunities across the day, with the shorter the time to fall asleep indicative of daytime sleepiness. Correlations have ranged from -0.42 (Johns 1994) to no significant relationship (see Fong (Fong et al. 2005) for a review). However, it is argued that the ESS and the MSLT measure different dimensions of sleepiness. The MSLT measures time taken to fall asleep when attempting sleep at time of testing. On the other hand, the ESS asks respondents to indicate the likelihood of falling asleep in the recent past in a variety of daily activities some of which the respondent would presumably be trying to resist falling asleep (Olson et al. 1998). The ESS does relate to important environmental outcomes such as road traffic accidents purported to be related to sleepiness (Miletin and Hanly 2003).

Some studies have found a relationship between ESS scores and severity of OSA symptoms, yet others have found no correlation (Fong et al. 2005).

The ESS has been shown to significantly decrease as predicted, after continuous positive airway pressure (CPAP) treatment for obstructive sleep apnea (Dolan et al. 2009).

Discussion

The ESS is an easily administered tool for evaluating subjective daytime sleepiness and is widely used in the sleep community. However, it is not, by itself, a diagnostic tool for the presence of OSA (Bausmer et al. 2010; Miletin and Hanly 2003). It provides information that can be combined with clinical findings to select patients who should be further investigated with overnight sleep studies.

The ESS appears to be moderately reliable although attempts to confirm its validity in comparison with objective time taken to fall asleep in laboratory settings have had only limited success. The most appropriate test of validity would involve objective observations of falling asleep over the prior month to which the ESS refers. However, such a demanding validity test has not been conducted.

Cross-References

- Pittsburgh Sleep Quality Index
- Sleep and Well-being

References

- Avidan, A. Y., & Chervin, R. D. (2002). ESS dot com. *Sleep Medicine*, 3, 405–410.
- Bausmer, U., Gouveris, H., Selivavanova, O., Goepel, B., & Mann, W. (2010). Correlations of the Epworth Sleepiness Scale with respiratory sleep parameters in patients with sleep-related breathing disorders and upper airway pathology. *European Archives Otorhinolaryngology*, 267, 1645–1648.
- Buyssse, D. J., Hall, M. L., Strollo, P. J., Kamarck, T. W., Owens, J., Lee, L., et al. (2008). Relationships between the Pittsburgh Sleep Quality Index (PSQI), Epworth Sleepiness Scale (ESS), and clinical/polysomnographic measures in a community sample. *Journal of Clinical Sleep Medicine*, 4, 563–571.
- Dolan, D. C., et al. (2009). The time of day sleepiness scale to assess differential levels of sleepiness across the day. *Journal of Psychosomatic Research*, 67, 127–133.

- Fong, S. Y. Y., Ho, C. K. W., & Wing, Y. K. (2005). Comparing MSLT and ESS in the measurement of excessive daytime sleepiness in obstructive sleep apnoea syndrome. *Journal of Psychosomatic Research*, 58, 55–60.
- Johns, M. W. (1991). A new method for measuring daytime sleepiness: The Epworth Sleepiness Scale. *Sleep*, 14, 540–545.
- Johns, M. W. (1992). Reliability and factor analysis of the Epworth Sleepiness Scale. *Sleep*, 15, 376–381.
- Johns, M. W. (1994). Sleepiness in different situations measured by the Epworth Sleepiness Scale. *Sleep*, 17, 703–710.
- Johns, M. W. (2002). Sleep propensity varies with behaviour and the situation in which it is measured: The concept of somnificity. *Journal of Sleep Research*, 11, 61–67.
- Knutson, K. L., Rathouz, P. J., Yanm, L. L., Lium, K., & Lauderdale, D. S. (2006). Stability of the Pittsburgh Sleep Quality Index and the Epworth Sleepiness Questionnaires over 1 year in early middle-aged adults: The CARDIA study. *Sleep*, 29, 1503–1506.
- Miletin, M. S., & Hanly, P. (2003). Measurement properties of the Epworth sleepiness scale. *Sleep Medicine*, 4, 195–199.
- Nguyen, A. T., Baltzan, M. A., Small, D., Wolkove, N., Giullon, S., & Palavew, M. (2006). Clinical reproducibility of the Epworth Sleepiness Scale. *Journal of Clinical Sleep Medicine*, 2, 170–174.
- Olson, L. G., Cole, M. F., & Ambrogetti, A. (1998). Correlations among Epworth Sleepiness Scale scores, multiple sleep latency tests and psychological symptoms. *Journal of Sleep Research*, 7, 248–253.
- Pilcher, J. J., Pury, C. L. S., & Muth, E. R. (2003). Assessing subjective daytime sleepiness: An internal state versus behavior approach. *Behavioral Medicine*, 29, 60–67.

EQ-5D

- [EuroQoL 5-Dimension Measures in Malaysia](#)

Equal Interval Scales

- [Interval Scale](#)

Equal Pay for Equal Value

- [Comparable Worth](#)

Equality

- [Coping with an Unjust World](#)
- [Critical Disability Theory](#)
- [Equity Theory](#)
- [Human Rights](#)
- [Social Justice](#)

Equality and Social Justice

- [Life Satisfaction and Youth Developmental Assets](#)

Equality of Variances

- [F-Ratio](#)

Equality Rights

- [Human Rights](#)

Equilibrium, Spatial

- [Urban Isobenefit Lines](#)

Equilience (Equity+Resilience) for Global Well-Being

Mariantonietta Fiore
Department of Economics, University of Foggia,
Foggia, Italy

Synonyms

[Resilience with respect for equity](#)

Definition

Equillience (Equity+Resilience) denotes resilient systems with respect for equity as a reconciliation of the different interests of the parties.

Description

The current complexity of reality and systems does not allow considering separately the economic, social, environmental, and health crisis. The COVID 19 pandemic has highlighted on the one hand even more the failure and unsustainability of the dominant economic model based on the linear culture of “waste,” on the other, the need for a change (Contò and Fiore 2020). Fighting the culture of waste, looking to the future in terms of sustainability, ethics/equity, and environment, to protect the “common home” (the economy) and future generations is the current challenge (European Commission 2020).

The term that summarizes the ability of an organization coordinated in the use of resources and economically oriented to react to negative economic pressures is resilience (Contò and Fiore 2020). The term resilience means to successfully adapt and recover from following detrimental effects (Masten 2007; Skodol 2010) by effectively handling negative emotions and by finding and discovering behavioral responses (Tugade et al. 2022). Resilience derives etymologically from the Latin language word “*resalio*,” or the iterative of “*salio*” which means to jump. A verb associated with a precise image: jumping on a boat in search of salvation. A boat that may have capsized, a fact that entails a further test of agility. According to FAO (2019), resilience is the aptitude of persons, communities, or systems that are challenged by disasters or crises to resist damage and to recuperate rapidly.

However, the idea of resilience has numerous facets like a diamond. It takes shape starting from a ductile capacity in materials science (meaning a particular absorption of elastic deformation) to psychology (taking a step back and with a run-up to overcome an existential difficulty), by

leading to a strategic and creative concept that creates a relationship between man and space, issues and challenges. This bond incorporates into a behavior the vision for the future of well-being.

The intense dynamics linked to competition on a global scale can be managed only if you are able to auscultate the reference environment, recovering all the emerged and emerging variables. The problem, at this point, is to understand how to manage and control them. To do this, it is necessary to start from the assumption that new (variable) environmental conditions must correspond new approaches and responses, both at a strategic level and at an operational level. These approaches and responses have to be qualified. Indeed, imagining a desirable life or a good quality of life in the absence of equality appears impossible: on the other hand, realizing interpersonal and psychological realization, as intended by philosophers and psychologists, without other sorts of wellness appears hard (Prilleltensky, *Wellness as Fairness*). Over seventy years ago, World Health Organization [WHO] (1948) defined social well-being as the central element of people’s overall health that depends in turn on the agro-food systems.

The Farm to Fork Strategy, approved on May 20, 2020, is at the heart of the *European Green Deal* (2020) aiming to make food systems fair, healthy, and environmentally friendly. The pandemic is putting pressure on governments, businesses, the population, and the entire economy but food systems cannot be resilient to crises such as the COVID-19 if they are not sustainable (Nemes et al. 2021).

Consequently, the proposal of a holistic approach (from the Greek ὅλος *hòlos*, meaning “total,” “global”) of businesses, governments, and customers “based on equity and resilience to achieve goals of equity, economic efficiency and green resilience is clearly evident” (Fiore 2020).

The next agricultural revolution could take the form of reorienting and transforming the food systems so that they are more resilient and sustainable and so that culture rethinks and redefines agriculture. The political vision should be strictly

in tune with the vision of the economy, updating itself in real-time and defining scales of priorities and choices consistent with the constantly evolving contexts as the COVID 19 pandemic is (Contò and Fiore 2020). Given the current inefficiencies of the market, an efficient use of limited natural capital cannot yet be possible, nor can be conceivable to produce products without ancillary services /functions, nor avoid wasting food and natural resources, and, above all, a linear vision is no longer possible. From these suggestions, the importance of a circular economy as stressed by the European Commission (2018) stands out. Agro-food systems have to be based on *Equilience*, a synchratic neologism composed of Equity + Resilience, that is, resilient systems in respect of equity as a balancing of the different interests of the parties (Contò and Fiore 2020). Recent research (Berbés-Blázquez et al. 2021; Ensor et al. 2021; Fitzgibbons and Mitchell 2021; Williams et al. 2020; Barnett et al. 2020) highlights the crucial importance to promote the “marriage” between equity and resilience.

Therefore, nowadays equity and resilience have become two buzzwords that, even if they risk being reduced to generic fashion labels, promote the creation of a different balance between the needs of economic growth and those of social, fair, and environmental development.

Cross-References

- [Equity](#)
- [Resilience](#)
- [Social Well-Being](#)
- [Well-Being](#)
- [Wellness as Fairness](#)

References

- Barnett, M. L., Kia-Keating, M., Ruth, A., & Garcia, M. (2020). Promoting equity and resilience: Wellness navigators' role in addressing adverse childhood experiences. *Clinical Practice in Pediatric Psychology*, 8(2), 176–188. <https://doi.org/10.1037/cpp0000320>.
- Berbés-Blázquez, M., Grimm, N. B., Cook, E. M., Iwaniec, D. M., Muñoz-Erickson, T. A., Hobbins, V., & Wahl, D. (2021). *Assessing future resilience, equity, and sustainability in scenario planning*. https://doi.org/10.1007/978-3-030-63131-4_8.
- Contò F., & Fiore M. (Eds.) (2020). *Ragionando di Sviluppo Locale: una lettura 'nuova' di tematiche 'antiche'*, Franco Angeli, Milano, pp. 1–688, ISBN 978–88–351–0554–1, OPEN ACCESS at the following link. https://www.francoangeli.it/Ricerca/Scheda_Libro.aspx?CodiceLibro=1036539
- Ensor, J. E., Mohan, T., Forrester, J., Khisa, U. K., Karim, T., & Howley, P. (2021). Opening space for equity and justice in resilience: A subjective approach to household resilience assessment. *Global Environmental Change*, 68. <https://doi.org/10.1016/j.gloenvcha.2021.102251>.
- European Commission. (2018). *Communication from the commission to the European Parliament, the council, the European economic and social committee and the Committee of the Regions on a monitoring framework for the circular economy*. Available at: <https://ec.europa.eu/environment/circular-economy/pdf/monitoring-framework.pdf>
- European Commission. (2020). *Farm to fork strategy: For a fair, healthy and environmentally-friendly food system*. DG SANTE/unit ‘food information and composition, food waste’.
- FAO. (2019). *Resilience strategy 2019–2021*. Rome: FAO.
- Fiore, M. (2020). Food loss and waste: The new buzzwords. Exploring an evocative holistic 4Es model for firms and consumers. *EuroMed Journal of Business*, 16.
- Fitzgibbons, J., & Mitchell, C. L. (2021). Inclusive resilience: Examining a case study of equity-centred strategic planning in Toronto, Canada. *Cities*, 108. <https://doi.org/10.1016/j.cities.2020.102997>.
- Masten, A. S. (2007). Resilience in developing systems: Progress and promise as the fourth wave rises. *Development and Psychopathology*, 19(3), 921.
- Nemes, G., Chiffolleau, Y., Zollet, S., Collison, M., Benedek, Z., Colantuono, F., . . . É. (2021). The impact of COVID-19 on alternative and local food systems and the potential for the sustainability transition: Insights from 13 countries. *Sustainable Production and Consumption*, 28, 591–599. <https://doi.org/10.1016/j.spc.2021.06.022>.
- Skodol, A. E. (2010). The resilient personality. In J. Reich, A. Zautra, & J. Hall (Eds.), *Handbook of adult resilience: Concepts, methods, and applications* (pp. 81–93). New York: Guilford.
- Tugade, M. M., Tan, V., & Wachsmuth, L. (2022). Amp it up or tamp it down: Examining strategies and outcomes of positive emotion regulation.
- WHO. (1948). *World Health Organization constitution. Basic documents*. Geneva: Author.
- Williams, T. G., Guikema, S. D., Brown, D. G., & Agrawal, A. (2020). Resilience and equity: Quantifying the distributional effects of resilience-enhancing strategies in a smallholder agricultural system. *Agricultural Systems*, 182. <https://doi.org/10.1016/j.agsy.2020.102832>.

Equitable Prosperity in Mexico and Chile

► [Democracy and Development in Mexico and Chile](#)

Equity

Lina Fortes-Ferreira
School of Business Administration, Polytechnic
Institute of Setúbal, Setúbal, Portugal

Synonyms

[Fairness](#)

Definition

Equity refers to the perception of fairness in distribution of resources within social and workplace situations, taking into account the perceived abilities or contributions of the individuals involved. That is to say, an individual perceives equity according to normative expectations if he/she perceives the ratio of his/her inputs to his/her outcomes to be equal to his/her social referents (Adams 1963, 1965).

Description

In accordance with social exchange theory and reciprocity norms (Gouldner 1960), we can posit that in their social exchanges, people appreciate fair treatment and develop ► [norms](#) about what is deemed as fair or unfair treatment (Pinder 2008). The workplace is a major setting where people enjoy and suffer the fairness and unfairness in the exchange of their contributions, talents, and efforts for various kinds of rewards.

Equity is an important topic in social psychology and is especially relevant in organizational psychology research and practice. Equity has

been the most researched organizational ► [justice](#)-related topic, and the work of John Stacy Adams seems to be the most influential in this field (Pinder 2008). According to Adams (1963, 1965), employees seek to preserve equity between the inputs they bring and the outcomes they receive within an employee-employer exchange. The ► [equity theory](#), which is founded upon Festinger's (Festinger 1957) theory of cognitive dissonance, specifies the situations under which inequity will occur and the means by which it may be reduced. "When the normative expectations of the person making social comparisons are violated – when he finds his inputs and outcomes are not in balance in relation to those of others – feelings of inequity result" (Adams 1963, p. 424). Then, according to the dissonance theory, this perceived inequity creates tension, which in turn drives the person to restore equity or at least to reduce inequity.

Adams (1965) proposed several mechanisms in this process: (1) adjusting inputs, (2) modifying outcomes, (3) cognitively distorting inputs or outcomes, (4) leaving the field, (5) taking actions aimed to the modification of the inputs and outputs of the comparison other, and (6) altering the comparison other.

The way the employees act in this situation of inequity is one of the key criticisms of the equity theory. As Cropanzano and Folger (1996) stated, some employees tend to get angry, to put less effort into their work, missing more days or even leaving the job altogether, while others will commit themselves to work even more hoping that eventually they'll achieve their aspirations. In this vein, the authors suggested that procedural justice is a key factor to resolve this problem.

On the other hand, Mowday (1996), in one of the most comprehensive reviews of the equity theory, asserted that prior research was generally in laboratory settings and usually studying employees' reaction to inequitable payment. Despite general support for the equity theory predictions, some writers criticized such research since there may be other alternative explanations for the disparities noted on subjects' performance, especially in what concerns the overpayment condition. Furthermore, the author stresses the fact

that overpayment in the organizational context may not be a source of inequity perception (Mowday 1996, p. 61).

However and notwithstanding the importance of the equity approach in organizational justice, this concept has not been without criticism. Deutsch (1983), for example, pointed out the fact that little attention has been given to the possibility that perceptions of equity are social constructs. According to the author, the social context in which the individual works was neglected, making the approach of equity too psychological. The same author also criticized the theory of equity for placing too much emphasis on “proportionality” (Deutsch 1983). Therefore, he considered that proportionality is not the sole basis of fairness, highlighting the importance of other standards (equality and need) in addition to equity. In fact, from the “distribution rules,” equity is merely one of the potential forms of assigning rewards and punishments in organizations (Pinder 2008, p. 327).

Nonetheless, more recently, Colquitt et al. (2005) pointed out that despite waning in research on equity theory, several studies in organizations demonstrated that it could predict different forms of behavior such as performance after receiving more prestigious job titles, higher status assignment of coworkers, theft after paycuts, and the performance of professional athletes entering free agency.

Regarding the study of the role of equity on quality of life, it is important to note that in recent years some studies were devoted to studying the relationship between inequity and burnout (e.g., Bakker et al. 2000; Smets et al. 2004; Taris et al. 2001; Van Dierendonck et al. 1996, 2001).

Van Dierendonck et al. (2001) found curvilinear effects of inequity on burnout (i.e., emotional exhaustion) in a longitudinal study among human service professionals. Those results are in line with the previous results found by those authors in a cross-sectional design (Van Dierendonck et al. 1996). In fact, according to the equity theory, both professionals who felt deprived and professionals who felt advantaged experienced more emotional exhaustion. However, some surprising results

occurred, because feeling advantaged resulted in more emotional exhaustion than deprivation feelings. Van Dierendonck et al. (1996, 2001) explain this result with the asymmetrical nature of professional-recipient relationships and found supportive results for a curvilinear relationship, unlike more recent research among medical specialists (cf. Smets et al. 2004).

Despite the need of future research to shed more light on this issue, the empirical research has shown that perceived inequity is a predictor of burnout, which meets the idea that relationships with inequity lead to an increase in experienced stress, resulting, then, in increased levels of burnout. However, the study of Taris et al. (2001) was the first attempt to specifically take into account the psychological process supporting these results. Comparing the two samples of Dutch teachers, the authors concluded, “the effect of inequity on burnout (...) can partly be accounted for in terms of elevated levels of stress” (Taris et al. 2001, p. 318).

Yet, as Smets et al. (2004) claim, although most burnout research has studied intrapersonal inequity, the assessment of perceived interpersonal inequity is paramount in understanding this phenomenon, as it is also a result of a social comparison. Then, Smets et al. in a sample of 2400 medical specialists addressed this issue, in the diverse nature of their relationships at work (with patients, colleagues, and the organization) and found that variance in burnout is better explained by intrapersonal inequity than by interpersonal inequity. The nature of work by those specialists, which is mainly individual work, is considered as a potential explanation for this result but, clearly, more investigation is warranted.

On the other hand, Bakker et al. (2000) studied not only burnout but also depression in a sample of 154 Dutch teachers. The study indicates that both burnout and depression are related to similar social exchange processes; however, they occur in different plans: burnout is linked to lack of reciprocity in the occupational domain, but depression is linked to lack of reciprocity in intimate personal nonwork relationships. This is consonant with the assumption of the equity theory that

individuals yearn, in a deeply evolutionary tendency manner, for reciprocity in interpersonal relationships and the perception of those relationships as unreciprocated will strongly distress them.

Despite the widespread acceptance and application of the equity theory, there are two lines of investigation that stress the importance of taking into account other variables when explaining the relationship between perceptions of equity/inequity in the work context and organizational outcomes. Huseman et al. (1987) introduced the concept of equity sensitivity and proposed three groups to categorize the individuals based on their equity preferences: “(a) Benevolents, those who prefer their outcome/input ratios to be less than the outcome/input ratios of the comparison other; (b) Equity Sensitives, those who, conforming to the traditional norm of equity, prefer their outcome/input ratios to equal those of comparison others; and (c) Entitleds, those who prefer their outcome/input ratios to exceed the comparison others” (p. 222). As originally conceptualized, (a) Benevolents are satisfied when under-rewarded but feel guilty from both equitable or over-rewarding, (b) Equity Sensitives feel distressed from under-rewarding and guilty from over-rewarding, and (c) Entitleds are satisfied when over-rewarded and feel distressed from being both equitable or under-rewarded.

However, “findings have been mixed with respect to these predicted patterns” (Blakely et al. 2005, p. 263). Equity sensitivity has been a research topic in organizational behavior in recent years, and has been associated with organizational citizenship behaviors (Blakely et al. 2005; Kickul and Lester 2001); employee attitudes like job satisfaction (Kickul and Lester 2001; Shore 2004; Shore et al. 2006), affective commitment (Restubog et al. 2009), and turnover intention (Shore 2004), to name just a few. Other research (e.g., Roehling et al. 2010) addressed the need for investigating the antecedents of equity sensitivity (organizational context, personal characteristics, etc).

Another line of investigation highlights the importance of introducing cultural factors when

examining equity. Kilbourne and O’Leary-Kelly (1994) argue that “equity theory is a good candidate for a cultural analysis because it has been suggested that equity theory is culture bound, reflecting Western values” (p. 178) and offer an interesting paper about questions that consider the influence of culture on equity theory propositions. However, relatively few studies have examined the cross-cultural applicability of the theory. Gelfand, Erez, and Aycan (2007) review the research on culture and organizational justice, showing that individualistic cultures favored equity and collectivistic cultures favored equality, and, similarly, cultures high on power distance and hierarchy favored equity, while equality was favored by cultures low on power distance and with egalitarian values. More recently, Bolino and Turnley (2008) presented a conceptual paper, where identification of the ways the cultural context may influence the conceptualization of inputs and outcomes by employees as well as their selection of referent others, their equity preferences, and their reactions to inequity is made through a value-orientation model of culture.

So, finally, it seems interesting to contrive equity within the perspective of justice research as propounded by Skitka (2009). The author includes equity in what she refers to the *homo economicus* perspective of justice research. She outlines that this perspective led to some critical findings: (a) people make a mental tally of their social relationships, (b) people’s interpretation of what is fair relies considerably on social comparisons, that is, on whom they choose to compare themselves to, (c) people recognize the distinction between outcome favorability and outcome fairness, and (d) the perceived concept of deservingness is key in determining where an outcome or treatment is perceived or not as fair. In fact, although the *homo economicus* perspective is only one of the three approaches of justice considered (*homo economicus*, *homo socialis*, and *homo moralis*), Skitka proposes a contingency model of justice, which highlights the need to include those important discoveries from equity theory and research, which were, in her opinion, mostly neglected in the other perspectives.

Cross-References

- [Critical Disability Theory](#)
- [Distributive Justice](#)
- [Equality](#)
- [Motivation](#)
- [Perceived Fairness](#)
- [Social Justice](#)

References

- Adams, J. S. (1963). Toward an understanding of inequity. *Journal of Abnormal and Social Psychology, 67*(5), 422–436.
- Adams, J. S. (1965). Inequity in social exchange. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 2, pp. 267–299). New York: Academic Press.
- Bakker, A. B., Schaufeli, W. B., Demerouti, E., Janssen, P. P. M., Hulst, R. V. D., & Brouwer, J. (2000). Using equity theory to examine the difference between burnout and depression. *Anxiety, Stress, and Coping, 13*, 247–268.
- Blakely, G. L., Andrews, M. C., & Moorman, R. H. (2005). The moderating effects of equity sensitivity on the relationship between organizational justice and organizational citizenship behaviors. *Journal of Business and Psychology, 20*(2), 259–273.
- Colquitt, J. A., Greenberg, J., & Zapata-Phelan, C. P. (2005). What is organizational justice? A historical overview. In J. Greenberg & J. A. Colquitt (Eds.), *Handbook of organizational justice* (pp. 3–56). Mahwah, NJ: Erlbaum.
- Cropanzano, R., & Folger, R. (1996). Procedural justice and worker motivation. In R. M. Steers, L. W. Porter, & G. A. Bigley (Eds.), *Motivation and leadership at work* (6th ed., pp. 72–83). New York: McGraw-Hill.
- Deutsch, M. (1983). Current social psychological perspectives on justice. *European Journal of Social Psychology, 13*, 305–319.
- Festinger, L. A. (1957). *A theory of cognitive dissonance*. Evanston, IL: Row, Peterson.
- Gouldner, A. W. (1960). The norm of reciprocity. *American Sociological Review, 25*(2), 161–178.
- Huseman, R. C., Hatfield, J. D., & Miles, E. W. (1987). A new perspective on equity theory: The equity sensitivity construct. *Academy of Management Review, 12*(2), 222–234.
- Jost, J. T., & Kay, A. C. (2010). Social justice. In S. T. Fiske, D. T. Gilbert, & G. Lindzey (Eds.), *Handbook of social psychology* (Vol. 2, 5th ed., pp. 1122–1165). Hoboken, NJ: John Wiley & Sons.
- Kickul, J., & Lester, S. W. (2001). Broken promises: Equity sensitivity as a moderator between psychological contract breach and employee attitudes and behavior. *Journal of Business and Psychology, 16*(2), 191–217.
- Mowday, R. T. (1996). Equity theory predictions of behavior in organizations. In R.M. Steers, L. W. Porter & G. A. Bigley (Eds.), *Motivation and leadership at work* (6th ed., pp. 53–71). New York: McGraw-Hill.
- Pinder, C. C. (2008). *Work motivation in organizational behavior* (2nd ed.). Hove: Psychology Press.
- Restubog, S. L. D., Bordia, P., & Bordia, S. (2009). The interactive effects of procedural justice and equity sensitivity in predicting responses to psychological contract breach: An interactionist perspective. *Journal of Business and Psychology, 24*, 165–178.
- Roehling, M. V., Roehling, P. V., & Boswell, W. R. (2010). The potential role of organizational setting in creating “entitled” employees: An investigation of the antecedents of equity sensitivity. *Employee Responsibilities and Rights Journal, 22*, 133–145.
- Shore, T. H. (2004). Equity sensitivity theory: Do we all want more than we deserve? *Journal of Managerial Psychology, 19*(7), 722–728.
- Shore, T. H., Sy, T., & Strauss, J. (2006). Leader responsiveness, equity sensitivity, and employee attitudes and behavior. *Journal of Business and Psychology, 21*(2), 227–241.
- Skitka, L. J. (2009). Exploring the “lost and found” of justice theory and research. *Social Justice Research, 22*, 98–116.
- Smets, E. M. A., Visser, M. R. M., Oort, F. J., Schaufeli, W. B., & De Haes, H. J. C. J. M. (2004). Perceived inequity: Does it explain burnout among medical specialists? *Journal of Applied Social Psychology, 34*(9), 1900–1918.
- Taris, T. W., Peeters, M. C. W., Le Blanc, P. M., Schreus, P. J. G., & Schaufeli, W. B. (2001). From inequity to burnout: The role of job stress. *Journal of Occupational Health Psychology, 6*(4), 303–323.
- Van Dierendonck, D., Schaufeli, W. B., & Buunk, B. P. (1996). Inequity among human service professionals: Measurement and relation to burnout. *Basic and Applied Social Psychology, 18*(4), 429–451.
- Van Dierendonck, D., Schaufeli, W. B., & Buunk, B. P. (2001). Burnout and inequity among human service professionals: A longitudinal study. *Journal of Occupational Health Psychology, 6*(1), 43–52.

Equity Capital

- [Financial Capital](#)

Equity Index

Benedicto Lukanima
Business School, Universidad del Norte,
Barranquilla, Colombia

Definition

Equity index is a statistical indicator of changes in the market value of a certain group of shares or stocks. Sometimes it is referred to as stock index (singular) and stock indices or indexes (plural).

Description

There are several types of equity indices, depending on their measurement criteria such as the coverage base, the averaging method used to establish the index, and the way the averaging methods assign index weights. Therefore, in essence, stock indices are not the same, and they may exhibit disparate behavior (Roll, 1992).

Broad-Based or Narrow-Based Index

This categorizes indices according to stock representation and coverage. Representation may be a specific group of companies with certain features, whereas coverage may be global, national, or even industrial. We can use the Dow Jones and Morgan Stanley Capital International (MSCI) Indices as examples. For a global measure, the Dow Jones Total Stock Market Index is a broad-based index, considered as a comprehensive mirror to the global equity market including more than 12,000 securities from 76 countries, covering both developed and emerging markets. For a national measure, the Dow Jones US Total Stock Market Indices are designed to provide comprehensive coverage of the US equity market. For a sectoral measure, the Dow Jones Industrial Average is a price-weighted measure of 30 US blue-chip companies, narrowed to cover all industries except transportation and utilities. The MSCI World

Index, which covers 23 developed countries, measures the market performance of 4500 large and mid-cap companies that have a global presence.

The Averaging Method Used to Establish the Index

Averaging methods may take different forms like simple weighted average, geometric average, moving average, or exponential average. A simple weighted average is simply an equation averaging from the addition of the share prices of the component stocks and then divided by the number of stocks used. A major drawback to this method is that it does not take into account the differences in stock price levels. That is, stocks with higher prices will affect this average more than price fluctuations in lower-priced stocks. The other methods are relatively more complex. For example, geometric averaging involves multiplying together the share prices of the component stocks and then raising to the power of $1/n$, where n is the number of stocks used in the index.

Index Weighting Methods

Index weighting constitutes mainly two categories, namely, price weighting and market value weighting. Depending on the method, Table 1 denotes the variables that are usually taken into account in calculating equity indices.

Equity Index, Table 1 Variables for calculating equity indices

Variable	Denotation
Time the index is computed	T
A company	I
Number of companies in the index	N
Stock price of company (i) at time (t)	P_{it}
Number of shares of company (i) at time (t)	S_{it}
Weighting factor of company (i) at time (t)	wf_{it}
Free float factor of company (i) at time (t)	ff_{it}
Weighting cap factor of company (i) at time (t)	cf_{it}
Exchange rate from local currency into index currency for company (i) at time (t)-where applicable	x_{it}
Divisor of the index at time (t)	D_t

Price-weighted Indices: Here, the indices originate from stock market prices. Thus, the indices are weighted based on the components' stock prices and weighting factors, as indicated in Eq. 1. Some of the indices under this category include the NIKKEI 225 and the Dow Jones Industrial Average (DJIA). In fact, the DJIA is very simplified in that it is simply a sum of stock values in the index (for the 30 corporations), divided by the official Dow Jones divisor:

$$\text{Index}_t = \frac{\sum_{i=1}^n (p_{it} \cdot wf_{it} \cdot cf_{it} \cdot x_{it})}{D_t} = \frac{M_t}{D_t} \quad (1)$$

Market-Weighted Indices: Here, the indices originate from market capitalization. Hence, they are calculated with the Laspeyres formula, which measures price changes against a fixed base quantity weight, as indicated in Eq. 2. Some examples in this category include NASDAQ 100 and S&P 500.

$$\text{Index}_t = \frac{\sum_{i=1}^n (p_{it} \cdot s_{it} \cdot ff_{it} \cdot cf_{it} \cdot x_{it})}{D_t} = \frac{M_t}{D_t} \quad (2)$$

A major difference between these two methods is that the price-weighted index considers stock price rather than company size. The market capitalization method takes into account company size by incorporating number of shares outstanding (s_{it}) for each stock. The weighted cap factor of a company or adjustment factor (cf_{it}) is used to limit the influence of big companies on the value of the overall index. In the absence of this limit, a small change in price for a big company will have a greater impact on the value of the index. The free float factor of a company (ff_{it}) represents the value of shares of a specific company available in public for buying and selling. Usually, the greatest weight is assigned to stocks with the largest float. Moreover, in these methods, the divisor replaces the number of stocks used in simple averaging methods. The aim here is to take into account other corporate events that are likely to affect the number of stocks outstanding (e.g., stock splits and spin-offs).

Equity Index Information

Due to their significance, today, there are numbers of equity indices all over the world with intra- and intercountry linkages, whose information is updated from time to time as the values of stocks change. Free online information about major equity indices is available from several financial news sites, like Bloomberg, Yahoo! Finance, and Reuters. This information can be either real time or historical.

Figure 1 was extracted from Yahoo! Finance to show an example of how information on stock indices is displayed on a specific trading day. It shows the names of an index (e.g., Bovespa), the last trade (i.e., index market value and time), and change (i.e., increase in market value – upward arrow, and decrease in market value – downward arrow).

Discussion

Equity indices play a significant role in day-to-day investment decisions as they reflect the performance of markets and the underlying companies' stocks. One of the major applications of stock indices is the estimation of CAPM beta, which is used as a proxy for measuring systematic risk in stocks. According to Sanchez-Barrios et al. (2020), however, the choice of an appropriate index for estimating beta is challenging due to the existence of many and different types of indices for a particular market and globally. In addition to estimating CAPM beta, using historical stock indices, investors set their trading strategies guided by forecasts of the future direction of stock performance (Chen et al., 2003) as well as taking appropriate hedging strategies against risk (Figlewski, 1985). In addition, equity indices carry important information that can be related to economic performance nationally and globally. Indeed, empirical studies suggest a strong relationship between stock market volatility and other economic factors (Beck & Levine, 2004; Beltratti & Morana, 2006; Fama, 1981; Hamilton & Lin, 1996; Sarantis, 2001). Therefore, as pointed out by Harvey (1989), stock indices can play a significant role in forecasting economic performance. A fall or a rise in stock indices may indicate a dampened or a sound economic atmosphere, respectively.

streaming quotes: [ON](#) 

Major World Indices

Americas	Asia/Pacific	Europe	Africa/Middle East	
Symbol	Name	Last Trade	Change	Related Info
^MERV	MerVal	2,211.49 1:02PM EDT	↑ 1.08 (0.05%)	Components , Chart , More
^BVSP	Bovespa	53,462.74 1:22PM EDT	↑ 45.99 (0.09%)	Components , Chart , More
^GSPTSE	S&P TSX Composite	11,480.92 1:07PM EDT	↑ 145.15 (1.28%)	Chart , More
^MXX	IPC	37,047.31 1:02PM EDT	↓ 12.47 (0.03%)	Components , Chart , More
^GSPC	500 Index	1,281.14 1:23PM EDT	↑ 2.96 (0.23%)	Chart , More

Headlines

Tuesday, June 5, 2012

Equity Index, Fig. 1 An example of equity index quotes

Apart from the cyclical behavioral change on individual stock indices, there is also evidence on the integration and correlation of global stock indices. The linkage between indices has been examined categorically in relation to issues like the contagion phenomenon (Caporale et al., 2005; King & Wadhwani, 1990), time variation in the covariance between stock markets and the extent of market integration (Longin & Solnik, 1995), and volatility transmission between markets both within countries (Frank et al., 2008) and across global markets (Bartram & Wang, 2005; Ng, 2000).

Cross-References

- [Economic and Financial Literacy](#)
- [Economic and Social Indicators](#)
- [Economic Efficiency](#)
- [Economic Growth](#)

References

Bartram, S. M., & Wang, Y.-H. (2005). Another look at the relationship between cross-market correlation and volatility. *Finance Research Letters*, 2(2), 75–88.

- Beck, T., & Levine, R. (2004). Stock markets, banks, and growth: Panel evidence. *Journal of Banking and Finance*, 28(3), 423–442.
- Beltratti, A., & Morana, C. (2006). Breaks and persistency: Macroeconomic causes of stock market volatility. *Journal of Econometrics*, 131, 151–177.
- Caporale, G. M., Cipollini, A., & Spagnolo, N. (2005). Testing for contagion: A conditional correlation analysis. *Journal of Empirical Finance*, 12(3), 476–489.
- Chen, A., Leung, M. T., & Daouk, H. (2003). Application of neural networks to an emerging financial market: Forecasting and trading the Taiwan stock index. *Computers and Operations Research*, 30, 901–923.
- Fama, E. F. (1981). Stock returns, real activity, inflation and money. *American Economic Review*, 71(4), 545–565.
- Figlewski, S. (1985). Hedging with stock index futures: Theory and application in a new market. *Journal of Futures Markets*, 5(2), 183–199.
- Frank, N., Gonzales-Hermosillo, B., & Hesse, H. (2008). *Transmission of liquidity shocks: Evidence from the 2007 subprime crisis* (IMF Working Paper No. WP/08/200). International Monetary Fund.
- Hamilton, J. D., & Lin, G. (1996). Stock market volatility and the business cycle. *Journal of Applied Econometrics*, 11(5), 573–593.
- Harvey, C. R. (1989). Forecasts of economic growth from the bond and stock markets. *Financial Analysts Journal*, 45(5), 38–45.
- King, M. A., & Wadhwani, S. (1990). Transmission of volatility between stock markets. *The Review of Financial Studies*, 3(1), 5–33.
- Longin, F. M., & Solnik, B. (1995). Is the correlation in international equity returns constant: 1960–1990. *Journal of International Money and Finance*, 14(1), 3–26.

- Ng, A. (2000). Volatility spillover effects from Japan and the US to the Pacific-Basin. *Journal of International Money and Finance*, 19(2), 207–233.
- Roll, R. (1992). Industrial structure and the comparative behavior of International Stock Market Indices. *Journal of Finance*, 47(1), 3–41.
- Sanchez-Barrios, L. J., Lukanima, B. K., Hernandez-Vargas, N., & Almanza Herazo, L. R. (2020). Estimating the CAPM beta for public and private firms: Challenges and solutions. In S. Köseoglu (Ed.), *Valuation challenges and solutions in contemporary businesses* (pp. 99–125). Hershey: IGI Global.
- Sarantis, N. (2001). Nonlinearities, cyclical behavior and predictability in stock markets: International evidence. *International Journal of Forecasting*, 17(3), 459–482.

Web Links

- Bloomberg: <http://www.bloomberg.com/markets/stocks/world-indexes/americas/>
- Dow Jones: <http://www.djindexes.com/totalstockmarket/>
- NASDAQ: <http://www.nasdaq.com/markets/indices/nasdaq-100.aspx>
- NIKKEI 225: [http://www.wikinvest.com/index/Nikkei_225_Index_\(N225\)](http://www.wikinvest.com/index/Nikkei_225_Index_(N225))
- Reuters: <http://www.reuters.com/finance/markets/indices>
- S&P 500: <http://www.standardandpoors.com/indices/sp-500/en/us/?indexId=spusa-500-usduf%2D%2Dp-us-l%2D%2D>
- S&P. (2012). S&P Indices Methodology, S&P US. Accessed June 2012, from <http://www.standardandpoors.com/indices/sp-500/en/us/?indexId=spusa-500-usduf%2D%2Dp-us-l%2D%2D>
- Yahoo finance: <http://finance.yahoo.com/q/hp?s=%5EGSPC+Historical+Prices>

Equity Planning

- [Community-Based Planning](#)

Equity Theory

Denis Meuret
Department of Educational Science, University of Burgundy Institut Universitaire de France, Dijon, France

Synonyms

[Equality](#); [Justice](#)

Definition

Equity theories tell us which inequalities are unfair. They rest on the assumption that ► [social inequalities](#) which will be considered as unfair will be less likely to survive. They allow for a better discussion in the public domain on which inequalities should be compensated for achieving a (more) just society. There are several equity theories, proposed either by political philosophers (e.g., Rawls 1971, 2001) or by economists (e.g., Sen 1992). They all rest on the assumption that individuals are free and equal. Most of them rest also on the priority of the just on the good. In this case the principles of justice which specify the rights of every person do not depend from any specific conception of the good life. They differ as to the relevant object of justice, as to the principles of justice, and therefore as to inequalities that should be compensated in order to reach a just distribution of objects and wealth.

Description

It is convenient to organize that the description of the main theories of equity distinguishing between the objects they consider should be justly distributed and the principles of a just distribution of these objects, even if these are not independent topics.

Objects of Equity

The classical object of equity theories is ► [well-being](#) as economists conceive it, that is, the sum of the subjective utilities preferred by an individual. For this reason, these theories are labeled “welfarists.” The most powerful among them is ► [utilitarianism](#). In the utilitarian theory, at least in its classical version, the associated principle of justice is the Pareto optimum, following which, although its interpretation is subject to discussion (see Fleurbaey 1996), there is an improvement of welfare from a given social state to another one if and only if at least one person prefers the second one and no one else is opposed. The initial form of this approach was Bentham’s calculus of pleasure and pains. For the traditional utilitarian

approach, society's overall welfare is the sum of the utility of each individual. This approach is insensitive to the distribution of utilities among individuals, which is not the case of all welfarists' approaches, including some more recent versions of utilitarianism (Harsanyi 1976). What distinguishes welfarists' approach is aversion to risk, which may be null (utilitarianism) or infinite (egalitarianism) (Fleurbaey 1996). In the first case, the objective is to maximize the well-being of the whole population; in the second, it is to equalize it among the individuals of the population.

Proponents of objects other than well-being argue:

- That well-being is not the only relevant information for distributive justice. Experimental studies have shown that criteria of justice were not the same if a given increase of well-being was caused by an increased satisfaction of needs or by an increased satisfaction of tastes (Yaari and Bar Hillel 1984). The same criteria of justice used by people are not the same for the distribution of wealth and of income (Schokkaert and Devooght 2003, quoted in Trannoy 2009).
- That the subjective character of well-being is a problem. There are two main problems with this subjectivity. The first one is the problem of "expensive tastes," that is, people which need more than others to reach a given level of well-being. The second one signaled by economists (Conseil d'Analyse Economique et Conseil Allemand des Experts en Economie [CAE] 2010; Fleurbaey and Maniquet 2009) is that well-being comparison (and therefore aggregation) is difficult because of the diversity of preferences and because the well-being of one person may be affected by the well-being of another (negatively, in the case of envy and, positively, in the case of empathy). Rawls (2001) emphasizes the objective character of his own object (the social primary goods). He insists, for instance, that not "self-respect" but the more objective notion of "social basis of self-respect" is one of the primary goods of his theory of justice.

Quality of life, a notion close to well-being, is not, to my knowledge, a relevant object in any theory of equity. For instance, in CAE (CAE/CAEEE 2010), income inequalities are considered to be detrimental to the "material well-being." However, inequalities do not enter in the definition of what the report calls "quality of life" or "immaterial well-being," which is defined only by indicators at the population level (e.g., the proportion of students among 16–24-year-old people, but not any kind of inequalities in that proportion).

In replacement of well-being, postwelfarist authors propose several objects, which may be divided in three main categories: resources (Dworkin 1981; Rawls 1971), opportunities (Arneson 1989; Cohen 1989), and "basic realizations" (Fleurbaey 1995).

Dworkin distinguishes between internal resources (talents) and external resources and imagines a kind of pseudo-insurance market, where individuals may gain additional external resources to protect themselves from some internal handicaps.

The relevant object for Rawls is a list of social primary goods: rights and liberties, powers and opportunities, and income and wealth (1971, p. 62) to which he later adds the social basis of self-respect. These goods are resources that any rational man is presumed to want. Rawls is concerned with the equity of the structural basis of society; his object is the reasonable expectations that individuals may form regarding the primary goods they will get during their entire life and not the distribution of goods at a given point in time (2001).

Arneson and Cohen, in order to equalize opportunities, argue that an equitable society should compensate for the variables which are out of the control of each single individual, but not for the variables he/she may control, of which he/she has to take responsibility.

Sen notes that every conception of equity searches equality "in some space" but that the spaces differ. He writes that even a libertarian like Nozick asks for equality of libertarian rights and that utilitarians ask for "equal treatments of human beings in the space of gain and losses of

utilities” (1992, p. 13). Sen himself wants to equalize “capabilities,” that is, the opportunity (the freedom) to achieve certain “functionings,” consisting in a “series of doings and beings,” a broader, therefore better to him, approach than the approach through resources.

Given the difficulties to disentangle what is and is not under the control of individuals, Fleurbaey (1995) proposes another distinction, between two kinds of goods: those for which society is responsible (e.g., education and health) and those for which individuals are responsible. For a society to be just, only the first ones have to be distributed according to a principle of justice.

Principles of Equity

For most authors, the principle of justice is ► **equality**, the question being what has to be equalized. As Sen (1992) puts it, the question is “equality of what?” However, in some cases, equality of something (e.g., opportunities) is there to assure that the distribution of something else obeys to the Aristotelian definition of equity, that is, the proportionality between contribution and retribution. This is the case when what is searched is retribution proportionate to effort and not to other variables which are out of control of individuals (Arneson 1989; Cohen 1989) or which make his/her identity (e.g., ambitions and tastes) (Dworkin 1981; Scanlon 1986). This is the case also when Roemer (1993) argues that one has only to be responsible for the gap between his behavior and the mean behavior of his social group.

Some add a regard to effectiveness. For instance, Sen (1992) recognizes that handicap should be compensated only if the compensation process has a minimal effectiveness.

Michael Walzer’s (1983) principle of justice may be called separation, since his main point is that inequalities are allowed provided that the rank in a given sphere (e.g., education) is independent from the place on another one (e.g., wealth). This may be understood as a kind of equality of opportunity.

The ultimate goal of Rawls’s theory of justice is the democratic ideal of an equitable cooperation between free citizens. Citizens are supposed to be

able to cooperate, that is, he does not address the specific problem posed by handicaps. The “social primary goods” are distributed according to the principles which individuals of a given society would chose if placed behind a “veil of ignorance” which make them unaware of their own characteristics. In such a situation, they would wisely seek to maximize their advantages in the case they discover themselves among the disadvantaged (maximin).

Rawls gave several (close) versions of these principles, one of them is:

1. “Each person is to have an equal right to the most extensive total system of equal basic liberties compatible with a similar system of liberty for all” (1971, p. 250).
2. Social and economic inequalities are to be arranged so that they are both (a) to the greatest benefit of the least advantaged (principle of difference) and (b) attached to offices and positions open to all under conditions of fair equality of opportunity (principle of fair equality of opportunities) (1971, p. 302).

The principle of difference means that inequalities, either in social or natural endowments, have to be used for the improvement of the expectations of the least advantaged. It is important to note that these principles are ranked in lexical order: The first principle has priority on the second, which means that “liberty can be restricted only for the sake of liberty.” The principle of equality of opportunity has priority on the principle of difference, which means that even the improvement of the situation of the least advantaged does not allow some people, including the least advantaged of course, to be “debarred from experiencing the realization of self which comes from a skilful and devoted exercise of social duties (...) one of the main form of human good” (1971, p. 84).

Utilitarianism is the main critical target of Rawls’s theory, which differs from it mainly in three ways (Van Parijs 1991): Utilitarianism is concerned by the fate of the average individual, while Rawls is concerned by the least advantaged; “social primary goods” rather than well-being are used to evaluate the fate of individuals; the

principle of liberty has priority on the one who organizes the just distribution of goods.

Rawls's theory attracted a great number of comments and criticisms, which lead him to some refinements of its initial form (Rawls 2001). Among these criticisms, three deserve special attention. Nozick (1974) disagrees on the question of the fate of the talented ones. He does not deny that we do not deserve our talents or the circumstances of our birth, but he argues that this arbitrariness does not forbid us for being lawful proprietors of these talents. He considers therefore that the principle of differences violates the principle of equality of basic liberties. Rawls answered mainly by the argument that property rights, instead of being natural rights, proceed from a (just) framework of social cooperation. Sen (1992) criticizes Rawls for penalizing those who derive less than others from the same amount of primary goods. Rawls's answer is that the question of the treatment of handicaps is distinct from the one he is concerned with, that is, the organization of the basic structure of society. Philosophers known as "communitarians," such as Charles Taylor, Alastair McIntyre, and Michael Sandel, address Rawls some criticisms which may roughly be described as the fact that his theory ignores the values of the community in which the individual is embedded. Rawls's (indirect) answer may perhaps be found in his "Political Liberalism" (1993) when he explains how communities with distinct values may however agree on certain principles to organize their coexistence.

The quasi-absence of any mention of quality of life in the theories of equity is likely to be explained by the undetermined character of the notion. However, understood as the quality of the services which help most individuals to live, quality of life, linked to well-being but without its subjective aspects, could be a good candidate to be an object in an equity theory.

Cross-References

- [Coping with an Unjust World](#)
- [Fairness](#)

- [Justice](#)
- [Well-Being](#)

References

- Arneson, R. J. (1989). Equality and equal opportunity for welfare. *Philosophical Studies*, 56, 77–93.
- Cohen, G. A. (1989). On the currency of egalitarian justice. *Ethics*, 90, 906–944.
- Dworkin, R. (1981). What is equality? *Philosophy and Public Affairs*, 10(4), 283–345.
- Conseil d'Analyse Economique et Conseil Allemand des Experts en Economie. (2010). *Evaluer la performance économique, le bien-être et la soutenabilité, Rapport pour le Conseil des ministres franco-allemand, décembre*. Paris: CAE.
- Fleurbaey, M. (1995). Equal opportunity or equal social outcomes? *Economics and Philosophy*, 11, 25–55.
- Fleurbaey, M. (1996). *Théories économiques de la justice*. Paris: Economica.
- Fleurbaey, M., & Maniquet, F. (2009). *A theory of fairness and social welfare*. Cambridge: Cambridge University Press.
- Harsanyi, J. C. (1976). *Essays on ethics, social behavior, and scientific explanation*. Dordrecht: Reidel.
- Nozick, R. (1974). *Anarchy, state and utopia*. Oxford: Blackwell.
- Rawls, J. (1971). *A theory of justice*. Cambridge, MA: Harvard University Press.
- Rawls, J. (1993). *Political liberalism*. New York: Columbia University Press.
- Rawls, J. (2001). *Justice as fairness, a restatement*. Cambridge: Harvard University Press.
- Roemer, J. (1993). A pragmatic theory of responsibility for the egalitarian planner. *Philosophy and Public Affairs*, 22(2), 146–166.
- Scanlon, T. M. (1986). Equality of resources and equality of welfare, a forced marriage. *Ethics*, 97(1).
- Schokkaert, E., & Devooght, K. (2003). Responsibility-sensitive fair compensation in different cultures. *Social Choice and Welfare*, 21(2), 207–242.
- Sen, A. (1992). *Inequality re-examined*. Oxford: Oxford University Press.
- Trannoy, A. (2009). Les normes de justice à l'épreuve de l'économie expérimentale. In M. Duru-Bellat & D. Meuret (Eds.), *Les sentiments de justice à et sur l'école*. de Boeck: Bruxelles-Paris.
- Van Parijs, P. (1991). *Qu'est ce qu'une société juste?* Paris: Le Seuil.
- Walzer, M. (1983). *Spheres of justice, a defense of pluralism and equality*. New York: Basic Books.
- Yaari, M. E., & Bar Hillel, M. (1984). On dividing justly. *Social Choice and Welfare*, 1(1), 1–24.

Erectile Dysfunction (ED)

- ▶ Sexual Arousal Disorders

Erectile Function

- ▶ Sexual Functioning

Erikson-Goldthorpe-Portocarero Classification (EGP)

- ▶ Social Inequalities

Erotic Enrichment Effect of Pornography

- ▶ Pornography Use and Sexual Satisfaction: The Role of Sexual Socialization

Eroticism

- ▶ Components of Optimal Sexual Experiences
- ▶ Lessons About Optimal Sexual Experiences from Remarkable Lovers
- ▶ Personal Contributions to Optimal Sexual Experiences
- ▶ Relational Contributions to Optimal Sexual Experiences

Error Models of Self-Confidence

- ▶ Self-Confidence

Error of Measurement

- ▶ Measurement Error

Error of Observation

- ▶ Measurement Error

Error Terms

- ▶ Disturbance Terms

Error Variance

- ▶ Mean Square Error of Survey Estimates

Errors of the First Kind

- ▶ Type I Errors

Errors of the Second Kind

- ▶ Type II Errors

Escala de religiosidade da universidade de Duke

- ▶ Duke Religion Index in Portuguese

Escape from Illness with God’s Help

- ▶ Health-Related Quality of Life and Reliance on God’s Help

ESI

- [Environmental Sustainability Index \(ESI\)](#)

ESPAD

- [European Survey Project on Alcohol and Drugs \(ESPAD\)](#)

Essential Needs

- [Basic Needs, Absolute Poverty: Measuring Poverty in Developing Countries](#)

Estimate

- [Estimator](#)

Estimated Convergence and Discriminant Validity

- [Multitrait-Multimethod Analysis](#)

Estimator

Oscar Olvera
Department of ECPS, University of British
Columbia, Vancouver, BC, Canada

Synonyms

[Estimate](#); [Population estimates](#); [Probability distribution](#); [Random variable](#); [Sample](#); [Sampling distribution](#)

Definition

An estimator is a mathematical function or rule that relates observed data alongside with other numerical information with the purpose of generating an estimate that approximates the value of a parameter in the probability distribution of a population.

Description

As even a cursory glance of the research literature shows, estimators are widely used in quality life research in the psychosocial, behavioral, and health sciences. An *estimator* is a mathematical function or rule that relates observed data (sometimes along with constant values) used to generate an *estimate*, which is a specific realization of an estimator or a type of “best informed guess” as to what the parameter of a population is equal to, based on the information available. The estimator is itself a random variable to which certain properties are either known or assumed (such as whether it follows or not a particular probability distribution) in order to aid in its calculation (Casella and Berger 2002). The sample mean is, for instance, probably the most popular estimator used in applied research.

Jerzy Neyman (1937) characterized estimators as belonging to one of two groups: *point-estimators* and *interval-estimators*. The aim of a *point-estimator* is to yield a single number (referred also as a *statistic*) as to what the parameter of the population may be. *Interval-estimators* provide a range of plausible values where the *estimate* may be located (instead of only one possible guess) and, depending the properties of the estimator, *interval-estimators* are sometimes the only possible solution that can be calculated (this is particularly true of estimators where the mathematical theory is exceedingly complex or if no computational algorithms are available).

There exist several criteria that aid in judging how good a particular *estimator* is when compared to another. Although several ideal properties have been put forward (c.f. Ramachandran

and Tsokos 2009, for a more elaborated description of the issue), there are at least three which are fundamental in the evaluation of the appropriateness of any estimator:

- **Consistency:** An estimator is said to be consistent if a sequence of them converges in probability to the parameter it attempts to estimate. By convergence in probability, it is meant that as the sample size grows (usually infinitely large), the probability distribution of the estimator tends to center around the true value of the parameter being estimated, so that the probability of obtaining the parameter tends toward certainty.
- **Unbiasedness:** An estimator is said to be unbiased if the expected value or the average over a large sequence of estimators matches the value of the parameter it attempts to estimate.
- **Efficiency:** An estimator is said to be efficient if it requires less or smaller samples than any other potential estimators to accurately approximate the parameter in question. Although this use is somewhat conceptual, the efficiency of an estimator is usually expressed in terms of variance, where, among a set of possible candidates for estimators, the one that offers minimum variance tends to be selected as the most desirable one.

Estimators that offer all these properties simultaneously are not always available. Sometimes the most efficient estimators are biased or vice versa, in which case it is important to evaluate its potential use and which property is the most important one based on its intended use.

Cross-References

- [Bivariate Analysis](#)
- [Mean Square Error of Survey Estimates](#)
- [Multivariate Statistical Analysis](#)
- [Ordinary Least-Squares \(OLS\) Model](#)
- [Regression Coefficients](#)
- [Univariate Analysis](#)

References

- Casella, G., & Berger, R. (2002). *Statistical inference* (2nd ed.). Pacific Grove: Thomson Learning.
- Neyman, J. (1937). Outline of a theory of statistical estimation based on the classical theory of probability. *Philosophical Transactions of the Royal Society of London A*, 236, 333–380.
- Ramachandran, K. M., & Tsokos, C. P. (2009). *Mathematical statistics with applications*. Boston: Elsevier/Academic Press.

Eta Squared

Marc A. Adams¹ and Terry L. Conway²

¹College of Health Solutions, Arizona State University, Phoenix, AZ, USA

²Herbert Wertheim School of Public Health and Human Longevity Science, University of California San Diego, La Jolla, CA, USA

Synonyms

[Correlation ratio or \$R^2\$](#) ; [Effect size](#); [Proportion of variance accounted for](#)

Definition

► **Eta squared** (η^2) is a squared measure of association defined as the ratio of variance in an outcome variable explained by a predictor variable, after controlling for other predictors. More intuitively, it is the amount of variation explained by the predictor variable (X) in the total variation for the outcome variable (Y). The equation below describes eta squared:

$$\eta^2 = \frac{\sigma_{\text{effect}}^2}{\sigma_{\text{total}}^2}$$

where the effect variance is the sum of squares of the predictor and the total variance is the sum of squares of the predictor variable (or set of variables) and error.

Description

Eta squared is a measure of effect size for analysis of variance (ANOVA) models. It is a standardized estimate of an effect size, meaning that it is comparable across outcome variables measured using different units. Eta squared is a commonly reported measure of association for group comparison studies when all effects are considered fixed.

Because eta squared is derived from a sample, it overestimates variance explained for a population (therefore is considered a positively biased estimator), but it is an unbiased estimator of the sample. Bias is reduced as the sample size increases. A biased-adjusted estimator of a population variance explained is *omega squared*, which usually explains less variation than eta squared (Kline 2004).

Partial eta squared is an alternative measure of association for a sample that describes the proportion of total variation explained by a predictor variable, after excluding (partialling out) variance from other predictor variables from the total non-error variance in the denominator. This measure may be preferable if one wants to compare a specific predictor across models with different types or numbers of predictor variables, when the inclusion of other predictors increases the total variation. Partial eta squared values are typically higher than eta squared values because variance from other predictors is removed from the denominator.

A study by Ringdal et al. (1994) provides a useful example. Ringdal et al. examined differences in quality of life scores between cancer patients classified into one of three groups: good, medium, and poor prognoses. They observed that prognosis group status was associated with the personal functioning subscale of the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30) ($p < 0.001$). Tukey's HSD post hoc test revealed the greatest difference in personal functioning scores occurred between the poor and good prognosis groups ($p < 0.05$). Prognosis group status explained 19% of the variation in personal functioning.

Cohen and Cohen (1983) provided estimates of the magnitude of an effect size for social sciences. For eta squared, threshold values are interpreted as small (0.01), medium (0.06), and large effects (0.14). However, they admonished these thresholds as just "rules of thumb" and advised that researchers should become familiar with observed effect sizes usually seen in their research domain.

Cross-References

- [Analysis of Covariance \(ANCOVA\)](#)
- [Analysis of Variance](#)
- [Effect Size](#)
- [EORTC QLQ-30 Modules](#)
- [EORTC QLQ-C30](#)

References

- Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences* (2nd ed.). Hillsdale: Lawrence Erlbaum Associates.
- Kline, R. (2004). *Beyond significance testing: Reforming data analysis methods in behavioral research*. Washington, DC: American Psychological Association.
- Ringdal, G. I., Ringdal, K., Kvinnsland, S., & Gøtestam, K. G. (1994). Quality of life of cancer patients with different prognoses. *Quality of Life Research*, 3, 143–154.

Ethical Business

- [Corporate Social Responsibility](#)

Ethical Corporate Practices

- [Corporate Social Responsibility](#)

Ethical Theory

- [Ethics](#)

Ethics

Daniel Haybron
Department of Philosophy, Saint Louis
University, St. Louis, MO, USA

Synonyms

[Ethical theory](#); [Moral philosophy](#)

Definition

Ethics is one of the main branches of philosophy, alongside such fields as metaphysics, epistemology, and logic. Philosophers sometimes use the term “ethics” quite broadly, to encompass all of value theory, including political philosophy. On a second usage, “ethics” takes a narrower meaning, denoting just moral philosophy, for instance the study of moral notions like right, duty, and virtue. Less narrowly, “ethics,” or “ethical theory,” is taken to be that part of value theory that bears on questions of how individuals ought to live. The present entry discusses ethics in this sense.

Description

Ethics is standardly divided into three subfields: metaethics, normative ethics, and applied ethics. Applied ethics is just the study of ethics as applied to particular sorts of problems, with better-known examples including medical ethics, [business ethics](#), and environmental ethics. Accordingly, metaethics and normative ethics are taken to be the more fundamental areas in ethical theory.

The distinction between metaethics and normative ethics is itself a matter of dispute, but normative ethics is typically thought to concern general, theoretical questions about which are the correct values or moral principles: which things have intrinsic value, for example, or which actions are morally right or wrong. Metaethics takes a step back from substantive questions of value and inquires about the *status* of value, along with

other questions about how we talk, think, and know about values.

Normative ethics has two main parts. One part, axiology, tells us what is *good*: for instance, well-being, [aesthetic value](#), perfection, and ecosystem integrity. Since most theorists agree that at least well-being has intrinsic value, theories of well-being get the most attention. The second part of normative ethics is sometimes called the theory of the *right*, or moral theory.

The standard classification of moral theories in normative ethics sorts them into three major types: consequentialism, deontology, and virtue ethics. *Consequentialists* typically focus on right action, arguing that right actions are somehow to be understood as based in the promotion of good consequences. The best-known form of this approach, [utilitarianism](#), enjoins people to maximize aggregate well-being. But consequentialists need not maximize, aggregate, or take well-being to be the only consequence that matters.

Deontologists, such as Kantians and contractualists, deny that right action is solely about promoting good consequences. For instance, morality might also, or instead, be about treating individuals with respect – taking seriously the demands we make of each other, say, or limiting what we may do to each other. So even if killing a certain individual would serve the greater good, it may yet be wrong: it might violate the person’s rights, failing to treat her with respect.

► [Virtue ethics](#) takes morality fundamentally to be about character: what sorts of people should we aspire to be? Questions of right action are then taken to be secondary: the right action, for instance, is the one a virtuous person would perform.

Social scientists and other nonspecialists sometimes take it to be obvious that some form of consequentialism must be correct. Yet a recent survey of professional philosophers finds consequentialism to command the support of only about a quarter of ethicists, with the other approaches likewise having minority status. (Of 139 faculty respondents, 35% favored deontology, 23% consequentialism, and 12% virtue ethics, with 30% choosing “other.”) Since consequentialism does not even have the support of a majority of the

experts, still less a consensus, nonspecialists would be well advised not simply to assume its truth: most of the experts deem the view false. Moreover, moral theorists of all three kinds tend in practice to agree that we should at least treat people as if they have certain rights – a nation that recognizes no rights, for instance, is likely to be neither happy nor virtuous – and also usually agree that such rights can sometimes be overridden when the stakes are high enough. That threshold will typically be lower for consequentialists, since they take rights to matter solely as vehicles for promoting good outcomes. But in practice, all major moral theories tend to follow commonsense morality in recommending deontological principles, along with a concern for consequences, in dealing with many everyday moral problems. Even if morality is ultimately about consequences, aiming solely and directly to promote the best consequences is probably not the correct decision procedure for many situations in personal or political morality – for instance, judicial decisions.

In metaethics, the deepest questions – and the questions of greatest interest to quality of life researchers – concern the metaphysical status of value: what is value, and how does it fit into the world? What, if anything, makes it the case that certain things are good or bad, right or wrong? The question isn't about people's *values*, in the sense of what they care about; there's no deep mystery about how people can care about things. The real mystery concerns the appearance that there's a fact of the matter about goodness and rightness: it's not just that we don't like slavery, but that slavery seems to be genuinely *wrong*, immoral, evil. People ought not to do such things.

These are *normative* claims: claims about what people have reason to do, or ought to do, or what has value or disvalue. They are value claims. And it is very hard to understand what could possibly make them true. Put another way: it appears that slavery has a certain property, of being immoral, and famine has a property, of being bad. What sort of properties are we talking about? How could we tell whether things really have those properties? And when people disagree about values, what if anything makes it the case that certain opinions

are better than others? Are those who defend slavery mistaken in their values?

The root problem is that values don't seem at all like familiar material objects and properties, the sort that science can straightforwardly tell us about. For one thing, they are *pushy*: value claims seem not just to *describe* things; they appear to *prescribe* ways of thinking and acting. For another, it seems we could have all the material facts in and still not know whether something is good or bad. Knowing that slavery causes immense suffering and so forth, it is still possible for a person coherently to deny that there's anything wrong with it. In short, no amount of information about nonnormative facts seems able to settle whether a normative claim is true. The worry arises in one form through Hume's dictum that you can't derive an "ought" from an "is," and in another through Moore's posit of a "naturalistic fallacy."

Very crudely, there are three common approaches to the problem of fitting values into the world: Platonic, Humean, and Kantian. (Note that there is no noncontroversial way of framing the debate, and some philosophers will refuse to accept any of these labels for their views. For convenience, we are focusing here on certain moral values: rightness and wrongness.)

The *Platonic* approach takes the appearances more or less at face value: there are objective, mind-independent facts about what is right and wrong, they do not depend on us, and they are not simply natural facts. Slavery is objectively wrong: this is a fact about slavery, and wrongness is a nonnatural property that slavery has. Even if no one ever objected to slavery, or could be brought to object to it, slavery would still be wrong. One need not believe in Platonic Forms to be a moral realist of this sort, and most contemporary realists do not. But views in this vicinity tend to face a similar set of worries: how there could be such facts, and how we could know about them.

The *Humean* approach is decidedly naturalistic: values are somehow ultimately a product of the human mind, and depend on the contingent features of human psychology. If human nature were different, different things would be right and wrong. Humean theories take many forms:

expressivists, for instance, deny the existence of moral properties and facts, and take moral assertions to, say, express our acceptance of certain norms. They do not attempt to state facts, and cannot strictly be true or false. Another kind of Humean might trade in moral facts, but argue that such facts are like color facts: at least partly dependent on the human mind. Value is something we project onto the world. Slavery is indeed wrong, on this sort of view, but only because (say) that's how people come to regard it when sufficiently reflective and informed.

The *Kantian* approach, or rationalism, asserts that moral truths are truths of reason. In short, norms of rationality ground moral norms: immorality is irrational, in much the same way that self-contradiction is irrational. And just as the irrationality of self-contradiction is a generic feature of all rational beings, so too is the irrationality of immorality something that applies to all rational beings, as such: it does not depend on the contingent features of human psychology. The Kantian approach seems to promise a more secure foundation for morality than Humeanism, while avoiding appeal to nonnatural properties. A familiar worry is whether rationality alone can suffice to ground all of morality: it is not clear that all forms of immorality implicate us in a contradiction, or any other obvious rational failure.

In practice, ethical theorists of widely varying metaethical commitments tend to converge on some sort of reflection test for many value claims: can a given value or norm sustain reflection? Very often we find, as we start thinking through the implications of our values, that they cease to seem plausible to us, or even prove incoherent. Whatever one thinks about the ultimate sources and status of values, one is not likely to think people's values justified if not even *they* would maintain them if they gave the matter a little thought. In one popular variant of this methodology, the aim of ethical theorizing, at least in practice, is to try to achieve a *reflective equilibrium* between one's theory and one's intuitions about particular cases. While there is considerable disagreement among philosophers about the reliability of such intuitions and what exactly it takes to establish a value proposition, there tends to be

agreement on at least this much: many values are unjustified, at least for most human populations, if only because they cannot sustain even a moderate dose of reflection. Hence, arguably, the global spread of ideals of human equality and ► [human rights](#) in recent centuries and the growing rejection of doctrines of racial superiority, slavery, and other values that most readers today find repugnant. Even if morality is relative, or dependent on human ► [attitudes](#), it is not just an "anything goes" affair. Some values are better than others.

Cross-References

► [Morality and Well-Being](#)

References

- Blackburn, S. (1999). *Ruling passions: A theory of practical reasoning*. New York: Oxford University Press.
- Darwall, S. L. (2006). *The second-person standpoint: Morality, respect, and accountability*. Cambridge: Harvard University Press.
- Foot, P. (2001). *Natural goodness*. New York: Oxford University Press.
- Gibbard, A. (1990). *Wise choices, apt feelings*. Cambridge: Harvard University Press.
- Griffin, J. (1986). *Well-being: Its meaning, measurement, and moral importance*. Oxford: Clarendon.
- Hume, D. (1751). An enquiry concerning human understanding
- Hume, D. (2000). In D. F. Norton & M. J. Norton (Eds.), *A treatise of human nature*. New York: Oxford.
- Kant, I. (1788). Critique of practical reason.
- Kant, I. (1997). *Groundwork of the metaphysics of morals* (M. Gregor, Trans.). New York: Cambridge.
- Korsgaard, C. M. (1996). *The sources of normativity*. New York: Cambridge University Press.
- MacIntyre, A. (1981). *After virtue*. Notre Dame: University of Notre Dame Press.
- Nagel, T. (1986). *The view from nowhere*. New York: Oxford University Press.
- Parfit, D. (2011). *On what matters*. New York: Oxford University Press.
- Railton, P. (2003). *Facts, values, and norms: Essays toward a morality of consequence*. New York: Cambridge University Press.
- Rawls, J. (1971). *A theory of justice*. Cambridge: Harvard University Press.
- Scanlon, T. (1999). *What we owe to each other*. Cambridge: Harvard University Press.
- Williams, B. (1985). *Ethics and the limits of philosophy*. Cambridge: Harvard University Press.

Ethnic Endogamy/Exogamy in Yugoslavia

► [Ethnic Inter-marriage and Social Cohesion in Yugoslavia](#)

Ethnic Homogamy/Heterogamy in Yugoslavia

► [Ethnic Inter-marriage and Social Cohesion in Yugoslavia](#)

Ethnic Inter-marriage and Social Cohesion in Yugoslavia

Jeroen Smits

Nijmegen Center for Economics, Institute for Management Research, Radboud University Nijmegen, Nijmegen, The Netherlands

Synonyms

[Albanian/Serbian inter-marriage](#); [Croatian/Serbian inter-marriage](#); [Ethnic endogamy/exogamy in Yugoslavia](#); [Ethnic homogamy/heterogamy in Yugoslavia](#); [Inter-marriage and cultural segregation](#); [Inter-marriage and group size](#); [Inter-marriage and sex ratios](#); [Inter-marriage and spatial segregation](#); [Inter-marriage in Yugoslavia](#); [Macedonian/Serbian inter-marriage](#); [Marriage preferences in Yugoslavia](#); [Montenegrin/Serbian inter-marriage](#); [Muslim/Serbian inter-marriage](#); [Slovenian/Serbian inter-marriage](#)

Definition

Inter-marriage can be defined as the marriage between partners who differ with respect to one or more socially relevant characteristic, like their ethnicity (including religion and language), race, educational level, occupation, socioeconomic

family background, geographic origin, and age. *Ethnic inter-marriage* is more narrowly defined as the marriage between partners from groups that see themselves – or are seen by their environment – as distinct from others in the same society, because of (real or assumed) common ancestry, religion, race, region of origin, or language (or another nonhierarchical criterion people may identify with). In the literature also the terms *homogamy/heterogamy* and *endogamy/exogamy* are used for marriages in which the partners are similar/different with regard to specific characteristics.

Description

Introduction

Inter-marriage is a major indicator of the quality of the relationships or social distances among groups in a society, as well as of the ► [social cohesion](#) of societies. At the same time, it is an *instrument* or *agent* that may produce better relationships among social groups and a more cohesive society. This double-sided character of inter-marriage, being both an indicator and an agent, together with the wide availability of inter-marriage data, has made it one of the most important variables in the study of intergroup relationships (Blau and Schwartz 1984; Merton 1941; Monden and Smits 2005; Pagnini and Morgan 1990).

Research on ethnic inter-marriage dates back to the 1920s, when Drachler (1921) studied the integration of immigrants in American society using data on the ethnic groups of husbands and wives for over 100,000 marriages registered in New York City. Inter-marriage was 10% among the first-generation immigrants and 32% among the second-generation immigrants, thus showing a substantial increase over generations. Another “classic” study of the integration of immigrants in the USA was conducted by Kennedy (1944), who, using marriage data for New Haven, concluded that ethnic ties based on national origin were becoming less important and that group formation was taking place more and more on the basis of religion. Since the time of Kennedy, an increasing number of inter-marriage studies have

appeared both in and outside the USA. These studies generally reveal high but decreasing levels of homogamy with regard to national origin (Alba and Golden 1986; Kalbach 2002; Meng and Gregory 2005; Van Tubergen and Maas 2006; Qian and Lichter 2007; Safi 2008; Muttarak and Heath 2010; Lanzieri 2012), religion (Johnson 1980; Kalmijn 1991; Rosenfeld 2008) and race (Kalmijn 1993; Qian 1997; Model and Fisher 2002).

A special category of ethnic intermarriage studies focuses on the former communist states of Eastern Europe and Central Asia, like Czechoslovakia (Boguszak and Bozon 1989), Yugoslavia (Botev 1994; Smits 2010; Nixon et al. 2010), Russia (Botev), Latvia (Monden and Smits 2005), and Estonia (Van Ham and Tiit 2011). In these states, ethnicity emerged as a major dividing factor after the collapse of the Soviet Union around 1990. Deep-rooted ethnic cleavages came to the surface, some dating back to reshufflings of nation states centuries ago, some to the redrawing of borders after World War I, and some to internal replacement policies within the Soviet empire. Two decades of grave ethnic tensions followed, in which bloody civil wars raged over the Balkan and Caucasus and over 20 new nation states were born. Some conflicts have calmed down now but others still smolder, and it may take quiet some years before all these new geographic entities have become peaceful stable societies.

The ethnic antagonisms that came to the surface after the collapse of the Soviet empire can teach us much about the role and meaning of ethnicity in the multiethnic regions of our world. To demonstrate the possibilities offered by intermarriage data for analyzing ethnic conflicts, this entry focuses on intermarriage among the major ethnic groups in the former Yugoslavia. Findings from the literature and new empirical outcomes are presented and discussed in light of the civil wars that took place in the country in the 1990s.

Social Distance

Marriage can be defined as a socially recognized “contract” to form a family. Across the globe, marriage is seen as one of the key events of life

and marriage relationships are often strongly regulated and protected by social control mechanisms, family laws, and/or religious rules. Who is going to marry whom is thus not merely a process of random meeting or spontaneous falling in ► love but also, and in many societies foremost, a rationally and carefully guided transaction in which economic and social considerations play a role and many more persons than the partners and their close relatives are involved (Gündüz-Hosgör and Smits 2002).

Given the important social role of marriage in many societies, marriage data are considered to be a major source of information on the quality of the relations, or social distances, among groups in a society. Sociologists like De Tocqueville (1835, 1967) and Weber (1921, 1972) already mentioned the tendency to marry within one’s own group as an important characteristic of status groups, and throughout the twentieth century marriage patterns have been used to study the openness of the stratification structure of societies (e.g., Benini 1901; Lipset and Bendix 1959; Blau and Duncan 1967; Smits et al. 1998). The notion that intermarriage says something about the social distances between groups in a society also can be traced back to the first part of this century, when Drachler (1921) used the number of mixed marriages to indicate the integration of immigrant groups in American society and Bogardus (1933) took up intermarriage as strongest item in his social distance scale.

The central assumption behind the use of intermarriage for studying social distance is that the existence of marital ties between groups implies that there are also other social contacts – like friendships and work relationships – between them. The children of the groups must have the opportunity to meet each other – at school, in the neighborhood, or during leisure activities. And, very importantly, if there are many marriages between the members of different groups, this means that those members ► trust each other and accept each other as social equals (Kalmijn 1998; Gündüz-Hosgör and Smits 2002). Of course, no social control system is perfect and there are always socially less accepted marriages due to unplanned meetings. However, only if a

combination of positive interactions, evaluations, and associations is present, a steady stream of intermarriages between two groups can be expected. It is this close connection between intermarriage and positive exchanges in a broad range of domains which makes it such a powerful indicator of social distance.

Social Cohesion

The social cohesion aspect of intermarriage has two dimensions: a *cohesion signaling* dimension and a *cohesion increasing* dimension. The signaling dimension is closely related to the social distance aspect. If positive contacts, exchanges, and trust are requirements for intermarriage, the presence of a large number of mixed marriages between two groups implies the existence of strong positive connections, which make violent conflict highly unlikely. The cohesion increasing dimension is related to the role of intermarriage as a connecting element in societies. Mixed marriages not only link together two individuals but also the larger groups to which these individuals belong. Such marriages form a bridge between the groups over which family members and friends of the partners may get in touch with each other, mutual understanding and trust may be promoted, and new – group boundary transcending – personal contacts and collaborations may come into existence (compare Merton 1941; Blau and Schwartz 1984; Kalmijn 1998; Gündüz-Hosgör and Smits 2002; Monden and Smits 2005; Smits 2010). If such marriages are successful, the children born from them belong to both as well as to neither of the groups, which may lead to a weakening of the boundaries and strengthening of the connections at the same time.

The idea that intermarriage is important for social cohesion in societies that consist of smaller units like ethnic, religious, racial groups, or clans is widespread in the anthropological and sociological literature (e.g., Gordon 1964; Lévi-Strauss 1969; Van den Berghe 1979; Blau and Schwartz 1984; Gündüz-Hosgör and Smits 2002). Blau and Schwartz (1984, pp. 12–13), for example, argue that for the integration of the different segments of a larger population, value consensus or functional dependencies are not enough, but social

interactions and personal relationships – preferable marital ties – are required.

This does not necessarily mean that segmented societies without connecting ties will easily fall apart. Social cohesion theory only says that segmented societies with high level of intermarriage between groups are better protected against ethnic conflict and dissolution. This theory therefore would predict that under circumstances of increased conflict risk – like situations of scarcity, inequality, external threat, or political instability (compare Horowitz. 2008; Østby 2008; Kaplan 2009; Kronenberg and Wimmer 2012) – the risk of ethnic conflict outbreak in multiethnic societies is higher if there are few marital ties than in if there are many marital ties between the major groups.

The events that took place in Eastern Europe, the Caucasus, and Central Asia after the breakdown of the Soviet empire offer a unique opportunity to test this prediction. Although its formulation is not very precise, we would in any case expect less mixed marriages between ethnic groups that engaged in violent conflicts than between groups that solved their differences in a more peaceful way.

Measuring Inter marriage

The method used for studying (ethnic) intermarriage depends on the goal of the research. If intermarriage is used for gaining insight into the quality of the relationships, or social distances, between groups, the primary interest is in the *preferences* of group members for close contact with members of the other group(s). To gain insight into the strength of these preferences, the effects of other factors that influence intermarriage should be controlled for. Parents generally try to arrange the opportunity structure in such a way that their children meet mainly partners of the preferred social group(s). However, the degree to which they are able to do this is restricted by structural characteristics of the local marriage market. In this respect the following factors are important:

1. Group size: The probability of a coincidental meeting with somebody of a large group is higher than with somebody of a small group.

The number of mixed marriages cannot be higher than the number of persons in the smallest group.

2. Sex ratio: If there are more males than females in a group, as is often the case with immigrants, part of them are “forced” to marry a partner from another group or remain single (or let a partner come over from their homeland).
3. Spatial segregation: If groups live in different regions of a country, their children have few meeting opportunities and intermarriage will be low.
4. Cultural segregation: Even if groups live close together, they can draw back in their own cultural circles and live in “separate worlds,” speaking their own languages, having segregated schools, and in this way restrict their social contacts to members of their own group.

To gain insight into the strength of the preferences for a marriage with somebody from another group, we have to remove the influence of these structural factors which overshadow the “pure” preference effect. Removing the influence of group size and sex ratio can be done effectively by applying log-linear models or using odds ratios to study the intermarriage patterns (compare Agresti 1990; Kalmijn 1998). The geographic distance effect can be addressed by including an indicator for the distance in the model or by performing separate analyses for different regions.

If we want to use intermarriage as an indicator of the integration of groups in a society, or to indicate the social cohesion of a society, it matters less how the marriages came into existence (because of preferences or “forced” by structural factors). Both kinds of marriages, the preferred and forced ones, bridge the boundaries between the groups and create binding ties, which over time may lead to mutual understanding and trust. What counts from a social cohesion perspective is the actual number of marital connections at a given point in time, independent of how those connections came into existence. Nevertheless, also here the group size is an important restricting factor, as the maximum number of connections is reached when all members of the smallest group

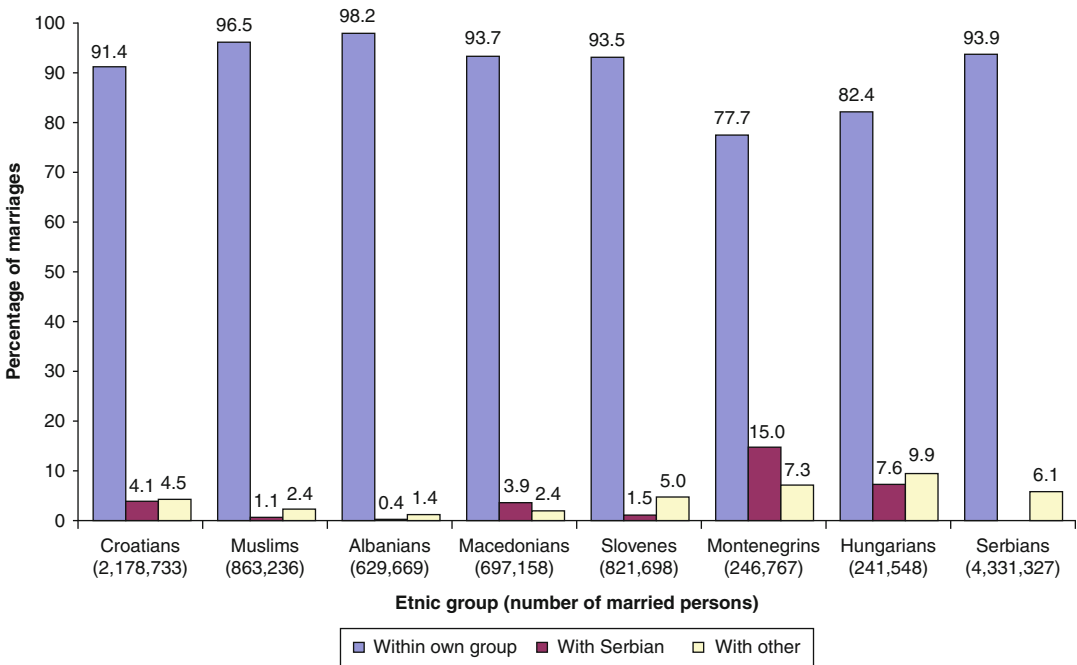
are married with somebody from the larger group. When using intermarriage as an indicator of integration or cohesion, it is therefore important to look not only of percentages of mixed marriages, but also at odds ratios, or to use log-linear modelling.

Ethnic Inter-marriage in Yugoslavia

In 1989, when the Berlin wall fell and the Iron Curtain opened, few people in the West were aware of the deep-rooted ethnic cleavages that were hidden underneath the surface in the former Yugoslav republics. Yet, only two years later, the country completely disintegrated and a period of bloody ethnic wars begun, in which over 100,000 people were killed and some two million became internally displaced or refugee.

These events were unexpected in light of the literature on ethnic relations from the Communist period, which gave the impression that intermarriage was a common phenomenon (Bromlei and Kashuba 1982; Petrovic 1986). This impression was however challenged by Botev (1994). Botev showed that only about 12% of the marriages which were concluded in Yugoslavia between 1961 and 1989 were mixed with regard to the ethnic backgrounds of the partners and that the preference for a marriage outside one’s own ethnic group was generally low. Botev’s findings were confirmed by Smits (1996, 2010), who compared the intermarriage tendencies of ethnic groups which, after the breakdown of Yugoslavia, did and those which did not fight against each other.

Figure 1 presents data from the Census of 1981 (derived from Smits 2010). In that year, there were about four million married persons with the Serbian nationality and over two million with the Croatian nationality. The other ethnic groups were much smaller. Intermarriage percentages were generally very low. Of the married Croats, 91% was married within one’s own group and about 4% had a Serbian partner. Those marriages with a Serbian partner are most of interest, because of the central role played by the Serbians in most conflicts. Of the Muslims, 97% was married within the own group, and 1.1% had a Serbian partner. Of the Albanians, more than 98% was married within the own group and only 0.4%



Ethnic Inter-marriage and Social Cohesion in Yugoslavia, Fig. 1 Percentage of marriages within the own ethnic group, with Serbians, with members of other ethnic

groups, and number of married persons, for selected ethnic groups in Yugoslavia in 1981. (Source: Smits 2010)

with a Serbian partner. Hence, in 1981 no more than one in 90 married Muslims and one in 250 married Albanians had a partner with the Serbian nationality. Also the Slovenes had few intermarriages with Serbians. The Macedonians took in an intermediate position, as the Croatians did. The ethnic groups that were most closely connected to the Serbians were the Montenegreins, of which 15% had a Serbian partner, followed by the Hungarians, of which 8% had a Serbian partner.

Census data show how many mixed marriages there are in a given year. However, as these marriages were concluded in an earlier time period, they reflect past marriage preferences. It is therefore also important to look at the marriages concluded in a given year. Table 1 presents for the major ethnic groups the percentages of marriages concluded in 1989 with a partner from one's own group and the intermarriage percentages and odds ratios for a marriage with a Serbian partner. The figures are computed on the basis of data from the former Yugoslav population administration

(Savezni Zavod Statistiki 1990). The figures in column 3 were presented before by Smits (2010, Fig. 3).

The intermarriage percentages are somewhat higher than in the census data for 1981. This might mean that social distances have decreased over time but may also be the result of a higher divorce rate among mixed marriages (compare Kalmijn et al. 2005; Bratter and King 2008). Overall, the percentages confirm the picture emerging from Fig. 1: strong tendencies to marry within one's own group; few intermarriages of Muslims, Albanians, and Slovenes with Serbians; and relatively many intermarriages of Montenegreins and Hungarians with Serbians.

The odds ratios in Table 1 show the strength of the tendency towards intermarriage with a Serbian partner. A *higher* value of the odds ratio indicates a *lower* tendency to intermarry. The odds ratios range from extremely high (Albanians, Slovenes, and Muslims) to rather high (Croatians, Montenegreins, and Hungarians). The overall

preference for marrying a Serbian partner was thus low in former Yugoslavia. Social distance was smallest between Serbian and Montenegrins, but their odds ratio of 320 still means that the odds of marrying within the own group was 320 times higher than the odds of intermarrying in the other group. Hence the social distances between Montenegrins and Serbians – and even more so between Hungarians and Serbians – turn out to be larger than their intermarriage percentages in Table 1 suggest. The explanation can be found in the fact that the Montenegrins and Hungarians are relatively small ethnic groups, so that the number of “forced” marriages due to structural factors was relatively high.

Ethnic Inter-marriage and Social Cohesion in Yugoslavia, Table 1 Percentages of marriages within the own group and with a Serbian partner concluded in Yugoslavia in 1989, odds ratios of intermarriage with a Serbian partner, and relative size of ethnic group (as percentage of all marrying persons)

Ethnic group	Within own group	With Serbian ^a	Odds ratio	% of all marriages
Croatian	86.9	6.3	373	20.6
Muslim	92.6	2.7	3.249	12.9
Albanian	97.2	0.4	177.020	10.8
Slovene	92.9	1.4	26.416	6.0
Macedonian	91.3	5.5	1.494	7.2
Montenegrin	73.2	17.5	320	2.9
Hungarian	72.7	13.9	702	2.2

^aFigures in this column were already presented by Smits (2010, Fig. 3)

Subnational Data

The figures available in the literature and those presented above are for Yugoslavia as a whole and therefore rather crude. As people tend to marry partners that live in their close environment, it is better to study intermarriage patterns on the basis of regional data. Table 2 presents such regional figures for the most relevant combinations of ethnic groups. They are for marriages concluded in 1989 in the Yugoslav republics and autonomous regions. Their source is again the former Yugoslav population administration (Savezni Zavod Statistiki 1990).

The regional figures to a large extent, but not completely, confirm the national findings. In Bosnia-Herzegovina 3.3% of Croatians and 3.5% of Serbians who married in 1989 did so with a Muslim partner. Also the odds ratios of 2,043 and 1,101 for intermarriage between these groups are very high, indicating large social distance and low intermarriage preference. The percentage of Croatians marrying a Serbian partner in this region was with 9.4% substantially higher, and their odds ratio was with 142 lower than any of the national figures (but still relatively high). The lowest level of intermarriage in 1989 was found in Kosovo, where only 2.2% of marrying Serbians did so with an Albanian partner. At the same time, the odds ratio for Serbian-Albanian intermarriage was extremely high. Hence at the eve of the breakdown of Yugoslavia, there were neither in Bosnia-Herzegovina nor in Kosovo much positive connections that could have

Ethnic Inter-marriage and Social Cohesion in Yugoslavia, Table 2 Intermarriage percentages, odds ratios, and size of smallest group (percentage of married persons) within Yugoslav republics and Autonomous Regions in 1989

Ethnic group combination and region (largest group mentioned first)	% intermarriage of smallest group	Odds ratio	Size smallest group (% of all marriages of both groups)
Muslim – Croatian in Bosnia-Herzegovina	3.3	2.043	27.2
Muslim – Serbian in Bosnia-Herzegovina	3.5	1.101	37.9
Serbian – Croatian in Bosnia- Herzegovina	9.4	142	37.9
Albanian – Serbian in Kosovo	2.2	14.363	11.2
Croatian – Serbian in Croatia	28.9	56	12.9
Slovene – Serbian in Slovenia	30.5	179	3.0
Macedonian – Serbian in Macedonia	72.6	11	3.3
Montenegrin – Serbian in Montenegro	51.9	34	7.2
Serbian – Hungarian in Vojvodina	13.9	99	25.6

prevented violent conflict between the major ethnic groups. At the same time, the social distances were large. Hence for these regions, the intermarriage data are in line with the predictions of social cohesion theory.

For Croatia, findings are however different. Rather surprisingly given the highly violent character of the war in Croatia, the number of mixed marriages between Serbians and Croats in this republic was relatively high. As much as 29% of Serbians marrying in that region in 1989 married a Croatian partner. The odds ratio of Serbian-Croatian intermarriage in Croatia was with a value of 56 also relatively low, indicating a moderate level of social distance between the local communities. In contrast to the findings for Bosnia-Herzegovina and Kosovo, the results for Croatia do not confirm predictions of social cohesion theory. In spite of a relatively high number of mixed marriages, a bloody ► war has been fought between the Serbians and Croats in this republic.

Table 2 also presents figures for Slovenia, Macedonia, Monte Negro, and Vojvodina. Of these regions, only Slovenia has experienced a violent conflict directly after secession in 1991. However, this war lasted only 10 days and there were few casualties. Table 1 shows that in 1989 there were not many Serbians marrying in Slovenia (they were involved in only 3% of marriages of the two groups). However, almost one-third of them married a Slovenian partner. In Monte Negro and Macedonia, the number of marrying Serbians was also low, but the intermarriage percentages of them with natives were with 52 and 73% even higher than in Slovenia. This might mean that a substantial part of the Serbians living in these republics went there for a marriage with a native-born person. The odds ratios still indicate a relatively large social distance between the Serbians and Slovenes in Slovenia but much smaller social distances between Serbians and Montenegrins in Monte Negro and Serbians and Macedonians in Macedonia.

In the autonomous area of Vojvodina – homeland of the ethnic Hungarians – the picture looks again different. Whereas most other ethnic groups formed a large majority in their own regions, only

26% of the marrying persons in Vojvodina in 1989 was Hungarian. Seceding from Yugoslavia, as the other groups did, was for them therefore not a realistic option. Table 2 shows that intermarriage between Hungarians and Serbians in the region was with 14% at an intermediate level. The odds ratio of 99 indicates that this relatively high number of mixed marriages was at least in part due to the small size of the group and less because of small social distance.

Conclusions

The figures presented above on ethnic intermarriage in Yugoslavia as a whole and in the republics and autonomous regions broaden our knowledge regarding the relationship between ethnic intermarriage and social cohesion in this country. Whereas for Bosnia-Herzegovina and Kosovo the findings of Botev (1994) and Smits (2010) of few mixed marriages and large social distances were reconfirmed, for Croatia the regional figures point in another direction. Of the Croatian Serbians who married in 1989, 29% did so with a Croatian partner. This is a substantial number. Although the odds ratio of 56 indicates that there still was a moderately strong preference for a marriage within the own group – and hence the mixed marriages may in part have been “forced” by structural circumstances – the intermarriage percentage is so high that there must have been a large number of connecting ties between the local ethnic communities. Thus, as far as this region is concerned, there was some truth in the literature from the communist period that spoke about much intermarriage in Yugoslavia.

Ethnic conflicts are complex phenomena in which many factors play a role. The intermarriage figures for Croatia make clear that the existence of many mixed marriages not under all circumstances can prevent a region from being split up along ethnic lines. This is an important observation, which makes one wonder what the circumstances were by which these ethnic groups, which were so closely connected, were torn apart and turned into deadly enemies. One

possibility to answer this question is an in-depth comparison of the Croatian-Serbian conflict in Croatia with the Croatian-Serbian, Croatian-Muslim, and Serbian-Muslim conflicts in Bosnia-Herzegovina.

Another one is a broader comparison of the ethnic conflicts in the former Yugoslavia with those in other parts of the former Soviet-dominated region, for example, the Caucasus, Central Asia, and the Baltic countries. The far-going transformations in this region after 1990 can be seen as a gigantic natural experiment that can learn us much about the role and meaning of ethnicity in the multiethnic regions of our world. The intermarriage figures which in some of these countries (for good reasons, as we know now) were collected in population administrations, censuses, and surveys constitute an important instrument for mapping the cleavages and how they changed as a result of the transitions the region went through.

Cross-References

- [Cultural or Ethnic Homogeneity Preference Index](#)
- [General Fair Treatment Index](#)
- [Heterogeneous Social Support Index](#)
- [Heterogeneous Socializing Network Index](#)
- [Index of Inegalitarianism](#)
- [Personal Fair Treatment Index](#)

References

- Agresti, A. (1990). *Categorical data analysis*. New York: Wiley.
- Alba, R., & Golden, R. (1986). Patterns of ethnic marriage in the United States. *Social Forces*, 65, 202–223.
- Benini, R. (1901). *Principii di demografia*. Firenze: Barbera.
- Blau, P., & Duncan, O. (1967). *The American occupational structure*. New York: Wiley.
- Blau, P., & Schwartz, J. (1984). *Crosscutting social circles*. New York: Academic.
- Bogardus, E. S. (1933). A social distance scale. *Sociology and Social Research*, 17, 265–271.
- Boguszak, M., & Bozon, M. (1989). L'Homogamie sociale en tchécoslovaquie. *Population*, 44, 198–209.
- Botev, N. (1994). Where east meets west: Ethnic intermarriage in the former Yugoslavia, 1962 to 1989. *American Sociological Review*, 59, 461–480.
- Botev, N. (2002). The ethnic composition of families in Russia in 1989: Insights into the soviet “nationalities policy”. *Population and Development Review*, 28(4), 681–706.
- Bratter, J. L., & King, R. B. (2008). “But will it last?": Marital instability among interracial and same-race couples. *Family Relations*, 57, 160–171.
- Bromlei, Y., & Kashuba, M. (1982). *Brak i semia u narodov jugoslavii (huwelijk en familie bij de joegoslaven)*. Moskou: Nauka.
- De Tocqueville, A. ([1835] 1967). *L'Ancien Régime et la Révolution*. Paris: Gallimard.
- Drachler, J. (1921). *Intermarriage in New York City: A statistical study of the amalgamation of European peoples*. New York: Columbia University.
- Gordon, M. (1964). *Assimilation in American life*. New York: Oxford University Press.
- Gündüz-Hosgör, A., & Smits, J. (2002). Intermarriage between Turks and Kurds in contemporary Turkey. *European Sociological Review*, 18, 417–432.
- Horowitz. (2008). Mapping pathways of ethnic conflict onset: Preferences and enabling conditions. *Ethnopolitics: Formerly Global Review of Ethnopolitics*, 7(2–3), 307–320.
- Johnson, R. (1980). *Religious assortative marriage in the United States*. New York: Academic.
- Kalbach, M. A. (2002). Ethnic intermarriage in Canada. *Canadian Ethnic Studies*, 36, 25–39.
- Kalmijn, M. (1991). Shifting boundaries: Trends in religious and educational homogamy. *American Sociological Review*, 56, 786–800.
- Kalmijn, M. (1993). Trends in black/white intermarriage. *Social Forces*, 72, 119–146.
- Kalmijn, M. (1998). Intermarriage and homogamy: Causes, patterns, trends. *Annual Review of Sociology*, 25, 395–421.
- Kalmijn, M. D., Graaf, P. M., & Janssen, J. P. G. (2005). Intermarriage and the risk of divorce in the Netherlands: The effects of differences in religion and in nationality, 1974–94. *Population Studies*, 59(1), 71–85.
- Kaplan, S. (2009). Identity in fragile states: Social cohesion and state building. *Development*, 52(4), 466–472.
- Kennedy, R. J. R. (1944). Single or triple melting Pot? Intermarriage trends in New Haven. *The American Journal of Sociology*, 49, 331–339.
- Kronenberg, C., & Wimmer, A. (2012). Struggling over boundaries of belonging; a formal model of nation building. Ethnic closure and populism. *The American Journal of Sociology*, 118(1), 176–230.
- Lanzieri, G. (2012). *Merging populations A look at marriages with foreign-born persons in European countries*. Eurostat, statistics in focus, 29.
- Lévi-Strauss, C. (1969). *The elementary structures of kinship*. Boston: Beacon.

- Lipset, S. M., & Bendix, R. (1959). *Social mobility in industrial society*. Berkeley: University of California Press.
- Meng, X., & Gregory, R. G. (2005). Inter-marriage and the economic assimilation of immigrants. *Journal of Labor Economics*, 23, 135–175.
- Merton, R. (1941). Inter-marriage and social structure: Fact and theory. *Psychiatry*, 4, 361–374.
- Model, S., & Fisher, G. (2002). Unions between blacks and whites: England and the US compared. *Ethnic and Racial Studies*, 25, 728–754.
- Monden, C., & Smits, J. (2005). Ethnic inter-marriage in times of social change: The case of Latvia. *Demography*, 42(2), 323–345.
- Muttarak, R., & Heath, A. (2010). Who inter-marries in Britain: Explaining ethnic diversity in inter-marriage pattern. *The British Journal of Sociology*, 61(2), 275–305.
- Nixon, N., Sevinc, R., & Dorothy, R. (2010). *Social embeddedness, social protection and conflict potential in the successor states of the former Yugoslavia*. Working paper.
- Østby, G. (2008). Polarization, horizontal inequalities and violent civil conflict. *Journal of Peace Research*, 45, 143–168.
- Pagnini, D., & Morgan, S. (1990). Inter-marriage and social distance among US immigrants at the turn of the century. *The American Journal of Sociology*, 96, 405–432.
- Petrovic, R. (1986). Ethnically mixed marriages in Yugoslavia. *Sociologija*, 28, 229–239.
- Qian, Z. (1997). Breaking the racial barriers: Variations in interracial marriage between 1980 and 1990. *Demography*, 34, 263–276.
- Qian, Z., & Lichter, D. (2007). Social boundaries and marital assimilation: Interpreting trends in racial and ethnic inter-marriage. *American Sociological Review*, 72, 68–94.
- Rosenfeld, M. J. (2008). Racial, educational and religious endogamy in the United States: A comparative historical perspective. *Social Forces*, 87(1), 1–31.
- Safi, M. (2008). Inter-marriage and assimilation: Disparities in levels of exogamy among immigrants in France. *Population-E*, 63(2), 239–268.
- Savezni Zavod Statistiki. (1962, 1974, 1968, 1990). *Demografska statistika*. Beograd: Yugoslav Statistical Office.
- Smits, J. (1996). *Ethnic inter-marriage in former Yugoslavia*. Paper presented at the spring meeting of the ISA Research Committee 28 on Social Stratification and Mobility in Stockholm Sweden.
- Smits, J. (2010). Ethnic inter-marriage and social cohesion. What can we learn from Yugoslavia? *Social Indicators Research*, 96, 417–432.
- Smits, J., Ultee, W., & Lammers, J. (1998). Educational homogamy in 65 countries: An explanation of differences in openness using country-level explanatory variables. *American Sociological Review*, 63, 264–285.
- Van den Berghe, P. (1979). *Human family systems: An evolutionary view*. New York: Elsevier.
- Van Ham, M., & Tiit, T. (2011). Ethnic minority-majority unions in Estonia. *European Journal of Population*, 27(3), 313–335.
- Van Tubergen, F., & Maas, I. (2006). Ethnic inter-marriage among immigrants in the Netherlands. An analysis of population data. *Social Science Research*, 36, 1065–1086.
- Weber, M. ([1921] 1972). *Wirtschaft und Gesellschaft*. Tübingen: Mohr.

Ethnic Minorities

Han Entzinger

Department of Public Administration and Sociology, Erasmus University Rotterdam, Rotterdam, The Netherlands

Definition

Ethnic minorities are groups of people who on grounds of their cultural and/or physical characteristics differ from the mainstream population in a country.

Description

There is no widely accepted international definition of what constitutes a minority. In the social sciences, Louis Wirth's (1945) classical definition is often taken as a starting point for the study of ethnic minorities. He sees a minority as "a group of people who, because of their physical or cultural characteristics, are singled out from the others in the society in which they live for differential and unequal treatment and who therefore regard themselves as objects of discrimination." In this definition the "physical and cultural characteristics" point at the fact that minority and majority are of different ethnicities. Later, Schermerhorn (1970) constructed a typology in which he differentiated between two characteristics of a minority position: the minority's numerical strength and its social power. Usually, ethnic minority groups have little power because of their small size. Situations exist, however, where ethnic

groups may numerically be a minority and yet have more power than the numerical majority. This was the case, for example, in colonial societies or in South Africa under apartheid. Here, it is the numerical majority that may suffer from unequal treatment and discrimination, which are typical characteristics of a minority situation.

The concept of ethnic minority is often linked to the modern nation-state (Kymlicka 1995a). Any community that because of its ethnic background diverges from the mainstream national identity may then be considered an ethnic minority. Heckmann (1992) distinguishes three types of ethnic minorities: national, regional, and immigrant minorities. National minorities result from the fact that state borders do not always coincide with boundaries between nations, often for historical reasons. In Europe, the Balkans provide many examples of this, for example, several millions of Hungarians live across the border in Romania, while Bulgaria has a significant Turkish minority. In Africa, it was a deliberate policy of the nineteenth-century colonial powers to let geographical borders cut right across territories of one and the same tribe. Consequently, most African states of today have ethnically mixed populations. Regional minorities are communities that are part of a nation-state, but that are ethnically different from the mainstream population of that nation-state. Unlike national minorities they have no ethnic links with neighboring countries. Usually, though not necessarily, they are concentrated in a specific area or region. Examples are Basques and Catalans in Spain, Welsh in the UK, or Saami in the Nordic countries. Finally, immigrant minorities are also ethnically different from the mainstream population in the country where they live. However, they are not usually concentrated in one particular region, their ethnic identity is strongly determined by their country of origin, but it is also likely to change rather rapidly under the influence of the mainstream culture that surrounds them.

Differences between these three types of ethnic minorities are not always as clear-cut as they may seem. The boundary between national and regional minorities is permeable; the time factor may play a role here (Brubaker 2004). In the long

run, immigrant minorities may even disappear – because of return migration or because of assimilation into the majority – but they may also develop into regional minorities. The African American minority in the USA, for example, owes its presence to forced immigration, but this took place so long ago that most Americans will not conceive them as an “immigrant” minority. The same applies to Roma and Sinti, significant minorities in many central and east European countries, which have century-old roots in India.

Outside the Western world, the pattern often is even more complex. Kymlicka (1995b) states that the world’s (then) 184 independent states contain over 600 living language groups and 5000 ethnic groups. Countries with vast territories, such as Russia, India, China, Indonesia, and Nigeria accommodate numerous ethnic groups and, in fact, are sometimes built up of ethnic minorities only – though often with one being dominant. Great empires in history, such as the Roman Empire, the Ottoman Empire, the Austro-Hungarian Monarchy, and the USSR, were true multiethnic entities. Immigrant societies, like the USA, Canada, or Australia, also house many different ethnic minorities, ranging from indigenous peoples to recently arrived immigrants from almost any place in the world.

In fact, only few states in the world are ethnically homogeneous (Iceland and Korea are commonly cited as examples, even though these countries are now also experiencing immigration). This means that almost all countries are multiethnic and thus face the challenge of how to deal with claims of recognition put forward by their ethnic minorities. Most experts agree that some form of recognition is needed in order for minorities to survive in the long run. States vary significantly in the degree to which they acknowledge such claims and in their ways of dealing with ethnic diversity (Kymlicka and Norman 2000). Nondemocratic states tend to suppress ethnic minority claims for the sake of national unity, even though limited forms of recognition may occur. Liberal democracies generally are more sensitive to minority rights, but here too major differences can be found, especially in modes and degrees of acceptance of ethnic and cultural

diversity (Chin 2017; Kenny 2004; Parekh 2000). Recently, several European countries have manifested a public backlash against their earlier tolerance towards multiculturalism (Vertovec and Wessendorf 2010; Joppke 2017).

Five basic options may be distinguished in the handling of ethnic and cultural pluralism by liberal democracies (Entzinger 2005). This is not to say that no intermediate positions exist; in fact, these options are only points on a continuum that ranges from no to full recognition. The first option is the idea of the neutral state, which treats all its citizens in exactly the same way and which sees culture and ethnicity as private affairs. The Jacobin tradition in France is one of the purest examples here: the idea of publicly recognizing ethnic minorities is alien to this philosophy. In practice, however, this may force minorities to assimilate to mainstream culture, and it may provoke discrimination as well as protest. The second option is a mild form of public recognition and support of ethnic minorities, particularly in fields directly related to the manifestation of their ethnic identity (e.g., through media or associations) and the transfer of language and cultural elements to the next generation (e.g., through facilities for mother tongue teaching). The third option goes one step further and aims at facilitating the development of parallel institutions, each based on different cultural or ethnic traditions. This is the classical image of a plural or “pillarized” society in which each community has the right to set up its own institutions, such as hospitals, schools, and sports clubs, if needed with public moral, legal, and financial support. Several northwest European countries, including the Netherlands, have been using this system to accommodate religious pluriformity. It is also quite common in multilingual countries like Belgium or Canada.

The three options mentioned so far have in common that the law applies in the same way to everyone, even though there may be separate institutional arrangements for certain communities. This is not the case under the fourth option, which implies legal pluralism. There are not many examples of this in modern liberal democracies, precisely because equality before the law is one of their fundamental principles. Non-Western

countries, however, such as India, Malaysia, or Nigeria, do practice certain forms of ethnically based legal pluralism, particularly in family law and penal law. Occasionally, the issue arises in Western countries as well, for example, when certain minorities claim that legal standards should be applied differently in situations where behavior is supposed to be religiously inspired, for example, in cases of honor killings. Recently, a vigorous debate took place in Germany on the acceptability of circumcision of little boys on religious grounds. The fifth and final option is the granting of some form of legal and political autonomy or self-determination to an ethnic minority. Generally, this requires a territory where the minority constitutes a majority, and that will then become its jurisdiction. Nearly always, however, new minorities will also be living in that territory, and arrangements for their recognition will still be needed. The splitting up of former Yugoslavia into no less than seven different states – each with their own minorities – constitutes a good recent example. In today’s Europe, ethnically based movements for territorial autonomy are quite significant in Scotland, Flanders, and Catalonia.

Since the Second World War, concerted efforts have been made at a supranational level to safeguard the rights of ethnic and other (national, regional, religious, and linguistic) minorities. Key actors here are the United Nations with the 1948 Universal Declaration of Human Rights and the 1966 UN Covenant on Civil and Political Rights (Thio 2005). At the European level, the Council of Europe has its 1995 Framework Convention on the Protection of National Minorities (Henrard and Dunbar 2008). The latter convention, for example, stresses the importance for governments of taking measures “that enable national minorities to maintain and develop their culture and to preserve the essential elements of their identity.” Forced assimilation is prohibited. The UN Human Rights Convention pleads for “the ability of a minority group to maintain its culture, language or religion.” A problem here is that it is not always clear to which minorities these conventions should be applied, particularly not in the case of immigrant minorities. An even larger

problem is that governments, also in liberal democracies, differ widely in their interpretation of the principles laid down in the different conventions.

Cross-References

- [Deprivation](#)
- [Immigrants, an Overview](#)
- [Migrations: An Overview](#)
- [Negative Stereotypes](#)
- [Social Inclusion](#)
- [Social Integration](#)
- [Xenophobia](#)

References

- Brubaker, R. (2004). *Ethnicity without groups*. Cambridge, MA: Harvard University Press.
- Chin, R. (2017). *The crisis of multiculturalism in Europe. A history*. Princeton: Princeton University Press.
- Entzinger, H. (2005). Multiculturalism revisited. In Y. Ben-Rafael & Y. Sternberg (Eds.), *Comparing modernities* (pp. 191–204). Leiden: Brill.
- Heckmann, F. (1992). *Ethnische Minderheiten, Volk und Nation*. Stuttgart: Enke.
- Henrard, K., & Dunbar, R. (Eds.). (2008). *Synergies in minority protection. European and international law perspectives*. Cambridge, UK: Cambridge University Press.
- Joppke, C. (2017). *Is multiculturalism dead?* Cambridge, UK: Polity.
- Kenny, M. (2004). *The politics of identity*. Cambridge, UK: Polity.
- Kymlicka, W. (1995a). *Multicultural citizenship*. Oxford: Oxford University Press.
- Kymlicka, W. (1995b). *The rights of minority cultures*. Oxford: Oxford University Press.
- Kymlicka, W., & Norman, W. (2000). *Citizenship in diverse societies*. Oxford: Oxford University Press.
- Parekh, B. (2000). *Rethinking multiculturalism. Cultural diversity and political theory*. Houndmills: Macmillan.
- Schernerhorn, R. A. (1970). *Comparative ethnic relations*. New York: Random House.
- Thio, L.-A. (2005). *Managing Babel: The international legal protection of minorities in the twentieth century*. Leiden: Nijhoff.
- Vertovec, S., & Wessendorf, S. (Eds.). (2010). *The multiculturalism backlash. European discourses, policies and practices*. Abingdon: Routledge.
- Wirth, L. (1945). The problem of minority groups. In R. Linton (Ed.), *The science of man in the world crisis* (pp. 347–372). New York: Columbia University Press.

Ethnic Preferences

- [Xenophobia](#)

Ethnic Tibetans Personal Well-Being (PWI)

- [Ethnic Tibetans: Application of the Personal Well-Being Index \(PWI\)](#)

Ethnic Tibetans: Application of the Personal Well-Being Index (PWI)

Dave Webb
University of Western Australia, Crawley, WA, Australia

Synonyms

[Contentment and well-being in Tibet](#); [Ethnic Tibetans personal well-being \(PWI\)](#); [International well-being group](#); [Satisfaction in Tibet](#); [Tibet](#); [Well-being, subjective](#)

Definition

Background

Mention the Tibetan plateau and the image conjured is that of a desolate cold barren place located at the roof of the world. To many, it is the kind of place often seen in color photography books or in the movies, but seldom experienced in person.

Life can arguably be described as unusually harsh in this high-altitude region with extreme winters lasting as long as 9 months of the year. Indeed, temperatures as low as minus 40 °C would not be unusual. Beyond the location and climate, the lifestyle of people living on the Tibetan plateau is determined by the topography with many living a nomadic or seminomadic existence. These

predominantly nomadic people are reliant on arable agriculture and the herding of domestic animals such as yak, goat, sheep, horses, and cattle for most of their basic needs which occur either through direct consumption or exchange trade.

Between 1996 and 2001, the ethnic Tibetan prefecture of Yushu, located in the province of Qinghai, was affected by prolonged and extraordinarily severe cold weather conditions resulting in the loss of up to 80–90% of the livestock (Webb and Stuart 2009). A low annual per capita income of about approximately US \$50 was insufficient to replace lost livestock rendering much of the local population in need of aid. Little aid was forthcoming, at least of a magnitude that could satisfactorily address the scale of the issue.

Beyond this, the region is prone to earthquakes, and indeed, the most recent one in April 2010 left about 85% of the town of Jyekundo, the government seat of Yushu prefecture, raised to the ground with 2698 reported fatalities, thousands injured, and many thousands homeless (People Daily 2010).

Purpose

A study to explore the life satisfaction of ethnic Tibetans living in the nomadic township area of Kharnang in the prefecture of Yushu was conducted (See also see study originally reported in Webb and Stuart 2009). Predominantly, the study was directed by the following objectives:

1. To conduct the first implementation of the PWI survey on Tibetan respondents
2. To assess the validity and reliability of the PWI with the resulting sample
3. To report on levels of PWI across a range of Tibetan respondents investigating at the same time differences in respondent demographic characteristics of age, gender, and education
4. To identify the main antecedents to overall life satisfaction

Description

Method

Consistent with established protocol for the PWI measure, personal well-being is operationalized

with both a single “overall life satisfaction” item and seven life domain satisfaction items (standard of living, health, achievement in life, personal relationships, safe you feel, part of community, future security). A “0–10,” 11-point measurement scale with the anchors “completely dissatisfied” and “completely satisfied” was employed (see Appendix 1 for full item wording in English) [1].

In addition to the PWI measures, a range of demographic variables were also included to enable exploration of demographic differences in the data. These included age, gender, and education.

Consistent with recommendations (Douglas and Craig 1983), the developed survey was both forward translated into Tibetan and backward translated into English by two qualified Tibetan native speakers whose knowledge of written and spoken Tibetan and English was fluent. Discussion between the translators enabled any ambiguities to be reconciled. The survey was implemented by the author together with the assistance of one of the translators while the author was traveling in the region during the Tibetan winter of 2005/2006.

Taking in to consideration that much of the townships’ population was nomadic, making access to a large sample somewhat problematic, a convenience sample ($n = 102$) of respondents was recruited.

Results

Validity and Reliability

To establish the validity of the PWI scale, exploratory factor analysis with varimax rotation was employed. A single-factor structure explaining 50.70% of the variance resulted. All items revealed factor coefficients greater than 0.50, and all were thus included in the scale’s structure (Table 1). To assess the reliability of the scale, Cronbach’s alpha was calculated revealing an acceptable alpha coefficient of 0.834 (Nunnally 1978).

Descriptives

Consistent with recommendations (Cummins et al. 2003), the overall life satisfaction and

Ethnic Tibetans: Application of the Personal Well-Being Index (PWI), Table 1 Exploratory factor analysis: varimax rotation

Component matrix ^a	Component 1
Standard of living	0.722
Health	0.725
Achieving in life	0.806
Personal relationships	0.519
Safe you feel	0.678
Part of community	0.742
Future security	0.758
Extraction method: principal component analysis	

^a1 Component extracted

individual satisfaction with life domain items were standardized into units representing a Percentage of Scale Maximum (%SM) on a 0–100 distribution using the formula (score/x) * 100. Descriptive statistics for all items included in the survey is presented in Table 2. Taking all domain items into consideration, an aggregate PWI for the total sample of 70.58 resulted (Table 2).

Determinants of Life Satisfaction

To assess the contribution of each of the included life domains to “overall life satisfaction,” a multiple regression analysis using the “stepwise” method was performed. A final significant model with an adjusted R² of 0.25 resulted. It is worth noting that this is lower than that reported elsewhere using the same measures (i.e., AdjR² = 0.52 Cummins et al. 2003; AdjR² = 0.43 Lau et al. 2005; AdjR² = 0.57 Tiliouine et al. 2006).

In this study, of the included variables, two significant predictors of overall life satisfaction were identified (Table 3). These included satisfaction with “standard of living” (beta = 0.35, p = 0.003) and satisfaction with “future security” (beta = 0.24, p = 0.012).

Demographic Differences

To explore the relationships between gender, age, education, and overall life satisfaction (OLS), a correlation matrix accounting for differing scale structures was produced (Table 4). For further insight, this was reviewed in conjunction with

the descriptive data for each included variable (Table 2).

Gender and Personal Well-Being

Table 4 reveals a significant negative correlation coefficient(−0.188, P = <0.05) between gender and OLS. With “males” coded as “1” and “females” as “0,” the negative direction of the correlation indicates that females (Table 2) report higher levels of OLS which can be attested to by the revealed mean score for males of 58.96 and for females of 76.46 (Table 2). It is also noted (Table 4) that the same pattern of negative correlations is revealed across all life domain areas offering further suggestion of higher within life domain satisfaction for females over males.

Age and Personal Well-Being

Table 4 reveals a significant positive correlation coefficient (0.391, P = <0.05) between age and OLS. It is also noted for the most part that the same pattern of positive correlations is revealed across life domain areas suggesting that OLS increases with age. However, closer scrutiny of Table 2 for the age group 45–54 reveals the continuity of OLS and PWB (as indicated by PWI) increasing with age to be thwarted. Unfortunately, this anomaly should be reviewed with caution due to the very low n = 6 sample size for this age group. That the sample size is low, not only here but for the study overall, is flagged here as a limitation to this study.

Education and Personal Well-Being

Table 4 reveals a significant negative correlation coefficient(−0.408, P = <0.05) between education and OLS. Given that respondents “with education” were coded as “1” and those with “no education” as “0,” the negative direction of the correlation confirms that respondents with no education (Table 2) report higher levels of OLS (avg. = 58.22) than do those with an education (avg. = 74.40). It is also noted (Table 4) that the same pattern of negative correlations is revealed across all life domain areas indicating higher life domain satisfaction for respondents without an education.

Ethnic Tibetans: Application of the Personal Well-Being Index (PWI), Table 2 Descriptive statistics (gender, education and age). Scores reflect converted means

	Gender		Education		Age					Mean / St. dev.
	Male	Female	No education	Education	18-24	25-34	35-44	45-54	55 plus	
Overall life satisfaction	58.96	76.46	74.40	58.22	54.83	64.88	85.38	68.33	84.50	67.33
	30.47	17.07	24.80	25.20	26.53	25.58	17.61	33.12	13.70	26.00
Standard of Living	59.58	73.96	72.50	59.78	60.83	64.42	76.92	50.00	85.00	66.83
	26.17	22.76	26.02	22.10	21.65	23.73	24.63	28.28	27.80	25.06
Health	67.71	73.96	71.43	68.22	62.92	72.09	76.15	51.67	86.67	70.00
	26.11	24.03	24.60	27.74	24.22	24.74	27.55	29.94	11.55	25.96
Achieving in life	62.29	68.13	71.25	56.00	59.17	60.93	73.08	50.00	90.00	64.46
	24.52	25.49	23.51	25.17	23.02	24.48	20.57	29.66	12.79	25.32
Personal relationships	77.92	80.00	84.82	68.00	72.92	77.21	93.08	75.00	81.67	77.33
	22.12	22.88	16.84	28.89	21.16	22.61	8.55	28.81	26.91	24.37
Safe you feel	68.54	77.29	78.21	66.44	69.17	68.37	88.46	51.67	94.17	72.97
	23.52	21.31	21.83	22.17	18.16	22.78	15.19	31.25	7.93	22.65
Part of community	69.17	73.13	77.14	62.67	64.17	66.05	87.69	61.67	88.33	70.69
	20.40	21.45	19.04	19.82	22.63	19.54	10.13	21.37	7.18	20.60
Future security	69.79	74.38	81.96	59.11	68.33	64.65	82.31	76.67	89.17	71.78
	23.56	21.53	19.86	19.05	23.90	21.08	20.48	22.51	14.43	22.51
<i>N</i>	49.00	48.00	56.00	46.00	24.00	44.00	13.00	6.00	12.00	102.00
Percentage %	50.50	49.50	54.90	45.10	24.20	44.40	13.10	6.10	12.10	100.00
PWI mean	67.86	74.40	76.76	62.89	65.36	67.67	82.53	59.52	87.86	70.58
PWI St. Dev	23.77	22.78	21.67	23.56	22.11	22.71	18.16	27.40	15.51	23.78

Ethnic Tibetans: Application of the Personal Well-Being Index (PWI), Table 3 Stepwise regression: life domains on overall life satisfaction

Dependent variable	=	Overall life satisfaction				
Number of obs.	=	101				
Multiple R	=	0.5143				
R square	=	0.2645				
Adjusted R square	=	0.2495				
F(2, 98)	=	17.6192				
Prob > F	=	0.0000				
Std. error of est.	=	2.2521				
Durbin-Watson stat.	=	1.7628				
Regression coefficients						
Variable	B	Ordinary Std. error	Heteroscedastic Std. error	Beta	t	p
Intercept	2.314	0.802	0.920		2.515	0.014
Standard of living	0.364	0.104	0.121	0.351	3.003	0.003
Future security	0.277	0.115	0.108	0.240	2.554	0.012

Interaction Effects

Though previous studies have highlighted the possibility of interaction effects with respect to age, gender, education, and life satisfaction (Glenn and Weaver 1981; Tiliouine et al. 2006), once main effects were accounted for in this study, none were identified. This finding is interpreted with caution, since again it is possible that this is an artifact of the relatively low sample size for this study.

Discussion
PWI

Cummins and Lau (2005) highlight that the normative range for Western means once converted is between 70% and 80% points. With respect to Asian populations, Lau et al. (2005) indicate that these values are generally around 10% points lower than for Western means which can be accounted for by cultural response bias. In a recent study using the PWI items, Davey et al. (2007, P2) reveal a PWI of 64.24 for a sample of peasants in rural China. This is within the lower anticipated normative range for Asians and is only marginally different from the PWI of 65.9 revealed by Lau et al. (2005) in their study with Chinese respondents in Hong Kong. Thus, the revealed PWI of 70.58 for the ethnic Tibetan sample is more akin to that expected of Western populations than it is for Asian populations.

Davey et al. (2007) suggest that the normative range for Chinese may be lower than that evidenced by Western populations because Chinese culture places a high value on modesty. If this is true, perhaps ethnic Tibetans place a lesser value on modesty, or perhaps it is just a case of them being more content with their lives than their Han Chinese neighbors. Furthermore, differences may also be due to situational variation. In any case, a full address of this issue goes beyond the scope of this entry, but a further exploration would certainly make a useful contribution to knowledge.

In regard to the validity of the PWI instrument, not only does it meet established psychometric guidelines as discussed above, but it also proved to be a useful template from which to discuss key aspects of life on the Tibetan plateau. In this regard, one important domain revealed to be missing from the original survey was that of religion/spirituality, core to Tibetans. Tibetans interpret their life through a Buddhist lens which is central to understanding and perhaps even accounting for a higher than expected PWI. The implication of this finding is that it highlights the need to include an item in the PWI that covers this important life domain and particularly so for populations rich in spiritual culture. For a fuller discussion on this theme, see Webb and Stuart (2009) and Webb (2012).

Ethnic Tibetans: Application of the Personal Well-Being Index (PWI), Table 4 Correlation matrix

	Overall life satisfaction	Standard of living	Health	Achieving in life	Personal relationships	Safe you feel	Part of community	Future security	Age	Gender	Education
Overall life satisfaction	1										
Standard of living	0.459	1									
Health	0.131	0.387	1								
Achieving in life	0.331	0.529	0.574	1							
Personal relationships	0.315	0.305	0.232	0.306	1						
Safe you feel	0.329	0.495	0.448	0.459	0.393	1					
Part of community	0.381	0.511	0.391	0.484	0.267	0.46	1				
Future security	0.492	0.493	0.415	0.607	0.312	0.436	0.503	1			
Age	0.391	0.33	0.297	0.383	0.271	0.33	0.401	0.383	1		
Gender	-0.188	-0.367	-0.143	-0.167	-0.133	-0.258	-0.147	-0.095	-0.232	1	
Education	-0.408	-0.363	-0.069	-0.385	-0.424	-0.386	-0.434	-0.643	-0.546	0.1	1

Italics – Correlation are not significant at the 0.05 level (2-tailed). Correlations between categorical variables are polychoric

Contribution to Overall Life Satisfaction

Multiple regression analysis revealed just two out of the seven life domains to be significant predictors of overall life satisfaction (Table 3). These included satisfaction with “standard of living” and “future security.”

It is surprising to find “standard of living” to be the strongest predictor of life satisfaction. The majority of respondents were living under extreme harsh conditions and in many respects struggling to make ends meet with some having little to no income at all because either there was no work for those living in the townships or, in the case of the nomadic herders, because they had suffered the loss of much of their livestock, their livelihood, during the extreme winters between 1996 and 2001. In spite of this, they were still able to express a sense of well-being and hope for the future, demonstrating an acceptance of and contentment with their circumstances. This is not to suggest that they would not like things to be better, but perhaps in relative terms, they consider the improvements that they have experienced in recent years to outweigh some of the downsides of their circumstances.

Improvements seen in the region include the building of a school, provision of health clinics, extensive road infrastructure development, provision of solar power, the building of water wells, water sanitation, and the availability of electricity and telephony services. All of these are tantamount to a modernization of living conditions which in the case of the nomadic herder reduces their sense of isolation and enhances their connection to the rest of the region for which many expressed a desire. In particular, and contributing to their sense of “future security,” the building of a school was seen as among the greatest of contributions because it provided for a sense of security for the future of the next generation who undoubtedly would experience many more changes in the region.

Summary and Conclusions

The study reported on here was the first empirical study to have explored the life satisfaction of ethnic Tibetans. It did so using seven of the PWI survey items together with a measure of overall

life satisfaction. The PWI was found to be a meaningful instrument from which to measure not only the life satisfaction of Tibetans but also to uncover aspects of the Tibetan’s life not covered by the instrument at the time of its implementation.

The PWI data presents the Tibetan people as generally satisfied with life in spite of the extreme harshness of their circumstances. The strength of their faith in Buddhism provides one explanation for the basis of their contentment. This author witnessed the Tibetan people as a deeply spiritual people. That spirituality is potentially an important dimension of life and that it contributes to an overall picture of life satisfaction were clear and thus suggest the importance of including an extra item in the survey to cover this important life domain.

This study is not without its limitations. With respect to sampling, the convenience nature of the sample together with the small sample size indicates a need for future studies to adopt a more randomized selection of a larger and potentially more diverse Tibetan population. Definitely, a larger sample size would allow for the more rigorous testing of relationships using structural equation models. Also, the moderately strong multiple regression model statistics presented here suggest, at least for this population, that satisfaction encompasses more than the domains covered by this study. This author suggests that an additional and meaningful domain to include in subsequent studies would be the domain of “religion/spirituality.” Indeed, research carried out recently with the same series of PWI items offers further testimony to this (Wills 2009). Its inclusion, and also that of other yet to be determined domains, warrants further research attention.

In summary, this study makes several valuable contributions to knowledge. First, it offers further psychometric validation of the PWI instrument. Second, being the first empirical study to be published exploring the life satisfaction of ethnic Tibetans, it offers insights into what contributes to the happiness of this remote nomadic population. Third, beyond psychometric validation, when combined with the opportunity for participant discussion, it serves as a useful framework for

exploring the existence of other life domains. Fourth, the application of the PWI on this remote and spiritually rich population opens the possibility of applying the PWI to other such remote populations. In this regard, it suggests that an opportunity exists to develop the measurement of the instrument such that it can be extended to accommodate the situation of specific populations, i.e., those living in less accessible regions of the world, and enhanced to include further life domain areas such as that of religion/spirituality. Fifth, it highlights the need for further well-being studies to be carried out on other diverse populations.

That the data reported on here was the first such study of its kind highlights, outside of the discipline of anthropology, that the Tibetan people have been relatively isolated from social science research attention. It is hoped that the work presented here inspires others to embark on studies of a similar nature with this and other remote populations. To do so is not only personally rewarding, but it offers the potential to extend our knowledge which will be contextually limited unless we venture into such uncharted territories.

Appendix 1 Scale Items

Readers interested in the Tibetan version are referred to the following document located on the ACQOL website: <http://www.deakin.edu.au/research/acqol/auwbi/index-translations/pwi-a-tibetan.pdf>.

Part 1: Life satisfaction overall.

Thinking about your own life and personal circumstances, how satisfied are you with your life as a whole?

Part 2: Domain life satisfaction

1. "How satisfied are you with your standard of living?"
2. "How satisfied are you with your health?"
3. "How satisfied are you with what you are achieving in life?"
4. "How satisfied are you with your personal relationships?"
5. "How satisfied are you with how safe you feel?"

6. "How satisfied are you with feeling part of your community?"
7. "How satisfied are you with your future security?"

Cross-References

- [Happiness](#)
- [Life Satisfaction](#)
- [Subjective Well-Being](#)
- [Well-Being](#)

References

- Cummins, R. A., Eckersley, R., Pallant, J., Van Vugt, J., & Misajon, R. (2003). Developing a national index of subjective well-being: The Australian unity wellbeing index. *Social Indicators Research*, 64, 159–190.
- Cummins, R. A., & Lau, A. (2005). *The International Wellbeing Group Manual 2005*. International Wellbeing Group (2005). Personal Wellbeing Index. Melbourne: Australian Centre on Quality of Life, Deakin University. http://www.deakin.edu.au/research/acqol/instruments/wellbeing_index.htm
- Davey, G., Chen, Z., & Lau, A. (2007). Peace in a thatched hut – That is happiness: Subjective wellbeing among peasants in rural China. *Journal of Happiness Studies*, 10, 239–252.
- Douglas, S. P., & Craig, C. S. (1983). *International marketing research*. Englewood Cliffs: Prentice Hall.
- Glenn, N. D., & Weaver, C. N. (1981). Education's effects on psychological wellbeing. *Public Opinion Quarterly*, 45, 22–39.
- Lau, A. L. D., Cummins, R. A., & McPherson, W. (2005). An investigation into the cross-cultural equivalence of the personal wellbeing index. *Social Indicators Research*, 72, 403–430.
- Nunnally, J. (1978). *Psychometric theory* (2nd ed.). New York: McGraw Hill.
- People Daily. (2010). *China puts final death toll from Qinghai quake at 2698*. Retrieved March 21, 2012. <http://english.peopledaily.com.cn/90001/90776/90882/7006506.html>
- Tiliouine, H., Cummins, R. A., & Davern, M. (2006). Measuring wellbeing in developing countries: The case of Algeria. *Social Indicators Research*, 75, 1–30.
- Webb, D. A. (2009). Subjective wellbeing on the Tibetan plateau: An exploratory investigation. *Journal of Happiness Studies*, 10(6), 753–768.
- Webb, D. (2012). In H. Selin (Ed.), *Happiness on the Tibetan Plateau in 'Happiness across cultures: Views of happiness and quality of life in Non-Western cultures'* (pp. 27–41). Antwerp: Springer. ISBN 978-94-007-2699-4.

- Webb, D. A., & Stuart, K. (2009). Exploring the impact of providing alternative technology products in remote Tibetan communities. *Journal of Research for Consumers*, 12. http://jrconsumers.com/Academic_Articles/issue_12/.
- Wills, E. (2009). Spirituality and subjective well-being: Evidences for a new domain in the personal well-being index. *Journal of Happiness Studies*, 10, 49–69. <https://doi.org/10.1007/s10902-007-9061-6>. Research paper.

intercultural competence, cosmopolitanism, ecumenicalism, and xenophilia.

Description

Coined by German sociologist Ludwig Gumplowicz in the late nineteenth century, and then popularized by USA anthropologist William Sumner, ethnocentrism refers to

the view of things in which one's own group is the center of everything, and all others are scaled and rated with reference to it. (Sumner, 1906)

The term is a warning against individual or collective closed-mindedness, particularly those associated with the kinds of conservative and/or ignorant parochialism that cosmopolitans try to avoid and to challenge. The flight from ethnocentrism is a deliberate move toward intercultural open-mindedness and empathy. It signifies resistance to the universal (Brown, 1991), but harmful, constraints on people's ability to empathize with, understand, or appreciate cultures different from their own. Such restrictions tend to encourage misplaced faith in the universal applicability of one's own value judgments and concepts.

Accusations of ethnocentrism are wielded by cosmopolitans against the collective narcissism of people they deem to be less crossculturally enlightened or respectful than themselves, or against specific instances of parochial or xenophobic bias. Logically, you do not need to be ignorant or nasty to be "ethnocentric." Those who try to improve global society by trying to universalize values, such as free love, personal autonomy, democracy, gender equity, or kindness to animals, are behaving ethnocentrically, though perhaps quite deliberately and with benign intentions.

Since culture is how humans learn, all humans are in many ways ethnocentric. So in principle, this term can be used in a positive or neutrally descriptive sense, for example, in discussing consumer preferences, mate choices, and sense of religious or patriotic belonging. More commonly, it is used to disparage blameworthy ethnocentric pathologies. These include the following: *parochial bias*

Ethnocentrism

Neil Thin

School of Social and Political Science, University of Edinburgh, Edinburgh, UK

Synonyms

Chauvinism; Culturalism; Parochialism; Sociocentrism

Definition

Ethnocentrism, also known as "ethnocentricity," means that one's concepts, beliefs, or values are strongly rooted in a particular cultural tradition. Commonly, this is also associated with the idea of believing one's culture to be superior to others. The etymology does not imply this, though, and it is important to distinguish ethnocentrism from beliefs about the relative goodness of one's own culture. Ethnocentric bias can be cognitive or affective, conscious or unconscious, and it may or may not entail feelings of superiority. It can refer to ignorance of other cultural perspectives, or to deliberate disparagement of them. By default, it refers to the feelings, thoughts, or discourses of collectivities such as regions, nations, or religions. But it can also refer to personal character traits or attitudes, or to more specific personal habits or beliefs. The culture of organizations, sports, or disciplines can also be a source of ethnocentrism. Its opposites include cultural relativism, cultural intelligence,

(paying inadequate heed or respect to other traditions and perspectives); *chauvinism* (disrespect for other communities and their culture); and *unwarranted universalism* (inappropriately trying to apply parochial perspectives to all of humanity). In practice, the term quickly became so loaded with pejorative association that users tended to assume parochialism also entailed chauvinism. Thus, for example, the anthropologist Alfred Kroeber referred to ethnocentrism as the tendency to “see one’s in-group as always right and all outgroups as wrong” (1923:266).

Conversations about ethnocentrism are moral debates that go beyond description of this characteristic, to argue in favor of improving attitudes and behaviors by becoming more cosmopolitan and interculturally considerate. Pathological forms of ethnocentrism can adversely affect the well-being of ethnocentric people and of those they interact with, by inhibiting curiosity, understanding, communication, tolerance, and openness to diverse experiences.

More recently and more neutrally, the concept has been used in business studies to refer to customers’ preference for goods or services produced by or associated with their own culture or in-group. Specific variants like “Afrocentrism” and “Indocentrism” have sometimes been used nonpejoratively to refer to revisionist movements which fight one kind of ethnocentrism with another, in efforts to revitalize the collective self-esteem of internationally disparaged populations. Similarly, “sociocentrism” (having a strong sense of identification with a specific community of other people) tends to be seen as better than “egocentrism.” Ethnocentrism has sometimes been given legal justification when a “cultural defense” is deployed to excuse or mitigate culpability for acts which the perpetrators believe are culturally justified. In such cases, cultural pluralism ironically supports ethnocentric behavior and values. Conversely, judges who reject cultural defense claims may also be blameworthy of ethnocentrism. “National legal systems tend to evaluate cultural traditions in an ethnocentric manner” (Renteln, 2004: 18).

All humans are ethnocentric to the extent that we learn our concepts and values from particular communities, networks, and cultural traditions. Our social well-being requires both the support of others who share these traditions, and a willingness to respect or at least engage nonviolently with those who do not.

There are three main ways in which quality of life scholarship can be improved by paying close attention to the varieties of ethnocentrism:

- **Positively**, we must learn how to optimize sociocentric well-being without undue disparagement of alternative worldviews.
- **Defensively**, we must ensure that our evaluation of life quality is not unduly restricted to the cultural traditions we happened to grow up with. We may search for universal values while recognizing that their application is always mediated through culture. The same “objective” goods may be experienced very differently according to different cultural contexts and specific cultural beliefs and values.
- **Negatively**, we must recognize excessive ethnocentrism as a harmful form of restriction on personal growth and on social intelligence. Ethnocentrism (our own, or other people’s) can harm our quality of life by spoiling the quality and variety of our social engagements, and by putting unhelpful constraints on our production, distribution and consumption systems.

Cross-References

- [Cross-Cultural Validation](#)
- [Cultural Evaluation](#)
- [Cultural Values](#)
- [Cultural Well-Being](#)

References

- Brown, D. E. (1991). *Human Universals*. New York: McGraw-Hill.
- Kroeber, A. (1923). *Anthropology*. New York: Harcourt.

Renteln, A. D. (2004). *The Cultural Defense*. Oxford: Oxford University Press.
 Sumner, W. G. (1906). *Folkways*. New York: Ginn.

Ethnodevelopment Laws in Ecuador and Peru

► [Social Movement Strength in Ecuador and Peru](#)

Ethnodevelopment Policies in Ecuador and Peru

► [Social Movement Strength in Ecuador and Peru](#)

Ethnography

► [Anthropology](#)

Ethnology

► [Anthropology](#)

Ethnomethodology

Allison Carter
 Department of Sociology and Anthropology,
 Rowan University, Glassboro, NJ, USA

Synonyms

[Conversational analysis](#)

Definition

Harold Garfinkel understands the ethnomethodological interest as focused on the moral order of society as an everyday “technical accomplishment.” Given this interest in moral concerns as societal members’ concerns, Garfinkel’s program claims indifference to the content of these concerns and concern only for the process by which societal membership allows social actors to accomplish sense making and maintain normality and familiarity in their customary fields of action. For Garfinkel this means studying everyday practices and everyday sense making in any and all activities, jury deliberations, counseling sessions, games of tic-tac-toe, and scientific coding, to name a few. Whether the ethnomethodologist studies the practices of divination or of physics, the contention is that all human activities can be analyzed in terms of the methods that societal members or “folk” use to constitute their sense (p. 32). Garfinkel (1967) sees this concern as an ongoing problematic for social actors, and hence ethnomethodology is named for its program to make visible the often-taken-for-granted background understandings that animate members’ folk methodology for making sense.

Description

Primarily influenced by Talcott Parson’s structural functional analysis of social order and Alfred Schutz’s phenomenological understanding of the natural attitude, Harold Garfinkel understands the ethnomethodological interest as focused on the moral order of society as an everyday “technical accomplishment.” Given this interest in moral concerns as societal members’ concerns, Garfinkel’s program claims indifference to the content of these concerns and concern only for the process by which societal membership allows social actors to accomplish sense making and maintain normality and familiarity in their customary fields of action. For Garfinkel this means studying everyday practices and everyday sense

making in any and all activities, jury deliberations, counseling sessions, games of tic-tac-toe, and scientific coding, to name a few. Whether the ethnomethodologist studies the practices of divination or of physics, the contention is that all human activities can be analyzed in terms of the methods that societal members or "folk" use to constitute their sense (p. 32). Garfinkel sees this concern as an ongoing problematic for social actors, and hence ethnomethodology is named for its program to make visible the often-taken-for-granted background understandings that animate members' folk methodology for making sense. These methods are the same as those used by sociologists in recognizing social settings and the sense of social action. Much of early ethnomethodological work focused on how sociological inquiries made sense of social life by unconsciously making use of the very resources that they should be making the subject of their inquiries.

Given this understanding of apparent indifference to the particulars of moral order, it could be charged that ethnomethodology is therefore equally indifferent to the concerns for understanding quality of life. For example, in Kenneth Stoddart's ethnomethodological study of the argot or idiomatic usage of heroin users, he warns the reader:

Here...and in contrast to 'traditional' studies dealing focally or tangentially with argot-interest in the discovered element itself is suspended in favour of an interest in the methods by which it was located or recognized as an instance of argot in the first place. Such a suspension entails a deliberate indifference to any and all substantive matters relating to the element: its potential as an addition to the existing corpus of argot in general and heroin users' argot in particular, its possible heuristic value to ethnographers investigating communities similar to the one from which it was derived, and all ways of asserting its importance as a 'finding' are specifically disattended here. The element is attended solely as furnishing the opportunity for explicating the methods whereby it was located. In a very real sense, then, the essay is not 'about' argot but the procedures involved in the everyday business of hearing and understanding talk-whether 'opaque' or 'transparent' (p. 173).

Nevertheless, certain directions in the development of the ethnomethodological program,

especially Conversation analysis and the analytic or self-reflective sociology of Alan Blum and Peter McHugh, have lent themselves to both critique and potential contributions to understanding quality of life issues. Further, the implications of ethnomethodological studies - both as criticisms of conventional sociological treatments and in their particular findings - are potentially instructive.

For Garfinkel, conventional sociology studies familiar settings such as home and work but ignores the "background expectancies" that societal members use as interpretive schema to render events in these settings as "recognizable and intelligible as the appearances-of-familiar-events" (p. 36). To see these taken-for-granted, background expectancies, one must either be a stranger to the social scene or, as an ethnomethodologist, intentionally estrange oneself from the social setting in order to take on the sociological task of noticing and topicalizing what is ordinarily taken for granted and making it the subject of analytical interest. For Garfinkel's early studies, this could take the form of finding "strangers" to particular aspects of social life, for example, Agnes, a transsexual, whom Garfinkel analyzed for her more conscious experience of learning how to accomplish a normal appearance of gender display. It could also take the form of Garfinkel's famous "breaching experiments," where Garfinkel organized the violation of expectations and analyzed both the conduct and experience of the subjects, as well as the discomfort of those doing the experiments. The discomfort that is provoked by breaching experiments points to what is for Garfinkel, the primary focus: he topicalizes what is, "from the member's point of view the morally necessary character" of the background expectancies that they bring to a social setting to make it intelligible (p. 37) or, put alternatively, how every "social setting [should] be viewed as self-organizing with respect to the intelligible character of its own appearances as either representations of or as evidences-of-a-social-order" (p. 33). What is breached in the breaching experiment is the representation or evidence of normal social order. Besides discomfort, what subjects displayed were their attempts to normalize the

situations and make them make sense. For Garfinkel, it is not the sacredness of a particular norm but the sacredness of social order and its usual intelligibility that is violated and causes the moral disruption.

Here we can see the ethnomethodological interest in intelligibility, that is, in how societal members make sense of the social scenes they participate in and how their practical actions are guided in these settings by background understandings that make their own actions rational and intelligible to themselves. Garfinkel is concerned with rescuing the social actor from any understanding that ignores or glosses over members' active accomplishment of the social setting and how they make active sense of it as well as of their own participation. Garfinkel's criticism of conventional sociology, such as that influenced by Parsons, is that it subordinates the understanding of members' reflexive accomplishment to external conceptualizations by sociologists who analyze what is really going on with social participants, who, unbeknown to themselves, are mindlessly acting out the determinations of social structures and norms (p. 33). These concerns lead to the centrality in ethnomethodological of concepts such as accounts, indexicality, the *et cetera* principle, and the documentary method, which Garfinkel developed out of the phenomenological approach of Alfred Schutz.

For Parsons, the key to the problem of order lay in the notion of the "internalization of norms," whereby social actors would adopt a common value system that would limit their range of activity and inhibit social conflict based on differing self-interests (p. 16). John Heritage describes the Parsonian solution as problematized by actors' rationality, intersubjectivity, and reflexivity. According to Heritage, these issues are theorized in the influential work of Schutz where he addresses the problem of intersubjectivity, self, and other and how we understand the subjective meaning of the other's actions. For Schutz, the natural attitude (which corresponds to the place of the commonsense attitude in Garfinkel's thinking) is constituted by the assumption that others' actions are motivated by goals and intentions;

the practical problem is to specify their particulars in any empirical situation. To do this, the social actor makes use of typifications, a contextual database of typical motives, goals, and intentions, with which to make sense of the other's activity. These typifications are found in the natural language that actors use and which furnish a way to anticipate and make familiar the intersubjective situations they find themselves in. Social actors in the natural attitude operate under the influence of two contradictory assumptions: that while each person has a different perspective, they also share a common world (p. 56). The actor's task is to infer through the use of typifications what the other means or intends by their behavior. Intersubjective knowledge is the result of actors sustaining their sense of commonality in the face of their recognition of perspectivity. Unlike the Parsonian approach to social order, there is no external common culture to plug into; order and commonality are the actors' ongoing accomplishment whereby they construct a shared world. For Schutz, the "general thesis of reciprocal perspectives" names two related idealizations: that our differing perspectives mean that if we changed places we would see as the other sees and that the differences that we bring to experience, by virtue of our different life histories, are not important enough to eliminate our common experience of the shared situation. While it is impossible for social actors to have identical experience, this is irrelevant as social actors assume that their experiences are similar enough and act as if they are "identical for all practical purposes" (p. 54).

For Garfinkel, the commonsense attitude of societal members is geared to calling on its resources, its stock of situational and biographical knowledge, to make sense of social scenes, as well as one's choice of practical action. Just as Schutz enumerated some of the assumptions that underlie social interaction and allow participants to assume they have the capability to understand each other, Garfinkel sees the ethnomethodological task as articulating the background understandings and expectancies that allow societal members to conduct practical activities and be able to account for their own actions in any specific context. According to Garfinkel, social actors are aware

that they may have to account for their actions, and for many social settings such as jury deliberations or forensic decisions, accountability is an ongoing feature of participation in the setting. For Garfinkel, this attention to one's account is a central feature of social action. However, given the indexical quality of speech and the incomplete evidence that is available, accountability in social situations is accomplished "for all practical purposes."

Perhaps the most famous of Garfinkel's breaching experiments is the one commonly known as the boarder experiment, in which Garfinkel sent his students home instructing them to behave as strangers, as boarders, in the family setting. This experiment provoked "accounts of astonishment, bewilderment, shock, anxiety, embarrassment, and anger," on the part of family members subjected to the treatment, as well as "charges that the student was mean, inconsiderate, selfish, nasty, or impolite" and demands for explanation (p. 47). As family members struggled to make sense of the students' behavior - whether they are sick, fired, mad, out of their mind or just stupid, they treated the strange behavior as possibly explicable by "previous understandable motives" (p. 48). For Garfinkel, the main point is that family members were unaware that their children were behaving according to rule that instructed them to disregard the normal "mutually recognized texture of events" of family life and act according to an artificial rule of behaving like a boarder (p. 46). Their frustration, anger, and anxiety point to the sense that Garfinkel gives that there is a moral order underlying the background expectancies of familial interaction. It is not a Goffmanesque backstage where anything goes and one can act however one wishes but a social setting constituted by the enacted expectancies of its members. When this does not occur, the familiar order is not produced and expectancies are disrupted; the result is emotional and moral disorder and attempts to reinstate the expected orderly scene. It is in this sense that Garfinkel sees himself as an heir to Durkheimian analysis, even as he denies the external source of moral order.

As family members attempt to make sense of their offspring's strange behavior, they bring to

bear other background understandings about what could motivate such behavior, from making a joke, being sick or angry, to accusations of rudeness. Here they base their attempt at interpretation and restoring sense on their understanding of what persons in general might mean by this behavior. Or they can base their sense making on attempts at reconciling behavior with previous behavior by the person in question, invoking aspects of biographical information such as that they are overworked which would explain this strange behavior. These attempts illustrate what Garfinkel refers to as indexicality and the documentary method, which are primary means by which societal members make sense of each other. The documentary method refers to the practice of making sense of what we are presented with in speech and conduct by seeing it as evidence of an underlying pattern. The action or speech utterance is interpreted through our invocation of background expectancies for this person and context, while those expectancies are reinterpreted through the activity of the interactional experience itself in a continual loop of reinterpretation. This methodical filling in what we experience of the other is necessary because of the essential indexicality of speech; speech is essentially incomplete and never says everything that is meant. We need to make use of our understandings of social situations and common biography in order to adequately interpret each other. One must take into account the context of interaction and who is speaking, as well as our trust that meaning will emerge through continued interaction. That we make sense despite the overt lack of complete information is an outcome of our interpretive processes and willingness to allow meaning to emerge in the sequence of talk or interaction. Garfinkel includes an example of indexicality where a couple discuss the husband's errand running with their young son. Garfinkel contrasts the actual utterances with the indexical, contextual, and biographical meanings that emerge:

Husband: Dana succeeded in putting a penny in a parking meter today without being picked up.

What is actually understood:

This afternoon as I was bringing Dana, our four-year-old son, home from nursery school, he,

succeeded in reaching high enough, put a penny in a parking meter when we parked in a parking meter zone, whereas before he has always had to be picked up to reach that high.

Wife: Did you take him to the record store?

What is actually understood:

Since he put a penny in a meter that means that he stopped while he was with you. I know that you stopped at the record store either on the way to get him or on the way back. Was it on the way back, so that he was with you or did you stop there on the way to get him and somewhere else on the way back? (pp. 38-39)

Garfinkel explicates indexicality in this example by pointing to the feature of conversation that interactants are able to understand matters that they did not mention and “on the basis not only of what was actually said but what was left unspoken. . . . Many matters were understood as a process of attending to the temporal series of utterances as documentary evidences of a developing conversation. . . .” (p. 39). Each participant could make sense of the other’s speech as documentary evidence pointing to an “underlying pattern” that they were trying to communicate, but “the documentary evidences in their turn were interpreted on the basis of ‘what was known’ and anticipatorily knowable about the underlying patterns. Each was used to elaborate the other” (p. 39).

Communication of meaning is not based merely on understanding words but on complex interpretations which are essentially incomplete and need to be elaborated. Garfinkel’s interest in the centrality of accounts and interpretation lent itself to the development of the branch of ethnomethodology known as Conversation analysis. Developed by Harvey Sacks and others, Conversation analysis takes a micro-look at conversation and its *mechanics* such as turn-taking to get at how conversation and meaning are accomplished by virtue of members’ background understanding of what is expected in response to particular kinds of utterances. For example, Sacks studied rules of conversational sequence as they influenced the ability of workers in a psychiatric hospital to get what they considered important information from telephone callers who inquire about services. Rather than asking directly for a name, Sacks notes that gambits such as “This is Mr. Smith,

may I help you?” provide a “slot” for persons to respond with their name in the “slot wherein they would properly answer “Yes, this is Mr. Brown”.” This kind of Conversation analysis lends itself to exploring how the mechanics of conversation can facilitate or inhibit interactional efficacy and can thereby influence quality of life in the many institutional settings which provide data for conversation analysis.

Sociologists have also used Conversation analysis to explore power as a practical accomplishment in interaction. Pamela Fishman looked at interactional strategies used by men and women in relationships which showed that women had to work harder to get men to respond to their introduction of topics and were less successful. For example, women tried to create responsiveness in their partners by asking questions and using attention beginnings, such as “You won’t believe this.” Susan Chase analyzed pauses and disruptions in the speech patterns of women school superintendents to show how they were more comfortable in the “settled discourse” of individual professionalism and less comfortable when they attempted to articulate their experiences of discrimination using the “unsettled discourse” of inequality based on their group membership. These discourses and the disjunction between the individualism of the professional discourse and the group identification of the inequality discourse served as the background expectancies and underlying patterns that informed the superintendents’ narratives and their difficulty or ease in articulating their experience. Using the unsettled discourse of inequality was informed by the background expectancy that other people hold different opinions about the politics of inequality, and thus one could not have the expectancy that one’s audience would be in agreement. One could have the opposite expectation about the professional discourse; no one would question its legitimacy. Chase notes that everyone, researchers and subjects, held the background understanding that the interviews would center on the superintendents’ achievement of their positions.

The analytic or self-reflective sociology practiced by Alan Blum and Peter McHugh addresses issues of quality of life more directly by exploring

and elaborating the ethnomethodological interest in language and indexicality. Where Garfinkel shows how social activity including science can only result in accounts which accomplish limited but accountable validity “for all practical purposes,” in *The Grey Zone of Health and Illness*, Blum uses the idea of the gray zone to elaborate the ambiguity that always accompanies our inquiries into the meaning of social life. Blum’s inquiries are framed, however, in the midst of a concern for developing notions of health and disease. For example, Blum’s analysis addresses how medicalization is not only an organized accomplishment but an occasion to reflect on “a recurrent theme suggesting that medical practitioners need retraining in order to be compassionate towards patients and to be respectful of their dignity and autonomy” (p. 190). Seeing the theoretic constructions that inform practical reasoning, his invitation to the reader is to consider the philosophical notions that underlie the way we conceptualize the body:

The capacity to represent ourselves and to divide ourselves into faculties or characteristics cannot be taken for granted, grounded as it is in notions of border, boundary, separation, characteristics, and powers, both seemingly in and out of our possession, that we invent, attribute, assign, and imagine as property both sovereign and dispossessible (p. 191).

Where certain notions of language might recommend that we are taken fundamentally away from the experiential body and that we might be deadened by the incomplete nature of our speech to articulate our experience, for Blum it is only language that can redeem experience and allow us to rediscover and explore its vitality (p. 208).

References

- Atkinson, P. (1988). Ethnomethodology: A critical review. *Annual Review of Sociology*, 14, 441–465. Annual Reviews.
- Attewell, P. (1974). Ethnomethodology since Garfinkel. *Theory and Society*, 1, 179–210.
- Blum, A. (2011). *The grey zone of health and illness*. Bristol: Intellect.
- Chase, S. (1995). *Ambiguous empowerment*. Amherst: University of Massachusetts Press.
- Coulon, A. (1995). *Ethnomethodology: Qualitative research methods* (Vol. 36). Thousand Oaks: Sage.
- Denzin, N. K. (1969). Symbolic interactionism and ethnomethodology: A proposed synthesis. *American Sociological Review*, 34(6), 922–934.
- Francis, D., & Hester, S. (2004). *An invitation to ethnomethodology: Language, society and interaction*. Thousand Oaks, CA: Sage.
- Garfinkel, H. (1967). *Studies in ethnomethodology*. Malden: Polity Press.
- Garfinkel, H., & Rawls, A. W. (2002). Ethnomethodology’s program: Working out Durkheim’s aphorism. In A. W. Rawls (Ed.). Lanham, MD: Rowman and Littlefield.
- Heritage, J. (1984). *Garfinkel and ethnomethodology*. Cambridge: Polity Press.
- Maynard, D. W., & Clayman, S. E. (1991). The diversity of ethnomethodology. *Annual Review of Sociology*, 17, 385–418. Annual Reviews.
- McHugh, P. R. (1974). *On the beginning of social inquiry*. London: Routledge & Kegan Paul.
- Pollner, M. (1991). Left of ethnomethodology: The rise and decline of radical reflexivity. *American Sociological Review*, 56(3), 370–380.
- Rawls, A. W. (2011). Garfinkel, ethnomethodology and the defining questions of pragmatism. *Qualitative Sociology*, 34, 277–282.
- Sacks, H. (1992). *Lectures on conversation*, vol. 2. Jefferson, (Ed.) Oxford: Basil Blackwell.
- Sacks, H., Schegloff, E. A., & Jefferson, G. (1974). A simplest systematics for the organization of turn-taking for conversation. *Language*, 50(4), 696–735.
- Stoddart, K. (1974). Pinched: Notes on the ethnographer’s location of argot. In R. Turner (Ed.), *Ethnomethodology* (pp. 173–179). Baltimore: Penguin Education.
- Turner, R. (1974). *Ethnomethodology*. Baltimore: Penguin Education.

Eudaemonia

► [Good Life, Theories of](#)

Eudaimonia

Daniel Russell
University of Arizona, Tucson, AZ, USA

Synonyms

Flourishing; Good life; Happiness; Welfare; Well-being

Definition

Eudaimonia is human well-being or happiness, understood as a human life that is fulfilling and rich.

Description

“Eudaimonia” is the classical Greek term for happiness, understood as a good life for the one living it. It is the central concept in eudaimonism, which is (1) an account of practical reasoning on which eudaimonia is the final end for deliberation, (2) where eudaimonia is both a rich, fulfilling human life and (3) a starting-point for thinking about the nature of human fulfillment, or virtue. Eudaimonism dates back to ancient Greek and Roman philosophers and it continues to be a major approach to understanding happiness among modern philosophers (see, e.g., Annas 1993; LeBar 2013; McDowell 1980, 1995; Russell 2012). Perhaps what is most distinctive of this approach is that it seeks to understand what happiness is by asking what it would have to be in order to play the role in our practical economies that it actually does play.

1. *Practical Reasoning.* Eudaimonism makes two main claims about practical reasoning: (a) deliberation requires an ultimate end we pursue only for its own sake and for the sake of which we pursue everything else and (b) that ultimate end is eudaimonia (see Aristotle, *Nicomachean Ethics* I). Our ends are things we want to achieve, and we deliberate so as to decide what actions to take for the sake of our ends. For instance, someone with the end of becoming a doctor needs to deliberate first about how to get into medical school. Furthermore, ends can be for the sake of other ends in different ways: getting into medical school serves the end of becoming a doctor as a means, but becoming a doctor is not so much a means to the end of having a rewarding career as the very realization of that end. We can think of deliberation as putting together “chains” of ends linked by “for the sake of” relations. Now,

these chains cannot go on forever, and they cannot loop back on themselves; otherwise, there would be no point to the chain in the first place, and deliberation could never halt. These chains need ultimate ends, then.

But more than that, it seems the chains all must share a single ultimate end for a couple of reasons. For one thing, every end has opportunity costs – becoming a doctor may leave no time for pursuing one’s end of mastering classical guitar, for instance – and this means that ends can come into conflict with each other. If there were multiple ultimate ends, such conflicts would occur between them too, and practical reason could do nothing to settle such conflicts. For another, it seems that there *is* one ultimate end and one that we all share: the end of giving oneself a good life. Human rationality is practical not only in working out how to reach the ends one has but also in telling one to have ends in the first place and more than that, ends that one can live for, that give one a reason to go on living, and that we can make our lives about. This does not mean that everyone should live the same way, only that everyone needs to find a good life. In other words, there is an ultimate end, and that ultimate end is eudaimonia.

2. *Happiness.* At this point, “eudaimonia” is something of a placeholder: it stands for a whole life that is the greatest good for the one who has it, but it allows for disagreement over what more precisely that good might be. We can think of eudaimonia as happiness, but we must be clear about what this means. We often use the word “happiness” to talk about a certain emotion, feeling, or mood, but none of these things is a whole life or likely to be the ultimate end. In saying that eudaimonia is happiness, we mean happiness more in the sense in which we wish newlyweds or newborns “every happiness” (Kraut 1979). We wish them not a kind of feeling but a future that can count as a *good life*.

Part of that life is being fulfilled as the unique individual one is. Happiness can be thought of as a gift – a gift of a good life – that one gives oneself, so it should be a life that

“fits” one as an individual and is experienced as rich and meaningful. It is also important that that life actually *be* rich and meaningful. For instance, a life that one has been brainwashed or manipulated to find fulfilling would not be a good life. Likewise, happiness involves emotional fulfillment, but the fulfillment of a mentally childish adult, for instance, or one incapable of love would not be the sort of good that human happiness is. So a good life involves individual fulfillment, but it must also involve *human* fulfillment. In fact, individual fulfillment is itself a form of human fulfillment: the kind of individuality and self-expression that our happiness requires is in virtue of our humanity.

So understood, happiness is an end that we pursue for its own sake and for the sake of nothing beyond it. It is also an end for the sake of which we can pursue all of our other ends. At the same time, though, happiness is not a separate, further end beyond our other ends. Rather, to pursue happiness is to pursue one’s other ends in a way that amounts to a good life as a whole, fulfilling for one both as a human and as an individual.

What more precisely that fulfillment entails will depend on one’s view of our shared humanity, and it is here that eudaimonists have differed significantly. For instance, Plato believes that our nature is to transcend our earthly being and “become like God.” At the other extreme, Epicurus believes that our capacity for pleasure is where our greatest fulfillment lies. Most eudaimonists, however, understand our shared humanity in terms of our capacity for practical reasoning. So understood, human fulfillment involves both wisdom in the choices we make as we share our lives together and an emotional life that is in harmony with wisdom. ► *Aristotle* describes a life of such fulfillment as our distinctive mode of life or what he calls our “function.” More recently, Martha Nussbaum has argued that our practical rationality “interpenetrates” the rest of our nature and makes it distinctively

human (Nussbaum 1990). Likewise, Rosalind Hursthouse argues that for humans, the characteristic way of living is a “rational way,” which is not some rigidly specific way of life but “any way that we can rightly see as good, as something we have reason to do” (Hursthouse 1999).

3. *Virtue*. We might identify certain attributes of character that are important for happiness and in particular for human fulfillment; doing so would give us a way to discover what attributes each of us has a reason to develop (Anscombe 1981; Foot 2001; Hursthouse 1999). Ancient eudaimonists called these attributes *aretai*, and today we call them “excellences” or especially “*virtues*.” It is important to see that eudaimonists do not begin with an already fixed idea of which attributes are virtues and then try to show that these somehow must be important for happiness. Rather, the goal is to discover which attributes are virtues by determining which ones actually are important for happiness. Which attributes are virtues, then, depends crucially on what human fulfillment is (see Nussbaum 1995). For instance, ► *Plato* thought the virtues were those mental attributes by possessing which one becomes more god-like; ► *Epicurus* thought they were those habits of choice that are instrumental in keeping one free of pain and distress in the long run.

Most modern eudaimonists share Aristotle’s view that the virtues are those attributes by which we lead our daily lives with practical wisdom and emotional soundness. For instance, since a good human life is social, such a life will involve treating others fairly, honestly, and generously, as well as traits like civility, friendliness, and even wittiness. We also need to treat ourselves well, which includes being realistic about our successes and shortcomings, and willing to stand by what we have chosen to care about in spite of fear and temptation to do otherwise. The virtues are those attributes by which our lives are fulfilled in all of these ways.

There are importantly different ways in which the virtues might be “important for happiness.” There is disagreement as to whether virtue is only instrumentally valuable for happiness, as Epicurus thought, or whether acting in accordance with the virtues is itself a constituent of happiness. Orthogonal to this issue is the question whether virtue is either necessary or sufficient for happiness (or both) (Annas 1993; Russell 2012). All ancient eudaimonists agreed that virtue is necessary for happiness, and most held that it is also sufficient, the Stoics being the most notable example (and Aristotle being the most notable exception). By contrast, the great majority of modern eudaimonists deny that virtue is sufficient for happiness, and some deny even that it is necessary. Even so, they still maintain that the virtues benefit their possessor, much as a wholesome diet is beneficial even if it is strictly neither necessary nor sufficient for long life (Hursthouse 1999).

4. *Challenges for Eudaimonism.* In general, resistance to eudaimonism takes two main forms: (a) happiness is not the final end for practical reasoning and (b) happiness is not eudaimonia. (See Russell 2012, for discussion.) Objections of the first sort, as well as some possible replies, include the following:
 - (a) *Eudaimonism makes the final end one’s own good life, so it is a very self-centered approach to practical reasoning.* However, even ends adopted for the sake of a good life need not be self-centered in their content. On the contrary, there is every reason to think that living for self-centered ends is a non-starter as a way of living a happy life.
 - (b) *Eudaimonism is incompatible with rational self-sacrifice.* If an act is rational in the eudaimonist’s sense, then ultimately, it must serve one’s happiness, but in that case, it is not self-sacrificial (Darwall 2002). But making rational sacrifices can be part of living for the very ends that give one’s life meaning; in fact, happiness can

involve adopting ends – such as raising children or serving in the military – that enrich one’s life precisely because they give one something to lose.

- (c) *Eudaimonism can make sense of wanting to act, but not of being obligated to act.* Central to our fulfillment as humans, though, is our fulfillment as social creatures, and a eudaimonist might insist that human happiness requires relating to others in such a way that there are things we must do for their sake (LeBar 2009).
- (d) *Kant argued that there is no moral worth in acting for the sake of one’s happiness.* If he was right, then no acts can have moral worth on the eudaimonist picture. It is important to note, however, that eudaimonists do not mean by happiness what Kant meant and they argue that acting for the sake of eudaimonia can have moral worth.

Other objections, however, address eudaimonism as an account of what happiness is:

- (a) *People are the final authority on whether their lives are happy, but the same cannot be said of eudaimonia* (Sumner 1996). But perhaps this cannot even be said of happiness: autonomy, for instance, is important for happiness whether one thinks so or not (LeBar 2004).
- (b) *Eudaimonia is the sort of good that involves being an excellent human specimen, but happiness is not* (Haybron 2008). However, while our humanity is important for understanding what can count as real eudaimonia for us, eudaimonia is no more about being a good specimen than happiness is.
- (c) *Eudaimonia must be understood in terms of human nature, but happiness is best understood in terms of individual nature alone* (Haybron 2008). Yet even our fulfillment as unique individuals is important for our happiness precisely because on account of our being human. That is, because of our human nature that individuality is so important for our happiness in the first place.

Cross-References

- [Aristotle](#)
- [Epicurus](#)
- [Ethics](#)
- [Eudaimonic Well-Being](#)
- [Good Life, Theories of](#)
- [Happiness](#)
- [Morality and Well-Being](#)
- [Plato](#)
- [Virtue Ethics](#)
- [Well-Being, Philosophical Theories of](#)

References

- Annas, J. (1993). *The morality of happiness*. New York: Oxford University Press.
- Anscombe, G. E. M. (1981). *The collected philosophical papers of G. E. M. Anscombe* (Ethics, religion and politics, Vol. 3). Oxford, UK: Blackwell's.
- Darwall, S. (2002). *Welfare and rational care*. Princeton, NJ: Princeton University Press.
- Foot, P. (2001). *Natural goodness*. New York: Oxford University Press.
- Haybron, D. M. (2008). *The pursuit of unhappiness*. New York: Oxford University Press.
- Hursthouse, R. (1999). *On virtue ethics*. New York: Oxford University Press.
- Kraut, R. (1979). Two conceptions of happiness. *Philosophical Review*, 88, 167–197.
- LeBar, M. (2004). Good for you. *Pacific Philosophical Quarterly*, 85, 195–217.
- LeBar, M. (2009). Virtue ethics and deontic constraints. *Ethics*, 119, 642–671.
- LeBar, M. (2013). *The value of living well*. New York: Oxford University Press.
- McDowell, J. (1980). The role of eudaimonia in Aristotle's ethics. In A. O. Rorty (Ed.), *Essays on Aristotle's ethics* (pp. 359–376). Berkeley, CA: University of California Press.
- McDowell, J. (1995). Eudaimonism and realism in Aristotle's ethics. In R. Heinaman (Ed.), *Aristotle and moral realism* (pp. 201–218). London: University College.
- Nussbaum, M. (1990). Aristotelian social democracy. In R. B. Douglass, G. M. Mara, & H. S. Richardson (Eds.), *Liberalism and the good* (pp. 203–252). New York: Routledge Press.
- Nussbaum, M. (1995). Aristotle on human nature and the foundations of ethics. In J. E. J. Altham & R. Harrison (Eds.), *World, mind, and ethics: Essays on the ethical philosophy of Bernard Williams* (pp. 86–131). New York: Cambridge University Press.
- Russell, D. (2012). *Happiness for humans*. New York: Oxford University Press.
- Sumner, L. W. (1996). *Welfare, happiness, and ethics*. New York: Oxford University Press.

Eudaimonia and Capabilities

- [Capability, Functioning, and Resources](#)

Eudaimonia and Personal Growth

- [Personal Growth](#)

Eudaimonic and Hedonic Happiness

Antonella Delle Fave
Dipartimento di Fisiopatologia Medico-
Chirurgica e dei Trapianti, Università degli Studi
di Milano, Milan, Italy

Synonyms

[Full functioning](#); [Optimal functioning](#); [Positive emotions](#); [Psychological well-being](#); [Self-expressiveness](#)

Definition

Researchers interested in well-being and ► [happiness](#) face the substantial problem of defining these two terms and their constitutive components. Definitions can in fact differ according to the disciplinary and theoretical assumptions adopted by the researchers. Moreover, the conceptual broadness of these two terms led scholars to distinguish in them a variety of components or dimensions. At the psychological level, Kahneman and Riis (2005) proposed to distinguish two dimensions of happiness: the experiential one and the evaluative one. The former comprises transient states, such as positive emotions; the latter comprises global cognitive judgments on one's own life. Other researchers moved instead from the assumption that happiness entails a paradox,

since it cannot be directly pursued or achieved, rather representing a by-product of cultivating activities that individuals perceive as important and meaningful (Martin 2008). From this perspective, happiness is better described as a process of growth and development, connected with structural psychological dimensions such as personality, general representation of reality, and value system. This process is based on meaning-making, actualization of potentials, and engagement and commitment to the pursuit of subjectively relevant goals. Ryan and Deci (2001) provided a systematic overview of the current perspectives in the study of well-being within the domain of psychology, distinguishing between two main frameworks: ► **hedonism** and eudaimonism, both rooted in a historical tradition stemming from two ancient Greek philosophical systems.

The hedonic view of happiness derives from the conceptualization proposed by Aristippus of Cyrene (fourth century BC), who equated happiness with ► **pleasure**, stating that only what is pleasant or has pleasant consequences is intrinsically good. In the eighteenth century, Hobbes identified happiness with the successful pursuit of human appetites. One century later Bentham, the founder of ► **utilitarianism**, maintained that a good society is built on individuals' attempts to maximize pleasure and self-interest. In his "Introduction to the Principles of Moral and Legislation," he argued that rulers and governments should pursue the highest level of happiness for the greatest number of citizens. Today, in philosophy the hedonic approach to happiness is prominently represented by the work of Haybron (2008) and Sumner (1996). In psychology it is centered on the concept of subjective well-being that includes positive emotions and satisfaction with life (SWB; Kahneman et al. 1999).

The eudaimonic view stems from Aristotle's concept of eudaimonia (also spelled eudaemonia), described in the *Nicomachean Ethics* as the fulfillment of one's true nature that includes both self-actualization and commitment to socially shared goals. The term is composed by *eu-* (good) and *daimon* (indwelling spirit, genius). According to Aristotle's conceptualization, within

a community every person is called to actively collaborate in the development of a shared project (Nussbaum 1993). Well-being derives from the cultivation of personal resources and strengths, through the commitment to valuable activities and the pursuit of both individual and collective goals. In the twentieth century, this approach was prominently endorsed by philosophers such as Norton (1976), Nussbaum (1993), and Kraut (2007). Within the domain of humanistic psychology, it was elaborated by Maslow (1970), who emphasized self-actualization as the highest human need, and Rogers (1967), who described the fully functioning person as endowed by qualities such as self-acceptance and self-awareness, experience of life as a process, perception of purpose and meaning, authenticity, openness to change, ► **trust** in relationships, and cooperation. According to the most recent interpretations, eudaimonia is neither confined to the realm of subjective feelings nor merely referable to objective, socially valuable activities. It rather stems from the interaction between the individual and the environment, as the pursuit of goals that are constitutively good (Fowers 2012) or, more broadly, as the global individual functioning or the ► **quality of life** of a person as a whole (Keyes and Annas 2009). The prominent conceptualizations of eudaimonia in psychology presently comprise psychological well-being (PWB, Ryff and Singer 2008), social well-being (Keyes 1998), eudaimonic well-being (EWB, Waterman et al. 2010), self-determination in goal pursuit (Ryan et al. 2008), meaning-making (Steger et al. 2006), and the values in action (VIA) classification of character strengths (Peterson and Seligman 2004).

Description

The Hedonic Approach

This approach moves from the core assumption that maximizing subjective well-being is the highest human goal (Kahneman et al. 1999). In line with Kahneman and Riis' (2005) definition of happiness, ► **subjective well-being** (SWB) includes an experiential component and an

evaluative one. The experiential component consists in the presence of positive emotions and in the absence of negative emotions. The cognitive evaluative component is the individual judgment on the level of ► [satisfaction](#) with one's life. Moving from these premises, the hedonic conceptualization of happiness focuses on the study of life satisfaction (Diener 2000, 2009) and ► [positive emotions](#) (Fredrickson 2001). SWB and its benefits for individual and social development were extensively studied in relation to demographic factors, income, genetic and cultural factors, personality, coping, and goal pursuit (Kim-Prieto et al. 2005; Veenhoven 2009). As for positive emotions, Fredrickson (2001) developed the broaden-and-build theory, on the basis of laboratory experiments and self-report assessments. Her findings highlighted the pivotal role of positive emotions in mobilizing personal resources and in pursuing goals, through the broadening of the cognitive repertoire and the subsequent building of a stable set of resources and competences.

A vast literature is currently available on the beneficial role of hedonic dimensions of well-being in promoting health, longevity, cognitive and emotion regulation, and positive achievements in different life domains (Lyubomirsky et al. 2005; Tugade and Fredrickson 2007; Diener and Chan 2011; Zaninotto and Steptoe 2019). Hedonic facets were also explored as orientations and motives guiding behaviors by Huta and Ryan (2010), through the Hedonic and Eudaimonic Motives for Activities scale (HEMA). Findings highlighted that hedonic motives, separately investigated as pursuit of pleasure and pursuit of comfort/relaxation, were positive predictors of vitality and release from concerns and worries.

The Eudaimonic Approach

Consistently with the definition of happiness as a process, this perspective identifies well-being with engagement and commitment, goal pursuit, meaning, self-actualization, and personal growth, at both the individual and social levels. It includes several theories and models, most of them operationalized through scales and inventories. According to Huta and Waterman (2014), in psychology eudaimonia is better understood as an

umbrella concept rather than a specific construct, and it encompasses the four broad dimensions of authenticity, meaning, excellence, and personal growth.

The role of meaning in promoting personal growth was first explored by Frankl (1963/1985), who conceptualized the search for meaning and purpose in life as a crucial human resource. Antonovsky (1987) included meaning in his conceptualization of ► [salutogenesis](#). More recent approaches have addressed the issue within the domain of ► [positive psychology](#) and well-being studies (Steger et al. 2006; Schnell 2009; Wong 2010). Overall, findings suggest the importance of searching and finding meaning for well-being promotion, in relation to other eudaimonic and hedonic dimensions, as well as to individual and collective values (Linley et al. 2009; Steger et al. 2011; Delle Fave et al. 2013).

Ryff's model of ► [psychological well-being](#) (PWB, Ryff and Singer 2008) encompasses the six dimensions of autonomy, personal growth, environmental mastery, purpose in life, positive relations, and self-acceptance. Keyes (1998) integrated PWB with five dimensions related to ► [social well-being](#): social acceptance, social actualization, social contribution, social coherence, and ► [social integration](#). Waterman (Waterman et al. 2010) defined ► [eudaimonic well-being](#) (EWB) as the feeling of personal expressiveness, arising when a person perceives to use her best potentials in the pursuit of goals that are consistent with one's true self and life purposes.

Research on ► [self-determination theory](#) (SDT, Ryan and Deci 2000) showed that individuals preferentially pursue self-determined goals based on the three basic psychological needs for autonomy, competence, and relatedness. The fulfillment of these needs through the performance of daily activities and through long-term planning strategies fosters well-being and individual development, both in favorable conditions and under stressful circumstances. The psychological outcomes associated with activities motivated by eudaimonic goals and pursuits, vis-à-vis hedonic ones, were investigated through the HEMA scale (Huta and Ryan 2010); findings highlighted their

specific role in promoting meaning-related activities and elevating experiences.

Peterson and Seligman (2004) focused on values and ► **virtues**, defining the “► **good life**” as comprised of six core virtues: ► **wisdom**, courage, humanity, ► **justice**, temperance, and transcendence. Based on these virtues, they developed the values in action (VIA) classification of ► **character strengths**. Character strengths are 24 personality traits (four strengths were identified in relation to each virtue) representing individual psychological processes or mechanisms that define the virtues and allow for their manifestation through attitudes and behaviors (McGrath 2015; Ruch and Proyer 2015).

Towards an Integrated Perspective

A lively debate arose around the distinction between hedonic and eudaimonic approaches to the study of well-being. Kashdan et al. (2008) first complained about the costs deriving from this distinction, in terms of theoretical confusion and plethoric constructs, proposing to incorporate eudaimonic research into the hedonic view and to consider happiness as synonymous with subjective well-being. More recently, based on the very high correlations detected between hedonic and eudaimonic dimensions in a large cross-cultural study using factor analysis, DiSabato et al. (2016) argued that the distinction between these two approaches represents an ethical rather than a scientific debate, and it should be therefore confined to philosophical discussions. Evidence emerging from other studies however suggested the potential danger of adopting a reductionist perspective, pointing to the need for gaining a deeper insight into such a complex issue (McMahan and Estes 2011; Dambrun et al. 2012). An important conceptual contribution to this debate is represented by a seminal work addressing the challenges related to the distinction between hedonia and eudaimonia (Huta and Waterman 2014). These challenges include, among others, the multiplicity of conceptual and operational definitions of the two terms, without systematic overview or classification (especially as concerns eudaimonia), and the treatment of hedonia and eudaimonia as asymmetrical terms

(a way of feeling and a way of behaving, respectively), which raises substantial comparison problems in empirical studies. To overcome these challenges, the authors propose to more clearly classify eudaimonic constructs, taking into account their degree of centrality to the definition of eudaimonia; their categorization (as orientations, behaviors, experiences, and functioning patterns); and their measurement level as traits or states. At the empirical level, the usefulness of distinguishing between hedonia and eudaimonia is highlighted by studies showing that they are two correlated but separate constructs (Gallagher et al. 2009; Linley et al. 2009; Huta and Ryan 2010; Delle Fave et al. 2011), and by the very recent introduction of analytical techniques such as exploratory structural equation modeling (ESEM) and bi-factor analysis, providing researchers with more refined and articulated information on the empirical overlaps and differences between constructs that conceptually refer to each of the two approaches (Joshianloo 2016; Longo et al. 2017).

In fact, several researchers have proposed to combine the hedonic and eudaimonic views into broader integrated theories of happiness. For example, Seligman (2002) developed the orientations to happiness model, identifying three different pathways to happiness: pleasure, engagement, and meaning. Empirical evidence suggested that the full life (being high in both eudaimonia and hedonia) leads to greater life satisfaction than pursuit of eudaimonia or hedonia alone or than the empty life (being low in both eudaimonia and hedonia). Findings further showed that engagement and meaning are the most significant contributors to happiness relative to pleasure (Peterson et al. 2005). Sirgy and Wu (2009) subsequently proposed to expand this model, by adding to it a fourth orientation, namely, balance. Their analysis specifically focused on the contribution of balance to life satisfaction, but its influence on other aspects of well-being can be easily hypothesized.

In the effort to build a comprehensive model of well-being, Keyes (2002) first used the term ► **flourishing** (subsequently adopted by other researchers to label their own models and scales)

to define the condition of complete mental health. Keyes (2007) conceptualized and operationalized flourishing as a syndrome including hedonic and eudaimonic well-being dimensions such as positive emotions, satisfaction with life, psychological well-being, and social well-being. He also proposed to investigate mental health as a continuum ranging from flourishing to the opposite state of languishing, defined as absence of mental health, developing a specific measurement scale – the Mental Health Continuum – to this purpose. Research on individuals who reported moderate mental health (different combinations of well-being levels, such as high hedonia but low eudaimonia or low hedonia and high eudaimonia) highlighted that the two constructs are not redundant and have differential consequences at the physical and psychosocial levels (Keyes and Annas 2009; Keyes and Simoes 2012). The usefulness of the distinction between hedonia and eudaimonia was further supported by subsequent studies based on more sophisticated analytical approaches (Jovanović 2015; Joshanloo 2018).

The complex and multifaceted nature of happiness emerged in the analysis of people's lay conceptions as well. The investigation of the content and contexts of happiness through quantitative and qualitative techniques (Delle Fave et al. 2016) highlighted that individuals across nations prominently define happiness in eudaimonic terms, as psychological balance and ► [harmony](#). Moreover, findings suggested that different life domains are differentially related to perceived meaning, life satisfaction and happiness (Delle Fave et al. 2011; Carlquist et al. 2017).

Future Directions

There is widespread evidence of cultural differences in the definition and evaluation of well-being (Kitayama and Cohen 2007; Diener 2009; Bond 2013). This is not surprising, since cultures shape individuals' behavior and the conception of ► [good life](#), providing individuals with specific value systems and opportunities for personal growth and self-expression. Until now, however, well-being research has been prominently grounded in the Western individualistic tradition.

The terms hedonia and eudaimonia themselves stem from ancient Greek philosophies (Delle Fave and Bassi 2009). Nevertheless, conceptualizations of well-being, as well as social interventions to promote it, can be detected throughout the history of all human communities. Although researchers from non-Western countries are increasingly contributing to this research domain (Kim et al. 2018), more culture-fair and less “weird” interpretation frames (Hendriks et al. 2019) could promote a better understanding of the cross-cultural variations in definition, operationalization, and evaluation of well-being-related constructs. This effort would substantially help improve reciprocal understanding and promote the best possible life for the greatest number of people around the world.

Cross-References

- [Individualism, an Overview](#)
- [Positive Psychology](#)
- [Social Well-Being](#)

References

- Antonovsky, A. (1987). *Unravelling the mystery of health: How people manage stress and stay well*. San Francisco: Jossey-Bass.
- Bond, M. H. (2013). The pan-cultural of well-being: But how does culture fit into the equation? *Asian Journal of Social Psychology*, 16, 158–162.
- Carlquist, E., Ulleberg, P., Delle Fave, A., Nafstad, H. E., & Blakar, R. M. (2017). Everyday understandings of happiness, good life, and satisfaction: Three different facets of well-being. *Applied Research in Quality of Life*, 12, 481–505.
- Dambrun, M., Ricard, M., Després, G., Drelon, E., Gibelin, E., Gibelin, M., et al. (2012). Measuring happiness: From fluctuating happiness to authentic-durable happiness. *Frontiers in Psychology*, 3, 16. <https://doi.org/10.3389/fpsyg.2012.00016>.
- Delle Fave, A., & Bassi, M. (2009). The contribution of diversity to happiness research. *The Journal of Positive Psychology*, 4(3), 204–206.
- Delle Fave, A., Brdar, I., Freire, T., Vella-Brodrick, D., & Wissing, M. P. (2011). The eudaimonic and hedonic components of happiness: Qualitative and quantitative findings. *Social Indicators Research*, 100, 185–209.
- Delle Fave, A., Brdar, I., Wissing, M., & Vella-Brodrick, D. (2013). Sources and motives for personal meaning

- in adulthood. *The Journal of Positive Psychology*, 8(6), 517–529.
- Delle Fave, A., Brdar, I., Wissing, M. P., Araujo, U., Castro Solano, A., Freire, T., Hernández-Pozo, M. D. R., Jose, P., Martos, T., Nafstad, H. E., Nakamura, J., Singh, K., & Soosai-Nathan, L. (2016). Lay definitions of happiness across nations: The primacy of inner harmony and relational connectedness. *Frontiers in Psychology*, 7, 30. <https://doi.org/10.3389/fpsyg.2016.00030>.
- Diener, E. (2000). Subjective well-being: The science of happiness and a proposal for a national index. *American Psychologist*, 55, 34–43.
- Diener, E. (2009). *Collected works* (Vol. 3). Dordrecht: Springer.
- Diener, E., & Chan, M. (2011). Happy people live longer: Subjective well-being contributes to health and longevity. *Applied Psychology: Health and Well-Being*, 3, 1–43.
- DiSabato, D. J., Goodman, F. R., Kashdan, T. B., Short, J. L., & Jarden, A. (2016). Different types of well-being? A cross-cultural examination of hedonic and eudaimonic well-being. *Psychological Assessment*, 28, 471–482.
- Fowers, B. L. (2012). An Aristotelian framework for the human good. *Journal of Theoretical and Philosophical Psychology*, 32, 10–23.
- Frankl, V. E. (1963/1985). *Man's search for meaning*. New York: Pocket Books.
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, 56, 218–226.
- Gallagher, M. W., Lopez, S. J., & Preacher, K. J. (2009). The hierarchical structure of well-being. *Journal of Personality*, 77, 1025–1049.
- Haybron, D. (2008). *The pursuit of unhappiness*. Oxford: Oxford University Press.
- Hendriks, T., Warren, M. A., Schotanus-Dijkstra, M., Hassankhan, A., Graafma, T., Bohlmeijer, E., & de Jonge, J. (2019). How WEIRD are positive psychology interventions? A bibliometric analysis of randomized controlled trials on the science of well-being. *The Journal of Positive Psychology*, 14, 489–501.
- Huta, V., & Ryan, R. M. (2010). Pursuing pleasure or virtue: The differential and overlapping well-being benefits of hedonic and eudaimonic motives. *Journal of Happiness Studies*, 11, 735–762.
- Huta, V., & Waterman, A. S. (2014). Eudaimonia and its distinction from hedonia: Developing a classification and terminology for understanding conceptual and operational definitions. *Journal of Happiness Studies*, 15, 1425–1456.
- Joshanloo, M. (2016). Revisiting the empirical distinction between hedonic and eudaimonic aspects of well-being using exploratory structural equation modeling. *Journal of Happiness Studies*, 15, 2023–2036.
- Joshanloo, M. (2018). Longitudinal associations between subjective and psychological well-being in Japan: A four-year cross-lagged panel study. *Personality and Individual Differences*, 134, 289–292.
- Jovanović, V. (2015). Structural validity of the mental health continuum-Short form: The bifactor model of emotional, social and psychological well-being. *Personality and Individual Differences*, 75, 154–159.
- Kahneman, D., & Riis, J. (2005). Living, and thinking about it: Two perspectives on life. In F. Huppert, N. Baylis, & B. Keverne (Eds.), *The science of well-being* (pp. 285–306). Oxford: Oxford University Press.
- Kahneman, D., Diener, E., & Schwarz, N. (Eds.). (1999). *Well-being: The foundations of hedonic psychology*. New York: Russell Sage.
- Kashdan, T. B., Biswas-Diener, R., & King, L. A. (2008). Reconsidering happiness: The costs of distinguishing between hedonics and eudaimonia. *The Journal of Positive Psychology*, 3, 219–233.
- Keyes, C. L. M. (1998). Social well-being. *Social Psychology Quarterly*, 61, 121–140.
- Keyes, C. L. M. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior*, 43, 207–222.
- Keyes, C. L. M. (2007). Promoting and protecting mental health as flourishing: A complementary strategy for improving national mental health. *American Psychologist*, 62(2), 95–108.
- Keyes, C. L. M., & Annas, J. (2009). Feeling good and functioning well: Distinctive concepts in ancient philosophy and contemporary science. *The Journal of Positive Psychology*, 4(3), 197–201.
- Keyes, C. L., & Simoes, E. J. (2012). To flourish or not: Positive mental health and all-cause mortality. *American Journal of Public Health*, 102, 2164–2172.
- Kim, H., Doiron, K., Warren, M. A., & Donaldson, S. L. (2018). The international landscape of positive psychology research: A systematic review. *International Journal of Wellbeing*, 8, 50–70.
- Kim-Prieto, C., Diener, E., Tamir, M., Scollon, C., & Diener, M. (2005). Integrating the diverse definitions of happiness: A time-sequential framework of subjective well-being. *Journal of Happiness Studies*, 6, 261–300.
- Kitayama, S., & Cohen, D. (Eds.). (2007). *Handbook of cultural psychology*. New York: Guilford Press.
- Kraut, R. (2007). *What is good and why: The ethics of well-being*. Cambridge, MA: Harvard University Press.
- Linley, P. A., Maltby, J., Wood, A. M., Osborne, G., & Hurling, R. (2009). Measuring happiness: The higher order factor structure of subjective and psychological well-being measures. *Personality and Individual Differences*, 47, 878–884.
- Longo, Y., Coyne, I., & Joseph, S. (2017). The scales of general well-being (SGWB). *Personality and Individual Differences*, 109, 148–159.
- Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology*, 9, 111–131.
- Martin, M. W. (2008). Paradoxes of happiness. *Journal of Happiness Studies*, 9, 171–184.

- Maslow, A. (1970). *Motivation and personality* (11th ed.). New York: Harper.
- McGrath, R. E. (2015). Integrating psychological and cultural perspectives on virtue: The hierarchical structure of character strengths. *Journal of Positive Psychology, 10*, 407–424.
- McMahan, E. A., & Estes, D. (2011). Hedonic versus eudaimonic conceptions of well-being: Evidence of differential associations with self-reported well-being. *Social Indicators Research, 103*, 93–108.
- Norton, D. L. (1976). *Personal destinies*. Princeton: Princeton University Press.
- Nussbaum, M. (1993). Non relative virtues: An Aristotelian approach. In M. Nussbaum & A. Sen (Eds.), *The quality of life* (pp. 42–269). Helsinki: United Nations University and WIDER.
- Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification*. New York/Washington, DC: Oxford University Press/American Psychological Association.
- Peterson, C., Park, N., & Seligman, M. E. P. (2005). Orientations to happiness and life satisfaction: The full life versus the empty life. *Journal of Happiness Studies, 6*, 25–41.
- Rogers, C. (1967). *On becoming a person: A therapist's view of psychotherapy*. London: Constable.
- Ruch, W., & Proyer, R. T. (2015). Mapping strengths into virtues: The relation of the 24 VIA-strengths to six ubiquitous virtues. *Frontiers in Psychology, 6*, 460. <https://doi.org/10.3389/fpsyg.2015.00460>.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and wellbeing. *American Psychologist, 55*, 68–78.
- Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic Well-being. *Annual Review of Psychology, 52*, 141–166.
- Ryan, R. M., Huta, V., & Deci, E. L. (2008). Living well: A self-determination theory perspective on eudaimonia. *Journal of Happiness Studies, 9*, 139–170.
- Ryff, C. D., & Singer, B. H. (2008). Know thyself and become what you are: A eudaimonic approach to psychological well-being. *Journal of Happiness Studies, 9*, 13–39.
- Schnell, T. (2009). The sources of meaning and meaning in life questionnaire (SoMe): Relations to demographics and well-being. *The Journal of Positive Psychology, 4*(6), 483–499.
- Seligman, M. E. P. (2002). *Authentic happiness*. New York: Free Press.
- Sirgy, M. J., & Wu, J. (2009). The pleasant life, the engaged life, and the meaningful life: What about the balanced life? *Journal of Happiness Studies, 10*, 183–196.
- Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The meaning of life questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counseling Psychology, 53*, 80–93.
- Steger, M. F., Oishi, S., & Kesebir, S. (2011). Is a life without meaning satisfying? The moderating role of the search for meaning in satisfaction with life judgments. *The Journal of Positive Psychology, 6*(3), 173–180.
- Sumner, L. (1996). *Welfare, happiness and ethics*. Oxford: Oxford University Press.
- Tugade, M. M., & Fredrickson, B. L. (2007). Regulation of positive emotions: Emotion regulation strategies that promote resilience. *Journal of Happiness Studies, 8*, 311–333. <https://doi.org/10.1007/s10902-006-9015-4>.
- Veenhoven, R. (2009). Trend average happiness in nations 1946–2008: How much people like the life they live. *World Data Base of Happiness*. Trend Report 2009–1. http://www.worlddatabaseofhappiness.eur.nl/hap_nat/findingreports/list_of_reports.htm
- Waterman, A. S., Schwartz, S. J., Zamboanga, B. L., Ravert, R. D., Williams, M. K., Bede Agocha, V., et al. (2010). The questionnaire for eudaimonic well-being: Psychometric properties, demographic comparisons, and evidence of validity. *The Journal of Positive Psychology, 5*, 41–61.
- Wong, P. T. P. (2010). Meaning therapy: An integrative and positive existential psychotherapy. *Journal of Contemporary Psychotherapy, 40*, 85–93.
- Zaninotto, P., & Steptoe, A. (2019). Association between subjective well-being and living longer without disability or illness. *JAMA Network Open, 2*(7), e196870. <https://doi.org/10.1001/jamanetworkopen.2019.6870>.

Eudaimonic Well-Being

Christopher P. Niemiec

Department of Clinical and Social Sciences in Psychology, University of Rochester, Rochester, NY, USA

Synonyms

Eudaimonia; Full functioning

Definition

Eudaimonic well-being refers to the subjective experiences associated with ► [eudaimonia](#) or

living a life of virtue in pursuit of human excellence. The phenomenological experiences derived from such living include ► [self-actualization](#), personal expressiveness, and vitality.

Description

► [Well-being](#) is a complex, multifaceted construct that can be defined as optimal human experience and psychological functioning (cf. Ryan and Deci 2001) and involves subjective experiences and objective conditions indicative of physical, psychological, and social ► [wellness](#). From the dawn of intellectual history, philosophers have debated what constitutes “the good life” and how such a life may be achieved, and this debate has recently permeated psychological theory and research (Kashdan et al. 2008; Ryan and Huta 2009; Ryff and Singer 2008; Waterman 2008).

One philosophical approach to “the good life” is eudaimonism. Often placed in juxtaposition to ► [hedonism](#), the eudaimonic approach to living well is rooted in Aristotle’s *Nicomachean Ethics* (fourth century BCE/Aristotle. 2002) and underscores the importance of living a life of contemplation and virtue in pursuit of human excellence and actualization of potentials. As an ethical philosophy, eudaimonism stresses the importance of ► [meaning in life](#), self-realization, and ► [personal growth](#). Indeed, in emphasizing the importance of excellence and virtue, the eudaimonic perspective posits that not all actions will confer ► [well-being](#) benefits even when successfully accomplished but rather that true happiness is derived from living in accord with one’s daimon (or true self) and in doing what is inherently worthwhile.

Eudaimonic well-being refers to the subjective experiences associated with ► [eudaimonia](#) (Waterman 2008), in which actions are fully engaged, reflectively endorsed, and aligned with deeply held values and beliefs. Such an approach to living may be described as fully functioning, in that the person is non-defensive,

lives each moment fully, and experiences a sense of ► [choice](#) (Rogers 1961). Psychologists use a broad range of constructs to assess eudaimonic well-being (cf. Kashdan et al. 2008), including ► [self-actualization](#) (Maslow 1968), personal expressiveness (Waterman 1993), vitality (Ryan and Frederick 1997), psychological well-being (Ryff and Keyes 1995), and others. It is interesting to note that because ► [wellness](#) is defined as full functioning, both emotional awareness (versus compartmentalization) and healthy emotion regulation (versus suppression and dysregulation) are more indicative of eudaimonic well-being than is emotional positivity per se, the latter being part of the definition of hedonic well-being.

► [Self-determination theory](#) (SDT; Deci and Ryan 2000) is an approach to human ► [motivation](#) that acknowledges the importance of eudaimonic well-being in the conceptualization of ► [wellness](#) and takes interest in what factors are conducive to its experience (Ryan et al. 2008). SDT posits that only those actions that facilitate satisfaction of the basic psychological needs for autonomy, ► [competence](#), and relatedness will contribute to full functioning. More specifically, research in SDT has shown that ► [wellness](#) is associated with (1) behavior that is regulated with an experience of volition, including ► [intrinsic motivation](#) and well-internalized extrinsic motivation; (2) pursuit and attainment of aspirations that are of inherent worth (intrinsic versus extrinsic life goals); and (3) ► [mindfulness](#), or a relaxed and nonjudgmental awareness of present experience.

Cross-References

- [Choice](#)
- [Competence](#)
- [Eudaimonia](#)
- [Good Life, Theories of](#)
- [Hedonism](#)
- [Intrinsic and Extrinsic Values](#)

- [Intrinsic Motivation](#)
- [Meaning in Life](#)
- [Mindfulness](#)
- [Motivation](#)
- [Personal Growth](#)
- [Self-Actualization](#)
- [Self-Determination Theory](#)
- [Virtues](#)
- [Well-Being, Philosophical Theories of](#)
- [Wellness](#)

References

- Aristotle. (2002). *Nicomachean ethics*. (S. Broadie & C. Rowe, Trans.). Oxford, UK: Oxford University Press. (Original work published 4th Century BCE).
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11, 227–268.
- Kashdan, T. B., Biswas-Diener, R., & King, L. A. (2008). Reconsidering happiness: The costs of distinguishing between hedonics and eudaimonia. *The Journal of Positive Psychology*, 3, 219–233.
- Maslow, A. H. (1968). *Toward a psychology of being*. New York: Van Nostrand.
- Rogers, C. R. (1961). *On becoming a person*. New York: Houghton Mifflin.
- Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. In S. T. Fiske, D. L. Schacter, & C. Zahn-Waxler (Eds.), *Annual review of psychology* (Vol. 52, pp. 141–166). Palo Alto, CA: Annual Reviews.
- Ryan, R. M., & Frederick, C. (1997). On energy, personality, and health: Subjective vitality as a dynamic reflection of well-being. *Journal of Personality*, 65, 529–565.
- Ryan, R. M., & Huta, V. (2009). Wellness as healthy functioning or wellness as happiness: The importance of eudaimonic thinking (response to Kashdan et al. and Waterman discussion). *The Journal of Positive Psychology*, 4, 202–204.
- Ryan, R. M., Huta, V., & Deci, E. L. (2008). Living well: A self-determination theory perspective on eudaimonia. *Journal of Happiness Studies*, 9, 139–170.
- Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, 69, 719–727.
- Ryff, C. D., & Singer, B. H. (2008). Know thyself and become what you are: A eudaimonic approach to psychological well-being. *Journal of Happiness Studies*, 9, 13–39.
- Waterman, A. S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology*, 64, 678–691.
- Waterman, A. S. (2008). Reconsidering happiness: A eudaimonist’s perspective. *The Journal of Positive Psychology*, 3, 234–252.

Eurobarometer

Meinhard Moschner

Data Archive for the Social Sciences (DAS),
GESIS Leibniz Institute for the Social Sciences,
Cologne, Germany

Synonyms

[Applicant countries eurobarometer](#); [Candidate countries eurobarometer \(CCEB\)](#); [Central and Eastern Eurobarometer \(CEEb\)](#); [Eurobarometer, Special](#); [European Communities study](#); [Flash eurobarometer](#); [Standard eurobarometer](#)

Definition

The Eurobarometer is a **cross-temporal and cross-national** comparative program of regularly repeated cross-sectional (i.e., non-panel) surveys. They are conducted on behalf of the European Commission in all European Union (formerly European Communities) member countries. Since the early 1970s, the surveys are monitoring the evolution of ► [public opinion](#) on European unification, its institutions, and its policies, plus Europeans’ general sociocultural and sociopolitical orientations. **Quality of life** (QOL) is addressed in the Eurobarometer in two ways: (1) as time series indicators regarding the general judgment of living conditions and (2), intermittently, the Eurobarometer includes special topical modules on QOL, particular life domains, and related policies.

The biannual Standard Eurobarometer started in spring 1974, subsequent to the European Communities Studies (1970, 1971, 1973), and with an early forerunner in 1962, the five-countries survey “Attitudes towards Europe.” In the 1990s, the program expanded considerably in terms of topics and geographical coverage. The large-scale

Standard and Special Eurobarometer, now with additional special topic surveys in each main wave, were complemented by the **Central and Eastern Eurobarometer** (1990–1997) and the **Candidate Countries Eurobarometer** (2000–2004). The ad hoc **Flash Eurobarometer** was established to deal with hot topics or to focus on special target groups. A Eurobarometer **qualitative study series** was started in 2001, with recent research reports on well-being. Starting with 2004, the standard survey program intermittently also includes the current accession and candidate countries. EFTA countries are surveyed occasionally if thematically required.

Description

Historical and Institutional Background

The Eurobarometer was launched and initially managed by *Jacques-René Rabier*, head of the European Commission's Press and Information Directorate and afterwards special advisor to the Commission of the European Communities. Rabier could count on political support from the European Parliament which had claimed the need for an information policy capable to promote public acceptance of European integration (Schuijt 1972). Today the surveys are conducted on behalf of the European Commission under the responsibility of the Directorate General Communication and on occasion requested by another Directorate General or by the European Parliament.

The scientific approach of the EB was substantiated by Rabier's close cooperation with the political scientist *Ronald Inglehart* (1977) whose materialist/post-materialist item battery for measuring value change in modern societies became an integral part of the Standard Eurobarometer questionnaire. The EB data were soon intensely used by a number of scholars, thus contributing to a growing knowledge in cross-national comparative research (Bréchon and Cautrès 1998; Reif and Inglehart 1991), particularly in political science (Niedermayer and Sinnott 1995; Scheuer 2005) but also from a methodological perspective (Saris and Kaase 1997). The Eurobarometer inspired other, purely academic cross-national survey projects, in particular the *European Values Study*

(EVS) and the *European Social Survey* (ESS) (GESIS 2011). These survey programs complement each other in providing comparative data on a wide range of topics, including how people experience their quality of life in the enlarging European Union (Alber et al. 2008).

Trends and Special Topics Related to QOL

The Standard Eurobarometer is unique in the number of measurement points for many social indicators, including general indicators for subjective well-being and QOL, such as general life satisfaction; some 80 regular measures since 1973 are available. Some Eurobarometer surveys include more detailed items on satisfaction and expectations regarding specific life domains such as employment, natural environment, social welfare, or health. Other regular trend indicators are concerned with the performance of political institutions as perceived by EU citizens, such as satisfaction with democracy and trust in political and societal institutions. Further measures of social capital range from ► [political participation](#) to knowledge of foreign languages. The appreciation of living conditions is measured in terms of the respondent's evaluation of his personal financial situation and his country's economic performance. The European dimension is substantiated in regularly repeated measures of regional, national, and European identity.

Intermittently, a number of issues related to quality of life are investigated in more depth by the help of special modules. Issues covered include working conditions, consumer satisfaction, family planning, public health, or access to the information society. Further, awareness of and attitudes towards poverty and ► [social exclusion](#) as important dimensions of social cohesion is dealt with in the Standard Eurobarometer since 1976. The concept of sustainability in the sense of preserving quality of life for future generations is addressed as natural capital, the quality of the natural environment, climate change, and the use of energy resources. In 2003, Eurobarometer investigated time use across EU member and candidate countries (EB 60.3, CCEB 2003.5).

The following Eurobarometer can be considered as particularly rich data sources on quality of life and the social situation in general: EB 50.1,

52.1, and 56.1; CCEB 2002.1; and EB 62.2 (“social capital”) and 66.3, with emphasis on poverty and social exclusion the surveys 67.1, 72.1, and 74.1. The impact of the financial and economic crisis on the perception of living conditions is monitored in detail from 2009 onwards in EB 71.2, 73.4, 73.5, 75.4 and 77.4.

While the variety of special topics in the Eurobarometer is remarkably broad, concepts and indicators are largely defined against the background of the political objectives pursued by the respective EC Directorate General. This political steering often conflicts with the methodological goal of having clear-cut and theoretically guided operationalizations which are comparable across EB waves. For example, the social indicators research community has criticized the EB for its lack of a consistent foundation in well-established QOL theory (Hagerty et al. 2001). Often, the appropriateness of indicators has to be verified ex post in secondary research. The Eurobarometer gained additional comparative analysis power as a complement to the ► [European Quality of Life Survey \(EQLS\)](#). Selected Eurobarometer results are also used in the ► [European System of Social Indicators \(EUSI\)](#) and in the ► [World Database of Happiness](#).

Survey Methodology

The Standard and Special Eurobarometer are designed to be representative for the population aged 15 and over, being either citizens of the respective country or (since 1994) with a citizenship of any EU member country. The sampling is based on a multistage random approach, with the primary sampling units (PSU) systematically drawn from all administrative regional units, with a probability proportional to population size and density. Within the PSU, addresses are selected randomly by standard random route procedures. Within each household, a respondent is selected by a random procedure, such as the next birthday method. Until Eurobarometer 31 (1989), sampling methods varied between countries (e.g., some countries used quota sampling until 1989). The interviews are administered face to face in respondents’ homes and in the adequate national language. Back translation

procedures are used starting from a bilingual (English/French) master questionnaire. Flash Eurobarometer is predominantly conducted as telephone interviews (CATI) and with reduced sample sizes.

The Standard Eurobarometer sample size is about 1,000 respondents and 500 respondents for small countries (Luxembourg, Malta, Cyprus). Separate samples are drawn for East Germany after German reunification (West Germany 1,000 respondents, East Germany 500 / initially 1000) and for Northern Ireland (300). Given these sample sizes, the Eurobarometer mainly reflects the opinion of larger social groups and does not allow for detailed analysis of subgroups such as immigrants or unemployed. The relatively small “cell size” also limits the potential for regional breakdowns, e.g., by EUROSTAT NUTS 2 regions.

For descriptive analysis, weighting factors are provided for post-stratification adjustment of the samples to universe characteristics regarding sex, age, region, and size of locality. In addition, population size weighting factors allow for descriptive analysis of groups of samples, such as the European Union in its different historic compositions.

Access to Data and Documentation

Long-term availability of Eurobarometer primary data and related documentation for research and training is provided by the social science data archives, in particular the *Inter-university Consortium for Political and Social Research* (www.icpsr.umich.edu/) and the data archive department of *GESIS – Leibniz Institute for the Social Sciences* (www.gesis.org/eurobarometer, <http://zacat.gesis.org>). In addition local support is offered by most member archives of the *Council of European Social Science Data Archives* (www.cessda.org/). Key results from the Eurobarometer are published in official report series, available on the European Commission’s public opinion website (ec.europa.eu/public_opinion/).

Cross-References

- [Active Citizenship](#)
- [Beliefs about Poverty](#)

- Cigarette Smoking and Drinking
- Civic Engagement
- Confidence in Institutions
- Democracy, Satisfaction with
- Domain Satisfaction
- European Quality of Life Survey (EQLS)
- European Social Survey and Marriage
- European System of Social Indicators
- Family Planning
- Food Security
- Gender Equality
- Happiness
- Health Care
- Lifelong Learning
- Measuring National Identity
- Political Efficacy
- Political Participation
- Political Trust
- Postmaterialism
- Public Opinion
- Public Understanding of Science
- Quality of Life (QOL)
- Sample Size
- Sample Survey
- Satisfaction with Life as a Whole
- Social Cohesion
- Social Exclusion
- Voting Behavior
- Well-Being of Nations

References

- Alber, J., Fahey, T., & Saraceno, C. (Eds.). (2008). *Handbook of quality of life in the enlarged European Union*. London: Routledge.
- Bréchon, P., & Cautrès, B. (Eds.). (1998). *Les enquêtes Eurobaromètres. Analyse comparée des données socio-politiques*. Paris. (congress papers).
- GESIS – Leibniz Institute for the Social Sciences. (2011). *Cross-national survey programmes based on population samples*. Retrieved from <http://www.gesis.org/ComparativeSurveyOverview>.
- Hagerty, M. R., Cummins, R. A., Ferriss, A. L., Land, K., Michalos, A. C., Peterson, M., et al. (2001). Quality of life indexes for national policy: Review and agenda for research. *Social Indicators Research*, 55, 1–96. <https://doi.org/10.1023/A:1010811312332>.
- Inglehart, R. (1977). *The silent revolution. Changing values and political styles among western publics*. Princeton: Princeton University Press.
- Niedermayer, O., & Sinnott, R. (Eds.). (1995). *Beliefs in government volume two: Public opinion and internationalized governance*. Oxford: Oxford University Press (multinational research project).
- Reif, K., & Inglehart, R. (Eds.). (1991). *Eurobarometer: The dynamics of European public opinion. Essays in honour of Jacques-Rene rabier*. London: Macmillan.
- Saris, W. E., & Kaase, M. (Eds.). (1997). *Eurobarometer – measurement instruments for opinions in Europe*. ZUMA Nachrichten Spezial. Band 2. Mannheim. Retrieved from <http://www.gesis.org/publikationen/archiv/zuma-und-za-publikationen/zuma-nachrichten-spezial/#c3807>
- Scheuer, A. (2005). *How Europeans see Europe. Structure and dynamics of European legitimacy beliefs*. Amsterdam: Amsterdam University Press. Ph.D. thesis.
- Schuijt, W. (1972). *Rapport fait au nom de la commission politique sur la politique d'information des Communautés Européennes*. Parlement Européen. Documents de séance 1971–1972. Document 246/71. Luxembourg.

Eurobarometer, Special

- Eurobarometer

Euro-centrism

- Social Values and Good Living

Europe, Quality of Life

Stefan Weick

Gesis – Leibniz Institute for the Social Sciences,
Mannheim, Germany

Definition

Europe is by convention regarded as a continent, occupying the western fifth of Eurasia. It accounts for about 11% of the world population in approximately 50 states. After World War II, Europe was divided into a western and an eastern bloc. With the fall of the Iron Curtain in 1989, the eastern bloc dissolved and most states of the former Warsaw Pact oriented towards Western Europe and the European Union. In 2004 and 2007, many Eastern European countries joined the European

Union, which grew to now 27 states. This was an important step in European integration, a process which had begun in 1957 with the founding of the European Economic Community. The most populous country in the European Union is Germany with a resident population of more than 82 million. The European Union has set objectives – on employment, innovation, education, social inclusion, and climate/energy – which its member states are to reach by 2020. The achievement of these objectives can be observed by social indicators provided by the statistical office (Savova 2012).

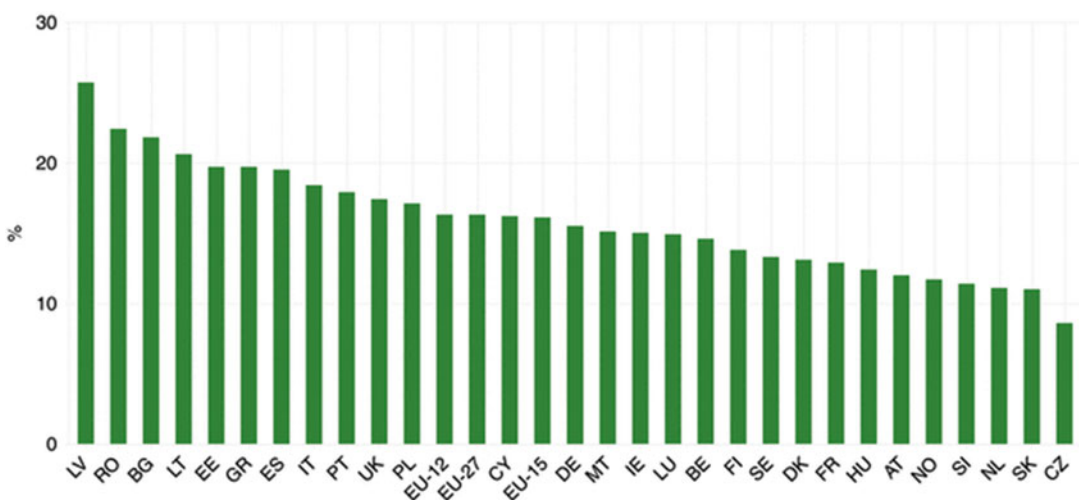
Description

Although as an industrially developed region Europe can be regarded as relatively prosperous, living conditions in Europe and even within the European Union differ due to remarkable differences in economic wealth. Luxembourg, one of the smallest countries of the EU with only 480,000 inhabitants, had the highest GDP per capita in Europe in 2010 (79,500), followed by the two non-EU countries, Norway (64,500) and Switzerland (51,200). The lowest values in 2010 were found in Bulgaria (4800) and Romania (5800), which had joined the EU in 2007, and in

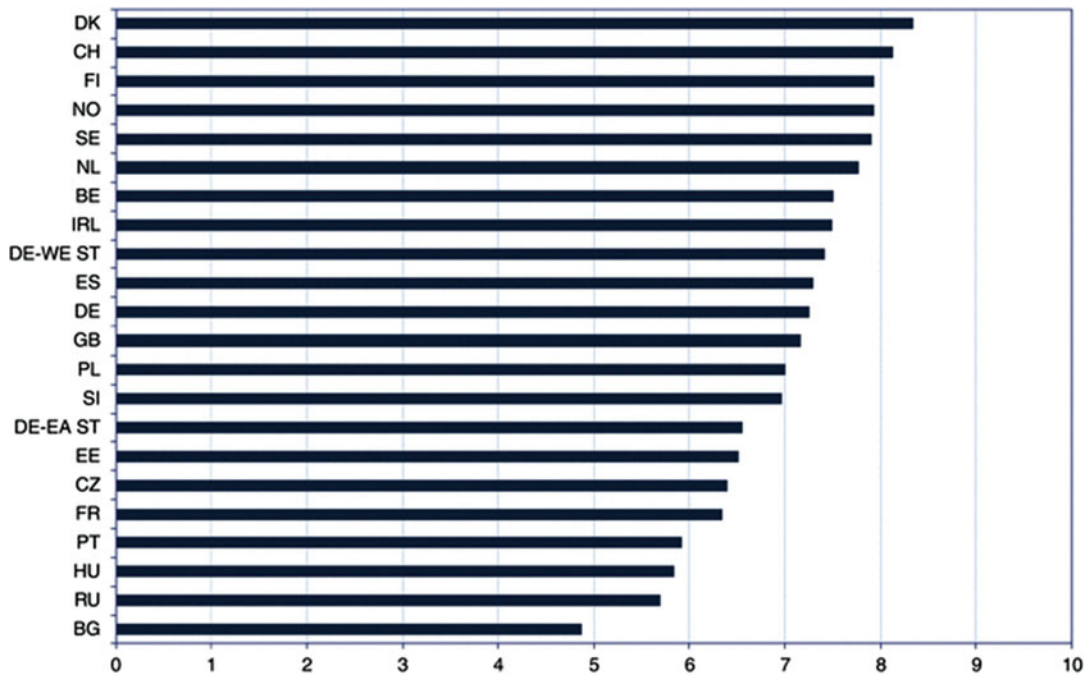
Macedonia (3300) in 2009, which is currently an accession country of the EU (Savova 2012).

With the latest enlargement of the European Union, the average GDP per capita has declined. In addition, the deep economic recession at the end of the first decade of the new millennium not only resulted in a decrease of the GDP but had consequences for the labor market. The seasonally adjusted unemployment rate of the EU rose from 7.1 in 2008 to 9.7 in 2010 (Savova 2012). The rate of gainfully employed persons proved to be more stable at 64.1% in the EU-27 countries in 2010. On top are the non-EU countries Switzerland (78.6), Iceland (78.2), and Norway (75.3), and at the bottom are the EU candidate states Macedonia (43.5), Turkey (46.3), and Croatia (54.0) (Savova 2012). The younger population under 25 years is particularly affected by unemployment in some EU countries with the highest rate in Spain in 2010 (41.6) (Savova 2012).

Considerable differences in the peculiarities of the welfare state within the European countries likewise influence the distribution of income and wealth of the different countries. The Gini index of disposable household income in the EU-27 countries is 0.30 (2010). The highest country-specific inequality can be found in the post-communist countries Latvia (0.36) and Lithuania (0.37) as well as in Southern European Portugal



Europe, Quality of Life, Fig. 1 Relative poverty rate II – 2009. (Source: European System of Social Indicators)



Europe, Quality of Life, Fig. 2 General life satisfaction – European countries 2010. (Source: European Social Survey 2010, own calculations)

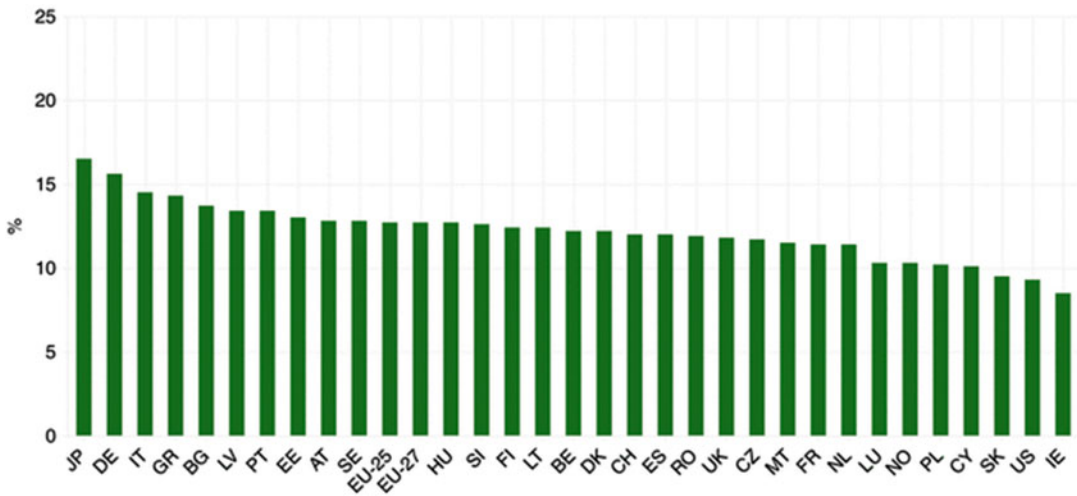
and Spain (0.34). On the other hand, the lowest Gini index (0.24) can be found in Hungary and Slovenia of the former eastern bloc and in the Scandinavian countries Norway and Sweden (► [European System of Social Indicators](#)).

A central aim of the Europe 2020 strategy is the reduction of poverty. To monitor this development, the at-risk-of-poverty rate is observed on the basis of national poverty thresholds (less than 60% of the median disposable household income), Fig. 1. According to this specification, 16.3% of the population in the 27 European Union countries fell below the poverty line in 2009. The highest percentages were in Latvia (25.7%) and Romania (22.4%), whereas the lowest in the Czech Republic (8.6%), Slovakia (11%), and the Netherlands (11.1%). A decline can be observed over the last years, particularly in those countries with very high levels of poverty.

A decline in fertility is an ongoing process resulting in an aging population in most European countries. The proportion of the population aged 65–79 does not match the high level in

Japan (16.5%), but for the 27 European Union states it was substantially higher (12.7%) in 2010 than in the USA (9.3%). Especially in Germany, the respective percentage (15.6) came quite close to the Japanese value (Fig. 2).

Composite indices indicate good or even very good living conditions in Europe. In the ranking of the current ► [human development index](#) (2011), the European countries are classed among the country group with very high human development. Even Bulgaria and Romania, with the lowest GDPs in the European Union, are in the country group of high human development (United Nations Development Program 2012). Six European countries are to be found among the top ten of the worldwide HDI ranking, with Norway on top. A more comprehensive view, based on the composite index of social progress (WISP), an aggregation of 41 indicators of social development, reveals that the whole of Europe actually ranks just behind Australia/New Zealand and as distinctly different to North America. In particular, the regional disaggregation of the



Europe, Quality of Life, Fig. 3 Population aged 65–79 years – 2010. (Source: European System of Social Indicators)

continents shows that Western and Northern Europe have the highest scores in the worldwide comparison, and even the poorer regions of Eastern and Southern Europe are on the fourth and fifth rank below Australia/New Zealand and above North America.

Although most measures indicate good objective living conditions from a worldwide perspective, ► **subjective well-being** in Europe is characterized by considerable inequality between countries (Fig. 3). On one hand, there are the well-off Scandinavian countries with an elaborate welfare state, low-income inequality, and very high subjective well-being. In particular the Danish people express a very high level of life satisfaction, and the country consistently ranks among the three happiest nations in worldwide international comparisons (Biswas-Diener et al. 2008; Veenhoven 2012). On the other hand, people in many post-socialist Eastern European countries show extremely low satisfaction levels, although they are not categorized among the poorest countries globally. According to their GDP, these countries could be expected to have an even higher level of ► **life satisfaction** (Deaton 2008). After the enlargement of the EU by the new Eastern European members, the former north–south divide in subjective well-being was eclipsed by a west–east split (Noll and Weick 2010; Weick 2012).

The high level of satisfaction in the Scandinavian countries can be at least partly explained by the relatively low satisfaction gap of the economically poorer parts of the population (Biswas-Diener et al. 2008). As a result of the safeguarding of their welfare programs, adverse living conditions have no far-reaching repercussions in the Scandinavian welfare states (Watson et al. 2010). On the other hand, the low subjective well-being in many Eastern European countries is exacerbated by the extremely low life satisfaction scores of economically deprived persons. As a result and in contrast to the Scandinavian countries, a high degree of heterogeneity of the satisfaction evaluations can be observed in the Eastern European countries (Clark et al. 2004; Delhey 2004). In particular, economically deprived persons in these poorer regions have aspirations that are oriented towards the economically rich countries, which are to some degree a worldwide phenomenon (Diener 2000). As a result, there seems to be a wide gap between aspirations and reality that impacts deficits in life satisfaction. On the basis of other subjective well-being measures that enhance the affective component of subjective well-being such as “happiness” or emotional well-being, the differences between countries appear to be smaller, and the order of ranking might shift (Watson et al. 2010). The latter measures react more sensitively to personal things

such as health or family and less so to differences in the social position of the individual.

Another aspect that tallies with country differences in the subjective well-being of Europeans is the role of social capital. A shift of priorities towards an increasing importance of social contacts as a source of subjective well-being seems apparent, particularly among the affluent societies in Europe (Watson et al. 2010; Weick 2012). Institutional and political contexts have a significant impact on subjective well-being, too. Openness, transparency, and predictability of institutions contribute to the trust and well-being of the population (Watson et al. 2010). Trust in the welfare state and its democratic institutions is an especially relevant requirement for a significant improvement of subjective well-being of a population, particularly the high subjective well-being in Denmark (Biswas-Diener et al. 2008; Helliwell 2002). The opposite can be found in the Eastern European countries with low trust and low life satisfaction. Among the post socialist states, the former German Democratic Republic is a special case of political and social transformation after the dissolution of the Eastern European bloc. Despite obvious improvements in living conditions in East Germany that have accompanied huge economic transfers from West to East since the German reunification, there is still a satisfaction gap compared to the western part of the country. That is not only due to high material aspirations aligned to the richer old federal states. The satisfaction gap of East Germans can be partly explained by low levels of trust in democratic institutions (Delhey and Böhnke 1999; Noll and Weick 2010; Weick 2012). In many post-socialist European countries, very low trust in the democratic state and its institutions is a characteristic that distinctly reduces subjective well-being.

Conclusions

Europe is a territory with about 50 states with remarkable differences in objective living conditions and considerable dispersion in subjective well-being at the country level, even more than might be expected with regard to the economic differences. The enlargement of the European Union in the last decade has changed its regional

characteristics: the former north–south decline in wealth and subjective well-being has been replaced by a west–east decline. From a world-wide perspective, Europe can nevertheless be regarded as a region with a high quality of life.

Cross-References

- ▶ Annual Reports of European Industrial Relations Observatory (EIRO)
- ▶ Annual Reports of European Working Conditions Observatory (EWCO)
- ▶ European System of Social Indicators
- ▶ Eurostat Database
- ▶ Eurostat Social Indicators for the European Community
- ▶ Human Development Index
- ▶ Index of Social Progress (ISP)
- ▶ Life Satisfaction
- ▶ Living Conditions, EU-SILC Community Statistics on Income and Living Conditions
- ▶ Living Conditions: European Foundation for the Improvement of Living and Working Conditions
- ▶ Subjective Well-Being
- ▶ Welfare State(s)

References

- Biswas-Diener, R., Vitterso, J., & Diener, E. (2008). The Danish effect: Beginning to explain the high happiness of Denmark. Published version, Social Indicators Research (Springer). Retrieved December 18, 2019, from <https://doi.org/10.1007/s11205-009-9499-5>
- Clark, A., Etilé, F., Postel-Vinay, F., Sénik, C., & Van-Der-Straeten, K. (2004). Heterogeneity in reported well-being: Evidence from twelve European countries. Working Papers HAL-00242916.
- Deaton, A. (2008). Income, health, and well-being around the world: Evidence from the Gallup World Poll. *Journal of Economic Perspectives*, 22(2), 53–72. <https://doi.org/10.1257/jep.22.2.53>.
- Delhey, J. (2004). *Life satisfaction in an enlarged Europe. European foundation for the improvement of living and working conditions*. Luxembourg: Office for Official Publications of the European Communities.
- Delhey, J., & Böhnke, D. (1999). Über die materielle zur inneren Einheit? Wohlstandslagen und subjektives Wohlbefinden in Ost- und Westdeutschland, WZB, Abteilung ‘Sozialstruktur und Sozialberichterstattung’ im Forschungsschwerpunkt III, FS III 99–412, Berlin.

- Diener, E. (2000). Subjective Well-being: The science of happiness and a proposal for a national index. *American Psychologist*, 55(1), 34–43.
- European Social Survey. (2010). *ESS Round*, 5. Retrieved December 18, 2019, from <https://www.europeansocialsurvey.org/>.
- European System of Social Indicators/SIMon (Social Indicators Monitor). Retrieved December 18, 2019., from <http://gesis-simon.de>
- Helliwell, J. F. (2002). How's life? Combining individual and national variables to explain subjective well-being. *NBER Working Paper No. 9065*.
- Noll, H.-H., & Weick, S. (2010). Subjective Well-being in Germany: Evolutions, determinants and policy implications. In B. Greve (Ed.), *Happiness and social policy in Europe* (pp. 70–88). Cheltenham: Edward Elgar.
- Savova, I. (2012). Europe 2020 Strategy – towards a smarter, greener and more inclusive EU economy?. *Eurostat, Statistics in Focus 39/2012*. Retrieved wDecember 18, 2019, from http://www.consiglioeneto.it/crvportal/upload_crv/biblioteca/servizio_studi/KS-SF-12-039-EN.pdf
- United Nations Development Programme. (2012). Retrieved December 18, 2019, from <http://hdr.undp.org/en/data>
- Veenhoven, R. (2012). *Average happiness in 149 nations 2000–2009: How much people enjoy their life as-a-whole on scale 0 to 10. World database of happiness*. Rotterdam: Erasmus University Rotterdam.
- Watson, D., Pichler, F., & Wallace, C. (2010). *Second European quality of life survey. Subjective well-being in Europe*. Dublin: European Foundation for the Improvement of Living and Working Conditions.
- Weick, S. (2012). Persönliches und soziales Wohlbefinden. In S. I. Keil & J. W. van Deth (Eds.), *Deutschlands Metamorphosen: Ein zweiter Blick auf Deutschland in Europa* (pp. 391–425). Nomos Verlag: Baden-Baden.

European Communities Study

- [Eurobarometer](#)

European Opinion on Services of General Interest

- [Europeans' Opinions on Services](#)

European Organisation for Research and Treatment of Cancer (EORTC) Modules

- [EORTC QLQ-30 Modules](#)

European Organization for Research and Treatment of Cancer Core Quality of Life Questionnaire

- [EORTC QLQ-C30](#)

European Quality of Life Survey (EQLS)

Ulrich Kohler
Department of Economic and Social Sciences,
University of Potsdam, Potsdam,
Germany

Definition

The European Quality of Life Survey (EQLS) is an ongoing survey project on ► [quality of life](#) in the European Union launched by the ► [European Foundation for the Improvement of Living and Working Conditions \(Eurofound\)](#). The survey project started in 2003, and fieldwork is taking place every 4 years. The target population of the sample is the resident population age 18 or above in the European Union member countries and the candidate countries. The core part of the questionnaire asks the selected respondents about various domains of quality of life in their countries of residence. The survey uses objective and subjective indicators.

Description

The description is presented under the headings:

- Theoretical background
- Questionnaire contents
- Methodology
- Survey results
- Data accessibility

Theoretical Background

The EQLS has been developed by Eurofound to provide policy-makers with *timely* and *relevant* information about the quality of life in the countries of the European Union. Departing from Swedish (Erikson 1993), German (Glatzer and Zapf 1984), New Zealand (Ministry of Social Development 2010), and other European (Noll 2002) approaches to social reporting, Tony Fahey, Brian Nolan, and Christopher T. Whelan have developed the conceptual background of the EQLS. As defined in their report *Monitoring quality of life in Europe* (Fahey et al. 2003), *quality of life* refers to the opportunities people have to achieve their own personal goals. More specifically, the concept of quality of life as used by the EQLS is associated with the following major characteristics (Alber et al. 2004, pp. 1):

1. Quality of life refers to individuals' life situations rather than economic and social situations of societies.
2. Quality of life is a multidimensional concept. It encompasses both people's own resources and the broader circumstances of people's everyday lives.
3. Quality of life is measured by objective as well as subjective indicators.

These prepositions have been further worked out to a set of core domains for the measurement of quality of life, namely:

- Work-life balance
- Economic resources and living standard
- Family life
- Health and health care
- Quality of society
- Housing and local environment
- Subjective well-being

These core domains form the backbone of the EQLS questionnaire.

Questionnaire Contents

The questionnaire of the EQLS has been developed by Eurofound in close collaboration with a consortium of experts led by the Social Science

Research Center in Berlin (Wissenschaftszentrum Berlin für Sozialforschung; www.wzb.eu). The questionnaire development team selected key indicators for each of the eight life domains, using both *objective* indicators and indicators of *subjective* satisfaction with life circumstances (including satisfaction with life as a whole). The large majority of items have been previously used in other international comparative surveys. The following list provides a short overview of the indicators used for measuring the various life domains:

- ► **Work-life balance**: Amount of housework, amount of caring, difficulties in balancing work and family, and activities in daily life
- Economic resources and living standard:
 - **Household income**, ► **material deprivation**, subjective economic strain, coping with economic strain, and satisfaction with living standard
- Family life: Household size, ► **household composition**, relationship with family and friends, family responsibilities, sources of support, satisfaction with family, and contact with friends
- Health and health care: ► **Self-rated health**, long-standing illness, mental health, satisfaction with health, access to medical care, and satisfaction with public health services
- Quality of society: Perceived quality of state pensions, public transport and education system, ► **trust in people**, trust in political institutions, and perceived conflicts between groups
- Housing and local environment: Home ownership, living space, housing conditions, and satisfaction with accommodation
- Subjective well-being: General life satisfaction, ► **happiness**, sense of fulfillment in life, and ► **optimism**

Moreover, the survey contains demographic and socio-structural variables such as gender, age, occupation, education, and income. The indicators for these variables largely follow the tradition of the Eurobarometer surveys.

Overall, the questionnaires of the first two rounds of the EQLS contained 65 and

71 questions, respectively. The questionnaires are online available on the web site of the Economic and Social Data Service; see <http://www.esds.ac.uk/findingData/eqlsTitles.asp>.

Methodology

The target population of the EQLS is all persons of age 18 and above, who live in a private household in a member country or candidate country of the European Union and who are able to speak the national language(s) well enough to respond to the questionnaire. The first round of the survey in 2003 included the 15 EU member countries of that time, the 10 countries that became EU members in May 2004, and Bulgaria, Romania, and Turkey. The second round in 2007 additionally included the new candidate countries Croatia and the former Yugoslav Republic of Macedonia, as well as Norway.

The sample design used by the EQLS is best described as a multistage cluster sample. Primary sampling units (PSU) were drawn randomly from lists of geographic areas. Within the PSU, addresses were randomly selected by using random walks. At each address, the target respondent was selected following the next/last birthday rule. Exemptions from this standard sampling design include the use of population registers as ► [sample frame](#) (Belgium, Malta in 2007) and pre-recruitment phases by telephone (Netherlands, Norway, and Sweden in 2007). A more detailed description of the sample design can be found in the fieldwork reports (Ahrend 2003; Eurofound 2007) available on the web site of the Economic and Social Data Service; see <http://www.esds.ac.uk/findingData/eqlsTitles.asp>.

The target number of interviews varies with the population sizes of the countries; it was between 600 and 1,000 in the first round and between 1,000 and 2,000 in the second round. These target numbers have been reached in all countries. Response rates have been reported to be around 58 % on average in the first two rounds of the survey; however, some doubts could be raised about the validity of some of those reported response rates. Despite the high response rates, the first round of the EQLS deviates strongly from external and internal criteria of representativeness

(Kohler 2007, 2008). The data set of the EQLS provides a weighting variable that partly corrects the problem at the cost of increased ► [standard errors](#).

Respondents are interviewed face to face in all EQLS countries. In some countries, the interviews are conducted with the help of computer aided personal interviews (CAPI).

Survey Results

Eurofound issues a series of reports on the results of the EQLS. These reports encompass general overviews (Alber et al. 2004; Anderson et al. 2009) as well as more specific reports on each of the core domains of the survey; see <http://www.eurofound.europa.eu/areas/qualityoflife/eqls/index.htm>.

In addition, various publications for an academic audience have appeared based on EQLS data. Eurofound lists some of them on the web page cited above, but for the time being, there is no complete database of publications using EQLS data. However, a valuable collection of scientific articles using the EQLS is the *Handbook of quality of life in the enlarged European Union*, edited by Jens Alber et al. (2008).

Data Accessibility

The EQLS data sets can be downloaded for scientific research from the web site of the Economic and Social Data Service; see <http://www.esds.ac.uk/findingData/eqlsTitles.asp>. Data users from outside the UK must register with the UK data archive at <http://www.data-archive.ac.uk/sign-up/credentials-application> before downloading the data.

Key figures from the EQLS have been included in EurLIFE, an interactive database on living conditions and quality of life in Europe. EurLIFE provides access to country averages of many variables used in the EQLS round 1; see <http://www.eurofound.europa.eu/areas/qualityoflife/eurlife/index.php>.

The results of the second round of the EQLS can be accessed via Eurofund's *survey mapping tool*. This tool performs simple data analyses on EQLS data online. Specifically, the user can

request means or percentages of many survey variables, broken down by age, gender, or income. The results are shown graphically as a map, as bar chart, or as a table. The requested statistics can be downloaded as text file in CSV format for further analysis; see <http://www.eurofound.europa.eu/areas/qualityoflife/eqls/eqls2007/results.htm>.

Cross-References

- [Deprivation](#)
- [Household Income and Wealth](#)
- [Life Satisfaction](#)
- [Living Conditions: European Foundation for the Improvement of Living and Working Conditions](#)
- [Poverty](#)
- [Quality of Life \(QOL\)](#)
- [Subjective Well-Being \(SWB\)](#)
- [Trust](#)
- [Work-Life Balance](#)

References

- Ahrend, D. (2003). *The quality of life survey. On behalf of the European Foundation for the improvement of living and working conditions*. Hilversum: Intomart GfK (Fieldwork Technical Report).
- Alber, J., Anderson, R., Delhey, J., Domanski, H., Fahey, T., Keck, W., et al. (2004). *Quality of life in Europe. First results of a new pan-European survey*. Luxembourg, Europe: Office for Official Publications of the European Communities.
- Alber, J., Fahey, T., & Saraceno, C. (Eds.). (2008). *Handbook of quality of life in the enlarged European Union*. London: Routledge.
- Anderson, R., Mikulic, B., Vermeulen, G., Lyly-Yrjanainen, M., & Zigante, V. (2009). *Second European quality of life survey. Overview*. Luxembourg, Europe: Office for Official Publications of the European Communities.
- Erikson, R. (1993). Descriptions of inequality. The Swedish approach to welfare research. In M. C. Nussbaum & A. Sen (Eds.), *The quality of life* (pp. 67–87). Oxford, UK: Clarendon.
- European Foundation for the Improvement of Living and Working Conditions and TNS opinion (2007). *Second European quality of life survey*. Fieldwork report. Dublin: European Foundation for the Improvement of Living and Working Conditions.

- Fahey, T., Nolan, B., & Whelan, C. T. (2003). *Monitoring quality of life in Europe*. Luxembourg, Europe: Office for Official Publications of the European Communities.
- Glatzer, W., & Zapf, W. (Eds.). (1984). *Lebensqualität in der Bundesrepublik Deutschland. Objektive Lebensbedingungen und subjektives Wohlbefinden*. Campus: Frankfurt a.M./New York.
- Kohler, U. (2007). Surveys from inside: An assessment of unit nonresponse bias with internal criteria. *Survey Research Methods*, 1, 55–67.
- Kohler, U. (2008). Quality assessment of European surveys. Towards an open method of coordination for survey data. In J. Alber, T. Fahey, & C. Saraceno (Eds.), *Handbook of quality of life in the enlarged European Union*. London: Routledge.
- Ministry of Social Development. (2010). *The social report 2010*. Wellington: Ministry of Social Development (www.socialreport.msd.govt.nz).
- Noll, H. H. (2002). Towards a European system of social indicators: Theoretical framework and system architecture. *Social Indicators Research*, 58, 47–84.

European Social Survey and Marriage

- [Marriage, Cohabitation, and Well-Being in 30 Countries](#)

European Socioeconomic Classification (ESEC)

- [Social Inequalities](#)

European Survey Project on Alcohol and Drugs (ESPAD)

Björn Hibbel
Swedish Council for Information on Alcohol and Other Drugs (CAN), Stockholm, Sweden

Synonyms

ESPAD

Definition

The European School Survey Project on Alcohol and Other Drugs (ESPAD) is a school survey about substance use among European students that will become 16 years old during the year of the data collection.

Description

Substance Use and Health

The use and abuse of tobacco, alcohol, and illicit drugs causes a large variety of health problems not only to the consumer but also to people around him, like family members, friends, and work mates. The use and abuse also create a lot of problems in a larger public health perspective in a country, and at a global perspective, they are important risk factors for deaths and the global burden of disease (Hanson et al. 2012; Rehm et al. 2009). Alcoholism and smoking are the most frequent causes of addiction (Lesch et al. 2011). Even though tobacco and alcohol are used much more than illicit drugs, about 230 million people in the world have been calculated to have tried an illicit drug at least once and 27 million have been characterized as problem drug users (United Nations Office on Drugs and Crime (UNODC) 2012). Cannabis is the most widely used illicit drug and among European adults (15–64 years old), 78 million have been calculated to have tried cannabis at least once and about 12 million during the past 30 days (European Monitoring Centre for Drugs and Drug Addiction [EMCDDA], 2011).

All societies are concerned about substance use and try to limit the consumption and its consequences via different kinds of policy measures (Anderson et al. 2012; Babor et al. 2010). Special concerns and measures are targeted to young people and for a serious policy discussion about efficient preventive measures, it is important to have an up-to-date picture about consumption trends and patterns. In this context, it is a great advantage not only to know what happens in a country, but also to be able to put the national situation in a broader context by making comparisons with

other countries. The European School Survey Project on Alcohol and Other Drugs (ESPAD) provides such a possibility when it comes to the use of tobacco, alcohol, and illicit drugs among youth in Europe (Hibell et al. 2012) (www.espad.org).

What is ESPAD?

Background

In the spring of 1995, the first large-scale European school survey of students' substance use, known as ESPAD, was conducted in 26 countries. The main reason for initiating the ESPAD Project was the need for comparable data on substance use among young people throughout Europe.

At the beginning of the 1990s, only a few European countries regularly carried out national school surveys on substance use. However, too many factors influenced the results and made comparisons difficult or impossible.

Annual school surveys have been conducted among Swedish grade 9 students (15–16 years old) since the early 1970s and from the mid-1980s, the Swedish Council for Information on Alcohol and Other Drugs (CAN) is responsible for the surveys. It was then noted that it was hard to find comparable data from other countries. In the light of these experiences, Björn Hibell and Barbro Andersson at CAN initiated a collaborative project in the early 1990s by contacting researchers in a number of European countries.

The Pompidou Group at the Council of Europe supported the first meeting and has supported ESPAD since then. Another important collaborating body since it was established in the mid-1990s is the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA).

A Standardized Methodology

To obtain comparable data, it is important to standardize the data-collection process as much as possible. This means that those collecting the data must follow the methodology presented in the ESPAD Handbook.

It is important to compare students of the same age since experience of substance use changes

considerably with age among adolescents. The target population is students turning 16 during the year of the survey. Since data collection normally takes place during March–April, on average, the students are about 15.8 years old.

Even though some exceptions have been made over the years, it is recommended and expected that participating countries draw random samples that are representative of the whole country and not only of regions, cities, or the like.

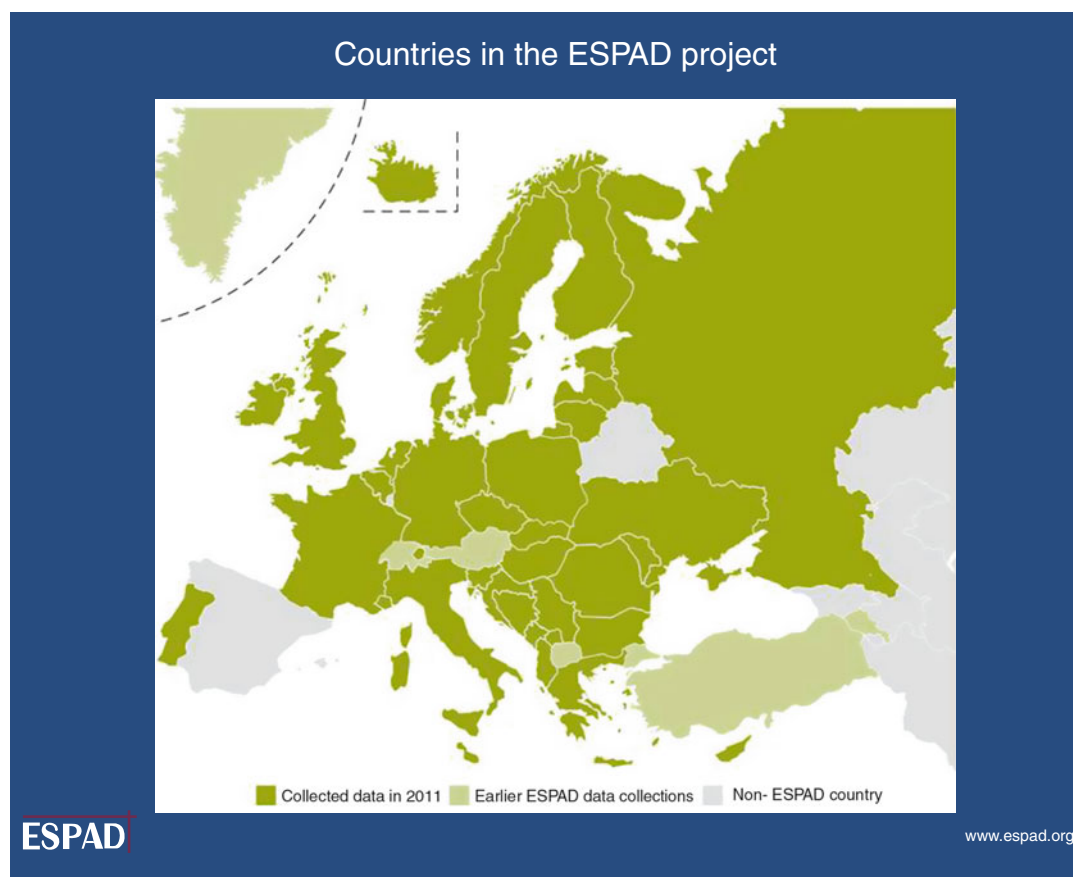
Data collection takes place in a classroom during an academic hour with anonymous group-administered questionnaires. Most questions in the questionnaire are identical in subsequent data-collection waves. The questionnaire includes a core part, which should be used in all countries. In addition to this, there are optional questions and modules to choose from. At the end of the

questionnaire, it is allowed to add country-specific questions.

Purpose and Data Collections

The main aim of ESPAD is to collect comparable data on substance use among students of the same age group in as many European countries as possible. The most important objectives in the long run are to monitor trends in substance use among students in European countries and to compare trends between countries and between groups of countries. In order to do so, the surveys are repeated every 4 years, with 1995 as the starting point. Since then, the subsequent survey waves took place in 1999, 2003, 2007 (with an extra data collection in 2008), and 2011 in an increasing number of countries. In 1995, 26 countries collected data while 39 took part in the 2011 survey (Fig. 1).

E



European Survey Project on Alcohol and Drugs (ESPAD), Fig. 1 Countries in ESPAD

Results from all data-collection waves have been published in international reports, which to a large extent are descriptive and primarily focus on trends in the prevalence of substance use. In addition to these reports, a lot of articles have been published in scientific journals.

Governance

ESPAD is an independent research project owned by its researchers. In each ESPAD member country, a Principal Investigator (PI) or an ESPAD Contact Person is appointed by ESPAD to ensure that the country meets its obligations. Each researcher is responsible for the project as a whole as well as for the national part of ESPAD. The data collection as well as other costs for traveling, etc. for the responsible ESPAD researcher should be covered by national resources. So far, the coordination of ESPAD has been financed through a grant from the Swedish Ministry of Health and Social Affairs.

Databank

Since 2007, it is mandatory for all participating countries to deliver their national datasets centrally, so that they can be merged into joint ESPAD databases. This process was started on a voluntary basis after the 2003 data collection and most countries delivered data for the first ESPAD

database. However, the 2007 and 2011 databases cover all participating countries.

The databases are used to generate results to be included in the international report. Once such a report has been published, ESPAD researchers may apply for access to the database in order to conduct further research. With a time lag, the databases are also open for external researchers. Interested researchers have to fill in a simple application form. More information about the databank and the application procedure is available at the ESPAD webpage (www.espad.org).

Some Results from the 2011 Survey

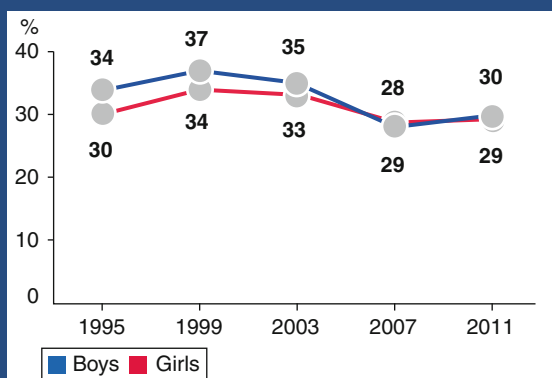
Smoking

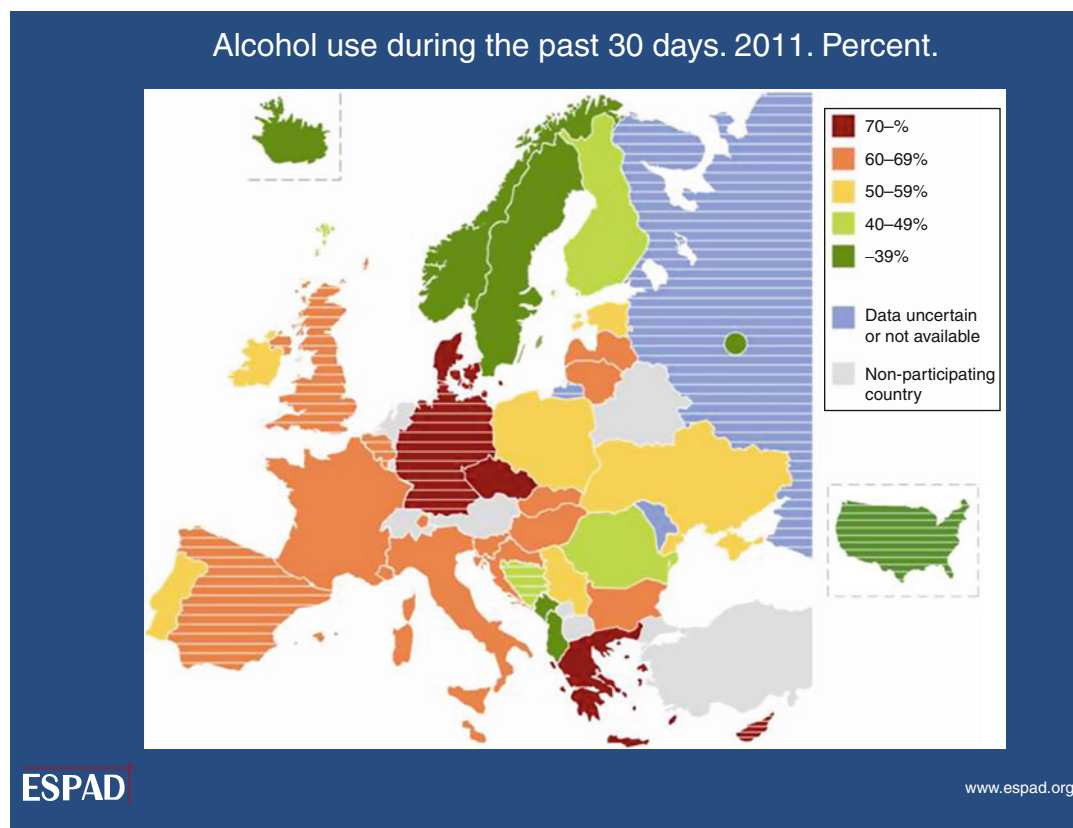
In the 2011 survey, on average, 54% of the students in participating countries reported that they had smoked cigarettes at least once and 28% that they had used cigarettes during the past 30 days (Fig. 2). Two percent of all students had smoked at least a packet of cigarettes per day during the past 30 days.

Between the two most recent surveys, the proportion of students who had been smoking during the past 30 days increased significantly in seven countries and fell in five. Some of the increases were fairly striking, with 13% points in Monaco and 10 in Portugal. Compared with 1995, the

European Survey Project on Alcohol and Drugs (ESPAD), Fig. 2 Cigarette use past 30 days, trends

Cigarette use during the last 30 days by gender. 1995–2011. Percentages. Averages for 19 countries.





E

European Survey Project on Alcohol and Drugs (ESPAD), Fig. 3 Alcohol use past 30 days, map

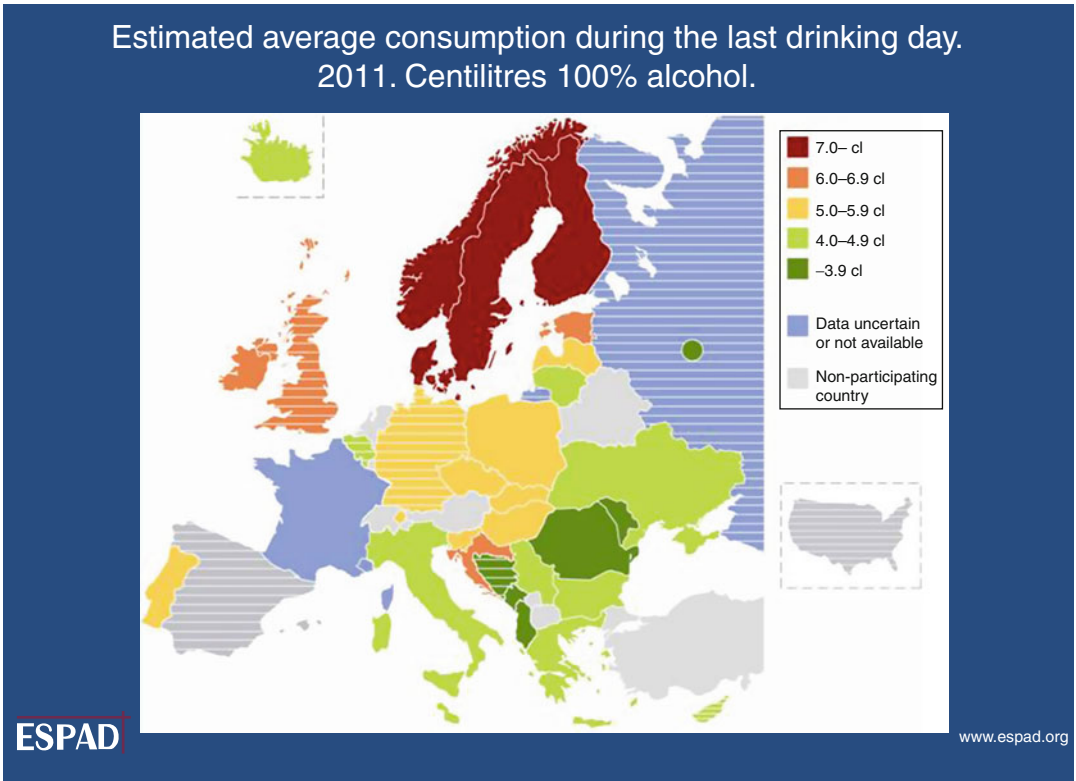
countries with the largest decreases (20% points or more from) are Iceland, Ireland, and Norway. No country shows a continuous increase across the five waves.

Alcohol

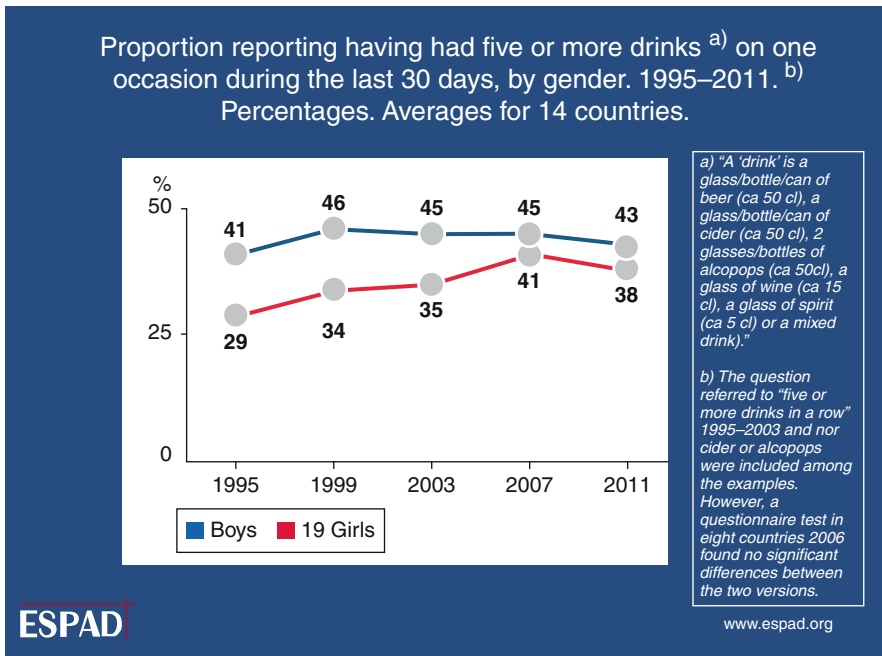
In all ESPAD countries but Iceland, at least 70% of the students have drunk alcohol at least once during their lifetime, with an average of 87% in the 2011 survey. The corresponding average figures for use in the past 12 months and the past 30 days are 79% and 57%, respectively. For all three time frames, there were small decreases from 2003 to 2007 to 2011. Of course, these averages are based on highly divergent country figures (Fig. 3). For example, alcohol use during the past 30 days was reported by more than 75% of the students in the Czech Republic and Denmark, but only by 17% in Iceland and 32% in

Albania. The national average figures for lifetime, past-12-months, and past-30-days prevalences are about the same for boys and girls, but when differences occur, the prevalence is nearly always higher among boys.

Of the students who reported the amounts of various beverages that they consumed during the most recent day on which they drank alcohol, the estimated average consumption differed between the sexes, with boys drinking one-third more than girls (5.8 vs. 4.3 cL of 100% alcohol). There are huge differences between countries. On their most recent drinking day, Danish students, on average, drunk more than three times as much as students in Albania, Moldova, Montenegro, and Romania. Large quantities are mainly found among students in the Nordic and British Isles countries, while countries with smaller quantities often are located in southeastern Europe (Fig. 4).



European Survey Project on Alcohol and Drugs (ESPAD), Fig. 4 Average alcohol consumption, map

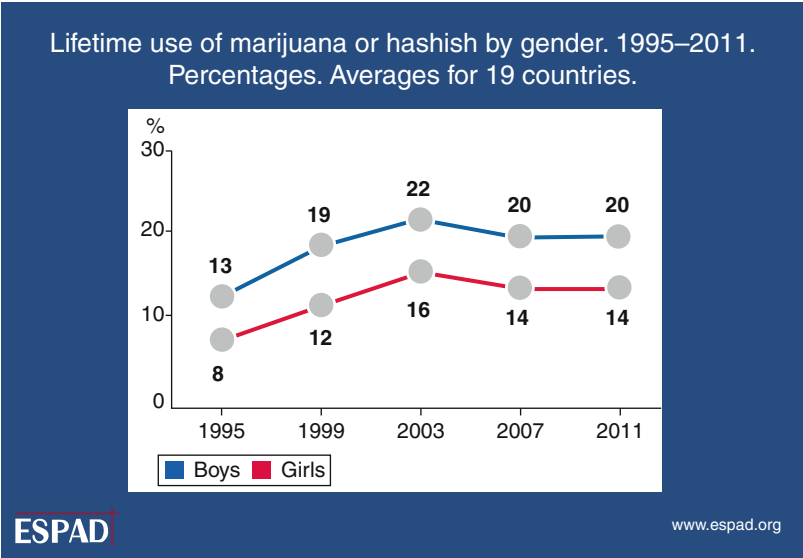


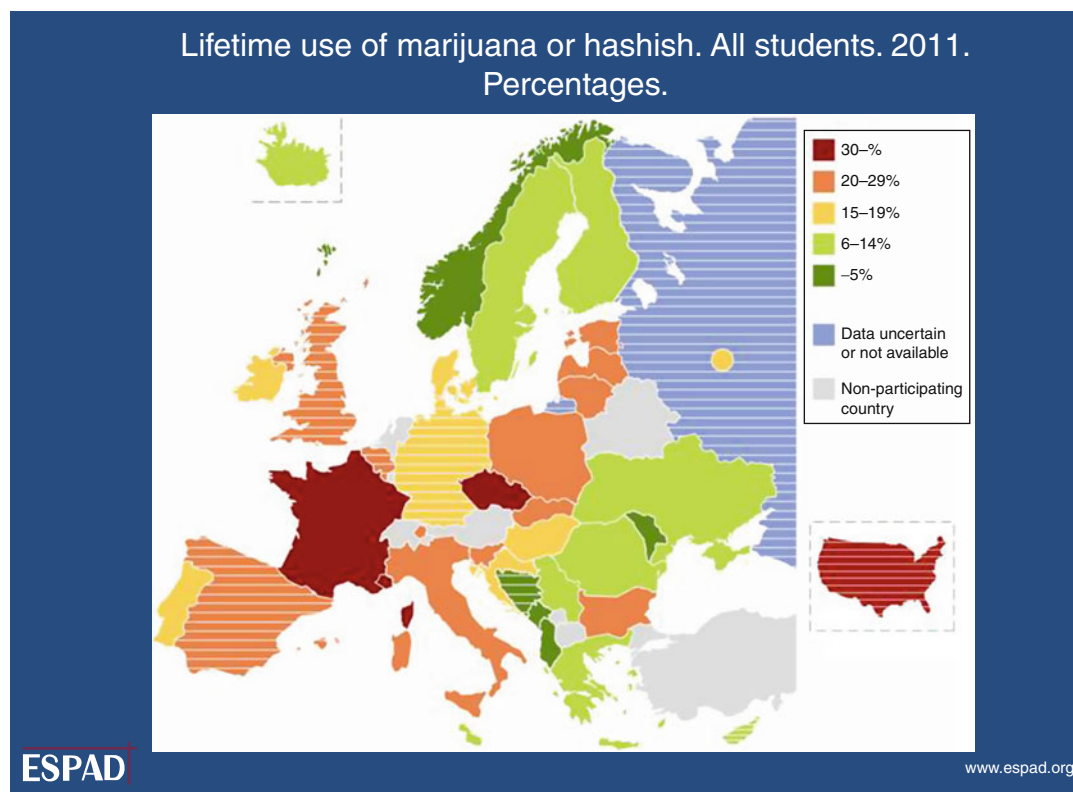
European Survey Project on Alcohol and Drugs (ESPAD), Fig. 5 Heavy episodic drinking, trends



European Survey Project on Alcohol and Drugs (ESPAD), Fig. 6 Heavy episodic drinking, map

European Survey Project on Alcohol and Drugs (ESPAD), Fig. 7 Life time cannabis use, trends





European Survey Project on Alcohol and Drugs (ESPAD), Fig. 8 Life time cannabis use, map

A way of measuring drunkenness is to ask how often the students had consumed five drinks or more on the same occasion during the past 30 days. This measure of “heavy episodic drinking” has undergone one of the most striking changes among girls across the ESPAD waves, with the aggregate-level average increasing from 29% in 1995 to 41% in 2007 (Fig. 5). In the 2011 survey, however, this figure had dropped to 38%. Among boys, the figure is also slightly lower in 2011 (43%) than it was in 2007 (45%) and thus also relatively close to the 1995 figure (41%). Like for all other variables, there are huge differences between students from different countries, varying from 56% in Denmark and Malta to 13% in Iceland (Fig. 6).

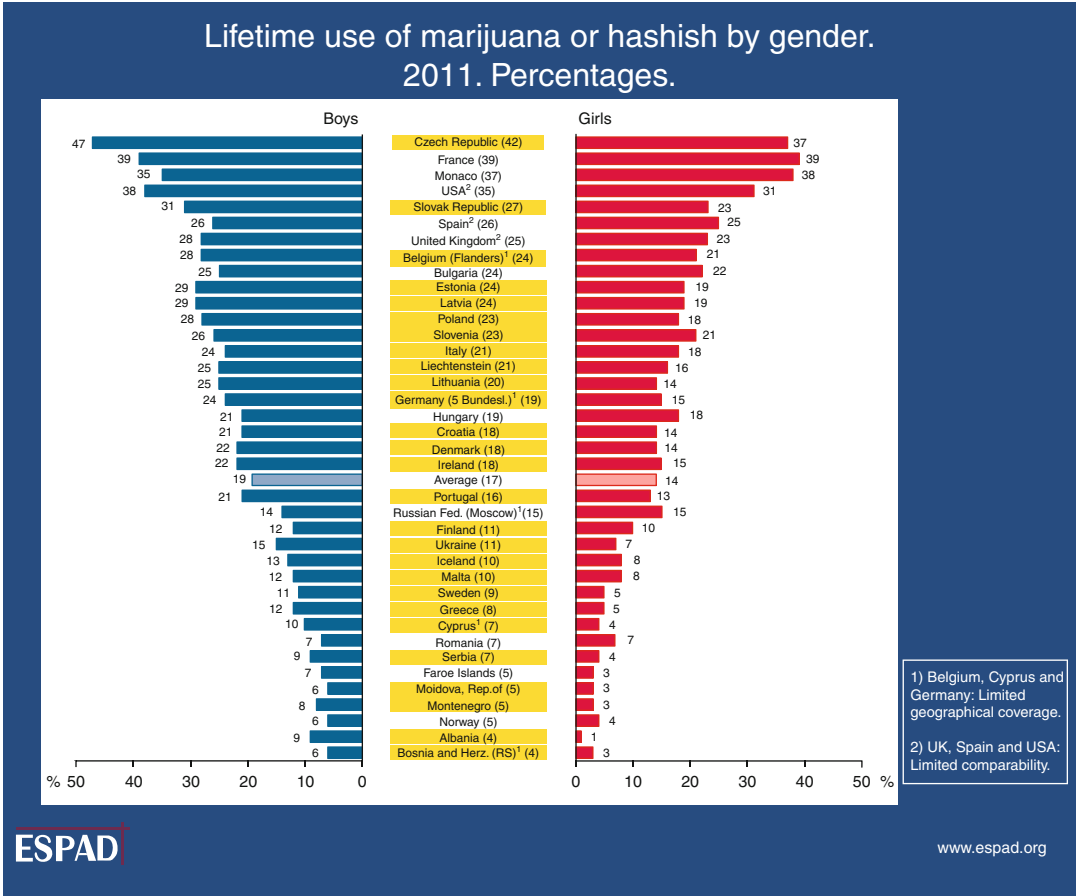
The most pronounced increases from 1995 to 2011 in heavy episodic drinking, in terms of percentage points, are found in Croatia, Hungary, Slovak Republic, and Slovenia (21–30% points). A reduction between 1995 and 2011 in heavy

episodic drinking in the past 30 days is mainly found in Iceland (23% points), but also in Finland (until 2007) and Ukraine (16% points each).

Illicit Drugs

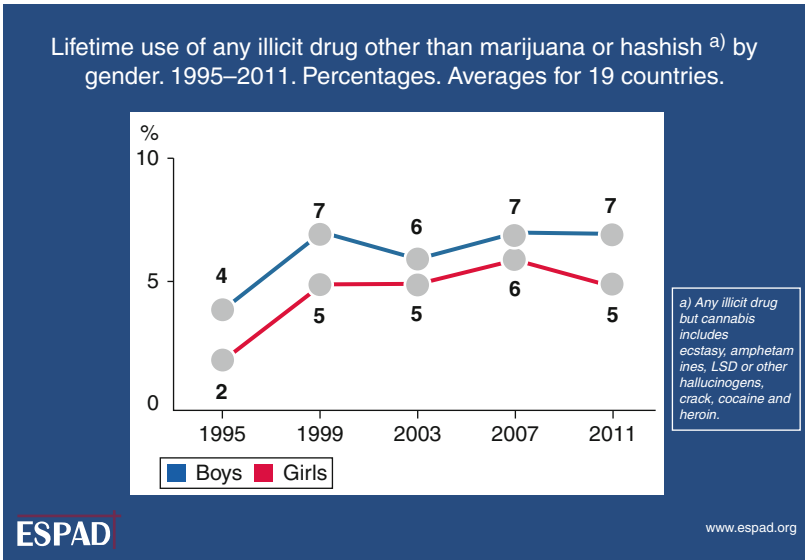
An observed upward trend between 1995 and 2003 in lifetime use of cannabis came to a halt in 2007, when the country average was about 2% points below the one in 2003, and has stayed at the same level in 2011 (Fig. 7). In 1995, 11% of the students reported lifetime use of cannabis. The corresponding figure in 2011 was 17%. Between the two most recent survey waves, a significant increase was found in 11 countries and a significant drop in six; there is no geographical pattern in either case, and both increases and decreases can be seen in high-prevalence as well as low-prevalence countries.

Reported use of cannabis varies considerably across the countries (Fig. 8). In the Czech Republic, almost half (42%) of the students admitted to

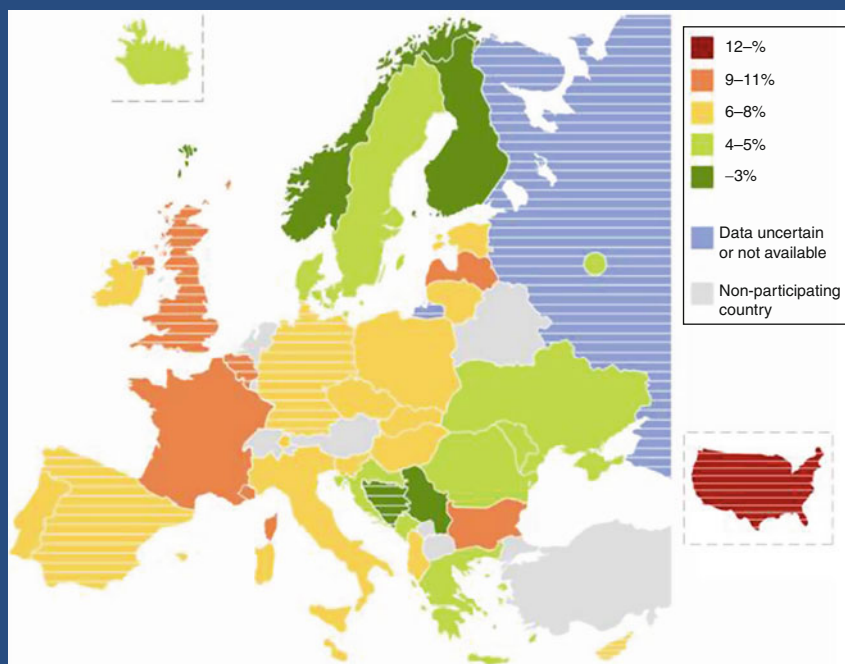


European Survey Project on Alcohol and Drugs (ESPAD), Fig. 9 Life time cannabis use, rank order

European Survey Project on Alcohol and Drugs (ESPAD), Fig. 10 Life time use of other drugs than cannabis, trends



Lifetime use of illicit drugs other than marijuana or hashish ^{a)}. All students. 2001. Percentages.



a) Any illicit drug but cannabis includes ecstasy, amphetamines, LSD or other hallucinogens, crack, cocaine and heroin.

ESPAD

www.espad.org

European Survey Project on Alcohol and Drugs (ESPAD), Fig. 11 Life time use of other drugs than cannabis, map

such use, and relatively many students (about 38%) did so in France and Monaco (Fig. 9). By contrast, only 4% reported cannabis use in Bosnia and Herzegovina (Republic of Srpska) and Albania. Lower prevalence rates are often found in southeastern Europe, including many Balkan countries, and among the Nordic countries.

The biggest increases since 1995 for lifetime cannabis use are found in the Czech Republic (with the main increase until 2003), Estonia (mainly until 2003), and Slovak Republic (even though its 2011 figure is significantly lower than the 2007 one) (17–20% points). With some exceptions, these countries are located in the eastern part of Europe.

Since 1995, lifetime use of cannabis has fallen by 19% points in Ireland and by 12 in the United Kingdom (until 2007). These two are also the only

countries with important decreases for lifetime use of any illicit drug other than cannabis, with a drop of 13% points in the United Kingdom (from 1995 to 2007) and 10 in Ireland.

Cannabis is by far the most frequently used illicit drug. Lifetime experience was reported by more boys than girls on average, with 19% versus 14% in 2011, and the figures were significantly higher for boys in 27 countries. Far behind comes ecstasy and amphetamines that, on average, were answered by 3% of the students.

The proportion of students reporting use of any illicit drug but cannabis increased between the first two surveys, but has after that been relatively stable with about 7% among boys and 5% among girls (Fig. 10). Also for this variable, there are clear differences between countries (Fig. 11).

References

- Anderson, P., Möller, L., & Galea, G. (Eds.). (2012). *Alcohol in the European Union: Consumption, harm and policy approaches*. Copenhagen: WHO Europe.
- Babor, T. F., et al. (2010). *Alcohol: No ordinary commodity: Research and public policy* (2nd ed.). Oxford: Oxford University Press.
- EMCDDA. (2011). *The state of the drug problem in Europe. Annual report 2011*. Lisbon: Author.
- Hanson, G., Venturelli, P., & Fleckenstein, A. (2012). *Drugs and society* (11th ed.). Boston: Jones & Bartlett Learning.
- Hibell, B., et al. (2012). *The 2011 ESPAD report – Substance use among students in 36 European countries*. Stockholm: CAN.
- Lesch, O. M., et al. (2011). *Alcohol and tobacco. Medical and sociological aspects of use abuse and addiction*. Vienna: Springer.
- Rehm, J., et al. (2009). Global burden of disease and injury and economic cost attributable to alcohol use and alcohol use disorders. *Lancet*, 373, 2223–2233.
- United Nations Office on Drugs and Crime (UNODC). (2012). *World drug report 2012*. New York: United Nations.

European Synthetic Welfare Indicator

► [Synthetic Indicators of the Quality of Life in Europe](#)

European System of Social Indicators

Heinz-Herbert Noll

Formerly Social Indicators Research Centre of the GESIS-Leibniz Institute for the Social Sciences, Mannheim, Germany

Definition

The *European System of Social Indicators* is a systematically selected set of indicators to be used to continuously monitor and assess the individual and societal well-being of European citizens in terms of quality of life, social cohesion,

and sustainability as well as changes in the social structure of European societies.

Description

The European System of Social Indicators is the result of research carried out by the Social Indicators Research Centre at GESIS, the Leibniz Institute for the Social Sciences. In its initial stage, this research was funded by the European Commission as part of the 4th European Research Framework Program. The research of constructing and implementing the European System of Social Indicators was aimed at developing a theoretically as well as methodologically well-grounded set of measurement dimensions and indicators to be used for a continuous monitoring of individual and societal well-being across European societies. To achieve these objectives, this indicator system is supposed to meet certain requirements, such as:

- A science-based, concept-driven approach of selecting measurement dimensions and indicators.
- The comprehensive coverage of relevant domains and dimensions of well-being as well as selected dimensions of general social change.
- The explicit coverage of the “European dimension,” for example, by means of measures of European identity or in terms of cohesion and conflict between member countries of the European Union.
- The search for and usage of valid and reliable indicators.
- The exploitation of the best data sources available and efforts to ensure the best possible level of international and intercultural comparability of indicators.

The research committed to these objectives followed several steps of development. As a result of this work, the European System of Social Indicators is characterized by the following conceptual and structural features:

European System of Social Indicators,

Fig. 1 European System of Social Indicators: concepts and basic dimensions of well-being

Individual Well-being	Quality of Life • Living Conditions • Subjective Well-being
Societal / Collective Well-being	Social Cohesion • Inequalities, Disparities, Exclusion • Social Relations, Ties, Inclusion (Social Capital)
	Sustainability • Natural Capital • Human Capital

Conceptual Framework Science-based indicator systems such as the European System of Social Indicators are supposed to be based on an explicit and clearly defined conceptual framework, which allows to systematically guide and justify the choice and selection of measurement dimensions and indicators. Departing from the major aim of monitoring individual and societal well-being in Europe, three basic concepts – quality of life, social cohesion, and sustainability – have been chosen, around which the framework has been developed. The choice of these concepts was based on theoretical considerations of different notions and conceptualizations of individual and societal well-being as well as on an analysis of goals of societal development in European societies (see Berger-Schmitt and Noll 2000; Noll 2002). While the concept of quality of life is supposed to cover dimensions of individual well-being, the notions of social cohesion as well as sustainability are used to conceptualize major characteristics and dimensions of societal or collective well-being (see Fig. 1).

From each of the three basic concepts, two major (goal) dimensions have been extracted. Quality of life is supposed to cover objective living conditions and subjective well-being as the two principal dimensions of individual well-being. The two basic dimensions of social cohesion addressed by the European System of Social Indicators are forces threatening cohesion, such as inequalities, disparities, and mechanisms of social exclusion, at the one side and binding mechanisms, such as relations, ties, and inclusion, or what is usually called the social capital, at the

other (Berger-Schmitt 2002; Collicelli and Noll 2010). Referring to the so-called capital approach, the concept of sustainability is supposed to cover natural capital and human capital as its two major dimensions.

Since the European System of Social Indicators is also aiming at monitoring general social change, it moreover addresses the dimensions of value orientations and attitudes as well as selected elements of the social structure of societies.

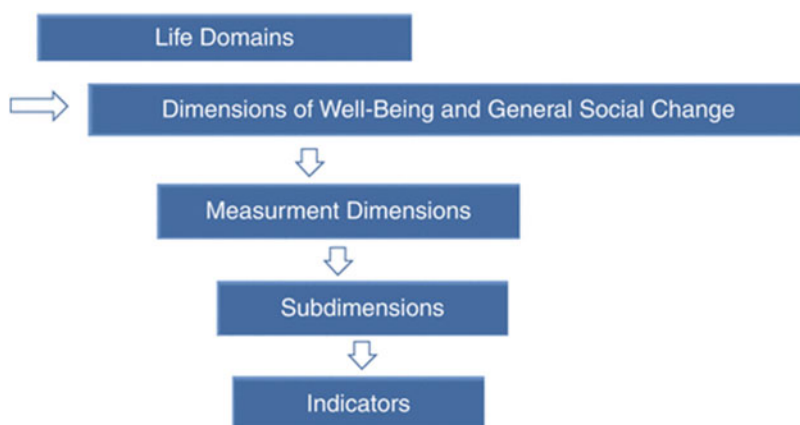
As far as the “system architecture” of the European System of Social Indicators is concerned, a life domain approach is most characteristic. The indicator system covers altogether 12 life domains and includes in addition a module on the total life situation with a view to address also more general dimensions of well-being, which are not limited to specific life domains, such as overall subjective well-being, trust in persons and certain institutions, or the level of living in general.

The domains covered by the European System of Social Indicators are the following:

- Population, households, and families.
- Income, standard of living, and consumption patterns.
- Labor market and working conditions.
- Education and vocational training.
- Health.
- Housing.
- Social security.
- Public safety and crime.
- Social and political participation and integration.
- Mobility and transportation.

European System of Social Indicators,

Fig. 2 Dimensional structure of the European System of Social Indicators



- Leisure, media, and culture.
- Environment.
- Total life situation.

Applying the dimensions of individual and societal well-being as well as general social change to each of the domains allows to identify measurement dimensions and eventually subdimensions, which are operationalized by selecting one or several indicators for each of them (see Fig. 2).

Additional Elements of the Systems' Architecture

Indicators As social indicators in general, most of the indicators used for the European System of Social Indicators are considered as outcome measures. The system makes use of objective as well as subjective indicators. While the objective indicators used are for the most part supposed to measure the outcomes of societal processes, for example, in terms of living conditions and individual resources, some input-related indicators are included too. The latter are required primarily when it comes to evaluate the efficiency of societal institutions and policy measures. Subjective indicators are by nature outcome measures and include first of all indicators of subjective well-being, but also other perceptual and evaluational measures

as, for example, preferences and concerns, political and social attitudes, or hopes and fears.

Various *key indicators*, which have been identified for each of the life domains covered, address dimensions of well-being and social change which are highlighted as particularly important.

Country Coverage The European System of Social Indicators currently covers all member states of the European Union as well as Norway and Switzerland as two countries not belonging to the EU. Moreover, also two important non-European reference societies – the United States and Japan – are being covered as far as appropriate and data availability allows. Country coverage may however vary across indicators depending on data availability and sources used.

Periodicity of Observations Time series start at the beginning of the 1980s at the earliest. As far as data availability allows, empirical observations are presented year by year.

Disaggregations Most of the indicator time series are broken down by selected sociodemographic variables, such as gender, age groups, employment status, or type of area, as far as meaningful and depending on the specific indicator as well as the availability of respective information. Regional disaggregations of indicators are being provided at the NUTS-1 or similar level as far as meaningful and data availability allows.

Data Sources The *European System of Social Indicators* is based on data sources ensuring the best possible level of comparability across countries and time. As far as possible, priority is given to data from harmonized sources. The data sources used include international aggregate official statistics, as they are, for example, provided by EUROSTAT or the OECD, as well as micro-data from various official as well as science-based cross-national surveys, such as the European Union Statistics on Income and Living Conditions (EU-SILC), Eurobarometer Surveys, the World Value Surveys, or the European Social Survey, to name just a few examples.

Given the conceptual framework as well as the system's architecture, the construction of the European System of Social Indicators apparently has anticipated several of the desiderata on the measurement of well-being as they have been pointed out more recently in the so-called Stiglitz-Sen-Fitoussi Report (Stiglitz et al. 2010; Noll 2011), as, for example, the life domain approach, the joint consideration of quality of life and sustainability, and the use of objective and subjective indicators. The European System of Social Indicators has been implemented gradually in recent years and was continuously being updated by the Social Indicators Research Centre at GESIS until 2015. In its latest version, it provided time series for 9 out of the projected 13 life domains. Comfortable access to the data from the European System of Social Indicators was provided through the online information system "Social Indicators Monitor – SIMon," which – due to the closing of the Social Indicators Research Centre at GESIS in 2016 – is no longer accessible unfortunately.

The Social Indicators Monitor – SIMon:

- Allows to browse and select indicators according to users' needs (hierarchical and geographical data selection modes).
- Allows to visualize and display data as charts (e.g., line chart, bar chart, scatterplot, boxplot), maps, and tables.
- Provides tools for table manipulation and basic data analysis.

- Allows to print and export data and charts in different formats (PDF, Excel tables, JPG, HTML) to be used in other applications.

In a less user-friendly format, the data of the European System of Social Indicators are currently accessible via histat (historical statistics) at <https://histat.gesis.org/histat/de/data/themes/36>.

The *European System of Social Indicators* was designed to be used for all kinds of comparative research on quality of life, social cohesion, sustainability, social structures, and value orientations within and across the more than 30 countries covered. As a tool to monitor progress in terms of individual and societal well-being as well as general social change across European societies, it was also considered to be most relevant for policy making purposes.

Cross-References

- [Social Cohesion](#)
- [Social Indicators](#)
- [Societal Progress](#)
- [Stiglitz-Sen-Fitoussi Report](#)
- [Sustainability](#)

References

- Berger-Schmitt, R. (2002). Considering social cohesion in quality of life assessments: Concept and measurement. *Social Indicators Research*, 58, 403–428.
- Berger-Schmitt, R., & Noll, H.-H. (2000). *Conceptual framework and structure of a European System of Social Indicators* (EuReporting working paper no. 9). Mannheim: Centre for Survey Research and Methodology (ZUMA), Social Indicators Department.
- Collicelli, C., & Noll, H.-H. (2010). Indicatori oggettivi e soggettivi di coesione sociale. Italia e Germania nello scenario europeo. In *La Rivista delle Politiche Sociali*, 4/2010, 105–135.
- Noll, H.-H. (2002). Towards a European system of social indicators: Theoretical framework and system architecture. *Social Indicators Research*, 58, 47–84.
- Noll, H.-H. (2011). The Stiglitz-Sen-Fitoussi-report: Old wine in new skins? Views from a social indicators perspective. *Social Indicators Research*, 102, 111–116.
- Stiglitz, J. E., Sen, A., & Fitoussi, J.-P. (2010). *Mis-measuring our lives: Why GDP Doesn't add up*. New York: The New Press.

European Union Indicators

Ruud Muffels

Faculty of Social and Behavioral Sciences,
Tilburg University, Tilburg, The Netherlands

Synonyms

Flexicurity indicators; Laeken indicators; Social indicators

Definition

The European Union aims to monitor progress in the attainment of policy targets set in the framework of EU social policy making, in particular employment policies and policies to prevent and combat social exclusion, through the open method of coordination by defining commonly agreed objective social indicators. To date, the EU has no subjective indicators on personal or social well-being defined even though the Eurobarometer survey already since its inception contains a question on life satisfaction.

Description

The Laeken Council and Social Indicators

In December 2001, the European Council met in the Belgium village Laeken near Brussels and agreed on a set of indicators on ► [social inclusion](#) policies. These indicators should measure progress toward the objectives of European social policy as set at the Nice Council in 2000. These objectives are (1) facilitating participation in employment and access by all to resources, rights, and services; (2) preventing the risks of social exclusion; (3) helping the most vulnerable; and (4) mobilizing all relevant bodies. The objectives and their specific content were endorsed by the 2002 Council of Ministers for Employment and Social Affairs with a few amendments among which the emphasizing of concrete target setting (see for a detailed account Atkinson et al. 2004). The authority of EU policy making in

the social domain is limited, since under the subsidiarity principle, the Member States are primary responsible for the implementation of social inclusion policies. The EU is not a federation – far from it, still – and therefore lacks legitimacy let alone formal competence in social policy (see for a discussion Muffels et al. 2002). Part of the Nice Agreement was to ask member states to develop National Action Plans for promoting social inclusion (NAPincs). The model for these was clearly the European Employment Strategy (EES), which similarly requires member states to present and implement a National Action Plan (NAPempls). The approach underlying both policy areas has come to be known as the open method of coordination (OMC). It represents a new form of policy coordination in which the role of the European bodies is to set the framework and the objectives (concrete targets) and to orchestrate the monitoring and review of the Action Plans while leaving member states free to decide on detailed policies and their implementation. The progress the EU made in the domain of social policy in the past decennium is very much determined by the success or lack of it of the OMC process during the past decennium.

The employment and social agenda of the EU during this period are very much catered to the overarching objectives and policy needs of the Lisbon agenda to create “the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion.” The Lisbon agenda implied a closer tuning of the economic (the internal market) and the employment and social agenda which was complicated by the enlargement of the EU with many Eastern European countries showing a widely diverse but generally poorer economic and social record. After the midterm review of the EES in 2005, the employment agenda became very much engaged with the elaboration of the ► [“flexicurity”](#) strategy according to which a better balance was aimed for between the economic (flexibility) and social (security) goals of the Lisbon agenda. Other topics in this period in the employment domain were the creation of jobs to reduce (long-term) unemployment, the ageing of the workforce and intergenerational relationships,

the opportunities for youth (school leavers) to begin a career on the labor market (increasing concern for youth in NEET, not in employment, education, or training), and the human capital and innovation agenda concerning lifelong learning and “new jobs for new skills” (see also Eichhorst et al. 2010). Even though the OMC as a form of “soft” law appears more successful than initially thought, it has been supplemented at the European level with some “hard” law through the establishment of EU directives on fixed-term and part-time work (which were based on European social partner agreements) and, very recently and after a very lengthy negotiation process, agency work (see Muffels and Wilthagen 2012).

The Set of EU Social Indicators

The set of Laeken indicators to monitor progress on social inclusion contains first of all poverty indicators for assessing the number of people in the EU at risk of poverty or persistent (longer-term) poverty before and after social transfers and indicators on the income gap of the poor. The corresponding poverty line was defined as the income level that corresponds to the 60 % of the median net equivalent household income level in each country. For the calculation of equivalent household income, the incomes are corrected for a so-called equivalence scale factor. The equivalence scale factor that is used to compare the welfare of households of different size and composition is the so-called modified OECD scale. It assumes that a household with an in-living partner needs 50 % more income than a single person household and that a household with a child needs 30 % more income than a childless household independent of the number and age of the children. The poverty indicators require information on income which is contained in the European Statistics on Income and Living Conditions (SILC). The definition and use of a persistent poverty indicator require the use of the panel information as contained in SILC (4-year rotating panel). However, the list of indicators is extended in the course of time and includes also other domains of ► [social policy](#) such as education, labor market, housing, and health. The list became gradually extended and includes indicators on income inequality, material ► [deprivation](#)

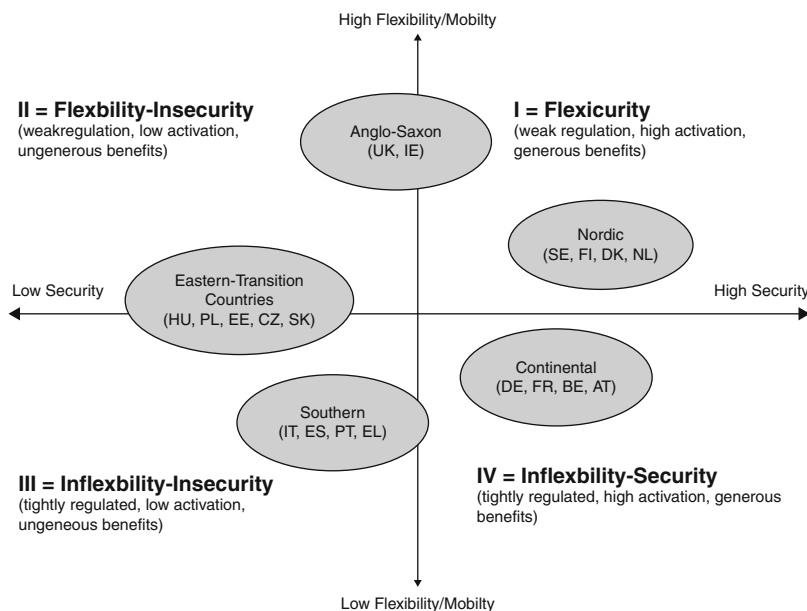
(indicated by economic strains, lack of possession of durables, housing and environmental deprivation), access to the labor market (in-work poverty, long-term unemployment rate, gender pay gap, workless households), education (early school leavers, low-educated poor, low reading literacy, computer and internet skills), and housing (housing deprivation and housing costs burden).

Flexicurity Indicators

In the domain of employment, the Commission worked on the definition of indicators for monitoring progress in the domain of flexicurity and its underlying dimensions: flexible and reliable contractual relations, active labor market policy, ► [life-long learning](#), and modern social security systems (EMCO 2009; Wilthagen and Tros 2004). Most of the work was oriented at defining static institutional and outcome indicators and was based on the cross-sectional information as contained in the European Labor Force Survey. The data permit to measure static indicators only. Against the backdrop of the increasing volatility and dynamics on the labor market, the challenge is to define dynamic indicators. In a report for the Commission, Muffels et al. (2011) proposed the definition and use of transition indicators calculated on the 4-year rotating panel of EU-SILC to monitor the rising labor market and job mobility patterns and their impact on income and employment security. The *transition mobility* indicators deal with the various forms of labor market and job mobility, as well as contractual mobility (from one type of contract into the other; Muffels et al. 2011). The *transition security* indicators deal with income (moving in and out of poverty) and employment security (moving in and out of secure employment). These indicators can be used to map the countries on the flexibility-security dimension and to show which countries are able to maintain simultaneously high or low levels of labor market and job mobility and income and employment security and which countries show trade-offs between the two dimensions. We then obtain a matrix with four cells as in Fig. 1. The location of countries in the quadrant is an empirical question. Empirical research either based on static (EU-LFS) or transition indicators (SILC data) shows very similar results and indicates that most of the Scandinavian countries are located in the

European Union

Indicators, Fig. 1 The location of countries in the “flexicurity” quadrant (Source: Muffels and Luijkx 2008; Muffels and Wilthagen 2012)



E

flexicurity cell and most of the continental countries in the inflexibility-security cell, whereas the Southern countries and a significant part of the Eastern transition countries are located in the inflexibility-insecurity cell (Muffels 2008; Muffels and Wilthagen 2012).

- Indicators, Quality of Life
- Lifelong Learning
- Net Economic Welfare (New)
- Poverty and Nonconsumption Indicators
- Social Inclusion
- Social Indicators
- Social Policy

Indicators on Subjective Well-Being

The set of indicators does not contain yet subjective indicators on well-being. There is ample debate in the literature of using subjective well-being measures as a proxy for social and economic welfare which can supplement the information contained in the standard measure of economic welfare as GDP per capita. A report by some Nobel laureates in 2009 held a strong plea for using measures of subjective well-being (Stiglitz et al. 2009). The rich literature on subjective well-being and happiness has shown the added value for academic and policy purposes of these types of subjective questions holding a promise for the inclusion in the near future in European-wide socioeconomic surveys.

Cross-References

- Deprivation
- Flexicurity

References

- Atkinson, A. B., Marlier, E., & Nolan, B. (2004). Indicators and targets for social inclusion in the European union. *JCMS*, 42(1), 47–75.
- Eichhorst, W., et al. (2010). *Analysis of the social agendas*. Bonn: IZA. (Research Report No. 24).
- EMCO. (2009). *Monitoring and analysis of flexicurity policies*. Brussels: European Commission. (Report endorsed by EMCO, EMCO Reports, Issue 2, pp. 41).
- Muffels, R. (Ed.). (2008). *Flexibility and employment security in Europe. Labour markets in transition*. Cheltenham, UK: Edward Elgar.
- Muffels, R., & Luijkx, R. (2008). The relationship between labour market mobility and employment security for male employees: Trade-off or flexicurity? *Work Employment and Society*, 22(2), 221–242.
- Muffels, R., Tsakoglou, P., & Mayes, D. (Eds.). (2002). *Social exclusion in European welfare states* (p. 366). Cheltenham, UK: Edward Elgar.
- Muffels, R., & Wilthagen, T. (2012, forthcoming). Flexicurity: A new paradigm for the analysis of labor markets and policies challenging the trade-off between flexibility and security. *Sociology Compass*, 1–11, <https://doi.org/10.1111/soc4.12014>.

- Stiglitz, J., Sen, A., & Fitoussi, J.-P. (2009). *Report by the commission on the measurement of economic performance and social progress*. Brussels: European Union.
- Wilthagen, T., & Tros, F. (2004). The concept of 'flexicurity': A new approach to regulating employment in the labour market. *TRANSFER European Review of Labour and Research*, 10(2), 166–186.

Europeans' Opinion on Public Services

► Europeans' Opinions on Services

Europeans' Opinions on Services

Pier Alda Ferrari and Giancarlo Manzi
Department of Economics, Management and
Quantitative Methods, Università degli Studi di
Milano, Milan, Italy

Synonyms

European opinion on services of general interest; Europeans' opinion on public services; Opinion of European citizens on public services; Public services, quality of

Definition

European opinion on services relates to how the provision of services of general interest – particularly public network services – is perceived by European citizens in their home countries. Opinions on public services are often regarded in terms of personal *satisfaction* especially in relation to the basic citizens' needs. They are particularly important when the provision of fundamental services could be at risk for some reason (e.g., in a period of economic recession or in a regulatory reform context) and because they form an important source of information about the efficiency of public services. This deeply differentiates this

concept from that of the standard customer satisfaction in marketing.

The analysis of Europeans' opinion on services might be rather cumbersome due to different reasons, especially in quantitative research when a measure of satisfaction is sought. Firstly, the citizen's contentment is a complex concept, since it is clearly an abstract phenomenon that can be measured only indirectly by means of a set of many related variables, with different relevance and different weight. In addition, observed variables are retrieved from opinion surveys and often have an ordinal measurement scale which should be properly treated. Secondly, the level of contentment is strictly related to both individual features of respondents (gender, age, type of family, education, type of occupation, etc.) and social environmental conditions. Therefore, micro and macro components generally affect the level of satisfaction and should be tightly kept under consideration.

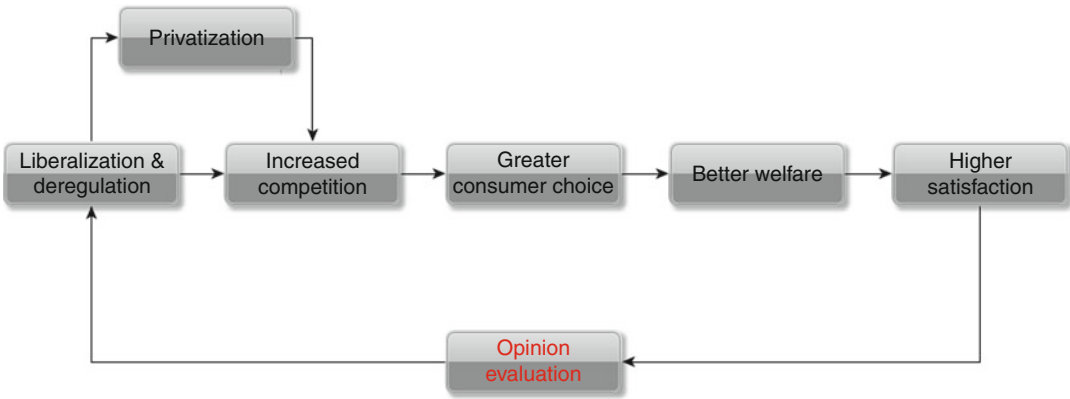
Description

The General Framework

The European Union (EU) member countries' convergence toward a high-level quality of public services and the standardization of their provision have become an important policy issue in the EU, especially after its enlargements of the last years.

One of the most important things to keep in mind with regard to EU political and economic aspects is the *specificity of the EU as an entity with national and supranational legislation*. From the national side, this often generates constraints in the development of a real common free market or shared policies which can be useful, especially when prompt actions have to be implemented in response to economic events (e.g., during the 2008–2012 crisis), or from the supranational side, this creates a bureaucratic and sometimes useless filter which can slow down the process of economic and political reforms.

Despite this, the regulatory reform process on privatization and liberalization started in the 1990s has steadily progressed and has often been viewed by EU policy makers as the only way to



Europeans' Opinions on Services, Fig. 1 The process to increase consumers' satisfaction for services of general interest

improve citizens' well-being. As the European Commission (EC) has often pointed out (see, e.g., European Commission 2004), the desired process to reach better results in terms of public welfare should follow the flow presented in Fig. 1 (Clifton et al. 2012).

Nevertheless, some features of these regulatory reforms have not always worked as expected. Therefore, the need to evaluate Europeans' perceptions and decisions as consumers of services of general interest (SGI) becomes a key factor, and an immediate feedback on how their provision is perceived is important. Therefore, in the last years, the EC has considered public opinions on satisfaction as a strategic ingredient to reach a really balanced competition.

Ways to Collect Information on Europeans' Opinion on Services

It is therefore of a vital importance to correctly collect information about the opinion for public services. The EC has promoted some tools for evaluating consumers' satisfaction, mainly the Eurobarometer (EB) surveys, which are the main source to evaluate the overall Europeans' opinion on services. Since 1973 EB surveys have comprehended each EU country of the time (EB58 2002; European Commission 2002, 2003). In the last years, special issues of the EB surveys have been released in order to include candidate countries during EU enlargements and on special focuses. These special parts of standard EB are devoted each time to some particular

aspects, for example, on expectations for the future, crime levels, and the employment situation. In EB47.0, EB53.0, EB58.0, EB62.1, EB63.1, and EB65.3 carried out in 1997, 2000, 2002, 2004, 2005, and 2006, respectively, plus two flash surveys (Flash 150 in 2003 and Flash 243 in 2008 [Flash EB surveys are conducted via telephone interviews, whereas standard and special EB surveys are conducted through face-to-face interviews.]), a special section was included in order to monitor consumers' opinion about SGI, especially utilities. Services considered were the following: mobile telephone, fixed telephone, electricity supply, gas supply, water supply, postal service, transport within towns/cities, and rail between towns and cities. This survey section intended to discover how European consumers perceive SGI during a period in which big changes concerning the ownership, the vertical integration, the access to market, and the structure of companies dictated both by national and EU policies. Questions for the evaluation of services are provided on the basis of the following criteria: access to services, prices of the services, quality of the services, clearness of information provided to consumers about services, fairness of terms and conditions of the contracts applicable to the services, complaints about the services and their handling, and level of customer service. Allowed responses are on a two-, three-, or five-level Likert scale ordered from positive to negative opinion. "Don't know" and "Not applicable" responses are also allowed. Occasionally, standard EB surveys

(EB49.0, EB57.2, EB67.3, EB72.2) present a few questions on general satisfaction about education, law and order, and health-care service in respondents' home country.

Another important source of information to evaluate the opinion on public services in the EU is the European Quality of Life Survey (EQLS). This survey is designed for a more general evaluation of quality of life as perceived by Europeans and is based on eight core life domains for the measurement of quality of life. Two of these domains can be directly linked with satisfaction for public services, namely:

- The health care domain
- The quality of society domain

The first domain addresses the problem of the evaluation of satisfaction for public health services, whereas the second domain contains tools to collect the citizens' opinion about the public transportation and the education system.

In 2001–2002, the EC launched a series of “public consultations and discussions” (in the “Your voice in Europe” portal) to make “the voice of EU citizens heard in Europe.” These consultations and discussions are “have your say” online tools like blogs, social networks, or surveys on many topics regarding the implementation of EU policies with particular reference to public services and in accordance to the attempts to improve the EU governance (Sarikakis 2011).

Other important surveys on monitoring Europeans' opinion for SGI are conducted by the International Social Survey Programme (ISSP) (ISSP is a continuing cross-national collaboration to perform surveys on topics related to social science research [www.issp.org]).

Finally, many ad hoc EU projects have been focused on satisfaction for public services, especially with particular reference to the liberalization process. For example, the 3-year Privatisation of Public Services and the Impact on Quality, Employment and Productivity (PIQUE) project has conducted a series of surveys to monitor the liberalization process. Phase 4 of the project was dedicated to assessing quality, accessibility, and accountability from the user's perspective in

Austria, Belgium, Germany, Poland, Sweden, and the United Kingdom (PIQUE 2009).

Satisfaction for Services of General Interest: A Multifaceted Concept

EB surveys collect information about Europeans' satisfaction for public services on the basis of *stated preferences* rather than *revealed preferences*. Stated preferences are “individual self-evaluation of satisfaction or subjective happiness” (Clifton et al. 2012), whereas revealed preferences are inferred from consumers' behavior (Frey and Stutzer 2002). However, stated preferences are subject to bias, since satisfaction is a complex concept related to multiple latent aspects. In particular, the quantification of satisfaction could indeed be a hard task for the following reasons:

- The user's *contentment* is an abstract phenomenon that can be measured only indirectly by means of a set of many related variables, with different relevance and different weight.
- Stated preferences are collected on an ordinal measurement scale which should be properly treated.
- The level of contentment is strictly related to both individual features of respondents (gender, age, type of family, level of instruction, type of occupation, etc.) and social environmental conditions; therefore, macro and micro components could affect the level of satisfaction and should be kept under proper consideration (Fiorio et al. 2007).
- Many surveys concern subjective questions like “Would you say that access to the service is difficult for you?” or “Would you say the price you pay for the service is fair for you?” which may have important implications on the analysis: by paraphrasing Freeman (1978), we can state that in these cases data reflect “What people say rather than what people think,” and therefore, the role and implications of this subjective data must be properly addressed, as pointed out, for example, by Bertrand and Mullainathan (2001).

Moreover, the different level of liberalization reached in each EU country gives the citizens

different possibilities of switching from one provider to another, causing different effects and expectations on satisfaction. For example, in the public railway transportation sector, there is a wide choice for different providers in the UK, whereas in countries like Italy or Greece, usually a single provider manages the overall service. Thus, citizens react differently since the situation of the regulatory reforms in their countries is different. Comparative and relative quantitative analysis to obtain reliable satisfaction indicators can help in better understanding these differences. In these cases, the goal is to evaluate how public opinion changes from country to country and from service to service, in markets where public ownership is still strong and, on the other hand, privatization and liberalization policies are in progress.

Statistical Measures and Composite Indicators to Evaluate Europeans' Opinion on Services

Several proposals to quantitatively evaluate the overall Europeans' opinion on the provision of public services have been put forward in the recent years. In this section, we limit our investigation to the most interesting proposals of the last 5 years regarding the overall residents of EU15 or EU27 countries.

The main source of recent EU overall quantitative analyses on the evaluation of Europeans' opinion on services is the EB survey. Analyses presented range from model-based evaluation to the implementation of synthetic measures of satisfaction, to between-country ranking methods, with some of them overlapping from one category to another.

Model-Based Analyses

Among recent model-based analyses, Jilke and Van de Walle (2012) explicitly model the responses to questions on complaints about any aspect of the provision of utilities against age and education through a binary logistic regression on EB data. Battaglio (2009) uses probit analysis to measure Europeans' choice between private and public provision of services. Salini and Kennett (2009) apply Bayesian network models to the analysis of EB data. Florio and Florio (2011)

aim at addressing the question "are European consumers happy with the price they pay for electricity supply services after two decades of reforms?" being interested in the correlation between satisfaction and regulatory reforms in the EU. They use an empirical model where the exact latent level of individual satisfaction for a given service has to be not only representative of the responses to satisfaction surveys (namely, EB58.0 and EB62.1) but also of a set of socioeconomic variables (i.e., gender and occupation), country macroeconomic variables (i.e., gross domestic product level and population density), and the level of privatization and market regulation (Conway and Nicoletti 2006). A random-effect probit model is used. A similar analysis for telecommunications has been carried out in Bacchiocchi, Florio, and Gambaro (2011). Wendt, Kohl, Mischke, and Pfeifer (2010) (see also Wendt et al. 2011) analyze the relationship between health-care provision and satisfaction performing an ordinary least squares regression with several individual and country-level explanatory variables (among which the opinion on doctors spending enough time, the number of general practitioners, and the type of doctor-patient relationship in respondent's country) retrieved from Organization for Economic Co-operation and Development surveys and an additive satisfaction index as dependent variable calculated on EB57.2 data.

Synthetic Measures and Composite Indicators

Ferrari, Annoni, and Manzi (2010) propose a synthetic indicator to classify European countries with relation to consumers' satisfaction for SGI based on EB58 data. A nonlinear principal component analysis (NPCA) solution is adopted (Gifi 1990; Michailidis and De Leeuw 1998). NPCA produces optimal *quantifications* for variable categories and different *weights* of the variables according to their importance in order to set up a composite indicator of the level of satisfaction. A country satisfaction indicator is obtained by performing an overall NPCA and then computing conditional means of NPCA scores, separately for each country, service, or aspect.

Ferrari and Salini (2011) use both Rasch Analysis (RA) and NPCA to obtain composite indicators, reconsidering the concepts of subject's *ability* and item *difficulty* in the Rasch model (Rasch 1960) as the citizens' *satisfaction* and the service *quality*, respectively. Then, the complementary use of RA and NPCA allows to obtain a ranking of items, on one hand, based on the perceived quality (via RA) and, on the other hand, based on the importance for the user (via NPCA). In this way, policy interventions can be appropriately redirected toward what is more needed to improve the service for the public, the actual quality in relation to user's need.

Ferrari, Pagani, and Fiorio (2011) present a two-step procedure based on NPCA and multi-level models (MLs) which can be categorized both among synthetic measures and among model-based approach. NPCA is used to evaluate the level of a latent satisfaction variable (first step), and MLs are used for detecting personal and environmental characteristics of this level (second step). In particular, in this second step, the output of the first step is modeled using a random intercept model with two sets of variables at two levels, an individual level and a country level. In this way, the contextual variation among countries due to environmental conditions detected in the second step through MLs explains most of the country variation initially obtained in the first step.

Ranking, Comparative, and Other Analyses

Several comparative and ranking analyses have been performed in the last years in order to evaluate the opinion of Europeans on public services. For example, Annoni (2007) uses Hasse diagrams and partial order scalogram analysis with coordinates methods to perform a ranking analysis on the EU15 countries through EB data; Annoni and Brüggemann (2009) show a way to rank EU countries through partial order theory; Clifton and Díaz-Fuentes (2010) analyze EB survey data by averaging responses on satisfaction for country comparison; Vael et al. (2009) perform a similar analysis on PIQUE data.

What Is Ultimately the Opinion of Europeans on SGI?

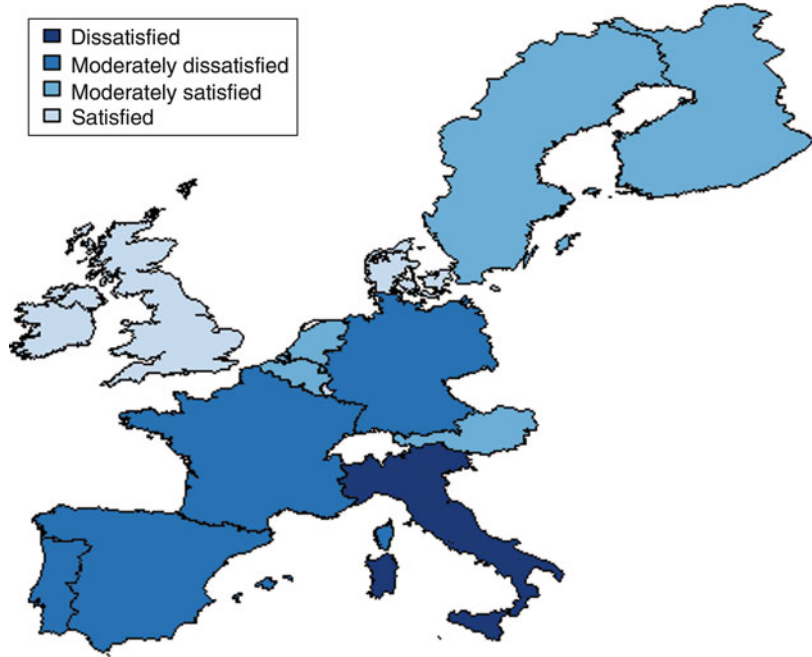
From what has been highlighted above, it is evident that the European public opinion on services of general interest varies depending on personal utilitarian needs, regional heterogeneity, and differences in providing the specific service. In this section, we want to summarize the findings of the recent literature in this field. Many methodological proposals have been tested on real data and produced interesting results which are worth discussing in more detail. In what follows, some examples are given in the utility and telecom sector.

Jilke and Van de Walle (2012) aimed at confirming the hypothesis that the wealthiest, best-informed, and most assertive European citizens get the best-quality service. They came out with mixed results only partly supporting the expectation that socioeconomic factors have a negative impact over time on citizen complaints about utility provision. Age has this impact whereas education does not have such an effect. Battaglio's (2009) findings suggest that "both industry and national contexts are important in explaining the choice between private or public provision of services," being individuals also influenced by utilitarian concerns, party preferences, and value orientations. The comparative analysis (among other EU countries) between Ireland and Italy presented by Salini and Kennett (2009) shows that, generally, the opinion on utility prices, quality, and access is better in Ireland than in Italy. Good quality and easy access judgments positively influence the opinion about price, whereas fixed telephone service opinion is almost completely depending on judgments on other services. Fiorio and Florio (2011) show that consumers' satisfaction for electricity supply is higher among females and elderly people. More educated people tend to be more satisfied, while there is no significant difference in terms of marital status; managers and students tend to be consistently more satisfied than self-employed people, with unemployed being the least satisfied. Respondents with moderate political views tend to complain less about electricity prices than people at both the extremes of the political spectrum. Macroeconomic variables are in general

Europeans' Opinions on Services, Fig. 2

Spatial distribution of satisfaction in EU15 countries – first decade of the 2000s.

(Source: Ferrari et al. 2010)



E

less significant to explain satisfaction. Interestingly and surprisingly, satisfaction results are higher where the reform process is less advanced. More mixed results are found in Bacchiocchi et al. (2011) for the telecommunication sector: a significant (and negative) effect on satisfaction is that of prices for local and international calls, whereas public ownership is negatively correlated with the level of satisfaction. A North–south dichotomy in terms of satisfaction for SGI was found by Ferrari et al. (2010) among the 15 pre-2004 EU enlargement member states (see Fig. 2). The “most satisfied” group is formed by Ireland, Denmark, Luxembourg, and United Kingdom, while an intermediate group of moderately satisfied countries is formed by Belgium, Finland, Netherlands, Sweden, and Austria. A moderately dissatisfied group is composed by France, Germany, Greece, Spain, and Portugal, and eventually, a clearly dissatisfied group can be identified whose only component is Italy. Ferrari and Salini’s (2011) results on utility supply satisfaction across EU15 countries show a deep difference between Mediterranean countries (Italy, Portugal, Spain, and Greece) and Scandinavian countries (Denmark, Sweden, and Finland),

being the latter the “satisfied group” of countries, whereas the former are the “unsatisfied group.” In Ferrari et al. (2011), the ML approach allows for country-specific variation of satisfaction. After performing ML, Italy remains the only country where people are clearly dissatisfied, whereas countries like Greece, Spain, or Portugal regress toward the EU15 average level of satisfaction. In agreement with Fiorio and Florio’s findings, macroeconomic variables are found not particularly significant. Annoni (2007) and Annoni and Brüggemann (2009) find that Denmark, Luxembourg, and Ireland are at the best level of satisfaction with respect to the other countries, whereas Clifton and DÚaz-Fuentes’ (2010) results are interesting especially for the preference with regard to the specific service: consumers were most satisfied with postal services in 2002. Finally, Vael et al. (2009) find that the UK is the country where people are most satisfied especially for postal and electricity supply service.

Concluding Remarks

The analyses presented above have mostly focused on SGI, particularly utilities, excluding

other important public services like health care. The reason for this is that there is no huge coverage for retrieving information, for example, on patient satisfaction at a general EU level. Standard EB surveys rarely include questions about patient satisfaction, and when included, questions are very general, typically about a general satisfaction for national health services. Some studies handle this issue, like the one by Wendt et al. (2010) who emphasize that the number of GPs and a high-quality doctor-patient relationship are among the main determinants of satisfaction for health-care services. However, with regard to SGI, most of the analysis presented above seems to give congruent results. In the first decade of the 2000s, Europeans' opinion on services varies across countries according to different conditions in each country and different individual perception; in any case, on the basis of the available data, residents in the Mediterranean countries seem to be less satisfied than residents in Northern Europe countries.

References

- Annoni, P. (2007). Different ranking methods: Potentialities and pitfalls for the case of European opinion poll. *Environmental and Ecological Statistics*, 14, 453–471.
- Annoni, P., & Brüggemann, R. (2009). Exploring partial order of European countries. *Social Indicators Research*, 92, 471–487.
- Bacchiocchi, E., Florio, M., & Gambaro, M. (2011). Telecom reforms in the EU: Prices and consumers' satisfaction. *Telecommunications Policy*, 35, 382–396.
- Battaglio, R. P., Jr. (2009). Privatization and citizen preferences: A cross-national analysis of demand for private versus public provision of services in three industries. *Administration & Society*, 41(38), 38–66.
- Bertrand, M., & Mullainathan, S. (2001). Do people mean what they say? Implications for subjective survey data. *The American Economic Review*, 91(2), 67–72.
- Clifton, J., & Díaz-Fuentes, D. D. (2010). Evaluating EU policies on public services: A citizens' perspective. *Annals of Public and Cooperative Economics*, 81(2), 281–311.
- Clifton, J., Díaz-Fuentes, D. D., Gutierrez, M. F., James, O., Jilke, S., & Van de Walle, S. (2012). *Regulatory reform for services of general interest and trends in citizen satisfaction*. European Commission, European Research Area.
- Conway, P., & Nicoletti, G. (2006). *Product market regulation in non-manufacturing sectors in OECD countries: Measurement and highlights*. OECD Economics Department Working Paper.
- EB58-EUROBAROMETER58.0: September–October 2002. (2002). EORG Codebook, European Opinion Research Group (2002).
- European Commission. (2002). *EORG: Consumers' opinion about services of general interest*.
- European Commission. (2003). *Eurobarometer*. Public Opinion in the European Union. (Report No. 58).
- European Commission. (2004). *White paper on services of general interest*. COM (2004) 374.
- Ferrari, P. A., & Salini, S. (2011). Complementary use of Rasch models and nonlinear principal components analysis in the assessment of the opinion of Europeans about utilities. *Journal of Classification*, 28, 53–69.
- Ferrari, P. A., Annoni, P., & Manzi, G. (2010). Evaluation and comparison of European countries: Public opinion on services. *Quality and Quantity*, 44, 1191–1205.
- Ferrari, P. A., Pagani, P., & Fiorio, C. V. (2011). A two-step approach to analyze satisfaction data. *Social Indicators Research*, 104, 545–554.
- Fiorio, C. V., & Florio, M. (2011). “Would you say that the price you pay for electricity is fair?” Consumers' satisfaction and utility reforms in the EU15. *Energy Economics*, 33, 178–187.
- Fiorio, C. V., Florio, M., Salini, S., & Ferrari, P. (2007). Consumers' attitudes on services of general interest in the EU: Accessibility, price and quality 2000–2004. In M. Marrelli, F. Padovano, & I. Rizzo (Eds.), *Servizi Pubblici: Nuove Tendenze nella Regolamentazione, nella Produzione e nel Finanziamento*. Milan: Franco Angeli.
- Freeman, R. B. (1978). Job satisfaction as an economic variable. *The American Economic Review*, 68(2), 135–141.
- Frey, B. S., & Stutzer, A. (2002). What can economists learn from happiness research? *Journal of Economic Literature*, 40, 402–435.
- Gifi, A. (1990). *Nonlinear multivariate analysis*. New York: Wiley.
- Jilke, S., & Van de Walle, S. (2012). Two track public services? *Public Management Review*. <https://doi.org/10.1080/14719037.2012.664015>.
- Michailidis, G., & De Leeuw, J. (1998). The Gifi system of descriptive multivariate analysis. *Statistical Science*, 13, 307–336.
- PIQUE project. (2009). *Privatisation of public services and the impact on quality, employment and productivity – PIQUE Summary Report*, PIQUE.
- Rasch, G. (1960). *Probabilistic models for some intelligence and attainment tests*. Copenhagen: The University of Chicago Press.
- Salini, S., & Kennett, R. S. (2009). Bayesian networks of customer satisfaction survey data. *Journal of Applied Statistics*, 36(11), 1177–1189.
- Sarikakis, K. (2011). Communicating Europe: Steps towards the public sphere? In J. Lodge & K. Sarikakis (Eds.), *Communication, mediation and culture in the making of Europe*. II Mulino: Rome.

- Vael, T., Vandekerckhove, S., Van Gyes, G., Van Roosbroek, S., Verhoest, K., & Coppin, L. (2009). Liberalisation in services of general economic interest. *A bottom up citizens' perspective*, PIQUE Workpackage 9.
- Wendt, C., Kohl, J., Mischke, M., & Pfeifer, M. (2010). How do Europeans perceive their healthcare system? Patterns of satisfaction and preference for state involvement in the field of healthcare. *European Sociological Review*, 26(2), 177–192.
- Wendt, C., Mischke, M., & Pfeifer, M. (2011). *Welfare states and public opinion: Perceptions of healthcare systems, family policy and benefits for the unemployed and poor in Europe*. Cheltenham: Edward Elga.

EuroQoL 5-Dimension Measures in Malaysia

Asrul Akmal Shafie and
Annushiah Vasan Thakumar
Discipline of Social & Administrative Pharmacy,
School of Pharmaceutical Sciences, Universiti
Sains Malaysia (USM), Penang, Malaysia

Synonyms

EQ-5D

Definition

EuroQoL 5-dimensional questionnaire, or better known as EQ-5D, is a generic instrument that measures HRQoL. This tool measures HRQoL using a descriptive system (EQ-5D descriptive system) and visual analogue score (EQ-VAS) (Rabin and de Charro 2001). The EQ-5D descriptive system classifies health states into five dimensions (mobility, self-care, usual activities, pain/discomfort, and anxiety/depression). EQ-VAS is a 20-centimeter self-rated visual analogue scale where the endpoints are labelled “Best imaginable health state” with the score of 100 and “Worst imaginable health state” with the score of 0 (Cheung et al. 2009).

Originally consisting of three levels of perceived problems, the developer (EuroQoL Group) has decided to revise the descriptive

system into five levels of severity (corresponding to no problems, slight problems, moderate problems, severe problems, and extreme problems) (Herdman et al. 2011), called EQ-5D-5L in order to increase reliability and sensitivity of the instrument. The existing EQ-5D version was then renamed as EQ-5D-3L.

Description

The results of the EQ-5D descriptive system can be presented as a health profile and translated into a weighted index, whereas the EQ-VAS as a measure of overall self-rated health status (Cheung et al. 2009). The weightage is derived from time trade-off, visual analogue, or even discrete choice experiment valuation tasks of selected hypothetical health states among general population (Devlin and Brooks 2017). This valuation property makes the instrument suitable not only for measuring health status but also in deriving quality weights in a cost-utility analysis.

EQ-5D Validity and Reliability in Malaysia

The validity of an instrument is the extent to which it measures what it claims to measure. There are three common types of validity – content validity is concerned with whether the items of the instrument are appropriate for the health dimension being measured; face validity evaluates whether the items are sensible and appropriate for the population it is being administered to; while construct validity concerns about the extent to which a scale measures or correlates with the construct which it aims to measure.

In Malaysia, both the EQ-5D versions have been psychometrically assessed. The EQ-5D-3L and EQ-5D-5L versions were validated among the general population (Shafie et al. 2019b, 2011; Varatharajan and Chen 2011). Additionally, the EQ-5D-3L was validated among patient receiving dialysis treatment (Faridah et al. 2010) and patient with dyspepsia (Mahadeva et al. 2009). All were conveniently sampled from the adult population.

Most of the studies assessed the construct validity of the EQ-5D-3L using known-group validation, whereby assessment of the relationship is made between the construct data to confirm or

disprove prior expectations and hence determine the validity of the instrument being tested. In Shafie et al. (2011), two out of four assessed hypotheses were found to be statistically significant, i.e., higher level of education would report better health states, and those participants with significant health problems would report poorer health status than the participants without significant health problems. Mahadeva et al. (2009) found that 20 of their 26 tested hypotheses were fulfilled. This includes lower value of EQ-5D-3L utilities and EQ-VAS with dyspepsia severity, relationship between the EQ-5D-3L descriptive system with SF-36 subscales, and relationship between the EQ-5D-3L descriptive system with the Short-Form Nepean Dyspepsia Index (SF-NDI) subscales. Only two out of six hypotheses tested by Faridah et al. (2010) were found to be significant, i.e., worsening mobility in elderly and higher limitation with usual activity among hemodialysis patient compared to CAPD.

Construct validity was also assessed using convergent validation, whereby EQ-5D-3L utility values and EQ-VAS were found to be correlated with MCS-12 ($r = 0.2$) and PCS-12 ($r = 0.4$) (Shafie et al. 2011). The EQ-5D utility values were also found to be correlated with PCS-36 ($r_s = 0.45$), MCS-36 ($r_s = 0.49$), and SF-NDI ($r_s = 0.47$) by Mahadeva et al. (2009). Both the EQ-5D-3L and SF-12 were found to be able to discriminate those without medical problems among general population though the EQ-5D-3L appeared to be better (Shafie et al. 2011). The dimensions of the EQ-5D were also correlated with EQ-VAS ranging from $r_s = -0.08$ to -0.28 on the EQ-5D-3L and $r_s = -0.13$ to -0.32 on the EQ-5D-5L, as reported by Shafie et al. (2019b). The analyses were done separately for Malay and English language versions.

Reliability is an instrument's ability to come out with reproducible and consistent results. Two weeks intraclass correlation coefficient (ICC) of EQ-5D-3L was found to be 0.01–0.92 among general population (Varatharajan and Chen 2011) and 0.66 among dyspepsia patients (Mahadeva et al. 2009). In addition, Faridah et al. (2010) found kappa agreement for the EQ-5D-3L to be 0.18–0.43 (though interval was not

specified in the report). Most recently, the 2-week kappa agreement for the dimensions of EQ-5D-5L were found to range between 0.21 and 0.38 on the Malay version, and -0.02 and 0.55 on the English version. The authors of the study (Shafie et al. 2019b) did note that the poorer-than-average reliability results could have been confounded by (i) no follow-up question on the change of health status was asked and (ii) different modes of administration of the test (computer-administered) and retest (pencil-and-paper) questionnaires were applied.

EQ-5D Measurement in Malaysia

Despite absence of requirement for economic evaluation in the country's formal evaluation of drug for reimbursement, the EQ-5D is one of the most popular generic health-related quality of life instrument in Malaysia. It has been used de novo in studies on general (Shafie et al. 2011, 2019b; Varatharajan and Chen 2011), disease-specific patient populations including those with mobility impairment (Misajon et al. 2006), dengue (Lum et al. 2008), dyspepsia (Mahadeva et al. 2009, 2010, 2011), breast cancer (Matalqah et al. 2011), schizophrenia (Taha et al. 2011), acute coronary syndrome (Azmi et al. 2015), headache (Tai et al. 2015), stress urinary incontinence (Lim et al. 2018), type 2 diabetes (Gillani et al. 2019), atrial fibrillation (Radaideh and Matalqah 2018) and service-specific population including dialysis (Faridah et al. 2010), smoking cessation (Awaisu et al. 2012), and community pharmacy (Shafie et al. 2010, 2013). The HRQoL of those from the lower socioeconomic populations (Wan Puteh et al. 2019), Muslim pilgrims (Fatimah et al. 2017), medication-consuming elderly patients in nursing homes (Al Aqqad et al. 2014) and hospitals (Akkawi et al. 2019), and caregivers of children with thalassaemia (Ismail et al. 2013) and acute otitis media (Crawford et al. 2017) were also characterized with the EQ-5D measure. From 2012, EQ-5D is also now used in routine evaluation of health promotion project funded by the Malaysian government through MySihat (Lim et al. 2015).

Studies have also applied the EQ-5D to characterize outcomes in interventional studies

involving chronic disease models (Aryani et al. 2016), pharmacist-led intervention for type 2 diabetes (Butt et al. 2016), simplification of a therapy for HIV patients (Velvanathan et al. 2016), and two forms of dialysis in end-stage renal disease patients (Surendra et al. 2019).

Internationally, the EQ-5D measure was applied in a number of large-scale multicenter studies involving Malaysians. These include patient groups of: type 2 diabetes (i) in 5 countries in the Asia-Pacific region (Sheu et al. 2012) and (ii) in 4 ASEAN countries under the Alchieve study (Lim-Abraham et al. 2013); cancer (i) under the ACTION study involving 8 South-East Asian countries (Kimman et al. 2015; Subramaniam et al. 2018; The ACTION Study Group 2015), (ii) patients with malignant pleural effusions in 4 Asia-Pacific countries (Muruganandan et al. 2018), and (iii) under the ACE study involving 6 ASEAN nations (Thinh et al. 2018); major depressive disorder in 6 Asian countries (Novick et al. 2015); pertussis in 3 Asian countries (Koh et al. 2016); and postmenopausal women with osteoporosis under the ALAFOS study conducted in 20 Asian and Latin American countries (Chen et al. 2019).

Additionally, the EQ-5D has informed economic evaluations in the Malaysian setting including the cost-effectiveness of a pneumococcal protein-D conjugate vaccine as part of Malaysia's national immunization program (Aljunid et al. 2014) and racecadotril with oral rehydration for acute diarrhea in children (Rautenberg et al. 2018). However, the utility weights applied were obtained from international studies due to the lack of local utilities at that time. A cost-effectiveness threshold was also estimated for Malaysia by applying the Malaysian-specific EQ-5D-3L utility weights (Md Yusof et al. 2012) as part of the health state descriptions and quality-adjusted life years calculations (Lim et al. 2017).

The EQ-5D score among general population was found to be almost at perfect health with a mean EQ-5D-3L utility score of 0.93 (SD = 0.13) (Shafie et al. 2011), and a mean EQ-VAS score between 82.22 (SD = 14.08) (Shafie et al. 2011) and 85.9 (SD = 11.9) (Varatharajan and Chen 2011). Majority of the general population

(73.2%) reported no problems in all dimensions (Shafie et al. 2011). Most of the problems in this population occurred in anxiety/depression and pain dimensions (Shafie et al. 2011; Varatharajan and Chen 2011).

Research was conducted in the state of Selangor on adult Malaysians with mobility impairment using the EQ-5D-3L (Misajon et al. 2006). They found that the majority (78%) experienced some mobility problems and some of them (15%) were confined to bed. With regards to self-care, 30% of them admitted to experiencing some problems in this dimension with more than half (16%) being unable to wash or dress themselves. In addition, most of them had problems with pain or discomfort (80%), and anxiety or depression (70%).

Another study using EQ-5D-3L compared HRQoL of breast cancer survivors (BCSs) with the general population in the state of Penang, Malaysia (Matalqah et al. 2011). The mean EQ-5D-3L utility score for BCSs (0.71) was lower than that of the general population (0.87). Most of them have problem with self-care (13.3% vs. 6.0%), carrying out usual activities (21.3% vs. 9.3%), pain or discomfort (54.0% vs. 33.3%), and anxiety or depression (42.0% vs. 18.7%). The lower HRQoL experienced by BCSs may be due to a declined health status from the pain and discomfort they encountered. As such, this study suggests that a way to help BCSs cope with the condition is by pain management intervention or occupational therapy.

Lum et al. (2008) have characterized the effects of dengue on HRQoL during the entire illness episode using EQ-VAS. They found that EQ-VAS score declined at the disease onset to the lowest point (<40) between third and seventh day of illness. Their HRQoL usually recovered after 13 days, though ambulatory patients had faster recovery.

The impact of adding smoking cessation service to directly observed tuberculosis treatment on HRQoL was assessed by Awaisu et al. (2012) using EQ-5D-3L. The study suggests that the combination of DOTS for TB and SCI (smoking cessation intervention) via cognitive behavioral therapy (CBT) and pharmacotherapy has a great

potential to yield better treatment outcomes among TB patient who smoke. The participants had shown improvement in both physical and mental functioning than those who received the usual TB care.

Among patients with acute coronary syndrome undergoing rehabilitation, Azmi et al. (2015) measured the EQ-5D-3L and observed statistically significant improvements in the mean-index score at baseline (0.75) and at 12 months (0.82) when applying the Malaysian value set (Md Yusof et al. 2012). While improvements were also recorded when the UK utility weights were used, these were not significant.

Lim et al. in 2018 reported that Malaysian women suffering from stress urinary incontinence generally had poorer HRQoL compared with continent women. Also, these women were significantly more likely to report problems with usual activities, pain/discomfort, and anxiety/depression dimensions of the EQ-5D-3L.

Utility Weights

Responses to the EQ-5D descriptive system could be converted into quality weights for cost-utility analysis using a set of weighting (or sometimes called social tariff or value set) from valuation exercises on representative samples of the general population. In the past, the absence of Malaysia-specific weighting was noted and the UK value set (Dolan 1997) was more commonly used to derive utility values. A 2012 study attempted to establish the EQ-5D-3L weighting in Malaysia (Md Yusof et al. 2012) using the original MVH protocol (Dolan et al. 1995). The chosen model applied preference values from the VAS elicitation tasks and has value set ranging from 0.122 to 1.00. However, the valuations were based on limited sample of patients on dialysis, caregivers, and health professionals in government hospitals. Nonetheless, the Malaysian EQ-5D-3L value set has been found to be most suitable to also represent weights for Indonesian cervical cancer patients in the absence of a Indonesian value set, when comparisons were made with three other country value sets (Endarti et al. 2018).

Subsequently, an EQ-5D-5L value set (Shafie et al. 2019c) has been recently estimated for the

Malaysian population using a representative general population sample and standardized valuation protocol (Oppe et al. 2016; Stolk et al. 2019). A hybrid model combining preference data from both time trade-off and discrete choice experiment tasks was chosen to represent the Malaysian EQ-5D-5L. The utility weights range from -0.442 to 1.00 with the dimension order of importance in descending order of mobility, pain/discomfort, anxiety/depression, self-care, and usual activities.

EQ-5D-3L Versus EQ-5D-5L

Currently, the EQ-5D-3L is more commonly applied in the Malaysian setting with growing numbers of EQ-5D-5L based studies (Chen et al. 2019; Fatimah et al. 2017; Muruganandan et al. 2018; Shafie et al. 2019b, c). A head-on comparison between the two EQ-5D versions in the general population (Shafie et al. 2019b) note a decrease in ceiling effects and an increase in relative informativity using the EQ-5D-5L, indicating better sensitivity and descriptive richness of the EQ-5D-5L. Additionally, the small amount of inconsistencies when shifting between EQ-5D-3L and EQ-5D-5L indicated that the respondents were able to understand and use both versions relatively well. The availability of a EQ-5D-5L representative value set is expected to facilitate healthcare decision-making in the Malaysian setting (Shafie et al. 2019a).

Cross-References

- [EQ-5D](#)
- [Inflammatory Arthritis, EQ-5D, and SF-6D](#)

References

- Akkawi, M. E., Nik Mohamed, M. H., & Md Aris, M. A. (2019). Does inappropriate prescribing affect elderly patients' quality of life? A study from a Malaysian tertiary hospital. *Quality of Life Research*, 28(7), 1913–1920. <https://doi.org/10.1007/s11136-019-02153-5>.
- Al Aqqad, S. M. H., Chen, L. L., Shafie, A. A., Hassali, M. A., & Tangiisuran, B. (2014). The use of potentially inappropriate medications and changes in quality of life among older nursing home residents. *Clinical*

- Interventions in Aging*, 9, 201–207. <https://doi.org/10.2147/CIA.S52356>.
- Aljunied, S., Maimaiti, N., Ahmed, Z., Muhammad Nur, A., Md Isa, Z., Azmi, S., & Sulong, S. (2014). Economic impact of pneumococcal protein-D conjugate vaccine (PHiD-CV) on the Malaysian national immunization programme. *Value in Health Regional Issues*, 3, 146–155. <https://doi.org/10.1016/j.vhri.2014.04.008>.
- Aryani, F. M. Y., Lee, S. W. H., Chua, S. S., Kok, L. C., Efendie, B., & Paraidathathu, T. (2016). Chronic care model in primary care: Can it improve health-related quality of life? *Integrated Pharmacy Research and Practice*, 2016(1), 11.
- Awaisu, A., Haniki Nik Mohamed, M., Noordin, N., Muttalif, A., Aziz, N., Syed Sulaiman, S., & Mahayiddin, A. (2012). Impact of connecting tuberculosis directly observed therapy short-course with smoking cessation on health-related quality of life. *Tobacco Induced Diseases*, 10(1), 2.
- Azmi, S., Goh, A., Fong, A., & Anchah, L. (2015). Quality of life among patients with acute coronary syndrome in Malaysia. *Value in Health Regional Issues*, 6, 80–83. <https://doi.org/10.1016/j.vhri.2015.03.015>.
- Butt, M., Mhd Ali, A., Bakry, M. M., & Mustafa, N. (2016). Impact of a pharmacist led diabetes mellitus intervention on HbA1c, medication adherence and quality of life: A randomised controlled study. *Saudi Pharmaceutical Journal*, 24(1), 40–48. <https://doi.org/10.1016/j.jsps.2015.02.023>.
- Chen, C. H., Elsalrawy, A. H., Ish-Shalom, S., Lim, S. J., Al-Ali, N. S., Cunha-Borges, J. L., . . . Marin, F. (2019). Study description and baseline characteristics of the population enrolled in a multinational, observational study of teriparatide in postmenopausal women with osteoporosis: The Asia and Latin America Fracture Observational Study (ALAFOS). *Current Medical Research and Opinion*, 35(6), 1041–1049. <https://doi.org/10.1080/03007995.2018.1552576>.
- Cheung, K., Oemar, M., Oppe, M., & Rabin, R. (2009). User guide: Basic information on how to use EQ-5D. Retrieved from www.euroqol.org/fileadmin/user_upload/Documenten/PDF/User_Guide_v2_March_2009.pdf
- Crawford, B., Hashim, S. S. M., Prepageran, N., Goh, B. S., Meier, G., Wada, K., . . . DeRosa, M. (2017). Impact of pediatric acute otitis media on child and parental quality of life and associated productivity loss in Malaysia: A prospective observational study. *Drugs – Real World Outcomes*, 4(1), 21–31.
- Devlin, N. J., & Brooks, R. (2017). EQ-5D and the EuroQol group: Past, present and future. *Applied Health Economics and Health Policy*, 15(2), 127–137. <https://doi.org/10.1007/s40258-017-0310-5>.
- Dolan, P. (1997). Modeling valuations for EuroQol health states. *Medical Care*, 35(11), 1095–1108.
- Dolan, P., Gudex, C., Kind, P., & Williams, A. (1995). A social tariff for EuroQol: Results from a UK general population survey. *University of York's Working Papers*, 138.
- Endarti, D., Riewpaiboon, A., Thavorncharoensap, M., Praditsithikorn, N., Hutubessy, R., & Kristina, S. A. (2018). A comparison of EQ-5D-3L index scores using Malaysian, Singaporean, Thai, and UK value sets in Indonesian cervical cancer patients. *Value in Health Regional Issues*, 15, 50–55. <https://doi.org/10.1016/j.vhri.2017.07.008>.
- Faridah, A., Jamaiyah, H., Goh, A., & Soraya, A. (2010). The validation of the EQ-5D in Malaysian dialysis patients. *The Medical Journal of Malaysia*, 65(Suppl A), 114–119.
- Fatimah, S., Rosminah, M., Suhaimi, A., & Omar, O. (2017). The measurement of quality of life among population within the crowd: A case study among Malaysian pilgrims in Makkah. *Malaysian Journal of Public Health Medicine*, 17(1), 137–145.
- Gillani, S. W., Ansari, I. A., Zaghoul, H. A., Sulaiman, S. A. S., Rathore, H. A., Baig, M. R., . . . Althagfan, S. (2019). Predictors of health-related quality of life among patients with type II diabetes mellitus who are insulin users: A multidimensional model. *Current Therapeutic Research*, 90, 53–60. <https://doi.org/10.1016/j.curtheres.2019.04.001>.
- Herdman, M., Gudex, C., Lloyd, A., Janssen, M., Kind, P., Parkin, D., . . . Badia, X. (2011). Development and preliminary testing of the new five-level version of EQ-5D (EQ-5D-5L). *Quality of Life Research*, 20(10), 1727–1736. <https://doi.org/10.1007/s11136-011-9903-x>.
- Ismail, M., Chun, C. Y., Shahar, S., Manaf, Z. A., Rajikan, R., Yusoff, N. A. M., . . . Jamal, A. R. A. (2013). Quality of life among thalassaemia children, adolescent and their caregivers. *Sains Malaysiana*, 42(3), 373–380.
- Kimman, M., Jan, S., Monaghan, H., & Woodward, M. (2015). The relationship between economic characteristics and health-related quality of life in newly diagnosed cancer patients in Southeast Asia: Results from an observational study. *Quality of Life Research*, 24(4), 937–949. <https://doi.org/10.1007/s11136-014-0828-z>.
- Koh, M. T., Liu, C. S., Chiu, C. H., Boonsawat, W., Watanaveeradej, V., Abdullah, N., . . . Chen, J. (2016). Under-recognized pertussis in adults from Asian countries: A cross-sectional seroprevalence study in Malaysia, Taiwan and Thailand. *Epidemiology & Infection*, 144(6), 1192.
- Lim, C. C., Shafie, A. A., & Hassali, M. A. A. (2015). Pilot evaluation of two childhood obesity prevention programmes in Malaysia. *Malaysian Journal of Pharmaceutical Sciences*, 13(1), 1.
- Lim, Y. W., Shafie, A. A., Chua, G. N., & Ahmad Hassali, M. A. (2017). Determination of cost-effectiveness threshold for health care interventions in Malaysia. *Value in Health*, 20(8), 1131–1138. <https://doi.org/10.1016/j.jval.2017.04.002>.
- Lim, R., Liong, M. L., Leong, W. S., Lau, Y. K., Khan, N. A. K., & Yuen, K. H. (2018). The impact of stress urinary incontinence on individual components of

- quality of life in Malaysian women. *Urology*, 112(1), 38–45. <https://doi.org/10.1016/j.urology.2017.10.019>.
- Lim-Abraham, M. A., Jain, A. B., Bebakar, W. M. W., Seah, D., & Soewondo, P. (2013). Safety and effectiveness of biphasic insulin aspart 30 in type 2 diabetes: Results from the ASEAN cohort of the A1chieve study. *Diabetes Research & Clinical Practice*, 100, S3–S9. [https://doi.org/10.1016/S0168-8227\(13\)70003-2](https://doi.org/10.1016/S0168-8227(13)70003-2).
- Lum, L. C., Suaya, J. A., Tan, L. H., Sah, B. K., & Shepard, D. S. (2008). Quality of life of dengue patients. *American Journal of Tropical Medicine and Hygiene*, 78(6), 862–867.
- Mahadeva, S., Wee, H. L., Goh, K. L., & Thumboo, J. (2009). The EQ-5D (Euroqol) is a valid generic instrument for measuring quality of life in patients with dyspepsia. *BMC Gastroenterology*, 9, 20.
- Mahadeva, S., Yadav, H., Rampal, S., Everett, S. M., & Goh, K. L. (2010). Ethnic variation, epidemiological factors and quality of life impairment associated with dyspepsia in urban Malaysia. *Alimentary Pharmacology & Therapeutics*, 31(10), 1141–1151. <https://doi.org/10.1111/j.1365-2036.2010.04270.x>.
- Mahadeva, S., Yadav, H., Everett, S. M., & Goh, K. L. (2011). Factors influencing dyspepsia-related consultation: Differences between a rural and an urban population. *Neurogastroenterology and Motility: The Official Journal of the European Gastrointestinal Motility Society*, 23(9), 846–853. <https://doi.org/10.1111/j.1365-2982.2011.01746.x>.
- Matalqah, L., Radaideh, K., Yusoff, Z., & Awaisu, A. (2011). Health-related quality of life using EQ-5D among breast cancer survivors in comparison with age-matched peers from the general population in the state of Penang, Malaysia. *Journal of Public Health*, 19(5), 475–480. <https://doi.org/10.1007/s10389-011-0406-6>.
- Md Yusof, F. A., Goh, A., & Azmi, S. (2012). Estimating an EQ-5D value set for Malaysia using time trade-off and visual analogue scale methods. *Value in Health*, 15(1 Suppl), S85–S90. <https://doi.org/10.1016/j.jval.2011.11.024>.
- Misajon, R., Manderson, L., Pallant, J., Omar, Z., Bennett, E., & Rahim, R. (2006). Impact, distress and HRQoL among Malaysian men and women with a mobility impairment. *Health and Quality of Life Outcomes*, 4(1), 95.
- Muruganandan, S., Azzopardi, M., Fitzgerald, D. B., Shrestha, R., Kwan, B. C. H., Lam, D. C. L., ... Lee, Y. C. G. (2018). Aggressive versus symptom-guided drainage of malignant pleural effusion via indwelling pleural catheters (AMPLE-2): An open-label randomised trial. *The Lancet Respiratory Medicine*, 6(9), 671–680. [https://doi.org/10.1016/S2213-2600\(18\)30288-1](https://doi.org/10.1016/S2213-2600(18)30288-1).
- Novick, D., Montgomery, W., Moneta, V., Peng, X., Brugnoli, R., & Haro, J. M. (2015). Antidepressant medication treatment patterns in Asian patients with major depressive disorder. *Patient Preference and Adherence*, 421. <https://doi.org/10.2147/PPA.S68432>.
- Oppe, M., Rand-Hendriksen, K., Shah, K., Ramos-Goñi, J. M., & Luo, N. (2016). EuroQol protocols for time trade-off valuation of health outcomes. *Pharmacoeconomics*, 34(10), 993–1004. <https://doi.org/10.1007/s40273-016-0404-1>.
- Rabin, R., & de Charro, F. (2001). EQ-5D: A measure of health status from the EuroQol group. *Annals of Medicine*, 33(5), 337–343.
- Radaideh, K., & Matalqah, L. M. (2018). Health-related quality of life among atrial fibrillation patients undergoing anticoagulation therapy. *Epidemiology, Biostatistics and Public Health*, 15(1).
- Rautenberg, T. A., Zerwes, U., & Lee, W. S. (2018). Cost utility, budget impact, and scenario analysis of racecadotril in addition to oral rehydration for acute diarrhea in children in Malaysia. *ClinicoEconomics and Outcomes Research*, 10, 169–178. <https://doi.org/10.2147/CEOR.S157606>.
- Shafie, A. A., Hassali, M. A., & Mohamad Yahaya, A. H. (2010). Assessment of health related quality of life (HRQoL) among non-prescription medicine customers in Malaysia. *Value in Health (ISI IF 3.03)*, 13(7), A544.
- Shafie, A. A., Hassali, M. A., & Liau, S. Y. (2011). A cross-sectional validation study of EQ-5D among the Malaysian adult population. *Quality of Life Research*, 20(4), 593–600. <https://doi.org/10.1007/s11136-010-9774-6>.
- Shafie, A. A., Hassali, M. A., & Mohamad Yahaya, A. H. (2013). Health-related quality of life among nonprescription medicine customers in Malaysia. *Value in Health Regional Issues*, 2(1), 107–117. <https://doi.org/10.1016/j.vhri.2013.02.005>.
- Shafie, A. A., Chandriah, H., Yong, Y. V., & Wan Puteh, S. E. (2019a). Health technology assessment and its use in drug policy in Malaysia. *Value in Health Regional Issues*, 18, 145–150. <https://doi.org/10.1016/j.vhri.2019.03.003>.
- Shafie, A. A., Vasan Thakumar, A., Lim, C. J., & Luo, N. (2019b). Psychometric performance assessment of Malay and Malaysian English version of EQ-5D-5L in the Malaysian population. *Quality of Life Research*, 28(1), 153–162. <https://doi.org/10.1007/s11136-018-2027-9>.
- Shafie, A. A., Vasan Thakumar, A., Lim, C. J., Luo, N., Rand-Hendriksen, K., & Md Yusof, F. A. (2019c). EQ-5D-5L valuation for the Malaysian population. *Pharmacoeconomics*, 37(5), 715–725. <https://doi.org/10.1007/s40273-018-0758-7>.
- Sheu, W. H. H., Ji, L.-N., Nitiyanant, W., Baik, S. H., Yin, D., Mavros, P., & Chan, S.-P. (2012). Hypoglycemia is associated with increased worry and lower quality of life among patients with type 2 diabetes treated with oral antihyperglycemic agents in the Asia-Pacific region. *Diabetes Research and Clinical Practice*, 96(2), 141–148. <https://doi.org/10.1016/j.diabres.2011.12.027>.
- Stolk, E., Ludwig, K., Rand, K., van Hout, B., & Ramos-Goñi, J. M. (2019). Overview, update, and lessons learned from the international EQ-5D-5L valuation work: Version 2 of the EQ-5D-5L valuation protocol. *Value in Health*. <https://doi.org/10.1016/j.jval.2018.05.010>.
- Subramaniam, S., Kong, Y.-C., Chinna, K., Kimman, M., Ho, Y.-Z., Saat, N., ... Bhoo-Pathy, N. (2018). Health-

related quality of life and psychological distress among cancer survivors in a middle-income country. *Psycho-Oncology*, 27(9), 2172–2179. <https://doi.org/10.1002/pon.4787>.

- Surendra, N. K., Abdul Manaf, M. R., Hooi, L. S., Bavanandan, S., Mohamad Nor, F. S., Shah Firdaus Khan, S., ... Abdul Gafor, A. H. (2019). Health related quality of life of dialysis patients in Malaysia: Haemodialysis versus continuous ambulatory peritoneal dialysis. *BMC Nephrology*, 20(1), 151–151. <https://doi.org/10.1186/s12882-019-1326-x>.
- Taha, N. A., Mohamed Ibrahim, M. I., Ab Rahman, A. F., & Shafie, A. A. (2011). PMH52 relationship between psychopathology and self-rated EQ-5D health states among patients with schizophrenia. *Value in Health (ISI IF 3.03)*, 14(7), A296.
- Tai, M.-L. S., Norhatta, N., Goh, K. J., Moy, F. M., Sujarita, R., Asraff, A. A., ... Mahadeva, S. (2015). The impact of dyspepsia on symptom severity and quality of life in adults with headache. *PLoS One*, 10(1), e0115838–e0115838. <https://doi.org/10.1371/journal.pone.0115838>.
- The ACTION Study Group. (2015). Catastrophic health expenditure and 12-month mortality associated with cancer in Southeast Asia: Results from a longitudinal study in eight countries. *BMC Medicine*, (1). <https://doi.org/10.1186/s12916-015-0433-1>.
- Thinh, D. H. Q., Sriraj, W., Mansor, M., Tan, K. H., Irawan, C., Kurnianda, J., ... Javier, F. O. (2018). Analgesic prescription patterns and pain outcomes in Southeast Asia: Findings from the analgesic treatment of cancer pain in Southeast Asia study. *Journal of Global Oncology*, 4, 1.
- Varatharajan, S., & Chen, W.-S. (2011). Reliability and validity of EQ-5D in Malaysian population. *Applied Research in Quality of Life*, 1–13. <https://doi.org/10.1007/s11482-011-9156-4>.
- Velvanathan, T., Islahudin, F., Sim, B. L., & Taha, N. A. (2016). Simplification of HAART therapy on ambulatory HIV patients in Malaysia: A randomized controlled trial. *Pharmacy Practice (Granada)*, (4). <https://doi.org/10.18549/pharmpract.2016.04.830>.
- Wan Puteh, S. E., Siwar, C., Zaidi, M. A. S., & Abdul Kadir, H. (2019). Health related quality of life (HRQOL) among low socioeconomic population in Malaysia. *BMC Public Health*, 19(Suppl 4). <https://doi.org/10.1186/s12889-019-6853-7>.

Definition

The Eurostat database, formerly New Cronos database, is the official European Union (EU) data portal. It contains a wide range of social and economic statistical data, covering the EU Member States, the candidate countries, the European Trade Association (EFTA) countries, and, in many cases, the USA, Japan, and Canada. The database is accessible free of charge from the website of Eurostat: <https://ec.europa.eu/eurostat/databrowser>.

Description

Eurostat is the statistical authority of the European Union and is located in Luxembourg. It is a Directorate General of the European Commission, and its mission is to provide the EU with a high-quality statistical information service (European Commission 2010). Eurostat is responsible for the development, production, and dissemination of European statistics in conformity with the statistical principles defined in the Regulation (EC) no. 223/2009 of the European Parliament and of the Council of 11 March, amended by the Regulation (EU) 2015/759 of the European Parliament and of the Council of 29 April 2015, and further developed in the European Statistics Code of Practice (European Union 2018).

In 2004, Eurostat adopted a free-of-charge dissemination policy of statistical data, ensuring equality of access to European statistics. This decision substantially changed the way to access the data. Internet became the main support for European statistics dissemination, and data was placed online so that they were accessible to all users without cost. Since then, the volume of available data has significantly expanded, meta-data were improved, and links for technical documents were added. Navigation and search capabilities were also enhanced, and tools for data visualization and extraction were developed. The Eurostat database contains data from 1960 onwards; however, the time coverage depends on the variable and the country, varying according to the accession data and availability of the data.

Eurostat Database

Edviges Coelho
Statistics Portugal, Lisbon, Portugal

Synonyms

[Eurostat dissemination database](#)

The Eurostat database represents an international reference statistical database, not only because of the large range of cross-national statistics available (it contains over 1.2 billion statistical data values [Eurostat 2019a]), the quality and comparability of the data, and the availability of time series that span considerable time periods, but also because of the way it is structured, allowing either the general public or the more sophisticated user to locate and identify the data required, offering simultaneously self-explanatory documentation, such as a descriptive statistical texts, a methodological manual, as well as classifications and background community regulations.

The Eurostat database is structured into nine different statistical themes (general and regional statistics, economy, and finance; population and social conditions; industry, trade, and services; agriculture, forestry, and fisheries; international trade; transport; environment and energy; and science, technology, and digital society) and an additional set of data tables entitled “EU policy indicators” that include statistics that usually cut across specific statistical themes and are in line with the EU policy developments and high-priority initiatives (Eurostat 2019).

The complete database may be accessed directly through a navigation tree, which presents user-friendly and personalization functions according to the individual user needs. The data navigation tree is organized into four main branches: database by themes, tables by themes, tables on EU policy, and crosscutting topics (Eurostat 2018). Database by themes enables the user to select and customize the data to display and extract through the Data Explorer tool. Tables contain predefined data and may be explored through the Tables, Graph, and Map functions (TGM) tool. Tables on EU policy contain a set of predefined tables that offer an overview of the most important statistical indicators for monitoring the progress of EU policies. More recently, it was added a new branch to the navigation tree “crosscutting topics,” dedicated to providing statistical indicators related to important

social, economic, or environmental phenomena, coming from different data sources and transversal to various statistics themes, allowing users to directly access to selected data on specific topics in focus, among those one related to “quality of life.”

Following the recommendations of the report on “measuring progress, well-being, and sustainable development,” adopted by the European Statistical System Committee in 2011, the set of indicators on quality of life are organized along a framework with nine dimensions: material living conditions; productive or other main activity; health; education; leisure and social interactions; economic security and physical safety; governance and basic rights; natural and living environment; and overall experience of life (Eurostat 2017). Data are presented for the EU and its Member States as well as for the EFTA countries. The main source for the compilation of statistics on quality of life is the EU-Statistics on Income and Living Conditions (EU-SILC). In 2013, an ad hoc module on subjective well-being was added to the EU-SILC survey.

Cross-References

- ▶ [European Quality of Life Survey \(EQLS\)](#)
- ▶ [European Social Survey and Marriage](#)
- ▶ [Eurostat Social Indicators for the European Community](#)
- ▶ [Living Conditions, EU-SILC Community Statistics on Income and Living Conditions](#)

References

- European Commission. (2010). *Legal framework for European statistics – The statistical law*. Publications Office of the European Union. <https://ec.europa.eu/eurostat/web/products-statistical-books/-/KS-31-09-254>
- Eurostat. (2017). Final report of the expert group on quality of life indicators. <https://ec.europa.eu/eurostat/documents/7870049/7960327/KS-FT-17-004-EN-N.pdf/>

- European Union. (2018). European statistics code of practice. <https://ec.europa.eu/eurostat/en/web/products-catalogues/-/KS-02-18-142>
- Eurostat. (2018). Accessing European statistics, statistics explained. <https://ec.europa.eu/eurostat/statistics-explained/pdfscache/10130.pdf>
- Eurostat. (2019a). Database. Accessed September 23, 2019, at <https://ec.europa.eu/eurostat/help/first-visit/database>
- Eurostat. (2019b). EU statistics on income and living conditions (EU-SILC) methodology. Accessed September 23, 2019, at [https://ec.europa.eu/eurostat/statistics-explained/index.php/EU_statistics_on_income_and_living_conditions_\(EU-SILC\)_methodology](https://ec.europa.eu/eurostat/statistics-explained/index.php/EU_statistics_on_income_and_living_conditions_(EU-SILC)_methodology)
- Regulation (EU) 2015/759 of the European Parliament and of the Council of 29 April 2015 on European statistics (2015).

Eurostat Dissemination Database

► [Eurostat Database](#)

Eurostat Social Indicators for the European Community

Carlos Farinha Rodrigues
Economics Department, School of Economics
and Management, Technical University of
Lisbon, Lisbon, Portugal

Description

Social Indicators for the European Union: From the Lisbon Strategy to the Europe 2020 Strategy

The Lisbon strategy, approved in the March 2000 Lisbon European Council, has been an important step in the development of EU ► [social policy](#). The explicit goal of “modernising the European social model, investing in people and combating ► [social exclusion](#)” implies not only the coordination of the Member States in the area of ► [social inclusion](#) but also the need for a set of indicators

that make it possible to monitor the performance of the Member States, and the EU as a whole, in promoting ► [social inclusion](#). The importance of the indicators has been extensively discussed in Atkinson et al. (2002); Atkinson et al. (2004); and Atkinson and Marlier (2010). In the European Council of Laeken (December 2001), a core set of 18 ► [poverty](#) and ► [social exclusion](#) indicators was approved. These indicators are regularly estimated for every EU country on a comparable basis, and they are known as the “Laeken indicators.”

The Laeken indicators were initially subdivided in two groups: ten primary indicators covering the main fields that have been considered the most important dimensions of ► [social exclusion](#) and eight secondary indicators whose aim is to complement the primary indicators or to extend the analysis to other dimensions relevant to ► [social exclusion](#). The next tables (Tables 1 and 2), adapted from the Statistical annex of the 2003 Joint Inclusion Report (adopted by the EU Council of Ministers in March 2004), present these indicators in their final form, after some revision and extension.

The set of indicators presented below covers important dimensions of ► [social exclusion](#) like financial ► [poverty](#), employment, health and education. The relation between ► [poverty](#) and inequality is also taken into account.

The concept of relative poverty plays a crucial rule as many indicators are based on a central ► [poverty threshold](#) defined as 60% of median national equivalized income after social transfers. However, this indicator does not measure wealth or ► [poverty](#), but low income in comparison to other residents in that country, which does not necessarily imply a low standard of living. Given the limitations of this indicator, it is referred to as a measure of *poverty risk*.

One important point about these indicators is that they were defined for a Europe Union with 15 State Members, and hence their ability to reflect the situation of the new countries that have joined the EU in this century may be questionable. The different situations of the new

Eurostat Social Indicators for the European Community, Table 1 Laeken primary indicators

1.	<i>At-risk-of-poverty rate</i>
	Share of persons with an equivalized disposable income below 60% of the national equivalized median income
	Equivalized median income is defined as the household's total disposable income divided by its "equivalent size," to take account of the size and composition of the household, and it is attributed to each household member
2.	<i>At-risk-of-poverty threshold (illustrative values)</i>
	The value of the at-risk-of-poverty threshold (60% median national equivalized income) in PPS (purchasing power standard), Euro, and national currency for two illustrative household types:
	–Single person household
	–Household with two adults, two children
3.	<i>Income quintile ratio (S80/S20)</i>
	Ratio of total income received by the 20% of the country's population with the highest income (top quintile) to that received by the 20% of the country's population with the lowest income (lowest quintile)
	Income must be understood as equivalized disposable income
4.	<i>Persistent at-risk-of-poverty rate</i>
	Share of persons with an equivalized disposable income below the at-risk-of-poverty threshold in the current year and in at least two of the preceding 3 years
5.	<i>Relative Medina poverty risk gap</i>
	Difference between the median equivalized income of persons below the at-risk-of-poverty threshold and the threshold itself, expressed as a percentage of the at-risk-of-poverty threshold
6.	<i>Regional cohesion</i>
	Coefficient of variation of employment rates at NUTS (Nomenclature of Territorial Units for Statistics) level 2
	Employment rates are calculated as the share of the population (aged 15 years or more) who are in employment (ILO definition)
7.	<i>Long-term unemployment rate</i>
	Total long-term unemployed population (12 months or more; ILO definition) as a proportion of total active population aged 15 years or over
8.	<i>Population living in jobless households</i>
	Proportion of children (aged 0–17 years) living in jobless households, expressed as a share of all children
	Proportion of all people aged 18–59 years who live in a jobless household as a proportion of all people in the same age group. Students aged 18–24 years who live in households composed solely of students are not counted in either the numerator or the denominator
9.	<i>Early school leavers not in education or training</i>
	Share of persons aged 18–24 who have only lower secondary education (their highest level of education or training attained is 0, 1, or 2 according to the 1997 International Standard Classification of Education – ISCED 97) and have not received education or training in the four weeks preceding the survey
10.	<i>Life expectancy</i>
	Number of years a person aged 0, 1, and 60 may be expected to live
11.	<i>Self-defined health status by income level</i>
	Proportion of the population aged 16 years and over in the bottom and top quintile of the equivalized ► income distribution who classify themselves as in a bad or very bad state of health

Source: Commission of the European Communities (2003)

member states as well as the differences between them and the countries of the EU15 suggest that the Laeken portfolio of indicators should be extended in order to take into account the diversity of living conditions in the 27 Member States.

The utilization, in recent years, of material ► [deprivation](#) indicators by Eurostat to

characterize living conditions and ► [social exclusion](#) in Europe is a first step in that direction.

According to Eurostat, material ► [deprivation](#) refers to “a state of economic strain and durables strain, defined as the enforced inability (rather than the choice not to do so) to pay unexpected expenses, afford a one-week annual holiday away

Eurostat Social Indicators for the European Community, Table 2 Laeken secondary indicators

12.	<i>Dispersion around the at-risk-of-poverty threshold</i> Share of persons with an equivalized disposable income below 40%, 50%, and 70% of the national equivalized median income
13.	<i>At-risk-of-poverty rate anchored at a moment in time</i> In year t, share of persons with an equivalized disposable income below the at-risk-of-poverty threshold in year t-3 uprated by inflation over the three years
14.	<i>At-risk-of-poverty rate before social cash transfers</i> Relative at-risk-of-poverty rate where equivalized income is calculated as follows: –Excluding all social cash transfers –Including retirement and survivors pensions and excluding all other social cash transfers –Including all social cash transfers (equal to indicator 1) The same at-risk-of-poverty threshold is used for the three statistics and is set at 60% of the national median equivalized disposable income (after social cash transfers)
15.	<i>Gini coefficient</i> Summary measure of the cumulative share of equivalized income accounted for by the cumulative percentages of the number of individuals. Its value ranges from 0% (complete ► equality) to 100% (complete inequality)
16.	<i>Persistent at-risk-of-poverty rate (50% of Medina equivalized income)</i> Share of persons with an equivalized disposable income below 50% of the national median equivalized income in the current year and in at least two of the preceding three years
17.	<i>In-work poverty risk</i> Individuals who are classified as employed (distinguishing between wage and salary employment and self-employment) according to the definition of most frequent activity status and who are at risk of poverty. This indicator needs to be analyzed according to personal, job, and household characteristics
18.	<i>Long-term unemployment share</i> Total long-term unemployed population (≥ 12 months; ILO definition) as a proportion of the total unemployed population aged 15 years and over
19.	<i>Very long-term unemployment rate</i> Total very long-term unemployed population (≥ 24 months; ILO definition) as a proportion of the total unemployed population aged 15 years and over
20.	<i>Persons with low educational attainment</i> Share of the adult population (aged 25 years and over) whose highest level of education or training is ISCED 0, 1, or 2

Source: Commission of the European Communities (2003)

from home, a meal involving meat, chicken or fish every second day, the adequate heating of a dwelling, durable goods like a washing machine, colour television, telephone or car, being confronted with payment arrears (mortgage or rent, utility bills, hire purchase instalments or other loan payments).”

The approval of the Strategy 2020 in the June 2010 European Council represents a new and significant step in European ► [social policy](#). The ultimate goal of this strategy is to help the EU to become a smart, sustainable, and inclusive economy. Five objectives, to be reached by 2020, were set in the areas of employment, innovation,

education, climate/energy, and ► [social inclusion](#). Each Member State should adopt its own national targets in each one of these areas.

The EU targets for inclusive growth include the following objectives:

1. To attain 75% employment rate for women and men aged 20–64 by 2020
2. To reduce school dropout rates to below 10% and have at least 40% of 30–34-year-olds complete third level education
3. To reduce the number of people in or at risk of ► [poverty](#) and ► [social exclusion](#) by 20 million

Eurostat Social Indicators for the European Community, Table 3 Risk of poverty and social exclusion

1.	<i>At-risk-of-poverty rate</i>
	This is the same indicator used in the Laeken portfolio of indicators, i.e., the proportion of persons with an equivalized disposable income below 60% of the national equivalized median income
	Equivalized median income is defined as the household's total disposable income divided by its "equivalent size," to take account of the size and composition of the household, and is attributed to each household member
2.	<i>Severe material deprivation rate</i>
	The material ► deprivation rate is an indicator that expresses the inability to afford some items considered by most people to be desirable or even necessary to lead an adequate life. The indicator distinguishes between individuals who cannot afford a certain good or service and those who do not have this good or service for another reason, e.g., because they do not want or do not need it. The indicator measures the percentage of the population that cannot afford at least three of the following nine items:
	(a) To pay their rent, mortgage, or utility bills
	(b) To keep their home adequately warm
	(c) To face unexpected expenses
	(d) To eat meat or proteins regularly
	(e) To go on holiday
	(f) A television set
	(g) A refrigerator
	(h) A car
	(i) A telephone
	The severe material ► deprivation rate is defined as the enforced inability to pay for at least four of the above-mentioned items'
3.	<i>Persons living in households with low work intensity</i>
	This indicator is defined as the number of persons living in a household that have a work intensity below a threshold set at 0.20
	The work intensity of a household is the ratio of the total number of months that all working-age household members have worked during the income reference year and the total number of months the same household members theoretically could have worked in the same period
	A working-age person is a person aged 18–59 years, excluding students in the age group between 18 and 24 years. Households composed only of children, of students aged less than 25, and/or people aged 60 or more are completely excluded from the indicator calculation

Source: Commission of the European Communities (2003)

The monitoring of these objectives, particularly the target of reducing the number of people in or at risk of ► **poverty** and ► **social exclusion**, clearly implies a need to strengthen the actual indicators and the construction of a new composed indicator: the number of people at risk of ► **poverty** and social exclusion.

The overall risk of facing ► **poverty** and ► **social exclusion** is made of three types of risk: being at risk of ► **poverty**, facing severe material ► **deprivation**, and living in a household with very low work intensity. People are considered to be at risk of ► **poverty** and ► **social exclusion** if they face at least one of those risks.

The three indicators/risks used are already among the EU's ► **social inclusion** indicators set, but it is the first time they have been combined in this way.

The next table (Table 3) presents the definition given by Eurostat for each of those three indicators:

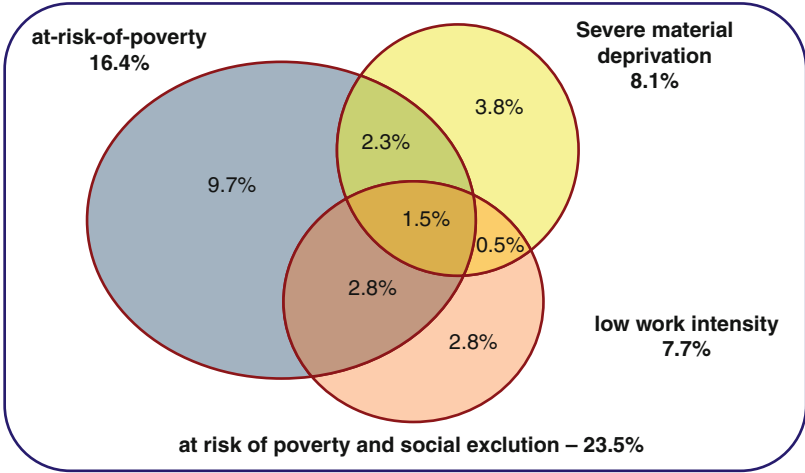
According to Eurostat, in 2010, approximately 115.5 million people in the EU-27 (23.5% of the total population) were at risk of ► **poverty** or social exclusion. However, this average figure masks considerable variation among Member States. At one extreme, the Member States with the highest rates of risk of ► **poverty** and ► **social exclusion** were Bulgaria (42%), Romania (41%),

Eurostat Social Indicators for the European Community, Table 4 Risk of poverty and social exclusion (%)

Country	Risk of poverty and social exclusion	At-risk-of-poverty rate	Severe material deprivation	Low work intensity
Austria	16.6	12.1	4.3	7.7
Belgium	20.8	14.6	5.9	12.6
Bulgaria	41.6	20.7	35.0	7.9
Cyprus	24.0	17.0	9.1	4.0
Czech Republic	14.4	9.0	6.2	6.4
Denmark	18.3	13.3	2.7	10.3
Estonia	21.7	15.8	9.0	8.9
Finland	16.9	13.1	2.8	9.1
France	19.3	13.5	5.8	9.8
Germany	19.7	15.6	4.5	11.1
Greece	27.7	20.1	11.6	7.5
Hungary	29.9	12.3	21.6	11.8
Ireland	29.9	16.1	7.5	22.9
Italy	24.5	18.2	6.9	10.2
Latvia	38.1	21.3	27.4	12.2
Lithuania	33.4	20.2	19.5	9.2
Luxembourg	17.1	14.5	0.5	5.5
Malta	20.6	15.5	5.7	8.4
Netherlands	15.1	10.3	2.2	8.2
Poland	27.8	17.6	14.2	7.3
Portugal	25.3	17.9	9.0	8.6
Romania	41.4	21.1	31.0	6.8
Slovakia	20.6	12.0	11.4	7.9
Slovenia	18.3	12.7	5.9	6.9
Spain	25.5	20.7	4.0	9.8
Sweden	15.0	12.9	1.3	5.9
United Kingdom	23.1	17.1	4.8	13.1
European Union	23.5	16.4	8.1	10.0

Source: Eurostat (online data code: t2020_50;t2020_51;t2020_52;t2020_53)

Eurostat Social Indicators for the European Community, Fig. 1 Intersections of Europe 2020 Poverty Target Indicators (Source: Eurostat [online data code: ilc_pees01])



Latvia (38%), Lithuania (33%), and Hungary (30%). At the other extreme, the share of the population at risk of ► [poverty](#) or ► [social exclusion](#) was around 15% in the Czech Republic, Sweden, and the Netherlands (Table 4).

Looking at the above figure (Fig. 1), we can ask what improvement we get from moving the main indicator and the target population of inclusion policy from the at-risk-of-► [poverty](#) rate to the at-risk-of-► [poverty](#) and ► [social exclusion](#) indicator. Certainly we get an indicator closer to the multidimensional dimension of ► [poverty](#) and exclusion. On the other hand, the interception of the three dimensions could be problematic. For example, it seems highly questionable to consider someone who is jobless but is neither low income or deprived as being at risk of ► [poverty](#) and ► [social exclusion](#). The next figure shows a more detailed analysis of the interception of the three indicators in 2010.

Nolan and Whelan (2011a, 2011b) make a thorough analysis of the way the EU 2020 ► [poverty](#) target identifies its target population via the risk of ► [poverty](#) and ► [social exclusion](#) indicator. They point out that its use is problematic in terms of inclusion of household joblessness, the way material ► [deprivation](#) is measured, and the inclusion of all those meeting any of the three criteria.

One final point about the social indicators for the European Union concerns the data used for building the indicators. It will not be possible to obtain most of the indicators presented above, and in particular the overall risk of facing ► [poverty](#) and ► [social exclusion](#), without a harmonized set of data for all the Member States. The EU-SILC (Survey on Income and Living Conditions) is the EU reference source for comparative statistics on income distribution, ► [poverty](#), and living conditions and the main source of information to develop indicators to monitor ► [poverty](#) and ► [social exclusion](#).

Cross-References

- [Deprivation](#)
- [Equality](#)
- [Gini Coefficient](#)

- [Income Distribution](#)
- [Poverty](#)
- [Social Exclusion](#)
- [Social Inclusion](#)
- [Social Policy](#)

References

- Atkinson, A. B., & Marlier, E. (2010). *Income and living conditions in Europe*. Luxembourg: Publications Office of the European Union.
- Atkinson, A. B., Cantillon, B., Marlier, E., & Nolan, B. (2002). *Social indicators: The EU and social inclusion*. Oxford: Oxford University Press.
- Atkinson, A. B., Marlier, E., & Nolan, B. (2004). Indicators and targets for social inclusion in the European Union. *Journal of Common Market Studies*, 42(1), 47–75.
- Commission of the European Communities. (2003). *Joint report on social inclusion*. Luxembourg: Author.
- Nolan, B., & Whelan, C. (2011a). *Poverty and deprivation in Europe*. Oxford: Oxford University Press.
- Nolan, B., & Whelan, C. (2011b). *The EU 2020 poverty target (GINI Discussion Papers 19)*. Amsterdam: Amsterdam Institute for Advanced Labour Studies.

Eustress

Maria José Chambel
Department of Social and Organizational
Psychology, University of Lisbon, Alameda da
Universidade, Lisbon, Portugal

Definition

Eustress can be defined as the positive experience of stress (Lazarus 1974).

Description

The term is not new in stress literature. Hans Selye (1976) was the first to use the term eustress and defined it as a good kind of stress. However, this author considered that stress was a nonspecific physiological response that might have positive effects, eustress, and negative effects, distress. It

was Lazarus that developed the Cognitive Transactional Model of Stress (Lazarus 1974; Lazarus and Folkman 1984), which included an explanation of the positive aspects of stress responses. In contrast to Selye's perspective, this model considered eustress as not being the positive effects of a nonspecific physiological response but a specific response in itself that includes affective, behavioral, and physiological manifestations. The experience of stress is a complex and phenomenological process that involves appraisals by the individual. Whether and how an individual responds to a situation depends upon what he or she thinks and believes about this situation. Concerning this model, the process of stress is not inevitable or identical for all because there is a cognitive mediator between what occurs in the environment and the reactions of the individual. The stress process is only initiated when an individual perceives the events, episodes, or conditions in the environment that are both relevant and stressful for his/her personal well-being. Nevertheless, the individual may appraise the situations as being harmful, threatening, or challenging. In the latter, the process of stress involves positive responses as the individual considers that his/her resources are highly relative to the demands and there is a potential for mastery and personal growth. However, challenge, harm, and threat appraisals can occur simultaneously, as the result of the same stressor, and should be considered as separate but related constructs.

Although the existence of positive responses is acknowledged, the majority of stress researchers have focused almost exclusively on negative responses. However, in the last decades, health, psychology, and organizational behavior have shifted toward a positive emphasis. For example, Ryff and Singer (2002) emphasized the necessity of studying health not only as the absence of the negative but also the presence of the positive. Seligman and Csikszentmihalyi (2000) defined "positive psychology" as a science of positive subjective experience and considered the necessity of studying both human strengths and positive institutions. Luthans (2002), who created positive organizational behavior (POB), considered that

researchers needed to focus on identifying and developing human strengths at work. This positive framework entails a new interest in the eustress construct.

The Holistic Model of Stress developed by Nelson and Simmons (2003, 2007) can be highlighted as a model that not only integrates this concept but has also served as the theoretical foundation of recent empirical studies that examine the positive responses to stress at work. This model considers that stress response is complex and most if not all of stressors – the physical or psychological stimuli to which the individual responds – will elicit both a negative and a positive response for any individual. The positive response is eustress and reflects the extent to which the individual appraises the situation or event as a benefit or an opportunity to enhance his/her well-being. Concerning this model, despite the demands of their work situations, workers might experience a high degree of the positive responses. These responses include positive emotions (e.g., joy, contentment, love, happiness, and positive affects), positive attitudes (e.g., hope, meaningfulness, manageability, vigor, trust, and engagement), and positive behaviors (e.g., forgiveness, organizational citizenship behaviors, and positive deviance) and show a significant link to the individual's well-being. This positive response is more than merely the absence of negative responses that represent a distinct construct that would require specific measures (Edwards and Cooper 1988).

Different empirical studies conducted with the Holistic Model of Stress as the theoretical referential model have supported that even in extremely distressful jobs, eustress can be experienced. For example, studies with nurses, a demanding profession with a lot of stressors, showed that these professionals exhibited high eustress, namely, high meaningfulness and hope (Simmons et al. 2001). Moreover, hospital nurses that had higher eustress, namely, higher hope, were those that had a higher perception of their health (Simmons and Nelson 2001). In the same vein, in research with pastors of churches with large denominations, considered leaders of their congregations with a lot of stressors, Little et al.

(2007) showed that these workers had eustress, namely, positive affect, engagement, and forgiveness behaviors. More interestingly, none of the work demands were significantly related to the perception of health, but positive affect was the positive variable related to it. This result supported that eustress was an intervening variable between demands and health.

Lazarus' transactional model of stress considered that the individual alters his/her circumstances, or how they are interpreted, to make them appear more favorable – an effort called coping. Nelson and Simmons proposed savoring eustress as a complement of coping. They considered that individuals might entail a process of positive affect regulation to maintain emotions by approaching things they believe caused the experience and avoiding things that threaten to cut short their good feelings. Most individuals not only prefer eustress, they savor, or enjoy with appreciation, this positive response to aspects of demands they encounter at work. By “savoring,” the individuals promote or prolong the experience of eustress.

Discussion

We can conclude that eustress is an important construct to include in a more holistic examination of stress at work. Even in demanding professions, there are individuals who find their work meaningful and who believe they have the will and the way to accomplish their goals and can glean positive experiences and related health benefits. However, much work remains to be done in this area. First, it is necessary to refine the construct of eustress and understand different personal or contextual characteristics that favor that positive experience of stress. Secondly, it is necessary to conduct research that analyzes the mechanisms that explain why and how eustress is associated with health and well-being. Thirdly, we also need to refine the constructs of savoring and distinguish its utilization and consequences from coping. Finally, it is necessary to focus on interventions and management actions that generate eustress to complement the well-developed focus on distress prevention, control, and reduction.

Cross-References

- ▶ [Affluence, Stress, and Well-Being](#)
- ▶ [Distress](#)
- ▶ [Happiness](#)
- ▶ [Health](#)
- ▶ [Job Satisfaction](#)
- ▶ [Positive Affect](#)
- ▶ [Positive Psychology](#)
- ▶ [Stress](#)
- ▶ [Well-Being at Work](#)
- ▶ [Work Stress](#)

References

- Edwards, J. R., & Cooper, C. L. (1988). The impacts of positive psychological states on physical health: A review and theoretical framework. *Social Science & Medicine*, 27, 1147–1459.
- Lazarus, R. S. (1974). Psychological stress and coping in adaptation and illness. *International Journal of Psychiatry in Medicine*, 5, 321–333.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping*. New York: Springer.
- Little, L. M., Simmons, B. L., & Nelson, D. L. (2007). Health among leaders: Positive and negative affects, engagement and burnout, forgiveness and revenge. *Journal of Management Studies*, 44(2), 243–260.
- Luthans, F. (2002). The need for and meaning of positive organizational behavior. *Journal of Organizational Behavior*, 23, 695–706.
- Nelson, D. L., & Simmons, B. L. (2003). Health psychology and work stress: A more positive approach. In J. C. Quick & L. E. Tetrick (Eds.), *Handbook of occupational health psychology* (pp. 97–119). Washington, DC: American Psychological Association.
- Ryff, C. D., & Singer, B. (2002). From social structures to biology: Integrative science in pursuit of human health and well-being. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 541–555). New York: Oxford University Press.
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology. *American Psychologist*, 55, 5–14.
- Selye, H. (1976). *The stress of life*. New York: McGraw-Hill.
- Simmons, B. L., & Nelson, D. L. (2001). Eustress at work: The relationship between hope and health in hospital nurses. *Health Care Management Review*, 26, 7–18.
- Simmons, B. L., & Nelson, D. L. (2007). Eustress at work: Extending the holistic stress model. In D. Nelson & C. L. Cooper (Eds.), *Positive organizational behavior: Accentuating the positive at work* (pp. 40–53). London: Sage.
- Simmons, B., Nelson, D., & Neal, L. (2001, Summer). A comparison of the positive and negative work

attitudes of home health care and hospital nurses. *Health Care Manage Rev*, 26: 63–74.

EUT

- [Expected Utility Theory](#)

Evaluation

- [Cultural Evaluation](#)

Evaluation of Social Progress

- [Social Performance Index](#)

Event

- [Community Festivals](#)

Event History Analysis

Johan H. L. Oud
Behavioural Science Institute, Radboud
University Nijmegen, Nijmegen, The Netherlands

Synonyms

[Duration modeling](#); [Failure-time modeling](#); [Hazard modeling](#); [Lifetime modeling](#); [Response-time modeling](#); [Survival analysis](#)

Definition

The synonyms of event-history analysis are indicative of the variety of disciplines, in which the analysis procedure has been developed and

applied. Event-history analysis focuses on the timing of events or, equivalently, on the duration time of being in a state. An event is the instantaneous transition from one state, the origin state, to another state, the destination state. Whereas the duration time T of being in a state is usually taken as a continuous variable, the states themselves are the values of a categorical variable. Examples of states are alive or dead, having or not having a certain illness, being employed or unemployed, categories of marital status (e.g., single, cohabitant, married, divorced, and widowed), having no children versus having a first child, etc. The examples leave little doubt about the importance of event-history analysis for quality of life research. An important aim of the analysis is to find out the effect of covariates on the risk of events. For example, the effect of a governmental job training program on the risk of becoming unemployed, the effect of first marriage on the risk of job change, or whether getting one's first child enhances the risk of entering marriage.

Description

Origin

Event history originated at the end of the 1950s in the biomedical sciences and in engineering. The biomedical sciences needed methods for analyzing survival data gathered in clinical trials and in engineering the breakdown of machines and electronic components needed statistical analysis. The two traditions came together in the 1970s and from then on spread over a wide range of disciplines, including the social sciences. A choice of textbooks discussing and applying the techniques has become available: Allison (1984), Blossfeld and Rohwer (1995), Kalbfleisch and Prentice (1980), Lancaster (1990), Tuma and Hannan (1984), Vermunt (1997), and Yamaguchi (1991).

Basic Elements

Four elements are basic in an event-history analysis. Two of them are standard in statistical analysis. These are the cumulative *distribution function* $F(t) = P(T \leq t)$, the probability of the event occurring between time 0 and t , and the associated

probability density function $f(t) = \partial F(t)/\partial t$. Survival function $S(t) = 1 - F(t)$ gives exactly the same information as $F(t)$, but decreases over time while $F(t)$ increases. $S(t)$ and $f(t)$ together define the central quantity or dependent variable of an event-history analysis, the hazard rate, or *hazard function* $h(t) = f(t)/S(t)$. The hazard rate specifies the instantaneous risk of the event occurring at t ($T = t$), given that it did not yet occur before t .

Log-Linear Models of the Hazard Rate

Approaches in event-history analysis differ in the way the effect of covariates, which can be time-invariant (e.g., gender) or time-varying (e.g., educational level), on the hazard rate is modeled. Because the hazard rate can take on values only from 0 to ∞ , usually it is first transformed to a logarithmic scale with value range $-\infty$ to ∞ to accommodate for linear regression $\ln h(t | \mathbf{x}_i) = \ln h(t) + \mathbf{b}'\mathbf{x}_i$. Here $\mathbf{x}_i$ is the vector of covariates for individual i and $\mathbf{b}$ the vector of regression weights. The various types of log-linear hazard models differ in the functional form that is chosen for the baseline hazard function, that is, for the term $\ln h(t)$ in the regression equation.

1. *Exponential models* are the simplest and easiest to handle, because they cause $h(t)$ to become a constant over time.
2. *Piecewise constant exponential models* assume $h(t)$ to be a step function, that is, constant within time periods.
3. The *Cox semiparametric model* (Cox 1975) makes it possible to assume time dependence in $h(t)$ but to leave it unspecified. This model has become the most popular one in social science applications.

In addition to these three types of models several other parametric models have been proposed: Weibull, Gompertz, log-logistic, log-normal, and gamma models.

Censoring and Unobserved Heterogeneity

Two problems that obtained a lot of attention in the event-history literature are censoring and

unobserved heterogeneity. *Censoring* is a special kind of missing data. An observation is called censored, if it is known that the event did not take place over a certain observation period, but unknown if and when it took place outside the observation period. Right censoring means that the uncertainty is on the right side (after the observation period), left censoring that it is on the left side (before the observation period). Censoring can also be on both sides. As long as it can be assumed that the censoring mechanism is not related to the events studied, right censoring does not pose a special problem in maximum likelihood parameter estimation. Much more difficult to cope with is left censoring.

Another problem in event-history analysis is *unobserved heterogeneity*. It can be defined as the bias caused by missing important covariates in the regression model. Because it may have much more impact in hazard models than in other regression models, the attention to the problem is deserved. The usual way to deal with it is to introduce random effects into the model in the form of one or more latent variables with different values for different individuals. Recent developments in this field are given by Blake et al. (2010).

Discussion

Event-history analysis as briefly described above is the basic framework. However, in the course of its development event-history analysis has significantly broadened its scope. One extension is that single, nonrepeatable events can be replaced by *multiple, repeatable events*. Going from the state of no children to the state of a first child is a single, nonrepeatable event, because the state of no children can only be followed by one single other state and, once the event of giving birth to the first child took place, it cannot be repeated. However, if the states of marital status are defined as single, cohabitant, and married, one can go from every state to every other state. This is an example of multiple, repeatable events which can be analyzed by current procedures (Vermunt 1997).

A second important extension of the basic framework is *simultaneous equations models* (Blake et al. 2010). One might be interested whether event history A influences event history B and perhaps also the other way around. For example, one might want to model the time a woman needs to complete her education and the time she becomes pregnant. The time of completing education may be affected by the time the woman becomes pregnant or the effect may go in the opposite direction or both. The possibility to analyze several event histories simultaneously and to let them influence each other puts event-history analysis in the vicinity of structural equation modeling (SEM), another immensely popular analysis procedure in the social sciences.

Most recent developments, approaches, and problems in event-history analysis are discussed by a wide range of leading authors in the Handbook of Survival Analysis (Klein et al. 2014).

Cross-References

- [Compositional Variables](#)
- [Continuous Time Analysis](#)
- [Latent Variables](#)
- [Loglinear Models](#)
- [Longitudinal Structural Equation Modeling](#)
- [Missing Data](#)
- [Parametric Analysis](#)
- [Survival Analysis](#)

References

- Allison, P. D. (1984). *Event history analysis: Regression for longitudinal data*. Beverly Hills: SAGE.
- Blake, D., Box-Steffensmeier, J., & Woo, B. (2010). Structural interdependence and unobserved heterogeneity in event history analysis. In K. van Montfort, J. H. L. Oud, & A. Satorra (Eds.), *Longitudinal research with latent variables*. Berlin: Springer.
- Blossfeld, H. P., & Rohwer, G. (1995). *Techniques of event history modeling*. Mahwah: Lawrence Erlbaum Associates.
- Cox, D. R. (1975). Regression models and life tables. *Journal of the Royal Statistical Society B*, 34, 187–203.

- Kalbfleisch, J. D., & Prentice, R. L. (1980). *The statistical analysis of failure time data*. New York: Wiley.
- Klein, J. P., Van Houwelingen, H. C., Ibrahim, J. G., & Scheike, T. H. (Eds.). (2014). *Handbook of survival analysis*. Boca Raton: CRC Press.
- Lancaster, T. (1990). *The econometric analysis of transition data*. Cambridge: Cambridge University Press.
- Tuma, N. B., & Hannan, M. T. (1984). *Social dynamics: Models and methods*. New York: Academic Press.
- Vermunt, J. K. (1997). *Log-linear models for event histories*. Newbury Park: SAGE.
- Yamaguchi, K. (1991). *Event history analysis*. Newbury Park: SAGE.

Event Stress

- [Stressful Life Events](#)

Event Stressors

- [Stressful Life Events](#)

Everyday Life Experience

Carmen Leccardi
Department of Sociology and Social Research,
University of Milan-Bicocca, Milan, Italy

Synonyms

[Dailiness](#); [Natural attitude](#); [Reproduction of social life](#); [World taken for granted](#)

Definition

Everyday life may be defined as the ambit of the banal or the taken for granted, of what is familiar to us because it is tied to actions that are repeated on a daily basis, and of the habits through which we manage to “feel at home” in the world. It is the

universe dominated by the “natural attitude” and by pragmatic motives. At the same time, it is the milieu of inventiveness and creativity. To the extent that it is the sphere of social production, and therefore of the reproduction of life, it constitutes the precondition for the very existence of productive activities.

Description

Today the concept of everyday life not only constitutes a key concept for cultural studies and feminist thought but also an important reference point for the analytical practice of the social sciences (Felski 2000). This success is without doubt related to the demise of the grand narrations and the crisis of the experience of time – centered on the importance of the future and the linear dimension of time – inherited from the enlightenment. As a consequence, more and more often it is the cyclical time that the everyday incarnates and the present in whose framework it is collocated that is identified as the locus of the realization of desires. Here too is to be found the origin of the close connection that exists in our times between everyday life and ► [quality of life](#).

The increasing interest that the dimension of everyday life arouses is also fed by its capacity to mount an active resistance to dualistic thought. In fact, it offers itself both as a parameter with which to measure the force and intensity of processes of change and as an instrument through which to capture permanence and continuity. For social actors in their turn, everyday life can at one and the same time represent both the most amenable terrain on which to produce innovation and the base on which to construct a reassuring and protective order. By way of the apparent banality of what seems to repeat itself day after day, everyday life – which is strictly linked to history – can indeed be readily transformed into a tool with which to defend oneself from history and the uncertainty of contemporary society.

This same ductility appears at a different level, when one considers the activities with which everyday life is normally associated. The everyday, for example, inheres not only to the time of

work for the market but also to family relations and to domestic activities, be they of ► [consumption](#) or ► [leisure](#); and the same goes for the use that is made today of ICT. More generally, it is possible to affirm that the relationship with everyday life is constantly associated with and mediated by a plurality of objects, ever more characterized with the passing of time by different forms of technology. Everyday life, then, is not just a theoretical category through which to make reference to what is close, familiar, at hand's reach by virtue above all of its routine character; it is also a perspective, a point of view through which to observe a plurality of areas and phenomena of social life (Jedlowski and Leccardi 2003).

Interest in the issue of everyday life, a theme which is intimately connected with the social transformations ushered in by modernity and by its tendency towards ► [standardization](#), was expressed over the course of the twentieth century by a large number of scholars (Highmore 2002). Georg Simmel, one of the founding fathers of sociology, was one of these. Simmel was able to observe the everyday world and its details by focusing – in the context of modernity – on their ambivalent character, their presence at the intersection between tendencies towards homogenization, and the search for individuality (Levine 1971). But it was above all thanks to the conceptual contributions of a number of schools of social thought, quite distant from one another from a number of points of view, that the category of everyday life was able to consolidate its position in the second half of the twentieth century. We refer here, on the one hand, to the social phenomenology of Schutz and his successors (Berger and Luckmann 1991; Schutz 1967; Schutz and Luckmann 1983) as well as to ethnomethodology and the dramaturgical approach proposed by Goffman (Garfinkel 1967; Goffman 1990) and, on the other, to the critical Marxism of Lefebvre and others (Elden et al. 2003; Heller 1984; Lefebvre 1984). It was thanks to the analytical contribution of phenomenology that light was cast on the socially constructed character of everyday life and the centrality within it of an intersubjective dimension. This approach also underlined the invisibility of everyday knowledge *savoirs*, a

feature tied to their “ordinary,” taken-for-granted character – a characteristic that ethnomethodology would go on to explore in a highly creative manner. The perspective of Lefebvre, for its part, has emphasized the centrality of everyday life both as a category through which to study the modern world and the dynamics of the capitalist mode of production that characterize it and as an ambit in which to develop a political process of consciousness raising and construct forms of critical thought.

Among the scholars of the second half of the twentieth century who devoted considerable attention to everyday life, mention must also be made of de Certeau. His analyses, which are collocated in the field of cultural studies, have opened the way to viewing everyday life as a milieu of creativity and inventiveness, a space of “ordinary resistance” to the processes of domination (de Certeau 1984). In this way de Certeau’s eye falls upon everyday practices, on those minute, interstitial practices, at times beneath the threshold of common perception, through which subjects reappropriate the times and spaces of everyday life.

The analyses that de Certeau carried out in relation to everyday life, not unlike at least a part of Lefebvre’s, would never have seen the light of day had it not been for the remarkable effervescence of the political and cultural movements of the late 1960s. The “practical criticism” of the forms of alienation of which the everyday is in the modern era the bearer, starting out from the ever more central place of the time of consumption, began to take form in that climate. A new emphasis on subjectivity, of which the everyday has become the container, has been its natural outcome. But it is above all thanks to the contribution of the feminist movement that an out-and-out redefinition of everyday life has been delineated. From being an ambit for the reproduction of patriarchal relationships, the everyday has transformed into strategic ground on which to affirm the right to self-determination. More precisely, everyday life has taken on the shape of the point of departure and the point of arrival of that transformation in the power relations between the sexes that the women’s

movement so vigorously calls for. Before the advent of feminism, the obviousness of the everyday was interwoven with the silence that enshrouded it and which sanctioned its separation from the public ambits of existence. Thanks to the feminist movement, this silence has been broken forever. This rupture has unleashed an extraordinarily broad-ranging process, a cultural revolution in the real sense of the word, that involves personal relationships, above all within the family, and the relationship with the public sphere and various forms of individual and collective action. In this way we can affirm that the close interaction between the affirmation of identity and everyday life, today very familiar to us, finds one of its deepest roots in the refusal of the women’s movement to identify the everyday and the sphere of reproduction. The insistence on the connection between everyday life and the expression of desires can be considered a manifestation of this refusal.

Today, some decades after this cultural and political upheaval in the ways of understanding everyday life, this category continues to assume more and more strategic importance in thought about the dynamics of society. One of the most recent examples of this is the use of the term everyday life, thanks to the plurality of the symbolic, meaning-bearing dimensions with which it is invested, as a synonym for culture *tout court* (Burke 2008).

Cross-References

- [Alienation](#)
- [Consumption](#)
- [Quality of Life](#)
- [Time Pressure](#)
- [Well-Being](#)

References

- Berger, P., & Luckmann, T. (1991). *The social construction of reality: A treatise in the sociology of knowledge*. Harmondsworth: Penguin.
- Burke, P. (2008). Cultural history. In T. Bennett & J. Frow (Eds.), *Cultural analysis* (pp. 107–125). London: Sage.

- de Certeau, M. (1984). *The practice of everyday life*. Berkeley: University of California Press.
- Elden, S., Lebas, E., & Kofman, E. (Eds.). (2003). *Henri Lefebvre. Key writings*. London: Continuum.
- Felski, R. (2000). The invention of everyday life. In R. Felski (Ed.), *Doing time feminist theory and post-modern culture* (pp. 77–98). New York/London: New York University Press.
- Garfinkel, H. (1967). *Studies in ethnomethodology*. Englewood Cliffs: Prentice-Hall.
- Goffman, E. (1990). *The presentation of self in everyday life*. Harmondsworth: Penguin.
- Heller, A. (1984). *Everyday life*. London: Routledge/Kegan Paul.
- Highmore, B. (Ed.). (2002). *The everyday life reader*. London/New York: Routledge.
- Jedlowski, P., & Leccardi, C. (2003). *Sociologia della vita quotidiana (Sociology of everyday life)*. Bologna, IL: Mulino.
- Lefebvre, H. (1984). *Everyday life in the modern world*. New York: Transaction.
- Levine, D. N. (Ed.). (1971). *Georg Simmel: On individuality and social forms, selected writings*. Chicago/London: University of Chicago Press.
- Schutz, A. (1967). *Collected papers*, vol. 1: (edited and introduced by M. Natanson). The Hague, Martinus Nijhoff.
- Schutz, A., & Luckmann, T. (1983). *The structures of the life-world* (Vol. 1). Evanston, IL: Northwestern University Press.

Evidence-Based Typology of Asian Societies

► Asia, Quality of Life

Evolutionary Psychology

Francis Heylighen
Center Leo Apostel, Vrije Universiteit Brussel,
Brussels, Belgium

Definition

Evolutionary psychology (EP) is an approach to the study of the mind that is founded on Darwin's

theory of evolution by natural selection. It assumes that our cognitive abilities, emotions, and preferences are specifically adapted for solving problems of survival and reproduction in the Paleolithic environment in which humanity evolved. It derives testable predictions from this assumption, including the conditions that support human well-being.

Description

History

When Charles Darwin formulated his theory of natural selection as an explanation for the origin of species, he already anticipated that this concept would also help us to understand the mind as a product of biological evolution. He made some first steps towards such “evolutionary psychology” in his later works on human descent and on the expression of emotions in humans and animals. His approach inspired several late-nineteenth-century philosophers and psychologists, including William James and James Baldwin. However, in the twentieth century, psychology became dominated first by behaviorism and then by cognitive approaches. These saw the mind as a blank slate, to be “programmed” by education and experience. Evolutionary perspectives on mental phenomena were relegated to other disciplines, including ethology (the study of animal behavior) as investigated by Konrad Lorenz, evolutionary epistemology (variation and selection in the evolution of knowledge) as instigated by Donald T. Campbell, and sociobiology (evolutionary theory of social interactions) as developed by Edward O. Wilson.

Building on these developments while adding specifically psychological methodologies for testing hypotheses, evolutionary psychology came back to the fore in the 1990s, under the impulse of researchers such as David Buss, Leda Cosmides, and John Tooby (Barkow et al. 1992; Wright 1994; Buss 2016). Initially, this approach was quite controversial, as it contradicted the standard social science model according to which our preferences and behaviors are

essentially a product of education and socialization. Moreover, evolutionary approaches had gotten a bad reputation within the social sciences because of their association with the outdated ideology of Social Darwinism (which Darwin never espoused), according to which society should not care for the weak but rely on the survival of the fittest. However, some of the empirical results of the new approach (e.g., on the cross-cultural universality of the determinants of jealousy and of physical attractiveness) were so compelling that it was difficult to come up with alternative explanations. Moreover, evolutionary psychology profited from a general revival and spread of Darwinian ideas across virtually all the disciplines, including economics, computer science, and medicine. This development has been called “universal Darwinism,” since it assumes that the mechanism of variation and selection can explain the development of intelligent organization in any domain. Nowadays, the value of EP is generally recognized, although some skepticism and much misunderstanding remain concerning its theoretical underpinnings (Buss 2015; Confer et al. 2010).

Assumptions and Methods

The basic assumption of evolutionary theory is that all organisms are the product of blind variation and natural selection. Each generation, selection picks out the variants that are fittest, i.e., which are best adapted for surviving and reproducing in their given environment. Therefore, most features of biological organisms can be understood as *adaptations*, specifically “designed” for life in this environment – although some are merely by-products of adaptations or random variations that have not (yet) undergone selection. Evolutionary psychology (EP) adds that the major features of the human mind too should be viewed as adaptations to our ancestral environment. While environments have of course changed over the course of evolution (most radically in the last centuries), evolutionary psychologists contend that the most important environmental features remained largely the same over the last 2–3 million years of human

prehistory until the end of the Paleolithic, about 10,000 years ago. Therefore, we may assume that our psychological mechanisms have been optimized by natural selection for functioning in this *Environment of Evolutionary Adaptedness* (EEA) (Buss 2015; Narvaez et al. 2013).

The human EEA features are those of life as hunter-gatherers in small, nomadic bands of 20–30 individuals, with occasional “tribal” gatherings of some 150 people. These prehistoric foragers were searching for a large variety of animal and vegetable foods, shelter, and other resources across a varied, savannah-like landscape while avoiding dangers such as predators, poisonous plants and animals, parasites, precipices, and potentially hostile strangers. Important criteria for success in the social environment were the abilities to attract and bond with fertile and dependable mates, to raise children until they are able to stand on their own, to establish cooperative relations with reliable friends, to detect and exclude “cheaters” or “bullies” who abuse such social contracts for their selfish benefit, to exchange useful information with others (via language, “gossip,” and storytelling), and to achieve a sufficiently high status within the group.

Like cognitive psychology, evolutionary psychology sees the mind as an *information-processing* system that solves problems by interpreting sensory data, devising schemes to deal with the perceived situation, and selecting appropriate actions (see ► “Cognitive Abilities”). What EP adds is that these problems are fundamentally problems of adaptation to a specific environment. Unlike cognitive psychology, EP does not see the mind as a “general-purpose” problem solver that can deal equally well with any kind of issue via mechanisms of inference and learning. While we may have developed some capacity for domain-independent rational thought, it is too weak to deal sufficiently quickly and reliably with the complex problems encountered in the EEA. For example, if you see something slithering in the grass towards you, you do not have the time to carefully observe its features, determine whether or not they indicate a poisonous snake, and if they do, decide that it is safer to

step away from it: you better run immediately! Another complex problem for which there is no dependable rational procedure is deciding whether you can trust the person you just met: best is to simply rely on your “instinct” to interpret all the subtle nonverbal cues.

EP assumes that over the millions of years of its evolution, our brain has accumulated a massive number of specialized neural circuits for tackling these kinds of adaptive problems. These circuits are often conceived in EP as “*modules*,” i.e., separate, encapsulated pieces of information-processing machinery, each responsible for performing one specific function. For example, it has been proposed that our brain contains specific modules for fearing spiders, for learning grammar, and for detecting cheaters. Within cognitive science, the existence of modules in the brain is contentious. However, it is not necessary to assume that the specialized circuits postulated by EP are separate (Confer et al. 2010). It seems more likely that their functions would overlap, so that different pieces of circuitry may contribute to solving a given adaptive problem, while the same circuit may contribute to different problems.

For example, we have specialized brain mechanisms for estimating the physical attractiveness of a potential sex partner (Buss 2015). EP researchers have shown via extensive cross-cultural surveys that there exist universal criteria for sex appeal. For women, these are basically indicators of health and fertility: symmetric features, smooth skin, long legs, full breasts, a 0.7 waist-to-hip ratio, and a minimum of deformities, in the sense of deviations from the “standard” human shape. Choosing a female sex partner with these characteristics makes perfect sense if the problem to be solved is maximizing the chances for healthy offspring. On the other hand, we have different innate criteria for evaluating the “cuteness” of babies and toddlers, an adaptation that stimulates us to take care of children that are too young to fend for themselves. These include short legs, large eyes, and a small, upturned nose. But “cuteness” and “sex appeal” also overlap in criteria such as smooth skin, symmetry, and absence of

deformities and therefore are likely to make use to some degree of the same brain circuits. As a result, there may be interference between both mechanisms, so that men also tend to be attracted to “cute” women with large eyes and a small nose, even though these indicate no fertility benefit.

EP accounts are often accused of being “*just-so stories*,” i.e., explanations based on some reconstruction of our evolutionary past that may seem plausible, but that cannot in any way be verified (Confer et al. 2010). While this criticism may have been applicable to certain other evolutionary approaches, such as sociobiology, EP explicitly aims to derive falsifiable predictions from its hypotheses. To test these predictions, EP relies on all the traditional methodologies of psychology, such as laboratory experiments and surveys, but also on methods and data from other domains, such as archaeology, anthropology, biology, and neuroscience (Lewis et al. 2017). An example of such a prediction is the notion – common in fairy tales but before EP absent in psychological theory – that parents care less about their stepchildren than about their biological children. This makes perfect sense from an evolutionary perspective, since stepchildren do not pass on their step-parents’ genes. The reality of this effect was proven by means of extensive, cross-cultural crime statistics, which show that children are orders of magnitude more likely to be killed or abused by stepparents than by their biological parents.

A last common misunderstanding about EP is that it implies some form of *genetic determinism*, i.e., the view that our behavior is fixed by our genes (Confer et al. 2010). However, an essential requirement for fitness is the ability to adapt to a variety of situations. Therefore, the innate mechanisms postulated by EP are plastic and will only come to the fore in the appropriate context or environment (see ► “[Gene-Environment Interaction](#)”). Moreover, in most cases, such psychological adaptations will not *predetermine* the action to be performed but merely *suggest* a default action: running away is not necessarily the best action to take in the presence of a snake, but if there is no time to reflect about a better alternative, it provides a

good default reflex. In that sense, most adaptations can perhaps be better conceptualized as *biases* or inbuilt *preferences* for certain types of behavior, which, however, can be overruled by learning or rational reflection. But it must be emphasized that such overruling demands much more effort than merely following your “instinct,” and therefore, the “instinctual” behavior will tend to be more common than any of its learned variants.

Applications to Well-Being

The view of psychological adaptations as innate, subconscious preferences for certain conditions and behaviors has direct implications for human well-being: people can be expected to feel well when these preferences are satisfied and feel stressed otherwise. According to EP, these preferences reflect the conditions that were optimal for survival and reproduction in the EEA. For example, we will tend to feel good in an open, sunny landscape with grass, trees, and animals; in the vicinity of clear water, such as a lake, while performing activities that resemble hunting or gathering; in the company of friends or mates; or while nurturing children. On the other hand, we will tend to feel stressed in the presence of spiders, snakes, thunderstorms, threatening animals or people, loud noises, fast-moving objects, and great heights, as these all indicate dangers in the EEA.

The problem is that our present environment is very different from the EEA. Therefore, behaviors that were adaptive in the EEA may no longer fit in well with our modern lifestyle. This leads to a fundamental mismatch between the behaviors and conditions that our genes “expect” and those that society proposes (Grinde 2002; Hill and Buss 2008). Several authors have argued that this discrepancy is at the origin of our many “diseases of civilization,” which include obesity, cardiovascular disease, diabetes, allergies, depression (Hidaka 2012), dementia, and ADHD. These disorders, which severely reduce our quality of life, are virtually unknown among hunter-gatherers.

EP theorists have examined in particular the evolutionary origins of stress and emotions

together with their implications for happiness and mental health (Nesse 2004, 2015; Hill and Buss 2008; Grinde 2002). One conclusion is that some of the “natural” conditions for happiness, such as intimate connections within a small, egalitarian band are intrinsically difficult to achieve in our modern society. On a more optimistic note, several aspects of our ancestral, hunter-gatherer lifestyle, such as frequent exercise, engaging activity, sound sleep patterns, and regular exposure to sunlight and to nature, can be reintroduced or mimicked without too much effort. A program based on such guidelines (Ilardi 2009) appears to combat depression more effectively than drugs or psychotherapy and is likely to increase well-being overall.

Another application is in improving childcare. Here, EP researchers recommend maximum physical contact between caregiver and infant (extended breast-feeding, carrying on the body, and co-sleeping) and immediate and sensitive response to any sign of distress (e.g., crying or fussing). On the other hand, older children should be allowed to play and explore freely as soon as they feel autonomous enough. Such nurturing but permissive parenting style, at least in hunter-gatherers, appears to provide the foundation for the development of a healthy, self-confident personality and for what is called “secure attachment” in interpersonal relationships (Schön and Silván 2007; Narvaez et al. 2013, 2016).

EP further provides an explanation for the often-observed asymmetry between positive and negative emotions and their corresponding cognitive biases. We tend to feel good by default (the “positivity offset”), because that motivates us to explore, take on challenges, and thus build the mental and physical resources that ensure long-term survival (Fredrickson 2004). On the other hand, we tend to overreact to possible threats (the “negativity bias”), because that protects us against potentially lethal harm. Therefore, people behave like “paranoid optimists” (Haselton and Nettle 2006): in general overconfident about their own abilities (e.g., in getting a project done on time or answering questions correctly), but

quick to get frightened by low-probability dangers (e.g., a plane crash or a terrorist attack).

In conclusion, evolutionary psychology has proven its value in generating testable new hypotheses about human cognition, emotion, and innate preferences, by assuming that our mind is adapted to our ancestral way of life, the environment of evolutionary adaptedness. While several nontrivial hypotheses have already been confirmed, further tests are needed, and many more fruitful predictions are likely to be derived from our increasing understanding of the human EEA. Such theories and observations are likely in particular to extend and unify our understanding of the conditions for human well-being.

Cross-References

- [Anthropology](#)
- [Child Care](#)
- [Cognitive Abilities](#)
- [Environment and Health](#)
- [Gene-Environment Interaction](#)
- [Happiness](#)
- [Nature and Well-Being](#)
- [Stress](#)

References

- Barkow, J. H., Cosmides, L., & Tooby, J. (1992). *The adapted mind: Evolutionary psychology and the generation of culture*. New York: Oxford University Press.
- Buss, D. (Ed.). (2015). *The handbook of evolutionary psychology*. Hoboken: Wiley.
- Buss, D. (2016). *Evolutionary psychology: The new science of the mind* (5th ed.). Old Tappan: Prentice Hall.
- Confer, J. C., Easton, J. A., Fleischman, D. S., Goetz, C. D., Lewis, D. M., Perilloux, C., et al. (2010). Evolutionary psychology: Controversies, questions, prospects, and limitations. *American Psychologist*, 65(2), 110–126.
- Fredrickson, B. L. (2004). The broaden-and-build theory of positive emotions. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 359(1449), 1367.
- Grinde, B. (2002). Happiness in the perspective of evolutionary psychology. *Journal of Happiness Studies*, 3(4), 331–354.
- Haselton, M. G., & Nettle, D. (2006). The paranoid optimist: An integrative model of cognitive biases. *Personality and Social Psychology Review*, 10, 47–66.
- Hidaka, B. H. (2012). Depression as a disease of modernity: Explanations for increasing prevalence. *Journal of Affective Disorders*, 140(3), 205–214.
- Hill, S. E., & Buss, D. M. (2008). Evolution and subjective well-being. In M. Eid & R. Larsen (Eds.), *The science of subjective well-being*. New York: Guilford Press.
- Ilardi, S. S. (2009). *The depression cure: The 6-step program to beat depression without drugs*. Cambridge, MA: Da Capo Lifelong Books.
- Lewis, D. M., Al-Shawaf, L., Conroy-Beam, D., Asao, K., & Buss, D. M. (2017). Evolutionary psychology: A how-to guide. *American Psychologist*, 72(4), 353.
- Narvaez, D., Panksepp, J., Schore, A. N., & Gleason, T. R. (Eds.). (2013). *Evolution, early experience and human development: From research to practice and policy* (1st ed.). New York: Oxford University Press.
- Narvaez, D., Wang, L., & Cheng, Y. (2016). The evolved developmental niche in childhood: Relation to adult psychopathology and morality. *Applied Developmental Science*, 20(4), 294–309.
- Nesse, R. M. (2004). Natural selection and the elusiveness of happiness. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 359(1449), 1333.
- Nesse, R. M. (2015). Evolutionary psychology and mental health. In D. Buss (Ed.), *The handbook of evolutionary psychology* (pp. 903–927). Hoboken: Wiley.
- Schön, R. A., & Silvén, M. (2007). Natural parenting. Back to basics in infant care. *Evolutionary Psychology*, 5(1), 102–183.
- Wright, R. (1994). *The moral animal: Why we are the way we are: The new science of evolutionary psychology*. London: Abacus.

Evolutionary Threat Assessment Systems (ETAS) Theory

- [Religious Beliefs and Mental Health](#)

Excess Labor Supply

- [Labor Markets and Underemployment](#)

Excessive Sexual Behavior

- [Compulsive Sexual Behavior Inventory](#)

Exchange Theory

Ming-Chang Tsai
Department of Sociology, National Taipei
University, New Taipei City, Taiwan

Synonyms

Give-and-take theory; Reciprocity in exchange

Definition

Exchange theory is a general analytic framework for understanding processes of social association that feature exchanges between at least two persons. These activities of exchange, which may be tangible or intangible and more or less rewarding or costly, situate exchange partners into an emerging interpersonal relationship structure.

Description

Exchange theory, initially proposed by Homans (1958, 1974), Blau (1964), and Emerson (1976), aims to provide a general theoretical framework for studying emergent human actions. The concepts of stimulus and response, along with other behaviorist principles, are mobilized to explain how human interactions evolve. To understand actions oriented toward “an actor adapting to its environment,” Homans (1974) advances a number of basic propositions. First, *the success proposition*: The more often a particular action is rewarded, the more likely a person is to perform that action. Second, *the stimulus proposition*: If a particular stimulus has occasioned a reward for a person’s action in the past, the more likely a person is to repeat the behavior in the presence of similar stimuli in the present. Third, *the value proposition*: The more valuable a person finds the reward for an action, the more likely he or she is to perform the action; furthermore, the more often in the recent past a person has received a particular reward, the less valuable any further unit of that

reward becomes. Finally, the *rationality proposition*: In choosing between alternative actions, a person will choose that action by evaluating its value and the probability of getting the result (i.e., $\text{action} = P \times V$).

Exchange theorists contend that rewards are the key driving force of human action. People tend to keep rewards high and costs low. Exchange behavior, when seen to be based on value realization, represents a typical ► [rational choice](#) action. Rewards, in technical terms, are stimulus that increase or maintain response frequency (Emerson 1976). Here, exchange theory overlaps with conventional economic thinking that conceptualizes human action as result of the hard-boiled calculation of interests.

The stress on notions of reward and value should not suggest that exchange theory endorses a hedonist philosophy. Human actions are not driven only by materialist values. Money is a generalized value (GV) that most humans are interested in acquiring. Yet, social approval is another GV. Besides, many other rewards are specific. The act of catching fish can be rewarding to people who fish for a living. On the other hand, some persons use fishing as an excuse for daydreaming, an experience with value that is pursued with lower costs (Homans 1974). In this sense, exchange theory can offer insights on why people are altruistic. It is less relevant, however, to the question of why altruism is considered a better virtue than, for instance, self-interest.

Exchange theory concerns much interpersonal dependence. Exchange is a social relation in which reciprocity between people is observed. In such social settings, peoples’ *referencesignals* (at the level of social comparison) drive them to obtain rewards or avoid punishments (Bredemeier 1978). What people perceive as rewards or what they intend to do to maximize their ► [adaptation](#) is more understandable in reference to their surrounding environments. People rank what they give in social exchange and rank the rewards they get from others. Conceptually, subjective satisfaction with a reward differs from the value of a reward. Happiness from winning a prize of \$10 does not mean that this amount of money is of significant value. *Discrepancy* between a \$10

reward and what others obtain (\$50) in the same game may arouse discontent and anger. *Injustice* in the distribution of rewards between individuals or groups in exchange, likely due to power inequalities, is a potential source of unhappiness (Blau 1964; Homans 1974). An important division within exchange theory is devoted to formal structures of dependence and power that emerge from positions in a certain network of exchange (Emerson 1976).

Exchange theory inspires numerous lines of research on quality of life. The study of reciprocity is one major extension. Reciprocity, conceived as “the act of giving benefits to another in return for benefits received” (Molm et al. 2007), develops into a generalized norm that contributes to the stability of a social system of interpersonal relations (Gouldner 1960; Cook and Rice 2005). Second, reciprocity takes various patterns and generates different effects on well-being. Some benefits exchanged may be identical or equal, leading to a favorable feeling of ► [distributive justice](#). Exchanges can be unequal, with one party receiving benefits while giving little or nothing in return. This imbalance implies a situation of exploitation. In daily life, “overbenefiting” (taking more than giving) is avoided, while “underbenefiting” allows persons that give more than take to enjoy a superior status in the dyad relationship (Uehara 1995). Credits accumulated from previous exchanges help enhance a feeling of security against hard times (Tsai and Dzorgbo 2012). Finally, extensive webs of interpersonal exchanges build up a larger structure of networked positions and ties that provide useful social capital for people to utilize to achieve their goals (Coleman 1988; Cook and Whitmeyer 1992). For exchange theory, a social structure of exchange relations, rather than a summation of single rational actors seeking exchanges with others, is more suitable to understanding how people can adapt successfully to their social environment.

- [Distributive Justice](#)
- [Rational Choice Theory](#)
- [Reciprocity in Exchange](#)
- [Social Network](#)

References

- Blau, P. (1964). *Exchange and power in social life*. New York: Wiley.
- Bredemeier, H. (1978). Exchange theory. In T. Bottomore & R. Nisbet (Eds.), *A history of sociological analysis* (pp. 418–456). New York: Basic Books.
- Coleman, J. S. (1988). Social capital in the creation of social capital. *American Journal of Sociology*, 94, 95–120.
- Cook, K., & Rice, E. (2005). Social exchange theory. In G. Ritzer (Ed.), *Encyclopedia of social theory* (Vol. 2, pp. 735–740). Thousand Oaks: Sage.
- Cook, K. S., & Whitmeyer, J. M. (1992). Two approaches to social structure: Exchange theory and network analysis. *Annual Review of Sociology*, 18, 109–127.
- Emerson, R. M. (1976). Social exchange theory. *Annual Review of Sociology*, 2, 33–362.
- Gouldner, A. W. (1960). The norm of reciprocity. *American Sociological Review*, 25, 161–178.
- Homans, G. C. (1958). Social behavior as exchange. *American Journal of Sociology*, 63, 597–606.
- Homans, G. C. (1974). *Social behavior: Its elementary forms* (rev ed.). New York: Harcourt Brace Jovanovich.
- Molm, L., Schaefer, D. A., & Collett, J. L. (2007). The value of reciprocity. *Social Psychology Quarterly*, 70, 199–217.
- Tsai, M.-C., & Dzorgbo, D.-B. S. (2012). Familial reciprocity and subjective well-being in Ghana. *Journal of Marriage and Family*, 74, 215–228.
- Uehara, E. S. (1995). Reciprocity reconsidered: Gouldner’s ‘moral norm of reciprocity’ and social support. *Journal of Social and Personal Relationships*, 12, 483–502.

Exclusion from Ordinary Living Patterns in Europe

- [Determinants of Poverty in Europe](#)

Cross-References

- [Adaptation](#)

Exclusionism

- [Collectivism](#)

Exercise

Jorge Mota and Elisa Marques

Research Centre in Physical Activity, Health and Leisure, University of Porto, Porto, Portugal

Synonyms

Exercising; Movement; Performance; Physical activity; Physical exertion; Sports activities; Training; Workout

Definition

Exercise is a ► [physical activity](#) that is planned, structured, repetitive, and performed in order to develop or maintain one or more components of physical fitness and overall ► [health](#) (Caspersen et al. 1985). Although both terms are related, each has a distinct meaning and should be used correctly. Thus, exercise should be distinguished from ► [physical activity](#), a multifaceted concept that includes a complex set of behaviors, comprising exercise as a subcategory.

Description

Exercise Dimensions

Prolonged sedentary behavior, usually combined with unhealthy dietary habits, has been consistently identified as a major risk factor for many chronic diseases in people of all ages, both male and female. Thus, it has become increasingly evident that physical inactivity is a global health concern. Conversely, evidence supporting the ► [health](#) benefits of regular exercise is continuously growing.

Exercise consists of the following broad dimensions: frequency (how often the activity is performed), intensity (how strenuous the activity is), duration (how long the activity lasts), and type (main characteristic of the activity itself, i.e., continuous or intermittent, predominantly aerobic or anaerobic, with many concentric or eccentric

muscle contraction actions, etc.). Exercise intensity can be expressed as either an absolute measure, for example, heart rate or metabolic equivalents (METs, considering that 1 MET is equal to 3.5 mL O₂/kg/min for a person with 70-kg body weight), or as a relative measure such as a percentage of maximal heart rate. Sedentary activities, such as quiet sitting, result in low energy expenditure (<1.6 MET), while light-intensity activities, including some domestic or occupational tasks (e.g., washing dishes, hanging washing, ironing, cooking, eating, and working at a computer desk), are those where the metabolic equivalent is between 1.6 < 3.0 METs. Exercise participation usually results in energy expenditure classified in three intensity categories: moderate, vigorous, and high. Moderate-intensity exercise activities are those requiring 3–6 METs or have an intensity of 55–70 % of maximal heart rate (HR_{max}), vigorous-intensity activities require between 6 and 9 times the resting metabolic levels (6–9 METs) or an intensity equivalent of 70–90 % HR_{max}, and high-intensity activities require at least 9 METs or an intensity level of at least 90 % HR_{max}.

The different types of exercise are intimately related to the exercise purpose itself. They are generally classified into aerobic/cardiovascular endurance ► [training](#), strength/resistance ► [training](#), balance/stability ► [training](#), and flexibility ► [training](#). In addition, exercise protocols targeting bone ► [health](#) should be classified according to skeletal loading characteristics as high-impact loading (such as vertical jumps or rope jumping, or running at >9 km/h), odd-impact loading (such as aerobic or step classes, bounding exercises, and agility exercises), low-impact loading (such as jogging at < 9 km/h), and combined loading protocols of impact activity mixed with high-magnitude joint reaction force loading through resistance ► [training](#) (Nikander et al. 2005).

The difficulty in measuring ► [physical activity](#) and consequently exercise is well recognized. Although no gold standard for measuring ► [physical activity](#) exists, there are a number of methods that can be used to assess the different components of exercise (Morrow et al. 2011). In brief,

these activity measures are typically classified as subjective or objective methods. Subjective methods are inexpensive and convenient to apply (e.g., can be administered to an entire classroom or group of people at one visit). Examples include self-report questionnaires, interviews, and activity diaries. Questionnaires can suffer from recall bias and floor effects. Unlike self-reported questionnaires, interviewer-administered recalls are expensive and labor intensive. Diaries may be the most accurate, but they require complete cooperation and are limited to use by adults, children with good reading and writing skills, and older adults with no difficulties in recalling. Objective methods provide a numerical assessment of a parameter such as body movement (for instance, number of steps) that is not recorded or interpreted by the individual. Devices such as heart rate monitors, accelerometers, and pedometers have been used to measure exercise more objectively. Accelerometers (or motion sensors) detect body movement via a lever that is displaced and generates electrical current proportional to the energy of the acceleration. The output, activity counts per unit of time, calculated from the magnitude and the intensity of the acceleration, distinguishes between different walking speeds and intensity levels. Some accelerometers can record step counts (the frequency domain of the vertical acceleration), allowing comparison with pedometers. However, most accelerometers and pedometers are not valid methods for recording the exercise movement and intensity associated with resistance exercise ► [training](#), cycling, or underwater activities. Thus, for these sport activities, other methods should be used to better assess the activity pattern or the cardiorespiratory ► [stress](#) involved. Double-labeled water is a method that uses isotope (hydrogen or oxygen) tracers and the dilution principle to assess energy expenditure. This expensive method is considered the closest there is to a gold standard for estimating free-living total energy expenditure but cannot describe physical activity patterns and is reliant on technical expertise for widespread application. Because heart rate is highly correlated with oxygen uptake, heart rate monitors have been used to measure exercise intensity and also to estimate

energy expenditure. Assessments of physical fitness, sport skills, and physical abilities are commonly performed for different purposes, including placement, diagnosis, prediction, motivation enhancement, and achievement and program evaluation. Physical fitness testing across all ages (youth, adults, and older adults) comprises different components – namely, aerobic capacity, muscle strength and endurance, flexibility, balance/agility, and body composition. Methods of measurement can be classified in two different categories: laboratory (involves expensive and sophisticated equipment and accurate test protocols) and field (normally require little equipment and are low cost). Measuring maximal oxygen consumption, computerized dynamometers, goniometry, and hydrostatic weighing are some examples of laboratory methods. Step tests, push-up test, sit-and-reach test, and body mass index are examples of common field tests. The choice of the appropriate method and test should be based on the purpose of the assessment and equipment availability. Health-related fitness batteries (e.g., Fitnessgram, YMCA physical fitness test battery, and functional fitness) group together different tests focusing on relevant components of physical fitness. They are available for all age groups. Normally, test batteries are well described and normative values, which help to interpret the results, are accessible for a wide range of age groups and for both genders.

Exercise and Health Promotion: Evidence and General Guidelines

The benefits of regular participation in exercise, mostly from aerobic and strength/resistance ► [training](#), are well documented, and specific recommendations for different age groups establish the quantity and quality of exercise that children and adolescents, adults, and older adults should achieve are available. Emphasis should be placed in the context of participant's needs, goals, and initial abilities and on factors that result in permanent lifestyle change and encourage a lifetime of appropriate exercise practice.

Accordingly, healthy adults are encouraged to perform ≥ 30 min/day on ≥ 5 days/week for a total

of ≥ 150 min/week, vigorous-intensity cardiorespiratory exercise training for ≥ 20 min/day on ≥ 3 days/week (≥ 75 min/week), or a combination of moderate- and vigorous-intensity exercise to achieve a total energy expenditure of ≥ 500 – $1,000$ MET/min/week. This general exercise prescription should include a well-rounded ► [training](#) program including also resistance ► [training](#) 2–3 days/week (for each of the major muscle groups, and neuromotor exercise involving balance, agility, and coordination), and flexibility exercises ≥ 2 days/week, in order to develop and maintain cardiorespiratory, muscular fitness, and flexibility (Garber et al. 2011). Moreover, additional ► [health](#) benefits are likely when a greater amount of exercise is performed regularly. The current American College of Sports Medicine (ACSM) position stand “exercise and physical activity for older adults” state that ► [aging population](#) should perform endurance and resistance exercises of moderate- to vigorous-intensity activities and flexibility exercises of moderate intensity. Balance exercise should be also included for frequent fallers or individuals with mobility problems (Chodzko-Zajko et al. 2009). For endurance moderate-intensity activities, accumulate at least 30 min/day in bouts of at least 10 min each or at least 20 min/day of continuous activity for vigorous-intensity activities. Resistance and flexibility exercise should be performed at least 2 days/week (Chodzko-Zajko et al. 2009).

The main benefits of moderate to vigorous, long-term participation in aerobic exercise ► [training](#) are associated with elevated cardiovascular reserve, $\text{VO}_{2\text{max}}$, and other cardiovascular adaptations (lower HR at rest and at any submaximal exercise workload, smaller rises in systolic, diastolic, and mean blood pressures during submaximal exercise, improvements in the vasodilator, and O_2 uptake capacities of the trained muscle groups, numerous cardioprotective effects, including reductions in atherogenic risk factors (reduced triglyceride and increased HDL concentrations), reductions in large elastic artery stiffness, improved endothelial and baroreflex function, and increased vagal tone). Chronic prolonged aerobic exercise also seems to improve body composition profile, including less total

and abdominal body fat, greater relative muscle mass, and higher bone mineral density (BMD).

Moderate- to high-intensity resistance ► [training](#) has been shown to be the most effective method for developing musculoskeletal strength, power, and muscular endurance. Thus, it is currently prescribed by many major health organizations for improving ► [health](#) and fitness. Other benefits include favorable changes in body composition (decreases total body fat mass, increases in fat free mass attributed to increases in muscle cross-sectional areas (increase in type IIa fiber areas) and volumes), enhance BMD, and include the promotion of some important metabolic and endocrine effects, such as increases in HDL cholesterol, decreases in LDL cholesterol, reductions in triglyceride, and increases in insulin-like growth factor 1 (IGF-1). Thus, both aerobic and resistance ► [training](#) should be incorporated into a comprehensive fitness program (in addition to flexibility exercise) in order to achieve the best and diverse ► [health](#) benefits from workout.

Furthermore, the effectiveness of exercise in the prevention of several chronic diseases, such as hypertension, diabetes, cardiovascular disease, obesity, and osteoporosis, is well known. It represents an important component of ► [health](#) maintenance and disease prevention and treatment. A summary of the effects of exercise therapy on several disorders/diseases, explicitly on pathogenesis, symptoms specific to the diagnosis, physical fitness or strength, and ► [quality of life](#) is presented in Fig. 1.

Indeed, recent position statements from governmental and professional organizations have put forth recommendations to guide individuals, communities, and health-care professionals on the required frequency, intensity, and duration of exercise for health-enhancing effects (American College of Sports Medicine 2010). Thus, exercise prescription varies considerably according to individual characteristics, such as age, medication, presence of a particular chronic condition, physical fitness level, and specific goals (e.g., improvement of cardiovascular endurance, muscle strength and/or power, balance, range of motion, ► [weight loss](#), or sports performance). For instance, it is recommended that patients with

	Pathogenesis	Symptoms specific to the diagnosis	Physical fitness or strength	Quality of life	
Insulin resistance	A	A	A	A	
Type 2 Diabetes	A	A	A	A	
Dyslipidemia	A	A	A	B	
Hypertension	A	A	A	A	
Obesity	A	A	A	A	
Chronic obstructive pulmonary disease	D	A	A	A	
Coronary heart disease	A	A	A	A	
Chronic heart failure	A	A	A	A	
Intermittent claudication	A	A	A	A	
Osteoarthritis	D	A	A	A	
Rheumatoid arthritis	D	C	A	B	
Osteoporosis	A	B	B	B	
Fibromyalgia	C	A	A	A	
Chronic fatigue syndrome	C	B	B	A	A Strong evidence
Cancer	D	B	B	B	B Moderate evidence
Depression	A	A	A	A	C Limited evidence
Asthma	D	C	A	B	D No evidence
Type 1 diabetes	D	D	B	D	

Exercise, Fig. 1 Grading the evidence for physical exercise effects on (1) disease pathogenesis, (2) symptoms specific to the diagnosis, (3) physical fitness or strength, or (4) quality of life (Adapted from Pedersen and Saltin (2006))

type 2 diabetes mellitus or prediabetes accumulate a minimum of 210 min/week of moderate-intensity exercise or 125 min per week of vigorous-intensity exercise with no more than two consecutive days without ► [training](#). Those 210 min/week of exercise activities should incorporate both aerobic and resistance exercise, which should include at least 60 min of resistance exercise per week (e.g., two 30 min sessions). The benefits of exercise ► [training](#) in preventing and treating type 2 diabetes or prediabetes are widely recognized, including improved glycemic control, body composition, cardiorespiratory fitness, cardiovascular risk, physical functioning, and well-being. For most patients with chronic heart failure, a combination of low- to moderate-intensity aerobic (endurance) exercise on most days of the week and individually prescribed low- to moderate-intensity resistance (strength) ► [training](#) at least twice per week is consensually recommended, whereas hypertensive patients should perform 30–60 min of aerobic exercise

4–7 days per week. According to current recommendations, management of osteoporosis in postmenopausal women should focus first on nonpharmacologic strategies such as a balanced diet, adequate calcium and vitamin D intake, and adequate exercise. Weight-bearing and strength-► [training](#) exercises are recommended as previous research demonstrated that both activities are beneficial to bone development and maintenance.

In addition to the well-known benefits of exercise on several chronic conditions as previously mention (type 2 diabetes mellitus, chronic heart failure, hypertension, and osteoporosis), exercise also demonstrates beneficial effects in cancer survivors. These exercise benefits include improved cardiovascular fitness, modest reductions in ► [fatigue](#), improved mood and ► [quality of life](#), body composition, sleep, ► [self-esteem](#), depression, ► [anxiety](#), and ► [tiredness](#) (Irwin 2009). Therefore, the ACSM and Exercise and Sports Science Australia both acknowledge the safety and efficacy of exercise ► [training](#) for cancer

survivors, with general recommendations of low to moderate intensity, three to five times per week, and involving aerobic, resistance, or mixed exercise types (Schmitz et al. 2010).

Although many observational and experimental studies support the benefit of exercise in reducing chronic diseases in the general adult population, less evidence exist regarding the association between ► [health-related quality of life \(HRQOL\)](#) and exercise level in this population. Most conceptualizations of HRQOL include physical, mental (including emotional dimensions), and social components, seen as distinct areas that are influenced by a person's experiences, beliefs, expectations, and perceptions.

Research on HRQOL in the exercise domain has predominately been focused on elder populations with chronic conditions (e.g., cardiovascular diseases, ► [arthritis](#), pulmonary diseases, and cancer). In brief, chronically diseased populations tend to improve their HRQOL from increased ► [physical activity](#) and exercise (Rejeski et al. 1996). This positive association was found in diabetic and cancer patients. Also higher physical fitness level has been shown to be associated with higher levels of HRQOL in older and chronically diseased populations. In older adults, exercise ► [training](#) showed a consistently positive effect on cognitive and physical function and autonomy in ► [activities of daily living](#). Among healthy adults, a systematic review has reported a consistent association of higher HRQOL scores with higher exercise levels (Bize et al. 2007). In addition, cross-sectional studies consistently showed an association of higher HRQOL scores with higher ► [physical activity](#) levels among apparently healthy adults (Klavestrand and Vingard 2009). Notably, few studies have assessed whether meeting these public ► [health](#) recommendations for ► [physical activity](#) is associated with better HRQOL. Existing evidence suggests that subjects meeting public ► [health](#) recommendations for physical activity had better HRQOL than those who did not (Vuillemin et al. 2005). In line with other ► [health](#) outcomes, higher exercise intensity was associated with greater HRQOL.

Nevertheless, physical inactivity remains as a major risk factor for many chronic diseases as

children and adults are not engaging in sufficient exercise to benefit ► [health](#).

In summary, ► [physical activity](#) is a complex behavioral construct that comprises exercise, a more easily quantifiable body exertion category in terms of frequency, intensity, and type. In general, ► [physical activity](#) and exercise have been linked to several ► [health](#) outcome benefits including HRQOL, an important aspect of human life.

Cross-References

- [Activities of Daily Living](#)
- [Aging Population](#)
- [Anxiety](#)
- [Diabetes Mellitus Type 1](#)
- [Fatigue](#)
- [Floor Effect](#)
- [Health](#)
- [Health-Related Quality of Life](#)
- [Lifestyle\(s\)](#)
- [Obesity, an Overview](#)
- [Physical Activity](#)
- [Quality of Life](#)
- [Self-esteem](#)
- [Sleep, an Overview](#)
- [Sports Activities](#)
- [Stress](#)
- [Training](#)
- [Weight Loss](#)

References

- American College of Sports Medicine. (2010). *ACSM's guidelines for exercise testing and prescription* (8th ed.). Philadelphia, PA: Lippincott Williams & Wilkins.
- Bize, R., Johnson, J. A., & Plotnikoff, R. C. (2007). Physical activity level and health-related quality of life in the general adult population: A systematic review. *Preventive Medicine*, 45(6), 401–415.
- Caspersen, C. J., Powell, K. E., & Christenson, G. M. (1985). Physical activity, exercise, and physical fitness: Definitions and distinctions for health-related research. *Public Health Reports*, 100(2), 126–131.
- Chodzko-Zajko, W. J., Proctor, D. N., Fiatarone Singh, M. A., Minson, C. T., Nigg, C. R., Salem, G. J., et al. (2009). American college of sports medicine position

- stand. Exercise and physical activity for older adults. *Medicine & Science in Sports & Exercise*, 41(7), 1510–1530.
- Garber, C. E., Blissmer, B., Deschenes, M. R., Franklin, B. A., Lamonte, M. J., Lee, I.-M., et al. (2011). Quantity and quality of exercise for developing and maintaining cardiorespiratory, musculoskeletal, and neuromotor fitness in apparently healthy adults: Guidance for prescribing exercise. *Medicine & Science in Sports & Exercise*, 43(7), 1334–1359.
- Irwin, M. L. (2009). Physical activity interventions for cancer survivors. *British Journal of Sports Medicine*, 43(1), 32–38.
- Klavestrand, J., & Vingard, E. (2009). The relationship between physical activity and health-related quality of life: A systematic review of current evidence. *Scandinavian Journal of Medicine & Science in Sports*, 19(3), 300–312.
- Morrow, J. R., Jr., Jackson, A. W., Disch, J. G., & Mood, D. P. (2011). *Measurement and evaluation in human performance* (4th ed.). Champaign, IL: Human Kinetics.
- Nikander, R., Sievanen, H., Heinonen, A., & Kannus, P. (2005). Femoral neck structure in adult female athletes subjected to different loading modalities. *Journal of Bone and Mineral Research*, 20(3), 520–528.
- Pedersen, B. K., & Saltin, B. (2006). Evidence for prescribing exercise as therapy in chronic disease. *Scandinavian Journal of Medicine & Science in Sports*, 16(Suppl 1), 3–63.
- Rejeski, W. J., Brawley, L. R., & Shumaker, S. A. (1996). Physical activity and health-related quality of life. *Exercise and Sport Sciences Reviews*, 24, 71–108.
- Schmitz, K. H., Courneya, K. S., Matthews, C., Demark-Wahnefried, W., Galvao, D. A., Pinto, B. M., et al. (2010). American college of sports medicine roundtable on exercise guidelines for cancer survivors. *Medicine & Science in Sports & Exercise*, 42(7), 1409–1426.
- Vuillemin, A., Boini, S., Bertrais, S., Tessier, S., Oppert, J. M., Hercberg, S., et al. (2005). Leisure time physical activity and health-related quality of life. *Preventive Medicine*, 41(2), 562–569.

Exercising

► Exercise

Exhaustion

► Fatigue

Existential Analysis

Daniel W. Parker

Existential Analysis Society of Canada,
Vancouver, BC, Canada

Definition

Existential analysis is a phenomenological and person-oriented psychotherapeutic method with the aim of guiding the person to a free experience of their mental and emotional life, to make authentic decisions and to discover a truly responsible way of dealing with life and the world. It is the analysis of the conditions for a fulfilled existence by finding a way of living that enables one to give inner consent to one's actions and being-in-the-world (Längle 1993).

Description

Historical Background

Existential analysis and logotherapy (concepts that emerged in the 1920s and were published for the first time in 1938) are two concepts introduced by Austrian neurologist and psychiatrist Viktor E. Frankl to designate the method of psychotherapy that was developed by him (Frankl 1985).

Originally, Frankl used the term “existential analysis” to refer to the theoretical background and the term “logotherapy” as the practical application of this theory. With the use of logotherapy (“logos” here used as the Greek word for “meaning”), Frankl wanted to underline the importance of the discovery of ► [meaning in life](#) and the role this plays in psychotherapy. In other words, an existential analysis–orientated approach toward practical life culminates with the discovery of existential meaning (personal meaning).

Having personally experienced the influence of a reductionist view of the human being while a prisoner in Nazi concentration camps (Frankl 1985), Frankl felt a profound need to help people find the spiritual support necessary to find a “what

for” to their suffering in life, including suffering that is purely of the physical body. With his emphasis on the spiritual support of the human person, Frankl viewed logotherapy as not only being a necessary tool for psychotherapy and psychiatry but also for medical physicians and others involved in the helping professions. It is for this reason that he titled his first book about logotherapy “The Doctor of the Soul” (Frankl 1986).

Existential analysis and logotherapy were created in response to the reductionism and determinism of the current theories and practices of depth psychology during the 1920s and 1930s. With their creation, Frankl intended to compensate for what he saw as the “spiritual deficit” within the treatment of the human person and to place greater emphasis on the uniquely human capacities of freedom, responsibility, and the search for meaning in life. The “existential analysis” was seen as a counterpart for the “psychoanalysis,” and logotherapy was seen as the practical application of this counterpart by being a psychotherapy centered on the fundamental need to search for meaning and ► values (Frankl 1985).

The Further Development of Existential Analysis

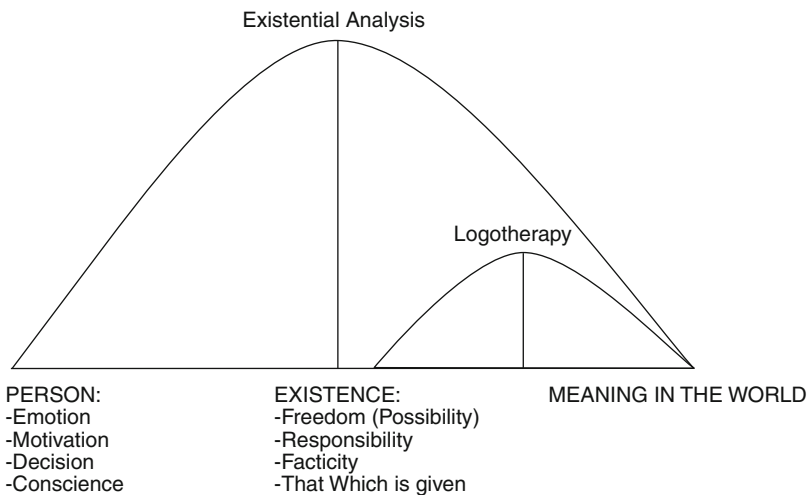
Although Frankl viewed existential analysis as the theoretical and anthropological background for

the practice of logotherapy, today, existential analysis has progressed into a comprehensive psychotherapeutic method that comprises the theory as well as the practical application. The concepts of existential analysis that have been developed by the GLE International (the Society of logotherapy and existential analysis in Vienna) constitute an amplification of Frankl’s original approach to include the emotions, motivations, and biography of the person. From the viewpoint of the GLE, logotherapy is understood as a specific theme within existential analysis, and its practical application is centered on themes related to the quest for personal meaning and the loss of existential orientation in life. However, according to the GLE, logotherapy’s focus on the quest for meaning in life does not allow for an exhaustive psychotherapeutic approach to many clinical disturbances in the human psyche and therefore is not considered a form of a deep psychotherapy, but more of a form of counseling, accompaniment, and treatment (Längle 2012). The following figure helps to visualize this relationship between existential analysis and logotherapy as well as the important existential themes that they encompass, as conceptualized by the GLE (Fig. 1):

Theoretical Components of Existential Analysis

At the center of the theoretical foundation lies the word “existence.” In existential analysis, the

Existential Analysis,
Fig. 1 A diagram comparing the different thematic points of reference within existential analysis and logotherapy. (Reproduced with permission from Alfred Längle)



concept of existence is referring to what is considered living a “whole” life, that is, a life that is characterized by the freedom and responsibility to make decisions within the context of what is given (Längle 2012). By “what is given” is meant both the context of the individual’s unique world and the mutual influences between this person and the world around them.

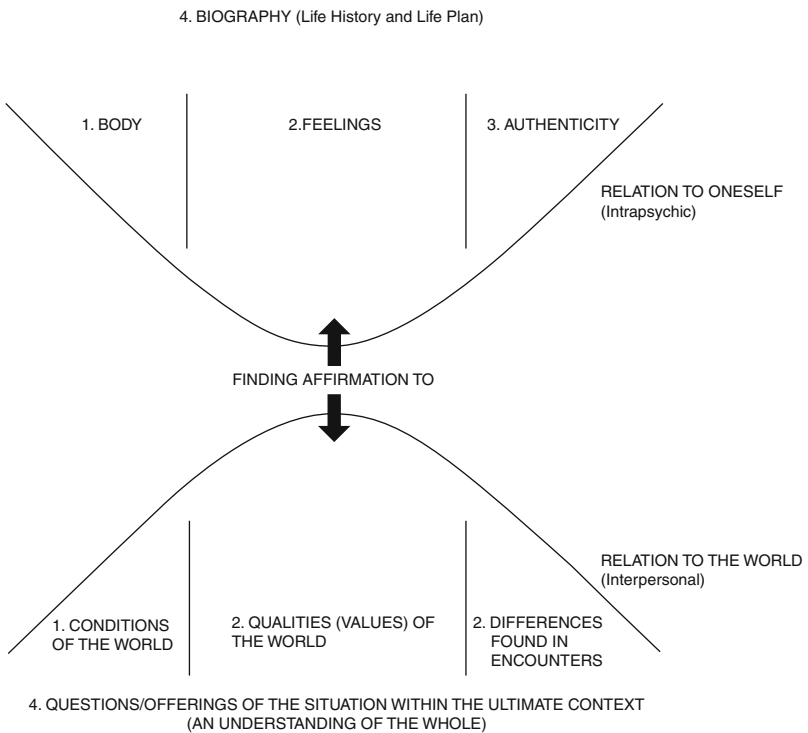
Affirmation: The concept of affirmation is a central element of existential analysis. This concept refers to an affirmative attitude (disposition) toward life which manifests as a giving consent to one’s own actions. Through this concept, existential analysis can be defined as “finding one’s ‘Yes’ to life by living with determination and inner consent” (Längle 2012, p. 163).

The four fundamental motivations (dimensions) of existence: The four fundamental motivations that were first presented by Alfried Längle during a congress of the GLE in 1992 and were later published in 1999 are seen today as forming a core component of the theory and are essential to existential-analytical work. According to contemporary existential analysis, a fulfilled existence

means finding a fourfold affirmation (saying yes) to the world, to life, to one’s unique personhood, and to the contextual meaning of an event or situation. That is, it takes an active dialogue with these four fundamental realities of the human experience of existence (Längle 1999, 2003, 2008). Referring to the terminology, Längle writes, “because these four structural dimensions are fundamental aspects of human existence, human activity tends to orient itself (motivate itself) towards accessing, empowering, or strengthening a relationship to them. Therefore, the four structural dimensions of existence can be psychologically categorized as the four ‘fundamental existential motivations’” (2012, p. 165). The realization of one’s existence requires this fourfold affirmation of both one’s inner (intrapsychic) world as well as the corresponding aspects of the outer (interpersonal) world. Through one’s interaction (dialogue), we ask ourselves questions about these four existential challenges in life. Figure 2 below demonstrates this relationship between the four fundamental dimensions of existence and their corresponding roles

Existential Analysis,

Fig. 2 The relationship between the four fundamental dimensions of existence and their corresponding roles within the intrapsychic and interpersonal worlds of the person. (Reproduced with permission from Alfried Längle)



within the intrapsychic and interpersonal worlds of the person.

A Practice-Oriented Description of Existential Analysis

In accordance with existential-analytical theory, when we access the four fundamental conditions of a fulfilled existence, we are endowed with the psychological abilities to access and co-construct our experience of existence and therefore are better equipped to enhance our quality of life.

Within the existential-analytical approach to the human experience of life, there are two main questions being asked:

1. What is a good life? What is essential for a good life? How can I recognize a good and fulfilled life? (theoretical questions of content)
2. What are the necessary means that a person needs in order to achieve a good and fulfilled life? (practical questions of method)

Regarding the first question, existential analysis proposes that a good life is a fulfilling life and that in order to experience fulfillment in life, one must be in active dialogue with their world. An

existence can be seen as fulfilled when the person is in true dialogue with all aspects of their existence. When the person is participating in a dialogical interaction with their world, they are better equipped to locate and maximize the “spaces of possibilities,” the human freedom present in all interaction, and ultimately behave and act in a manner that they can give true inner consent to.

To answer the second question, existential analysis recognizes four fundamental requirements for a fulfilled experience of being-in-the-world:

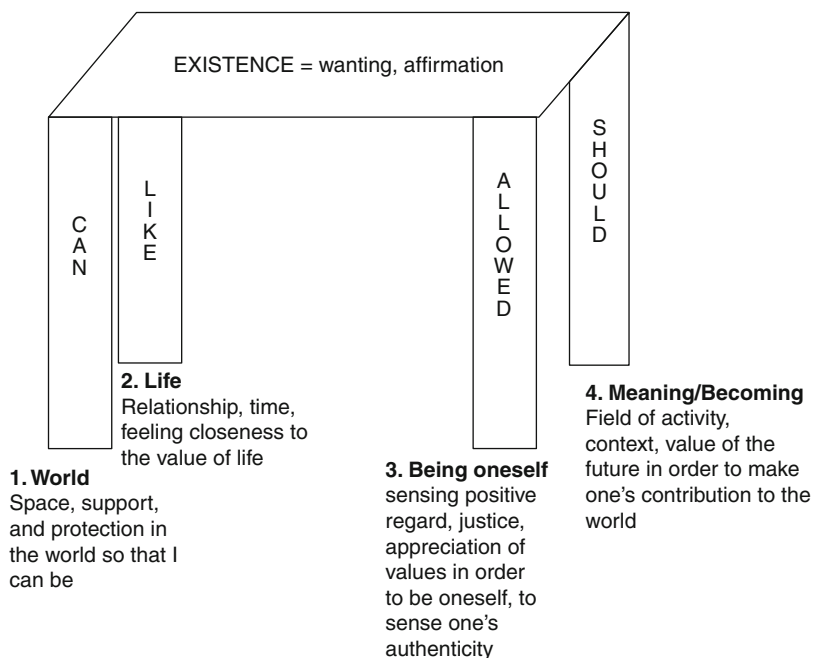
1. The ability to accept the conditions/facticity of life (being grounded in reality, being able to find basic trust)
2. The ability to locate and live with one's own feelings (relationships and felt values)
3. The ability to appreciate the individual and unique (respecting the nature, freedom, and dignity of any person including oneself)
4. The ability to act and engage in what leads to a felt sense of meaning in life

The Structural Model of Existential Analysis

The four personal-existential fundamental motivations (dimensions) are seen structurally as

Existential Analysis,

Fig. 3 The conditions for an “existential life” restated using four simple (mostly modal) words. (Reproduced with permission from Alfried Längle)



supporting a fulfilled existence. Figure 3 below illustrates how these four dimensions act as supportive pillars that provide the necessary conditions for an existential life:

Psychotherapeutic Application

The theoretical foundations of existential analysis are deeply rooted in existential and phenomenological philosophy. Therefore, the approach to treating a client, and even what is considered healthy and pathological, stems from this philosophy of the human person. Due in large part to the work of Alfred Längle and his colleagues at the GLE, existential analysis as a theory of psychotherapy has been thoroughly developed in order to treat all types of psychological disturbances, including neuroses, psychoses, and personality disorders. Existential analysis within a therapeutic context is focused on unlocking the person's experience in order to use it for personal growth by integrating one's feelings, actions, and experiences in order to be a whole person. This phenomenological process involves helping the client to activate his or her innate openness to life by entering into a dialogue with their inner (intrapsychic) and outer (interpersonal) experiences of being-in-the-world. Therefore, existential analysis holds two elements as generally pathogenic: *acting (living) with inner disagreement* and a *lack of dialogue* (both inner dialogue with oneself and outer dialogue with the world) (Längle 1993). This goal of installing the free and responsible person as the acting and not merely reacting center in one's own life is accomplished primarily through a phenomenological method called "personal existential analysis (PEA)" (Längle).

Empirical Measures

Existential analysis is not as empirically oriented as some other therapies such as cognitive behavioral therapy (CBT) because it is subjectively oriented as opposed to objectively oriented. However, several psychometric measures have been developed and utilized in research to both support theoretical assumptions and provide assistance in therapeutic practice. The following is an incomplete list of empirical measures based on or related to existential analytic theory:

The Existence Scale (ES; Längle et al. 2003): A self-report measure designed to measure one's felt sense of existential fulfillment in life. The questionnaire consists of 46 items that load on 4 subscales (self-distance, self-transcendence, freedom, and responsibility).

Test on Fundamental Motivations (TEM; Längle and Eckhard 2000): A 56-item self-report measure based on the EA concept of the four fundamental motivations in life.

The Logo Test (Lukas 1986): A self-assessment measure designed to investigate both the level of meaning accomplishment and the felt sense of existential frustration.

► *Purpose in Life Test* (PIL; Crumbaugh and Maholick 1969): The first self-report questionnaire created to measure Frankl's concept of meaning in life through the investigation of purpose and the experience of the "existential vacuum."

Cross-References

- [Counseling](#)
- [Existential Fundamental Motivation](#)
- [Existential Psychotherapy](#)
- [Feelings](#)
- [Personal Existential Analysis Method](#)
- [Psychotherapy](#)
- [Purpose in Life](#)
- [Quality of Life](#)
- [Values](#)

References

- Crumbaugh, J. C., & Maholick, L. T. (1969). *Manual of instructions for the purpose in life test*. Munster: Psychometric Affiliates.
- Frankl, V. E. (1985). *Man's search for meaning*. New York: Washington Square Press.
- Frankl, V. E. (1986). *The doctor and the soul*. New York: Random House.
- Längle, A. (1993). A practical application of personal existential analysis (PEA) – a therapeutic conversation for finding oneself. *English translation from Bulletin der GLE*, 10(2), 3–11.
- Längle, A. (1999). Die existentielle motivation der person. *Existenzanalyse*, 16(3), 18–29.

- Längle, A. (2003). The search for meaning in life and the fundamental existential motivations. *Psychotherapy in Australia*, 10, 1.
- Längle, A. (2008). Existenzanalyse. In A. Längle & A. Holzhey-Kunz (Eds.), *Existenzanalyse und daseinsanalyse* (pp. 29–180). Vienna: UTB (Facultas).
- Längle, A. (2012). The Viennese school of existential analysis: The search for meaning and the affirmation of life. In L. Barnett & G. Madison (Eds.), *Existential therapy: Legacy, vibrancy, and dialogue* (pp. 159–170). New York: Routledge.
- Längle, A., & Eckhard, P. (2000). *Test zur erfassung der existentiellen motivation*. Vienna: GLE, Fragebogen.
- Längle, A., Orgler, C., & Kundi, M. (2003). The existence scale. A new approach to assess the ability to find personal meaning in life and to reach existential fulfillment. *European Psychotherapy*, 4(1), 135–151.
- Lukas, E. (1986). *Logo-test test. zur messung von "innerer sinnerfüllung" und "existentieller frustration"*. Vienna: Deuticke.

Existential Fundamental Motivation

Denise Coles
Existential Analysis Society of Canada,
Vancouver, BC, Canada

Definition

► **Motivation**, from an existential analytic perspective, requires involvement of the person, with his or her potential and ability to decide, in his or her own world. Motivation within this framework takes into account that humans are dialogical in nature and are in continual communication with the world around them (people, ideas, events, their environment, and themselves). It is within this interrelational process that motivation is kindled and occurs. When there is recognition that something is of worth and of value, we are moved to integrate this new information into our lives and we are challenged to respond in some way. Motivation unfolds and is shaped by fundamental themes and realities of existence, according to existential analytic theory.

Description

The study of how human beings are motivated is central to psychology. The aim of this chapter is to outline how the theory of motivation has evolved within a particular psychotherapy, existential analysis, and how it is considered in practice today.

Current existential analytic views of motivation evolved out of Logotherapy which was developed by Victor Frankl in Austria, in the 1930s and 1940s, in response to what he perceived to be lacking in the predominant psychological theories of that era. He came to believe that human beings were not merely motivated by the pleasure principle (central to Freudian psychology) or a striving for superiority on which Adlerian psychology was based, but on a search for meaning. Frankl considered the search for meaning to be the deepest and the most primary motivational force to humankind (Frankl 2006).

Frankl defined his motivational concept as “will to meaning,” and it also represented spiritual concern. Frankl believed that the person was moved by a spiritual striving for a deeper understanding of his or her experiences or activities (Längle 2003a). Within this dimension, processes related to the conscience are present, and therein exists personal freedom, the capacity for decision-making and responsibility. He saw motivation as guided within this framework. According to this view, Frankl saw the person as free in determining what he or she is or what he or she will do or be in this life.

Frankl advocated an approach to engaging in life, which encouraged a certain kind of humility and openness – a phenomenological attitude. Each circumstance poses a question to the individual: “What does this hour want from me, how shall I respond?” (Frankl 1973, p. 62). Existence to him was not simply a stage to be acted upon, but an experience which demands an “act” or response from us. The choices one makes require an ability to discern what is best for oneself, for others, the future, and for the environment or situation. These are the elements of the definition of existential meaning. Moving with this attitude of receptivity and responsiveness brings forth a

greater chance of fulfillment. These challenges are posed to us again and again throughout our lives and serve as the turning points for personal direction.

In the 1980s, Alfried Längle further developed existential analysis to include a more comprehensive view of how motivation occurs within this realm of interrelation between self and the world. He described motivation starting with a provocation (we are impressed upon or moved by something seen, heard, or experienced). "As dialogical beings we expect and look for something or someone who 'speaks to us', calls us, needs us, talks to us, looks for us, challenges us" (Längle 2003a). He also identified three steps which bring about motivation of the individual: *recognizing* something is of worth and value and sensing we are "moved," *harmonizing* – bringing the perceived value into accordance with our inner reality, and determining its congruence with our deepest emotions, beliefs, and other values. Here we also explore if it can be integrated into our lives in some way with respect to our ability and personal capacity. Längle (2003) also illuminated that opening to this process allows the person to arrive at a place of *inner consent* with self and the decided upon value to which the person feels moved toward engagement. He has also described inner consent as the inwardly felt or spoken "yes" (Längle 2002). Ultimately, the outcome of this process is expansion of meaning and even the potential for self-transcendence.

Längle also elaborated upon Frankl's approach to include three existential motivations which precede the motivation for meaning. The theoretical view is that fulfillment and meaningfulness in existence can only be achieved based upon the firm foundation of particular existential conditions (Kirchbach 2003). These conditions, which include Frankl's search for meaning as the final motivation, are called the four fundamental existential motivations, and they will be outlined below.

The reality of being in the world confronts the person with certain questions to which he or she needs to respond:

I am – can I be? This question provokes looking at the reality of the existence that the person has been thrown into. Can I accept my place in the world and the conditions of my life and the possibilities before me? This ability to accept demands three things: protection, space, and support. If these conditions are absent, restlessness, insecurity, and fear occur. However, if present, one is able to develop trust in the world and trust in one's own ability. The consequence of these experiences is a fundamental trust: a trust that one has enough support to sustain one's life. However, it is not enough to have the three aforementioned criteria "to be" in the world. It also requires that the person "seizes" these conditions, make a decision to accept them, both the positive and negative ones, and to trust the support and protection given and to take one's space (Längle 2003b).

The second fundamental question of existence is *I am alive – do I like this reality?* Is it a quality existence? In order to embrace life and to fully appreciate living, three things are required: relationship, time, and closeness. This means taking time to establish and cherish relationships and being involved in activities which are valuable and worthy of our time. If these three aforementioned elements are not available to us or accessible to us, a feeling of longing will occur, as well as a distancing (isolation) and depression. However, if these three conditions are present and fulfilled, one feels the value of one's life. One feels in harmony with the world and with self and will experience the depth of life (Längle 2003). This is where inner consent is required. It is not enough to have these aforementioned elements; one must also inwardly announce "yes" to life. This means fully engaging in life.

The third fundamental question of existence is *I am myself – may I be like this? Do I feel free to be myself?* This is the plane of identity, of knowing oneself, and of ethics (Längle 2002). In order to be oneself, and enact the unique self, one needs to experience attention, justice, and appreciation. If these experiences are missing from life, one will tend toward isolation and histrionic symptoms develop as well as a tendency to hide in shame.

If, on the other hand, these positive experiences are present, one can find oneself, one's true and authentic self. The outcome is a strong sense of one's own self-worth: self-esteem.

The fourth fundamental question of existence is *I am here – but for what purpose? What do I live for?* Here we arrive back again at the meaning of our existence. In order to find meaning in life, what is required is a field of activity, a structural context, and a value to be realized in the future (Längle 2003b). We need to enter into activity and become engaged in our communities. We must be able to consider possibilities, make goals, and contemplate results on a future horizon. We must be willing to delve in and appreciate the process. If these three aforementioned ingredients are not present in our lives, a felt void and a sense of emptiness will occur, as well as frustration, despair, and, in some, addiction and dependencies. However, if these conditions are present in our lives, we will be capable of action and commitment to our endeavors. A sense of integrity will develop and a personal form of religious belief. The result of these experiences will lead to psychological health.

In summary, the concept of motivation in modern existential analysis focuses on the fact that we are in constant communication with ourselves and the complexities life presents to us – all the gifts and the challenges. Motivation is understood within a framework of acknowledging the dialogical nature of human beings – the interplay of self with the themes that dominate and intersect a human life – the world with its limits and possibilities; life itself, with its spectacular range of feelings and relationships; the opportunity to fully be oneself, to live as an authentic and unique individual; and the future we can shape through our chosen direction and valued activities.

Cross-References

- [Existential Analysis](#)
- [Existential Psychotherapy](#)
- [Motivation](#)
- [Personal Existential Analysis Method](#)

References

- Frankl, V. (2006). *Man's search for meaning*. Boston: Beacon.
- Frankl, V. (1973). *The Doctor and the Soul*. From Psychotherapy to Logotherapy. New York: Random House.
- Längle, A. (2002). *Existential fundamental motivation*. Paper presented at the 18th World Congress of Psychotherapy, Trondheim, Norway.
- Längle, A. (2003a). The art of involving the person – fundamental motivations as the structure of the motivational process. *European Psychotherapy*, 4(1), 47–58.
- Längle, A. (2003b). The search for meaning in life and the fundamental existential motivations. *Psychotherapy in Australia*, 10(1), 22–27.
- von Kirchbach, G. (2003). General introduction to logotherapy and existential analysis. *European Psychotherapy*, 4(1), 33–46.

Existential Humanistic Therapy

- [Existential Psychotherapy](#)

Existential Needs and Chronic Diseases

- [Spiritual Needs of Those with Chronic Diseases](#)

Existential Psychotherapy

Michael C. Mathers
Existential Analysis Society of Canada,
Vancouver, BC, Canada

Synonyms

[Existential humanistic therapy](#); [Existential therapy](#); [Existentialism](#)

Definition

Existential psychotherapy has evolved out of an appreciation for how concepts fundamental to existential philosophy can help relieve human suffering. As a psychotherapeutic approach, the primary focus is on empowering the client to develop a greater tolerance for suffering, while also encouraging a deeper experiential engagement with existence. This is accomplished within the bounds of a personal and sustaining therapeutic relationship that is designed to bolster clients in their efforts to change.

Description

Wampold (2008) explains the relevance existential methods have for the broader field of therapeutic practice as he states, “it could be argued that an understanding of the principles of existential therapy is needed by all therapists, as it adds a perspective that might...form the basis of all effective treatments” (p. 6). ► **Freedom**, choice, responsibility, ► **motivation**, agency, meaning, death, suffering, relationships, and self-acceptance are some of the issues that might emerge during a treatment in existential psychotherapy. However, the field is quite diverse overall and there are a number of different pathways to change espoused by various existential psychotherapists. For example, Yalom suggests that change occurs through an interpersonal focus, while Bugental recommends an intrapersonal focus as the primary way by which clients change (Krug 2009). This chapter will discern a general view on existential psychotherapy as an approach to treatment. It will also focus on issues pertaining to the training of existential therapists to demonstrate the unique demands required by this kind of practice.

Existential psychotherapists do not believe people generally come to psychotherapy as a result of deficiencies. Instead, therapy is envisioned as an opportunity to help people more freely experience their emotions so that

they can come to more responsible and authentic decisions (Längle 2003). Relief from the presenting concern is of course a vital concern, but existential psychotherapists purport that the primary way of achieving this outcome is for clients to expand their range of feeling and increase their ability for choice regarding the conditions of life (Schneider 2007). Dean (2003) explains that “existential psychotherapy is not like many other approaches, where something is wrong and the person is treated to become better. The therapy offered by an existential approach is the opportunity to come into a new relationship with life” (p. 87). This is not to say that existential psychotherapy views all forms of suffering as valuable, but rather, it does not automatically aim to eliminate the client’s suffering since developing a greater understanding of why one suffers can be of great value. Rather than aiming for the outright avoidance or elimination of these feelings, existential psychotherapy tends to view feelings such as guilt and anxiety as a normal part of the human condition. Thus, it aims to raise awareness of how these endemic states of being can be used to creatively encourage a deeper, richer, and more profound relationship with life (Dean). According to Milton et al. (2003), “the therapeutic encounter can be regarded as an invitation for the client to confront and clarify the meaning of their anxiety, rather than attempt to reduce or eliminate it” (p. 117). Schneider (2008) sheds light on how the existential approach conceives of this process by describing “the freer that people feel to experience themselves, the less panic they harbour; the less panic, the less urgency they feel to rearrange and hence dysfunctionally distort themselves. To the degree that people can draw upon this strength, the more fully they can perceive, experientially reflect, and respond” (p. 83).

Existential psychotherapy is composed of a divergent collection of methods that share a common appreciation for the role of the therapist’s personhood in initiating change. While most therapeutic approaches recognize the importance of the therapeutic relationship, the unique perspective of existential psychotherapy comes from the

emphasis on the therapist's use of self as an instrument of the change process. The existential psychotherapist focuses on embodying specific values in the therapeutic relationship such as being with a client over doing something to them, understanding a person over explaining behavior, and experiential awareness over theoretical abstraction (Cooper 2007; Milton et al. 2003; Yalom 1980). Therefore, the therapeutic relationship has a unique role within the existential tradition. According to May (1983), one of the essential characteristics of existential psychotherapy is how it emphasizes the value of the therapeutic relationship as an existential encounter. May notes, "in effective therapy a change occurs in both the therapist and the patient; unless the therapist is open to change the patient will not be either" (p. 22). He highlights the importance of the therapist's willingness to be impacted by the client in noting "the essence of relationship is that in the encounter both persons are changed" (p. 128). May's view demonstrates the existential perspective on a therapeutic encounter; both therapist and client need to be willing to be altered by the relationship for change to occur.

The role of the therapist's self in the therapeutic process distinguishes existential psychotherapy as an approach. Havens (1974) highlights the implications of this perspective by comparing it with the psychoanalytic tradition, which "directed attention to the misuses of the therapist's self, through the discovery and management of countertransference phenomena. It has not made comparable contributions to the uses of the self" (p. 1). Existential psychotherapy therefore does not attempt to limit the role of the therapist's self in impacting the client's therapy, but rather, it seeks to maximize the potential for change from this encounter. The existential psychotherapist thus serves as a model of a perspective on how to approach existence authentically. Portnoy (1999) describes how this requires the therapist's readiness "to let the client know how they affect the therapist. The therapist also needs to bracket preconceptions, be open to the genuine encounter between two people, and be keenly aware of how his or her issues/reactions

impact the therapy" (p. 31–32). This is similar to Buber's (1970) concept of an I-thou form of relationship. Friedman (1960) describes this as "the primary word of relation. It is characterized by mutuality, directness, presentness, intensity, and ineffability" (p. 57). In this sense, the existential perspective on the therapeutic relationship invokes the view of a dynamic interaction that requires a reciprocal influence.

Existential psychotherapy is also an approach that encourages the development of insight or awareness as an integral part of the psychotherapist development process (Cooper 2007; Farber 2010; Schneider 2007). May (1983) illustrated why this is necessary in defining the existential approach as one "concerned with understanding man as the being who represses, the being who surrenders self-awareness as a protection against reality and then suffers the neurotic consequences" (p. 65). Furthermore, it may be that in order to work in this manner, it helps for the psychotherapist to have been able to gain insight into the process of how one can overcome personally challenging issues (Dean 2003). According to Farber (2010), existential psychotherapy posits that the process of change occurs within the bounds of a therapeutic relationship built on the acceptance of self and others, and he believes that a significant amount of the change process can occur as a result of the therapist being fully present for the client. He illustrates the values that existential methods bring to psychotherapy training as an approach that generally "aims to expand the trainee's knowledge of theory and technique, facilitate exploration of the person of the psychotherapist, and cultivate skills in the use of self as a change agent" (p. 32). This helps make clear the existential psychotherapy theory of change, which Cain (2007) defines as the belief that "the person of the therapist, as opposed to ideology or technique, is what makes therapy effective for a given client" (p. 6). Existential psychotherapy places a heightened focus on the development of self-awareness as it aims to create conditions supportive of growth and development in the person of the trainee.

Existential psychotherapy has been presented as an approach that helps clients expand their sense of freedom and choice within an honest acceptance of life's limitations. The therapist seeks to help the client reframe suffering as an opportunity for personal growth that will lead to more contact with the world, other people, as well as with one's self. The aim is to encourage a deeper and more authentic way of being for the client. The therapeutic relationship is defined as an existential encounter with a particular emphasis on the therapist's use of self as an instrument of change. The ultimate goal is to encourage interpersonal and intrapersonal awareness so that clients can more freely choose how they will relate to the conditions, or limitations, of their existence.

Cross-References

- [Existential Analysis](#)
- [Existential Fundamental Motivation](#)
- [Freedom](#)
- [Motivation](#)
- [Personal Existential Analysis Method](#)

References

- Buber, M. (1970). *I and thou*. New York: Charles Scribner's Sons.
- Cain, D. J. (2007). What every therapist should know, be, and do: Contributions from humanistic psychotherapies. *Journal of Contemporary Psychotherapy*, 37, 3–10.
- Cooper, M. (2007). Humanizing psychotherapy. *Journal of Contemporary Psychotherapy*, 37, 11–16.
- Dean, P. (2003). Approaching existential psychotherapy. *Existential Analysis*, 14(1), 86–97.
- Farber, E. W. (2010). Humanistic-existential psychotherapy competencies and the supervisory process. *Psychotherapy Theory, Research, Practice, Training*, 47(1), 28–34.
- Friedman, M. (1960). *Martin Buber: The life of dialogue*. New York: Harpers.
- Havens, L. L. (1974). The existential use of the self. *The American Journal of Psychiatry*, 131, 1–10.
- Krug, O. T. (2009). James Bugental and Irvin Yalom: Two masters of existential therapy cultivate presence in the therapeutic encounter. *Journal of Humanistic Psychology*, 49, 329–354.
- Längle, A. (2003). The search for meaning in life and the existential fundamental motivations. *Existential Analysis*, 16(1), 2–14.
- May, R. (1983). *The discovery of being*. New York: W.W. Norton.
- Milton, M., Charles, L., Judd, D., O'Brien, M., Tipney, A., & Turner, A. (2003). The existential-phenomenological paradigm: The importance for integration. *Existential Analysis*, 14(1), 112–136.
- Portnoy, P. (1999). Relatedness: Where humanistic and psychoanalytic psychotherapy converge. *Journal of Humanistic Psychology*, 39, 19–34.
- Schneider, K. J. (2007). The experiential liberation strategy of the existential-integrative model of therapy. *Journal of Contemporary Psychotherapy*, 37(1), 33–39.
- Schneider, K. J. (2008). *Existential-integrative psychotherapy: Guideposts to the core of practice*. New York: Routledge.
- Wampold, B. (2008). Existential-integrative psychotherapy: Coming of age. *PsycCritiques Contemporary psychology: APA review of books*, 53(6).
- Yalom, I. D. (1980). *Existential psychotherapy*. New York: Basic Books.

Existential Therapy

- [Existential Psychotherapy](#)

Existentialism

- [Existential Psychotherapy](#)

Exit

- [Japan, Quality of Life](#)

Exodus

- [Migrations: An Overview](#)

Exotic Dance and the Quality of Life

Meg Panichelli

Portland State University, Portland, OR, USA

Description

In the USA most of forms of sex work are criminalized and legalized. This atmosphere often leaves ► [sex workers](#) in polarized locations of “victim” on one end and “empowered” on the other end. Although exotic dancing and stripping are not criminalized sectors of the industry, men and women who work as such still face similar stigma about how and why they entered the industry and battle stereotypes that are described as “having experienced childhood sexual abuse”, “sex addicts”, and “victims”. Less often, language about empowerment, choice, and making money enter the dialogue. Many scholars who study and write about exotic dancing explore dancers’ lives; discuss both their personal and professional lives, both positive and negative experiences in the industry; and place emphasis on the many forms of labor (physical and emotional) that dancers employ while working. In this piece, the ► [quality of life](#) for exotic dancers is discussed by examining literature on stripping that situates dancers in the context of their day-to-day lives and by recognizing how the physical and emotional labor that dancers employ have a similar impact on them as to folks who work in any other occupations of the service industry, under a capitalist society. This entry aims to complicate the experiences of exotic dancers during work hours, as mothers/sisters/partners, and to go beyond categorizations of empowered/disempowered to represent the range of life experiences that impact dancers’ quality of life.

To begin, Wahab, Baker, Smith, Cooper, and Lerum (2010) did a review of the literature on exotic dancing between 1970 and 2008. This review established a number of themes that were commonly focused on in exotic dance literature. Themes they identified included “female dancers’ motivations for becoming dancers, their self-

perceptions, their experiences of stripping, the influence of exotic dance on relationships outside the clubs, how they resist the negative image of exotic dance, and how they manage stigma associated with this labor” (p. 63). The literature from 1970 to 1989 showed motivations for becoming an exotic dancer to be rooted in financial needs that required a “quick and easy” way to earn money; some women were drawn into dancing by friends, family members, or other recruiters like agents or club managers, while men were recruited into dancing through similar networks and “saw it as a way to be involved in the entertainment business” (2010, p. 65).

Exotic dancers employ both physical and emotional labor while working, which has been described as both a skill and a tax, both emotionally and physically (Barton 2006; Dewey 2011). Wahab et al. recognize that from 1970s to present day, research rhetoric on “counterfeit intimacy” is prevalent. While some may describe this intimacy as performative and as an aspect of emotional labor as a “counterfeit intimacy” wherein “both male and female dancers objectify and exploit the customers creating an atmosphere of mutually exploitative interactions masked by an aura of intimacy” (2010, p. 67), Wahab et al. are troubled by this concept. They recognize that “counterfeit intimacy” is based upon heteronormative interactions and question whether or not a “real” intimacy (between men and women) exists, as opposed to one that is “performed” or “faked.” This is an important question as it raises the point that “real intimacy” can only be between men and women and that intimacy in sex work or exotic dancing must be of the faked variety. This helps everyone explore their notions of what intimacy looks like inside and outside of work and among different types of relationships.

Next, in the literature between 1990 and 1999, Wahab et al. identified three ways that exotic dancers/strippers managed stigma. These included things like “freely discussing their jobs with insiders (i.e., other dancers, people they dealt with on a regular basis, boyfriends and spouses) who knew they were dancers; rationalized and neutralized their deviant behavior (Thompson and Harred 1992 as cited in Wahab et al. 2010);

offering reasons for their participation in dancing as helping family members, paying for school so that parents would be spared the cost of their education, or not being on welfare" (Thompson and Harred 1992 as cited in Wahab et al. 2010). By invoking these strategies, dancers advocate for themselves and seek to justify their occupation in a stigmatized profession.

From 2000 to 2008, there is a trend in the literature that moves from looking at dancers in an individual context to looking at dancers within a larger structural context, which has ultimately led to moving away from pathologizing dancers into more of an analysis of dancers within "organizational and cultural frameworks" (Wahab et al. 2010, p. 69). Dancers resisted club-imposed sanctions by "breaking rules" so that they could make more money and profit. For example, some dancers violated a no-touch rule, where they encouraged more intimate contact to make more money, and essentially resist being controlled by club rules (Deshotels and Forsyth 2008; Egan 2003 as cited in Wahab et al. 2010, p. 69). Finally, within the literature between 2000 and 2008, research on dancers was situated along a continuum of sexualization, victimization, and abuse, recognizing the complex life experiences of dancers. Researchers noted that dancers' experiences of violence and abuse early in life manifested response behavior in a range of different ways while working and that some dancers carried mace or guns to protect themselves from further victimization (Wesley 2002, p. 325 as cited in Wahab et al. 2010). They do not draw direct links between dancers and victimization, which is important to see, as exotic dancers and other sex workers are often positioned into being victims of abuse. This literature acknowledges that some dancers have been sexually abused and describe dancers in a strong way by showing strategies for resisting further abuse in their workplace (Barton 2006; Dewey 2011; Wahab et al. 2010).

Susan Dewey's (2011) book, *Neon Wasteland: On Love, Motherhood, and Sex Work in a Rust Belt Town*, focuses on a group of women working as topless dancers and their experiences being

mothers, in intimate relationships, managing risks in the industry, the impact of the classed body, and dancers everyday survival strategies. In response to the need for research on the cultural and organization context of sex work, Dewey begins with the question of "whether an industry so clearly characterized by exploitative labor practices and discourses of dirty and shame could in fact be empowering for women and the children they supported?" (p. 9). Dewey examines how dancing impacts intimate relationships, for example, she quotes dancers who discuss the need to avoid working with men they meet at their club yet find it hard to meet men outside of work because most of their awake time exists in the club. Other dancers describe how they are cautious to disclose their place of employment too soon in a relationship for fear of being stigmatized, while others meet significant others in the bar, and at first these partners are okay with their work but at some point become jealous. She also discusses the need for dancers to provide for their families and find it a better alternative to going on welfare, due to the stigmatized nature of being on welfare. Dewey (2011) says that "dancers described their work as something that could be carefully hidden from children's teachers and other members of the community who have the power to exercise authority over their families" (p. 57). Dewey frames this in the context of "everyday survival strategies" and, from my perspective, situates these dancers as fierce women navigating social systems and the impact of intersectionality on their daily lives.

Similarly Bernadette Barton writes about the complicated experiences of dancers in her book, *Stripped* (2006). She acknowledges how damaging it can be to represent dancers through a one-dimensional lens and states that "Stripped breaks down this polarized binary of exploitation or empowerment, slut or victim, that frames most academic and feminist work on the sex industry as well as popular myths about the lives of strippers because the unnatural dichotomy defining stripping as either good or bad is simply inadequate to the task of understanding the lives of dancers" (Barton 2006, p. xi). In her book you can find the

experiences of dancers set along a continuum, and she disrupts these polarized categories. She discusses the various reasons women enter the sex industry; the diversity in race, class, and **sexuality**; drug use; education; and how these identities and social locations impact their experience as dancers. She talks about both physical and emotional demands on sex workers' bodies, experiences with club management, intimate partnerships, positive and negative experiences with clients, and dancers descriptions of being sexualized based upon race, class, gender, and sexuality.

Barton's experience researching dancers brings up important questions for researchers to consider when engaging with workers in the sex industry:

"Researchers have not been loathe to study the deviant identity of topless dancers and the ways sex workers manage to maintain their ► **self-esteem** when they face bigotry and abuse. Indeed, it is difficult to write about sex work at all without at least some mention of the stigma women endure and negotiate in the industry." (p. 113)

Barton expands the implicit complexities of studying sex workers when she mentions:

"[Sociologist Kari Lerum] argues that the study of sex work has achieved social and scientific legitimacy at the expense of dehumanizing sex workers, and that this dehumanization is not an unfortunate coincidence, but a requirement for the production of contemporary institutionalized knowledge." (Lerum 1998 as cited in Barton 2006, p. 113)

She also asks, "how much stigma can a researcher unpack before her informants clam up or before she becomes tangled up in the layers of stereotypes she is trying to debunk?" (p.113). This question is so important for researchers to consider when working with already sexually marginalized communities. In attempts to humanize sex work, researchers must be extremely cautious not to further stigmatize sex workers.

The research and literature referenced in this entry are all examples of writing that I see as moving beyond positioning sex workers into binary categories and that recognize sex workers within the individual context of their lives. There

is value in discussing sex workers within the context of their lives as mothers or in romantic relationships and normalizing this work, because stigma and discrimination against sex workers lead people to forget that sex workers are mothers, sisters, aunts, daughters, girlfriends, friends, etc. They have been constructed as the "other."

Strip clubs and the experiences of dancers have been studied for a number of different purposes. In the context of this Encyclopedia of Quality of Life Research on dancers, it is exciting for exotic dancers to be recognized along a continuum of dance forms, yet I am curious about reader's expectations of differences among dancers. How does the addition of taking one's clothes off for money in a dancing environment differ from other forms of movement? What kind of stigma is attached to this legalized form of sex work that impacts our lens of exotic dancing?

Much of this literature aims to situate dancers at the intersection of individual, organizational, and structural experiences. Laura Agustin (2008 as cited in Wahab et al. 2010) encourages researchers to move away from a focus on individual dancers toward a focus on the cultural contexts and issues associated with sex work. The quality of life for exotic dancers is dependent on how intersecting micro, mezzo, and macro factors shape the experiences of dancers in the industry, as they are inextricable. Finally, this literature can be used to recognize the many experiences of exotic dancers and to especially show them as complex human beings navigating stigma, relationships, and emotional and physical labor and resisting objectification and social control. You will find stories of strength, empowerment, disempowerment, ► **love**, intimacy, performativity, and creativity.

References

- Agustin, L. (2005). The cultural study of commercial sex. *Sexualities*, 8(5), 618–631.
- Barton, B. (2006). *Stripped: Inside the lives of exotic dancers*. New York: New York University.
- Deshotels, T., & Forsyth, C. J. (2008). Sex rules: The edicts of income in exotic dancing. *Deviant Behavior*, 29(5), 484–500.

- Dewey, S. (2011). *Neon Wasteland: On love, motherhood, and sex work in a rust belt town*. Berkeley: University of California Press.
- Egan, R. D. (2003). I'll be your fantasy girl, if you'll be my money man: Mapping desire, fantasy and power in two exotic dance clubs. *JPCS: Journal for Psychoanalysis of Culture & Society*, 8(1), 109–120.
- Frank, K. (2007). Thinking critically about strip club research. *Sexualities*, 10(4), 501–517.
- Thompson, W. E., & Harred, J. L. (1992). Topless dancers: Managing the stigma in a deviant occupation. *Deviant Behavior*, 13(3), 291–312.
- Wahab, S., Baker, L., Smith, J., Cooper, K., & Lerum, K. (2010). Exotic dance research: A review of the literature from 1970 to 2008. *Sexuality & Culture*, 15(1), 56–79.
- Wesley, J. K. (2002). Growing up sexualized: Issues of power and violence in the lives of female exotic dancers. *Violence Against Women*, 8(10), 1182–1207.

Expanded Prostate Cancer Index Composite

► [Expanded Prostate Cancer Index Composite \(EPIC\)](#)

Expanded Prostate Cancer Index Composite (EPIC)

Florian R. Schroeck and John T. Wei
Department of Urology, University of Michigan,
Ann Arbor, MI, USA

Synonyms

[EPIC](#); [Expanded prostate cancer index composite](#); [Related EPIC short form](#)

Definition

The expanded prostate cancer index composite is a health-related quality of life-specific questionnaire for patients with prostate cancer.

Description

The expanded prostate cancer index composite (EPIC) is a standardized self-administered disease-specific questionnaire developed to measure health-related quality of life in prostate cancer patients treated with radical prostatectomy, brachytherapy, external beam radiation, or hormonal therapy.

Since its publication in 2000 (Wei et al. 2000), the EPIC has become one of the most widely used instruments for assessing health-related quality of life in patients with prostate cancer. It has been used in studies described in more than 250 peer-reviewed publications and has been translated into many languages, including Spanish (Ferrer et al. 2009), Japanese (Takegami et al. 2005), and Korean (Chung et al. 2010).

A multi-institutional study of patients who underwent radical prostatectomy, brachytherapy, or external beam radiotherapy (Sanda et al. 2008) showed differential trends in recovery according to treatment modality up to two years of follow-up, measured with the EPIC, providing data which is now widely used in counseling prostate cancer patients. The same study also found a significant association of the irritative urinary subscale, the sexual function domain, and the hormonal function domain with patient satisfaction, as measured with the Service Satisfaction Scale for Cancer Care (Greenfield and Attkisson 1989). Longer-term (5 year) EPIC-based quality of life data of a prospective nonrandomized study comparing brachytherapy and radical prostatectomy has been recently reported (Crook et al. 2011). It has been also useful as the endpoint of a clinical trial which randomized post-prostatectomy patients with incontinence to an intervention to show improvement at 8 weeks compared to controls (Goode et al. 2011).

Measurement Model

The measure's content of the University of California-Los Angeles Prostate Cancer Index (UCLA-PCI) (Litwin et al. 1998) was expanded with guidance from a cohort of prostate cancer patients and an expert panel of urologic

oncologists, radiation oncologists, survey researchers, and cancer nurses. The rationale was to augment the UCLA-PCI with items to capture concerns relevant to patients treated with brachytherapy, external beam radiation, radical prostatectomy, and androgen deprivation (Wei et al. 2000). Specific items addressing irritative and obstructive voiding symptoms, hematuria, additional bowel symptoms, and hormonal symptoms were vetted. Additionally, symptom-specific bother items were added to elicit multi-item bother scales.

Exploratory factor analysis using varimax rotation identified four domains (urinary, bowel, sexual, and hormonal). For each domain, two subscales of function and bother and a summary score were constructed. In addition, two urinary scales that distinguish irritative/obstructive symptoms and incontinence were also defined. Response options for each EPIC item form a Likert scale, and multi-item scale scores were transformed linearly to a 0–100 scale, with higher scores representing better Health Related Quality of Life (HRQOL).

Metric Properties

The EPIC was independently validated in a sample of 252 patients composed by an equal number of subjects who had received brachytherapy, external beam radiation, radical prostatectomy, and hormonal therapy. Internal consistency and test-retest reliability were high (Cronbach’s alpha and Intraclass Correlation Coefficients ≥ 0.8) for all four EPIC domains (urinary, bowel, sexual, and hormonal). Moderate correlation with the FACT-P ($r = 0.58$, $r = 0.51$, $r = 0.44$, $r = 0.61$, respectively) provided evidence for criterion validity. For the characteristics of the domain-specific HRQOL subscales, please see the Table 1.

The EPIC has been compared to other validated instruments. Comparison with the Incontinence Symptom Index revealed a strong correlation with the EPIC urinary incontinence domain and a somewhat weaker correlation with the EPIC irritative urinary subscale (Hedgepeth et al. 2009). Similarly, the EPIC has been

Expanded Prostate Cancer Index Composite (EPIC), Table 1 Characteristics of domain-specific HRQOL subscales (Wei et al. 2000)

HRQOL Domain	No. of items	Test-retest	Cronbach’s alpha
Urinary subscales			
Function	5	0.83	0.69
Bother	7	0.87	0.85
Incontinence	4	0.87	0.89
Irritation/obstruction	7	0.85	0.81
Bowel subscales			
Function	7	0.78	0.75
Bother	7	0.85	0.90
Sexual subscales			
Function	9	0.90	0.92
Bother	4	0.78	0.84
Hormonal subscales			
Function	5	0.79	0.51
Bother	6	0.73	0.73

co-administered with the International Index of Erectile Function short form (IIEF-5) (Rosen et al. 1999). Overall, strong correlation between the IIEF-5 and the EPIC sexual domain was found. However, the EPIC provides information not only on erectile function but also on overall sexual function and sexual bother. In one study, a cutoff for an EPIC sexual domain score ≥ 60 was found to correspond well with individual definitions of potency that were conceptually familiar to physicians and patients (Schroeck et al. 2008). When patients were defined as being potent – based on an IIEF-5 score of ≥ 22 – EPIC sexual function domain scores ≥ 65 were found to be comparable (Levinson et al. 2010).

The EPIC-26 Short Version

The original 50-item version was later condensed into a shorter 26-item version (Szymanski et al. 2010) with the goal to maintain the five prostate cancer-specific HRQOL domains of the EPIC. A high correlation was observed between the EPIC-50 and EPIC-26 versions for the urinary incontinence, urinary irritation/obstruction, bowel, sexual, and vitality/hormonal domain scores ($r > 0.95$). Furthermore, the internal

consistency and test-retest stability (Cronbach's alpha and Intraclass Correlation Coefficient around 0.7 or higher for all five HRQOL domains) supported that it maintains their breadth without significantly sacrificing reliability.

References

- Chung, K. J., Kim, J. J., Lim, S. H., Kim, T. H., Han, D. H., & Lee, S. W. (2010). Development and validation of the Korean version of expanded prostate cancer index composite: Questionnaire assessing health-related quality of life after prostate cancer treatment. *Korean Journal of Urology*, 51(9), 601–612.
- Crook, J. M., Gomez-Iturriga, A., Wallace, K., Ma, C., Fung, S., Alibhai, S., Jewett, M., et al. (2011). Comparison of health-related quality of life 5 years after spirit: Surgical prostatectomy versus interstitial radiation intervention trial. *Journal of Clinical Oncology*, 29(4), 362–368.
- Ferrer, M., Garin, O., Pera, J., Prats, J. M., Mendivil, J., Alonso, J., De Paula, B., et al. (2009). Evaluation of the quality of life of patients with localized prostate cancer: Validation of the Spanish version of the EPIC. *Medicina Clinica*, 132(4), 128–135.
- Goode, P. S., Burgio, K. L., Johnson, T. M., II, Clay, O. J., Roth, D. L., Markland, A. D., Burkhardt, J. H., et al. (2011). Behavioral therapy with or without biofeedback and pelvic floor electrical stimulation for persistent postprostatectomy incontinence: A randomized controlled trial. *JAMA: The Journal of the American Medical Association*, 305(2), 151–159.
- Greenfield, T. K., & Attkisson, C. C. (1989). Steps toward a multifactorial satisfaction scale for primary care and mental health services. *Evaluation and Program Planning*, 12(3), 271–278. [https://doi.org/10.1016/0149-7189\(89\)90038-4](https://doi.org/10.1016/0149-7189(89)90038-4).
- Hedgepeth, R. C., Labo, J., Zhang, L., & Wood, D. P., Jr. (2009). Expanded prostate cancer index composite versus incontinence symptom index and sexual health inventory for men to measure functional outcomes after prostatectomy. *The Journal of Urology*, 182(1), 221–228. <https://doi.org/10.1016/j.juro.2009.02.155>.
- Levinson, A. W., Ward, N. T., Sanda, M. G., Mettee, L. Z., Wei, J. T., Su, L.-M., Litwin, M. S., et al. (2010). Comparison of validated instruments measuring sexual function in men. *Urology*, 76(2), 380–386. <https://doi.org/10.1016/j.urology.2010.04.033>.
- Litwin, M. S., Hays, R. D., Fink, A., Ganz, P. A., Leake, B., & Brook, R. H. (1998). The UCLA prostate cancer index: Development, reliability, and validity of a health-related quality of life measure. *Medical Care*, 36(7), 1002–1012.
- Rosen, R. C., Cappelleri, J. C., Smith, M. D., Lipsky, J., & Pena, B. M. (1999). Development and evaluation of an abridged, 5-item version of the International Index of Erectile Function (IIEF-5) as a diagnostic tool for erectile dysfunction. *International Journal of Impotence Research*, 11(6), 319–326.
- Sanda, M. G., Dunn, R. L., Michalski, J., Sandler, H. M., Northouse, L., Hembroff, L., Lin, X., et al. (2008). Quality of life and satisfaction with outcome among prostate-cancer survivors. *The New England Journal of Medicine*, 358(12), 1250–1261.
- Schroeder, F. R., Donatucci, C. F., Smathers, E. C., Sun, L., Albala, D. M., Polascik, T. J., Moul, J. W., et al. (2008). Defining potency: A comparison of the international index of erectile function short version and the expanded prostate cancer index composite. *Cancer*, 113(10), 2687–2694.
- Szymanski, K. M., Wei, J. T., Dunn, R. L., & Sanda, M. G. (2010). Development and validation of an abbreviated version of the expanded prostate cancer index composite instrument for measuring health-related quality of life among prostate cancer survivors. *Urology*, 76(5), 1245–1250. <https://doi.org/10.1016/j.urology.2010.01.027>.
- Takegami, M., Suzukamo, Y., Sanda, M. G., Kamoto, T., Namiki, S., Arai, Y., Ogawa, O., et al. (2005). The Japanese translation and cultural adaptation of expanded prostate cancer index composite (EPIC). *Japanese Journal of Urology*, 96(7), 657–669.
- Wei, J. T., Dunn, R. L., Litwin, M. S., Sandler, H. M., & Sanda, M. G. (2000). Development and validation of the expanded prostate cancer index composite (EPIC) for comprehensive assessment of health-related quality of life in men with prostate cancer. *Urology*, 56(6), 899–905. [https://doi.org/10.1016/S0090-4295\(00\)00858-X](https://doi.org/10.1016/S0090-4295(00)00858-X).

Expatriate

► Migrations: An Overview

Expectation of Life

► Life Expectancy

Expectation-Reality Discrepancy and Quality of Life Assessments of Chinese Migrants

Xiaoming Li¹, Danhua Lin² and Jintao Zhang³

¹Pediatric Prevention Research Center, Wayne State University School of Medicine, Detroit, MI, USA

²Institute of Developmental Psychology, Beijing Normal University, Beijing, China

³State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China

Synonyms

Theory of Goal-Striving Stress (TGSS)

Description

The concept of ► [quality of life](#) (QOL) is being used increasingly in behavior and clinical research to measure perceived well-being among various vulnerable populations, such as migrants, refugees, and individuals with various chronic diseases (Bayram et al. 2007; Browne et al. 1996; Ghazinour et al. 2004). The term “quality of life” evolved from the constructs of ► [life satisfaction](#) and ► [subjective well-being](#) and represented the individual’s overall satisfaction or ► [happiness](#). The World Health Organization (WHO) defined QOL as “individuals’ perception of their position in life in the context of culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way by the person’s physical health, psychological state, level of independence, social relationships and their relationship to salient features of the environment” (WHOQOL Group 1994, page 24). This concept emphasized the essentially subjective

nature of QOL (Saxena and Orley 1997). Previous empirical studies found that perceived QOL was a significant predictor of subsequent physical illness and psychological disorders (Schnurr et al. 2006; Scogin et al. 2007). Therefore, QOL assessment is an essential step to understand and improve health status, well-being, and mental health among various vulnerable populations, such as rural-to-urban migrants who moved from rural areas to urban areas in seeking jobs or better life.

► [Migration](#) was often associated with a series of ► [stressful life events](#) and poor mental health outcomes (Ekblad et al. 1999). WHO has identified immigrants living in highly stressful situations as one of the five priority groups in an international QOL assessment (Ekblad et al. 1999). Rural-to-urban migrants often perceived or experienced stressful life events because of their socioeconomic status, language, or ethnicity (Li et al. 2006, 2007b). Although previous studies suggested that stressful life events were negatively related to perceived QOL (Kinsler et al. 2007; Li et al. 2006; Mays and Cochran 2001; Marra et al. 2004), it is still unclear whether effects of stressful life events on QOL would be mediated by some individual’s cognitive variables, such as the pre-migratory expectation or aspiration.

The ► [Multiple Discrepancies Theory](#) (MDT) hypothesizes that overall life satisfaction is a function of multiple perceived discrepancies including the one between what one has and wants (Michalos 1985). In addition, MDT suggests that the discrepancy between what one has and wants is a mediating variable between all other perceived discrepancies and reported satisfaction (Michalos 1985). The Theory of Goal-Striving Stress (TGSS) applies the notion of multiple discrepancies to migrants and proposes that the discrepancy between a migrant’s pre-migratory aspiration and post-migration achievement (e.g., goal-striving stress or unfulfilled aspiration) is the source of mental distress (Williams and Berry 1991). The TGSS also suggested that

psychological stress due to other stressors in the migration process (e.g., cultural shock) may be mediated by goal-striving stress (Parker et al. 1969). Similar to the effect of unfulfilled aspiration, the discrepancy between pre-migratory expectation and post-migration reality (i.e., expectation-reality discrepancy) regarding work and life in urban destination may also be a source of stress for migrants.

Several previous studies suggested that migrants' pre-migratory expectation of future life at the destination may have an important effect on their post-migratory QOL (McKelvey et al. 1993; McKelvey and Webb 1996; Williams and Berry 1991). However, these studies also indicated a complex relationship between migrant's expectation of the migratory life and post-migratory QOL. Some researchers suggested that high expectations and ► **optimism** were associated with lower levels of depressive symptomatology and a better overall adjustment to post-migratory life (McKelvey et al. 1993; McKelvey and Webb 1996), while others suggested that an over-optimistic or unrealistic pre-migratory expectation may lead to increased psychiatric symptom during post-migration (Williams and Berry 1991). Although existing literature has mostly used the pre-migratory expectation of their migratory life as a predictor, the expectation-reality discrepancy may be a more sensitive variable to study. The extent to which a pre-migratory expectation is overoptimistic or unrealistic is largely depending on how close it is to the post-migratory reality. Therefore, compared to pre-migratory expectation, the expectation-reality discrepancy may be more closely related to individual's perceived post-migratory QOL. However, there is virtually no study about the effect of expectation-reality discrepancy on the perceived QOL among migratory populations, especially in a developing country, such as China, which is experiencing an increasing economics-driven, internal migration from rural villages to urban centers.

According to the most recent China National Population Survey in 2010, there were about 261.39 million migrants who worked and lived in urban areas of China and more than two-thirds of these migrants were from rural areas (National

Bureau of Statistics of China 2011). Migrants reported more symptoms of perceived mental illness (e.g., depression, ► **anxiety**) than their counterparts living in rural or urban areas (Li et al. 2007a, b). Migrants also perceived lower QOL than their rural counterparts (McGuire et al. 2009). Therefore, as an enormous and growing population, rural-to-urban migrants should receive more researchers' attention on their QOL assessment.

To examine the expectation-reality discrepancy and its effect on QOL assessment among Chinese rural-to-urban migrants, we conducted a study using data from a representative sample of 1006 migrants from Beijing, China (Zhang et al. 2009). The sample was recruited in 2003 from 34 sampling units (e.g., store, shop, club, office, factory, construction site, or street) that were stratified by occupational cluster and spread across 10 large geographic locations (e.g., metropolitan areas, business districts, major streets, and suburban townships) in two central urban districts, 2 "near" suburban districts, and 2 "outer" suburban districts/counties in Beijing (Li et al. 2009). One-third of these participants were female and the majority was of Han ethnicity (97%). The primary aims of our study were to evaluate status of discrepancy of pre-migratory expectation and post-migratory reality among young migrants and to assess the role of the expectation-reality discrepancy as a mediator in the relationship between negative life events (e.g., discrimination experience) and perceived QOL.

The QOL was assessed using the abbreviated version of the World Health Organization Quality of Life (WHOQOL-BREF) assessment (WHOQOL Group 1998) which has been previously validated in Chinese populations in Taiwan (Yao et al. 2002) and Hong Kong (Leung et al. 2005). The WHOQOL-BREF is a self-report scale consisting of 26 items. Two items measured overall QOL and general health. The remaining 24 items were divided into four domains including physical health (7 items), psychological health (6 items), social relationships (3 items), and environment (8 items). All items were presented on a five-point Likert scale (1 = "very unsatisfied" to 5 = "very satisfied"). Each domain's score ranged

from 4 to 20, which was calculated by multiplying the mean score of items in one domain by 4 (Yao et al. 2002). The internal consistency estimates of physical health, psychological health, social relationship, and environment subscales were 0.66, 0.74, 0.56, and 0.80, respectively.

The expectation-reality discrepancy was measured using 10 items assessing migrants' perceived discrepancy between pre-migratory expectations and post-migratory work and life in the urban areas (e.g., "compared to the pre-migratory expectation, how about your post-migratory work in the urban areas?"). All items were presented on a five-point scale (1 = "much better" to 5 = "much worse"). For the purpose of data analysis in our study, we defined expectation-reality discrepancy as the extent to which migrants' post-migratory work and life in the urban areas is worse than their pre-migratory expectation. Three subscales were constructed through exploratory factor analysis: "employment," which measures the job-related expectation-reality discrepancy; "social environment," which measures the expectation-reality discrepancy regarding the social environment they encountered or perceived in the urban areas, such as access to public health services and public attitudes; and "life," which measures the expectation-reality discrepancy of daily life in the urban areas. The three factors explain 53.58% of total variance among 10 items. The internal consistency estimates (► [Cronbach alpha](#)) of these three subscales were 0.49, 0.60, and 0.66, respectively. A mean score was calculated for each subscale as the composite score with a higher score indicating that migrants' post-migratory reality in urban areas is worse than their pre-migratory expectation (i.e., greater expectation-reality discrepancy).

We also measured the discrimination experience using 20 items regarding unfair treatment experienced or perceived by participants during their work and life in urban areas (e.g., "When I look for a job, I don't have the same opportunity as others," "If something got stolen [at work], people would first suspect me."). All items were presented on a four-point scale (1 = "never happened" to 4 = "frequently happened"). Four

subscales were constructed through ► [exploratory factor analysis](#): "employment," which measures the discrimination experiences migrants perceived when they were looking for a job or at workplace; "distrust," which measures the extent of suspicion by others when some villainous things (e.g., theft, robbery) happened around themselves; ► ["attitudes"](#), which measures the perceived negative attitudes against participants from other people (e.g., urban residents); and "law enforcement," which measures the extent of unfair treatment from local law enforcement (e.g., police). These four subscales explain 53.62% of total variance and have good internal consistency estimates (Cronbach alpha = 0.80, 0.81, 0.75, and .74, respectively). A mean score was obtained for each subscale as the composite score with a higher score indicating a higher level of perceived or experienced discrimination in various domains.

Our study employed a structure equation model (SEM) analysis to test the role of the expectation-reality discrepancy in mediating the relationships between the discrimination experience and QOL. The SEM analysis was conducted using LISREL V8.70 with the maximum likelihood method of estimation. Multiple goodness-of-fit indices were used to determine the suitability of model: the goodness-of-fit index (GFI), chi-square of the estimated model (χ^2), standardized root-mean-square residual (SRMR), non-normed fit index (NNFI), and comparative fit index (CFI). For the GFI, NNFI, and CFI, values greater than .90 indicated an acceptable fit of the model to the data, whereas the value of SRMR should be less than .08 for an acceptable fit (Quintana and Maxwell 1999). Furthermore, to explore whether the effect of the independent variable (discrimination experience) is significantly reduced upon the inclusion of the mediator (expectation-reality discrepancy) into the model, we test the mediation effect using Sobel test, a widely used method for testing the significance of the mediation effect (Sobel 1982).

Our data revealed a significant difference in expectation-reality discrepancy by marital status ($p < 0.01$), with single individuals reporting a higher expectation-reality discrepancy regarding

job and social environment. Likewise, there were significant differences in QOL by gender ($p < 0.01$) and marital status ($p < 0.05$). Male participants reported lower QOL, especially on the social relationship, environment aspects, and overall QOL, than female participants. Single participants reported higher QOL on environment aspects than those who were ever married. Moreover, age was significantly associated with expectation-reality discrepancy, with older participants scoring lower on the job and social-environment-related discrepancy. Educational attainment was positively associated with expectation-reality discrepancy on work and environment aspects and the physical domain of QOL. The participants with a higher education level experienced high expectation-reality discrepancy on social environment domain and better QOL on physical health domain. Income level was significantly associated with both expectation-reality discrepancy and QOL. People with higher income reported a better QOL regarding physical life and psychological health. The length of migration was negatively associated with the environment aspect of QOL. Discrimination experience was positively associated with expectation-reality discrepancy, and negatively associated with QOL, which was negatively associated with expectation-reality discrepancy.

The overall fit of the model was adequate based on multiple goodness-of-fit indices. The model suggested that the relationship between discrimination experience and perceived quality of life was significantly reduced when expectation-reality discrepancy, the mediator, was entered into the model (Sobel's $t = 9.31$, $p < 0.001$), which suggested that expectation-reality discrepancy partially mediated the relation between discrimination experience and perceived QOL. According to the formula of testing mediation effect developed by MacKinnon et al. (1995), the mediation effect of the expectation-reality discrepancy accounted for 44.4% of the total effect of discrimination experience on perceived QOL.

Our data provide empirical support to the role of expectation-reality discrepancy in the assessment of QOL among rural-to-urban migrants in China. The results of our study also show that

compared to their pre-migratory expectation, most migrants felt better about the social environment in Beijing. However, most migrants had a higher or overoptimistic pre-migratory expectation regarding their work and life in Beijing. The rural-to-urban migration has occurred within a context of rapid urban economic development and increased urban-rural income disparity. The rapid economic growth in Chinese urban areas since the introduction of economic reform 30 years ago has increased the income disparity between urban and rural areas to a historically high level. Rural incomes were 55% of urban incomes in 1983, but decreased to 31% in 2005 (\$402 in rural areas and \$1296 in urban areas) (National Bureau of Statistics of China 2006). This increasing income gap has provided a strong incentive to rural residents to migrate to urban areas in search of better lives. Most of these migrants came from the poor rural areas of the interior provinces with weak industrial bases with the hope that the city would bring fortunes or opportunities not possible in their villages. However, most of the migrants had experienced or perceived discrimination because of their low socioeconomic status (e.g., low-educated, low-income, and rural residence status). While migrants make a major contribution to China's industrial development and economic growth in the past decades, their contributions were not well recognized by the public (especially the urban residents). They are frequently marginalized in urban areas and are targets of discrimination (Li et al. 2007a, b). These discriminations might prevent the fulfillment of their pre-migratory aspirations or the realization of their pre-migratory expectations. In addition, many of the rural migrants might recognize that it was a challenge to fulfill their expectation of better lives because of their inadequate job skills, high competition in employment, high cost of living, and inability to access public services.

The data in our study revealed that male migrants had a higher expectation-reality discrepancy regarding job than that of female migrants, which means male migrants were more unsatisfied with job-related situations than female migrants. One of the reasons for these gender

differences is that men usually took more responsibilities for their household in China, so they were more active in looking for a job, or often need a better-paying job to support their families. Therefore, the chance that they were discriminated or got disappointed would be higher than women. Another possible reason is that female migrants might in general have a lower pre-migratory expectation (due to their lower SES in rural China) than male migrants about their post-migratory life and work before they migrated to a city. Therefore, female migrants might feel less affected than male migrants when they encountered some difficulty or discrimination in the urban areas.

The results of our study also indicate empirically that more discrimination experience migrants experienced will lead to a larger expectation-reality discrepancy and lower QOL. The mediation analysis indicates that discrimination experience migrants experienced will increase the expectation-reality discrepancy, which in turn will contribute to its relation to a lower perceived QOL. The greater the extent of migrants' overoptimistic pre-migratory expectation about work and life in urban destination, the lower QOL they perceived in urban areas. This result is consistent with a study about the negative effects that unrealistic pre-migratory expectation might have on individual's psychological outcomes (McKelvey and Webb 1996). Our data suggest that expectation-reality discrepancy plays an important role in the relationships between stressful life events and QOL among rural-to-urban migrants.

Although the data partially supported the social and psychological theories about the role of expectation-reality discrepancy in QOL assessment, the cross-sectional data in our study prevented causal interpretation of the findings. Longitudinal research is needed to explore the causal relationship among discrimination experience, expectation-reality discrepancy, and QOL. In addition, our data about pre-migratory expectation were collected retrospectively in post-migration which were subject to the error of recall and confounding effect of post-migratory experience. Some measurement scales, including the

three expectation-reality discrepancy scales and some scales of QOL (i.e., physical health and social relationship), had low internal consistency estimates (Cronbach alpha < .70). Future studies are needed to develop more psychometrically reliable measures of these constructs to improve the internal reliability of the findings. Although efforts were taken to ensure the representativeness of our sample, our sample was recruited from a single metropolis (the national political and culture center) and might not be representative of migration populations in other areas of China, and therefore, our ability to generalize the findings of our study to other migratory populations may be limited.

Another issue with the QOL assessment in our study was that various QOL items were treated equally relevant and important for all participants, which might have been an incorrect assumption and also have biased the results of the current study. Although the QOL scale (i.e., WHOQOL-BREF) was validated in Chinese culture (Yao et al. 2002), the scale does not allow respondents to provide information on the relevance and importance of an item (e.g., an aspect of life) to their QOL. For example, the item on sex life ("How satisfied are you with your sex life?") might not be relevant to some participants, and consequently, this aspect of QOL might not be equally important to all participants (as some young migrants might not be sexually experienced). Similarly, the scale contains items on support from friends or personal relationships. However, not all respondents would have such a social or a personal network. Future studies with more sensitive assessment of QOL are needed to validate our findings.

Despite these limitations in our study, the results had some significant implications for intervention and health promotion programs to improve the QOL of rural-to-urban migrants. First, local government agencies and communities need to provide adequate education and skill training to pre-migratory young rural residents, especially potential migrants, to help them to get familiar with the relevant regulatory and policy issues and ► [social norms](#) at urban destination, and also help them to set up realistic goals for

their work and life at urban destination, and learn or improve necessary occupational skills before migration. Second, migrants' experience of unfair treatment, poor working/living conditions, and insufficient ► [social support](#) might affect their QOL (McGuire et al. 2009). Thus, the government and concerned organizations should seek to improve living conditions and social support for young migrant workers in urban areas.

Third, local government and public media need to educate urban residents about the contribution of rural-to-urban migrants to the urban development and seek to improve public attitudes to rural-to-urban migrants and to eliminate or reduce public or societal discrimination and prejudice attitudes or acts against migrants. Fourth, the government and legislature should eliminate structural barriers (e.g., dual urban–rural household registration systems) for migrants to fully benefit from the urban economics development. Migrant workers and urban residents should have equal opportunities for employment, housing, ► [health care](#), schooling for children, and other social services at urban destinations. Finally, the future health promotion efforts need to help migrants in urban areas to actively cope with various stressful life experiences to alleviate the negative effect of these experiences on their QOL and other aspects of their migratory life. In addition, considering that the individual's characteristics were significantly associated with their stressful life events, expectation-reality discrepancy, and QOL among rural-to-urban migrants, future health promotion efforts need to be gender and age appropriate.

References

- Bayram, N., Thorburn, D., Demirhan, H., & Bilgel, N. (2007). Quality of life among Turkish immigrants in Sweden. *Quality of Life Research*, 16, 1319–1333.
- Browne, S., Roe, M., Lane, A., Gervin, M., Morris, M., Kinsella, A., et al. (1996). Quality of life in schizophrenia: Relationship to sociodemographic factors, symptomatology and tardive dyskinesia. *Acta Psychiatrica Scandinavica*, 94, 118–124.
- Ekblad, S., Abazari, A., & Eriksson, N.-G. (1999). Migration stress-related challenges associated with perceived quality of life: A qualitative analysis of Iranian refugees and Swedish patients. *Transcultural Psychiatry*, 36, 329–345.
- Ghazinour, M., Richter, J., & Eisemann, M. (2004). Quality of life among Iranian refugees resettled in Sweden. *Journal of Immigrant Health*, 2, 71–81.
- Kinsler, J. J., Wong, M. D., Sayles, J. N., Davis, C., & Cunningham, W. E. (2007). The effect of perceived stigma from a health care provider on access to care among a low-income HIV-positive population. *AIDS Patient Care and STDs*, 21, 584–592.
- Leung, K. F., Wong, W. W., Tay, M. S., Chu, M. M., & Ng, S. S. (2005). Development and validation of the interview version of the Hong Kong Chinese WHOQOL-BREF. *Quality of Life Research*, 14(5), 1413–1419.
- Li, X., Stanton, B., Fang, X., & Lin, D. (2006). Social stigma and mental health among rural-to-urban migrants in China: A conceptual framework and future research needs. *World Health & Population*, 8(3), 14–31.
- Li, X., Stanton, B., Fang, X., Xiong, Q., Yu, S., Lin, D., et al. (2009). Mental health symptoms among rural-to-urban migrants in China: A comparison with their urban and rural counterparts. *World Health & Population*, 11(1), 15–29.
- Li, L., Wang, H., Ye, X., Jiang, M., Lou, Q., & Hesketh, T. (2007a). The mental health status of Chinese rural–urban migrants workers. *Social Psychiatry and Psychiatric Epidemiology*, 42, 716–722.
- Li, X., Zhang, L., Fang, X., Xiong, Q., Chen, X., Lin, D., et al. (2007b). Stigmatization experienced by rural-to-urban migrant workers in China: Findings from a qualitative study. *Journal of World Health and Population*, 9(4), 29–43.
- MacKinnon, D. P., Warsi, G., & Dwyer, J. H. (1995). A simulation study of mediated effect measures. *Multivariate Behavioral Research*, 30(1), 41–62.
- Marra, C. A., Marra, F., Cox, V. C., Palepu, A., & Fitzgerald, J. M. (2004). Factors influencing quality of life in patients with active tuberculosis. *Health and Quality of Life Outcomes*, 2, 58–68.
- Mays, V. M., & Cochran, S. D. (2001). Mental health correlates of perceived discrimination among lesbian, gay, and bisexual adults in the United States. *American Journal of Public Health*, 91, 1869–1876.
- McGuire, J., Li, X., & Wang, B. (2009). Social stigma and quality of life among rural-to-urban migrants in China: A comparison with their rural counterparts. *World Health & Population*, 11(2), 30–41.
- McKelvey, R. S., Mao, A. R., & Webb, J. A. (1993). Pre-migratory expectations and mental health symptoms in a group of Vietnamese Amerasian youth. *Journal of the American Academy of Child and Adolescent Psychiatry*, 32, 414–418.
- McKelvey, R. S., & Webb, J. A. (1996). Pre-migratory expectations and post-migratory mental health symptoms in Vietnamese Amerasian youth. *Journal of the American Academy of Child and Adolescent Psychiatry*, 35(2), 240–245.

- Michalos, A. C. (1985). Multiple discrepancies theory (MDT). *Social Indicators Research*, 16, 347–413.
- National Bureau of Statistics of China. (2006). *China 2005 Social Economics and Social Development Statistics*. Beijing: National Bureau of Statistics.
- National Bureau of Statistics of China. (2011). *Communiqué on major data from the 6th National Population Survey in 2010*. Retrieved March 30, 2012 from, http://www.stats.gov.cn/tjgb/rkpcgb/qgrkpcgb/t20110428_402722232.htm
- Parker, S., Kleiner, R. J., & Needelman, B. (1969). Migration and mental illness. *Social Science & Medicine*, 3, 1.
- Quintana, S. M., & Maxwell, S. E. (1999). Implications of recent development in structural equation modeling for counseling psychology. *The Counseling Psychologist*, 27, 485–527.
- Saxena, S., & Orley, J. (1997). Quality of life assessment: The world health organization perspective. *European Psychiatry*, 12, 263s–266s.
- Schnurr, P. P., Hayes, A. F., Lunney, C. A., McFall, M., & Uddo, M. (2006). Longitudinal analysis of the relationship between symptoms and quality of life in veterans treated for posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology*, 74, 707–713.
- Scogin, F., Morthland, M., Kaufman, A., & Burgio, L. (2007). Improving quality of life in diverse rural older adults: A randomized trial of a psychological treatment. *Psychology and Aging*, 22(4), 657–665.
- Sobel, M. E. (1982). Asymptotic intervals for indirect effects in structural equations models. *Sociological Methodology*, 13, 290–312.
- WHOQOL Group. (1994). Development of the WHOQOL: Rationale and current status. *International Journal of Mental Health*, 23(3), 24–56.
- WHOQOL Group. (1998). Development of the world health organization WHOQOL-BREF quality of life assessment. *Psychological Medicine*, 28, 551–558.
- Williams, C. L., & Berry, J. W. (1991). Primary prevention of acculturative stress among refugees. *American Psychologist*, 46, 632–641.
- Yao, G., Chung, C. W., Yu, C. F., & Wang, J. D. (2002). Development and verification of validity and reliability of the WHOQOL-BREF Taiwan version. *Journal of the Formosan Medical Association*, 101(5), 342–351.
- Zhang, J., Li, X., Fang, X., & Xiong, Q. (2009). Discrimination experience and quality of life among rural-to-urban migrants in China: The mediation effect of expectation-reality discrepancy. *Quality of Life Research*, 18(3), 291–300.

Expected Utility Theory

Tessa Peasgood

School of Health and Related Research, The University of Sheffield, Sheffield, UK

Synonyms

EUT; Expected utility hypothesis; vNM utility; Von Neumann-Morgenstern utility

Definition

Expected utility theory (EUT) is an axiomatic theory of choice under risk that has held a central role in economic theory since the 1940s. The hypothesis is that, under certain assumptions, an individual's preferences towards lotteries can be represented as a linear function of the utility of each option multiplied by the probabilities of each option. The growing body of theoretical and empirical evidence that challenges the validity of EUT is beginning to undermine the influence of this theory.

Description

Expected utility theory (EUT) originates from the eighteenth-century mathematician Daniel Bernoulli who in 1738 resolved an interesting paradox known as the St. Petersburg paradox (why were people only willing to pay a small amount for a risky gamble with an infinite expected monetary value?). Bernoulli argued that people's preferences reflect their expected benefit from the lottery rather than its expected monetary value.

John von Neumann and Oskar Morgenstern began the process of providing an axiomatic foundation for EUT in the 1940s. They showed that under certain assumptions, an individual's preferences towards lotteries can be represented by a mathematical function or “utility” function. The expected utility or von Neumann-Morgenstern

Expected Utility Hypothesis

► Expected Utility Theory

(vNM) utility of a lottery is given by the utility of each outcome multiplied by its probability. This theory marked the start of a new branch of economics, game theory, and a number of applications for decisions under risk, one being the use of Standard Gamble (SG) as a means of health utility assessment. With some additional assumptions, health state utilities can be derived from SG responses to estimate Quality-Adjusted Life Years (QALYs). QALYs are used to support decisions about distributing scarce resources among competing health programs (Torrance and Feeny 1989). Due to its foundations in expected utility theory, SG has been portrayed as the “gold standard” for health utility assessments (Torrance 1986). However, that judgment is not uncontroversial.

These controversies focus on two areas. Firstly, do the assumptions or axioms of vNM utilities hold sufficiently for the theory to have practical use? And secondly, is a vNM utility the right measure of value for health-care decision makers?

The axioms upon which vNM utilities depend are:

1. Lotteries can be placed in a clear order of preference. The ordering must be *complete*; the decision maker can compare any two lotteries and either say that they are indifferent to

each other or that one is preferred to the other. The order must be *transitive*: if A is preferred to B, and B is preferred to C, then A is also preferred to C.

2. Continuity. If an individual can rank three lotteries (A, B, and C), then they will be indifferent between the middle-ranked lottery and some probability mixture of the best- and worst-ranked lotteries. Hence, there is a lottery that comprises probability p of outcome A and probability $(1-p)$ of outcome C such that the individual would be indifferent between that lottery and outcome B. It is this axiom which is critical for the Standard Gamble methodology.
3. Independence (also known as the “sure thing principle”). If two lotteries have an identical probability and payoff branch, the levels of this payoff and probability should not affect people’s choices between lotteries. Common factors cancel each other out.

If an individual’s preferences over lotteries comply to these axioms, then there is a utility function of the expected utility form that represents those preferences that is cardinal.

For health applications, cardinal utility, or scores which possess interval scale properties, is essential. Without interval scale properties, it would not be possible to calculate QALYs.

Expected Utility Theory, Table 1 Gamble A versus Gamble B

Decision 1		Decision 2	
Gamble A	Gamble B	Gamble A	Gamble B
Win \$1 million for sure	0.89 chance of winning \$1 million	0.11 chance of winning \$1 million	0.1 chance of winning \$5 million
	0.1 chance of winning \$5 million	0.89 chance of winning nothing	0.9 chance of winning nothing
	0.01 chance of winning nothing		

Expected Utility Theory, Table 2 With common consequences removed

Decision 1 with common consequence (0.89 chance of winning \$1 million) removed		Decision 2 with common consequence (0.89 chance of winning nothing) removed	
Gamble A	Gamble B	Gamble A	Gamble B
0.11 chance of winning \$1 million	0.1 chance of winning \$5 million	0.11 chance of winning \$1 million	0.1 chance of winning \$5 million
	0.01 chance of winning nothing		0.01 chance of winning nothing

Expected Utility Theory, Table 3 Decision and payoffs

Decision 1		Decision 2	
Gamble A	Gamble B	Gamble A	Gamble B
\$100 if ball is red	\$100 if ball is black	\$100 if ball is red or yellow	\$100 if ball is black or yellow

Expected Utility Theory, Table 4 With common consequences removed

Decision 1		Decision 2 with common consequence (ball being yellow) removed	
Gamble A	Gamble B	Gamble A	Gamble B
\$100 if ball is red	\$100 if ball is black	\$100 if ball is red	\$100 if ball is black

Under the vNM axioms, the level of risk in a SG question is linear in utility, thus generating a scale with interval properties.

A large body of work by psychologists and behavioral economists has, however, found that individual choices systematically violate the assumptions of EUT.

One of the first challenges to EUT came from Maurice Allais (1953) who showed that people’s actual behavior did not conform to the independence axiom of EUT. Given the two decisions presented in Table 1, most people opt for gamble A in the first decision (most people are not willing to incur the small risk of winning nothing when they could have had \$1 million with certainty) and gamble B in the second (the different probability of winning nothing here seems so minimal most opt for the higher possible payoff).

Yet according to the independence axiom of EUT, the benefit of each gamble should be determined independently rather than with reference to the alternative choice. The independence axiom implies that common consequences of alternative gambles should be able to be removed without affecting people’s choices. When common consequences are removed (as shown in Table 2 below), it is easy to see that if we complied with EUT, we would choose A for both decisions, or B for both decisions.

Ellsberg (1961) presented another famous paradox to challenge EUT. In this case, some of the probabilities of winning are not known, a position economists describe as characterized by uncertainty rather than risk. Imagine an urn with

30 red balls and 60 balls that are either yellow or black. Table 3 shows the decision and payoff for each color ball.

Most people choose gamble A in the first decision and gamble B in the second, yet this violates EUT. With common consequences removed, the two decisions are identical; hence, EUT implies choosing either A for both or B for both. This is shown in Table 4.

Preferences displayed towards the certain options suggest that uncertain decisions are not fully explained by (subjective) EUT.

A third well-known challenge to EUT is the preference reversal phenomena in which people tend to value bets with a small chance of winning a large prize (“\$ bets”) as being worth more than bets with a high chance of winning a low price (“p bets”), and yet when asked to choose which they would prefer, they opt for the lower valued “p bet.”

Systematic violations of EUT found in this type of choice problems have cast doubt on the validity of EUT and led to the development of alternative models of choice under risk and uncertainty. Some of the most well known are regret theory (Loomes and Sugden 1982), prospect theory (Kahneman and Tversky 1972) and cumulative prospect theory (Tversky and Kahneman 1992), rank-dependent expected utility (Quiggin 1982), and weighted utility (Chew 1989). See Starmer (2000) for a review of non-expected, or generalized, utility models.

The second area of controversy in relation to valuing health-related quality of life states is whether vNM utilities are what health-care

decision makers want to know. vNM is a representation of individual preferences under risk which differs from utility under certainty. That they deal with risk has been taken by some as an advantage since risk is arguably “inherent in virtually all health care and health policy decision making context” (Feeny 2000, p. II-152). The argument is that the contamination of utilities derived from Standard Gamble (SG) with attitudes towards risk is not of concern because health-care decisions involve some element of risk. This stance is often given as a justification for the superiority of SG over other means of deriving health state valuations, without a complete argument being given for how risk over gambles equates to the type of uncertainty faced by decision makers prioritizing over health-care options. Richardson claims that the relationship between the risk of death in an SG question and uncertainties faced in medical decision making is “more mystical than empirical” (Richardson 2002, p. 154), and consequently, the meaning and the interval property of units derived from SG questions are seriously confounded by the risk context of the instrument (Richardson 1994).

A debate is ongoing about the most appropriate outcome measure for health-care decision makers. Is it a valuation based on the public’s preferences towards particular health states or a valuation based on the actual, real time, patient experiences? (See Dolan and Kahneman 2008, for a discussion.) Do decision makers need a measure of utility as “health-related quality of life” or a more holistic measure of individual well-being? Unfortunately, the concept of utility used by economists is “damagingly ambiguous” (Broome 1991, p. 10). On the one hand, the term is used to refer to a Benthamite notion of pleasure and pain – a subjective judgment of individual well-being. On the other hand, it refers to a reflection of preferences. In the case of vNM utilities from EUT, these are preferences under risky prospects. EUT does not give a measure of well-being, or a model of how people actually behave under risky or uncertain situations, but simply shows how people would behave if they conformed to certain axioms of choice.

Cross-References

► Quality Adjusted Life Years (QALY)

References

- Allais, M. (1953). Le comportement de l’homme rationnel devant le risque: Critique des postulats et axiomes de l’école Américaine. *Econometrica*, 21, 503–546.
- Broome, J. (1991). Utility. *Economics and Philosophy*, 7, 1–12.
- Chew, S. H. (1989). Axiomatic utility theories with the betweenness property. *Annals of Operations Research*, 19, 273–298.
- Dolan, P., & Kahneman, D. (2008). Interpretations of utility and their implications for the valuation of health. *The Economic Journal*, 118, 215–234.
- Ellsberg, D. (1961). Risk, ambiguity and the savage axioms. *Quarterly Journal of Economics*, 75, 643–669.
- Feeny, D. (2000). A utility approach to the assessment of health-related quality of life. *Medical Care*, 9(Suppl II), II-151–II-154.
- Kahneman, D., & Tversky, A. (1972). Subjective probability: A judgment of representativeness. *Cognitive Psychology*, 3, 430–454.
- Loomes, G., & Sugden, R. (1982). Regret theory: An alternative theory of rational choice under uncertainty. *Economic Journal*, 92, 805–824.
- Quiggin, J. (1982). A theory of anticipated utility. *Journal of Economic Behavior and Organisation*, 3, 323–343.
- Richardson, J. (1994). Cost-utility analysis: What should be measured? *Social Science and Medicine*, 39(1), 7–21.
- Richardson, J. (2002). Evaluating summary measures of population health. In C. Murray (Ed.), *Summary measures of population health. Concepts, ethics, measurement and applications*. Geneva: WHO.
- Starmer, C. (2000). Developments in non-expected utility theory: The hunt for a descriptive theory choice under risk. *Journal of Economic Literature*, 38(2), 332–382.
- Torrance, G. W. (1986). Measurement of health-state utilities for economic appraisal: A review. *Journal of Health Economics*, 5, 1–30.
- Torrance, G. W., & Feeny, D. (1989). Utilities and quality-adjusted life years. *International Journal of Technology Assessment in Health Care*, 5, 559–575.
- Tversky, A., & Kahneman, D. (1992). Advances in prospect theory: Cumulative representation of uncertainty. *Journal of Risk and Uncertainty*, 5, 297–323.

Expenditure

► Consumption

Expenditures for Public Safety and Administration of Justice as a Percentage of the GNP

Ferdinand Ahiakpor

Department of Economics, University of Cape Coast, Cape Coast, Ghana

Description

There are certain mishaps, dangers, and disasters that may require the collective effort and resources of society as a whole to control, especially when the private markets lack efficient solutions. These dangers may be human made (such as armed robbery) or natural (such as flooding and ► [earthquakes](#)) (Groisman et al. 2007; Rubin et al. 1999; Ribas et al. 2006; Tymchuk et al. 1999). Public safety involves the prevention of and protection of individuals and society from events that could endanger their safety from significant damage to their ► [health](#) and welfare. From the above description, public safety could be classified as a public good because its provision benefits everyone in society, and individuals' consumption is less likely to reduce its supply. Funding for public safety provision is often the responsibility of national and local governments because private markets are likely to fail to provide them. Therefore, the provision and administration of public safety, especially from criminal activities, and justice are strongly related to the countries' gross national income (GNP) (Nørgård 2006).

The maintenance of law and order is an important aspect of public safety in the society. In certain cases, to prevent the occurrence of a crime, certain agencies need to be put in place (Syrett and Quick 2009). Also, the occurrence of a crime or disaster needs agencies to help people to prevent crimes, overcome disasters, and execute justice. The institutional approach of state-sponsored police, judicial service, and disaster management organizations is paid for by taxpayers. Therefore, public safety and administration of justice are the scope of the governments' public expenditure program. The amount of government revenue

spent on such public goods as a percentage of GNP is a key determinant of the level of public safety in the country (Nørgård 2006). For example, when the government spends more on security and judicial services, citizens are protected from the criminal and they have fair justice. This social expenditure by the government helps to promote ► [quality of life](#) within the country as the citizens live without intimidation and enjoy the quality of life.

References

- Groisman, P. Y., Sherstyukov, B., Razuvaev, V., Knight, R., Enloe, J., Stroumentova, N., et al. (2007). Potential forest fire danger over Northern Eurasia: Changes during the 20th century. *Global and Planetary Change*, 56(3), 371–386.
- Nørgård, J. (2006). Consumer efficiency in conflict with GDP growth. *Ecological Economics*, 57(1), 15–29.
- Ribas, R., Jr., Tymchuk, A., & Ribas, A. (2006). Brazilian mothers' knowledge about home dangers and safety precautions: An initial evaluation. *Social Science & Medicine*, 63(7), 1879–1888.
- Rubin, J., Gordon, C., & Amatekpor, J. (1999). Causes and consequences of mangrove deforestation in the Volta Estuary, Ghana: Some recommendations for ecosystem rehabilitation. *Marine Pollution Bulletin*, 7(8), 441–449.
- Syrett, K., & Quick, O. (2009). Pedagogical promise and problems: Teaching public health law. *Public Health*, 123(3), 22–131.
- Tymchuk, A., Lang, C., Dolyniuk, C., Berney-Ficklin, K., & Spitz, R. (1999). The home inventory of dangers and safety precautions-2: Addressing critical needs for prescriptive assessment devices in child maltreatment and in healthcare. *Child Abuse & Neglect*, 23(1), 1–14.

Experience Sampling

Adam Augustine

Department of Clinical and Social Sciences in Psychology, University of Rochester, Rochester, NY, USA

Synonyms

Daily diary; Ecological momentary assessment; Intensive time sampling

Definition

Experience sampling is a research methodology in which variables of interest are measured many times for each participant. Unlike longitudinal research designs, experience sampling takes place over a much shorter time frame (days or weeks). In the case of daily diary studies, participants are assessed once each day. In many experience sampling designs, participants are assessed several times a day on a predetermined schedule. In addition, researchers may wish to employ event-contingent sampling, in which participants are assessed only when a given event is experienced by the participant (i.e., a social interaction, a negative emotional experience).

Description

The use of experience sampling methodology has two primary benefits: real-world measurement and the acquisition of large amounts of data for each person in your study (i.e., within-person data). In terms of real-world measurement, there are many events which cannot be precisely replicated in the laboratory (i.e., social interactions, emotional experiences, health issues). Through the use of experience sampling and event-contingent reporting, one can learn about the causes and consequences of these events. In addition, many internal psychological states naturally fluctuate over time. To truly understand these temporally variant psychological constructs, one must incorporate time into their data. By measuring these states many times, one can better understand the ways in which they change and the correlates of change.

The second primary benefit of experience sampling methodology is that you can obtain a within-person data set that is as large and complex as most between-person data sets from traditional experimental designs (for a review, see Larsen et al. 2009). With many measurement occasions over time for each participant, every participant in your study essentially becomes an experiment in and of themselves. There are two basic options as to how to approach this level of detail at the within-person level. If your goal is to obtain

good, reliable measures of a construct that were obtained in a real-world setting, then you can simply aggregate over all measurement occasions (i.e., mean, standard deviation) and treat the entire data set as a single, between-persons design. However, the true power of experience sampling methodology comes into play when you harness the temporal nature of the data. As the time of each assessment is known, you can form a quantitative picture of how processes play out in the real world. This allows one to answer questions as to duration, co-occurrence, temporal causality (one event precipitates another), and variability over time, just to name a few possibilities.

Many of the variables which comprise or are related to quality of life naturally fluctuate over time, and experience sampling research has led to a greater understanding of these variables (for a review, see Augustine and Larsen 2011). Considering one component of quality of life, emotion, experience sampling has shed light on the duration of emotional episodes, the patterns of emotional change over time, and the consequences of extreme changes in emotion. The use of this methodology has also led to a greater understanding of how minor health concerns (headaches, stomach issues, etc.) persist and change over time. Finally, a key predictor of quality of life, personality, has been studied at length using experience sampling and has been found to predict temporal patterns in many of the variables mentioned previously.

Cross-References

- [Daily Diary Methodology](#)
- [Ecological Momentary Assessment](#)
- [Experimental Design](#)
- [Measurement Methods](#)

References

- Augustine, A. A., & Larsen, R. J. (2011). Emotion research. In M. R. Mehl & T. S. Conner (Eds.), *Handbook of research methods for studying daily life* (pp. 497–510). New York: Guildford Press.
- Larsen, R. J., Augustine, A. A., & Prizmic, Z. (2009). A process approach to emotion and personality: Using

time as a facet of data. *Cognition and Emotion*, 23, 1407–1426.

Experimental Auctions and WTP

► Willingness to Pay for Private Environmental Goods

Experimental Design

Kim Koh
Werklund School of Education, University of
Calgary, Calgary, AB, Canada

Synonyms

Experiments; Randomized clinical trial; Randomized trial

Definition

In quality-of-life and well-being research specifically, and in medical, nursing, social, educational, and psychological research more generally, experimental design can be used to test cause-and-effect relationships between the independent and dependent variables.

Description

Experimental design was pioneered by R. A. Fisher in the fields of agriculture and education (Fisher 1935). In studies that use experimental design, the independent variables are manipulated or controlled by researchers, which enables the testing of the cause-and-effect relationship between the independent and dependent variables. An experimental design can control many threats to internal validity by using random assignment of participants to different treatment/

intervention and control/comparison groups. Therefore, it is considered one of the most statistically robust designs in quality-of-life and well-being research, as well as in medical, nursing, social, educational, and psychological research. The distinction between experimental and non-experimental design lies in the manipulation of the levels of the independent variables or conditions. In nonexperimental design, the independent variable cannot be manipulated due to its nature (e.g., sex, age, race, intelligence, personality) (Kerlinger and Lee 2000) or for ethical reasons (e.g., an innovative pedagogical approach cannot preclude one group of students). The difference between true experimental design and quasi-experimental design is that the latter involves existing intact groups of participants (e.g., students in classrooms, nurses in hospital wards), which makes the random assignment of participants to the different treatment/intervention and control/comparison groups impossible.

According to Campbell and Stanley (1963), there are three basic types of true experimental designs: (1) pretest-posttest control group design, (2) Solomon four-group design, and (3) posttest-only control group design.

The *pretest-posttest control group design* is the most widely used design in medical, social, educational, and psychological research. It takes the following form:

$$\begin{matrix} R & O_1 & X & O_2 \\ R & O_3 & & O_4 \end{matrix}$$

Note. R = random assignment; O₁ = pretest for the treatment/intervention group; O₂ = posttest for the treatment/intervention group; X = treatment/intervention; O₃ = pretest for the control/comparison group; O₄ = posttest for the control/comparison group.

Two groups (treatment/intervention and control/comparison) that are equivalent before treatment/intervention are created by a random assignment of participants to each group. This minimizes any preexisting differences between the two groups of participants prior to their exposure to the treatment/intervention. In addition, the

existence of a control group allows this design to control nearly all threats to internal validity, such as history, maturation, testing, instrumentation, statistical regression to the mean, differential selection of participants, mortality, and interaction of selection of participants and maturation. As both groups of participants undergo the same events (i.e., treatment/intervention), the effect on the dependent variable is truly caused by the treatment/intervention, which represents a manipulation of the level of the independent variable. When analyzing pretest and posttest scores for the treatment/intervention and control/comparison groups, the use of Analysis of Covariance (ANCOVA) with pretest scores as the covariate is more appropriate than the use of gain-score comparisons with *t*-test. The caveat of the pretest-posttest control group design is that it does not control some of the threats to external invalidity, such as the interaction of testing (i.e., pretest) and treatment/intervention (e.g., the exposure to a mathematical problem-solving pretest may sensitize participants to a problem-solving teaching method); interaction of selection of participants and treatment/intervention (e.g., the interaction of school characteristics with a particular teaching method); reactive effects of experimental arrangements, such as the Hawthorne effect (i.e., students behaving differently because they know they are participating in an intervention) and the novelty effect (i.e., students reacting positively to a new program at the beginning of its implementation); and multiple-treatment interference (i.e., carryover effects from a previous treatment/intervention).

The *Solomon four-group design* is presented below:

R	O ₁	X	O ₂
R	O ₃		O ₄
R		X	O ₅
R			O ₆

Note. R = random assignment; O₁ = pretest for treatment/intervention group 1; O₂ = posttest for treatment/intervention group 1; X = treatment/

intervention; O₃ = pretest for control/comparison group 1; O₄ = posttest for control/comparison group 1; O₅ = posttest for treatment/intervention group 2; O₆ = posttest for control/comparison group 2.

This design involves two treatment/intervention and two control/comparison groups. The addition of a posttest-only treatment/intervention group and a posttest-only control/comparison group allows researchers to rule out the effect of the testing itself and to control for the interaction of the testing with the treatment/intervention. Such control increases not only the generalizability but also the replication of the effect of treatment/intervention in four different ways: O₂ > O₁, O₂ > O₄, O₅ > O₆, and O₅ > O₃ (Campbell and Stanley 1963).

The *posttest-only control group design* takes the following form:

R	X	O ₁
R		O ₂

Note. R = random assignment; O₁ = posttest for the treatment/intervention group; O₂ = posttest for the control/comparison group; X = treatment or intervention.

When true randomization is possible, the posttest-only control group design is more cost-effective than the pretest-posttest control group design or the Solomon four-group design. It also avoids participants' reactivity to the pretest.

A subset of experimental design is the *randomized controlled trials* (RCT), which is the gold standard for determining the effectiveness of a new treatment, intervention, or procedure in clinical research. RCT involves randomization, a placebo-controlled condition, and blinding/masking. Researchers should strictly adhere to the randomization or random allocation of participants to the treatment and control (i.e., placebo) conditions. Blinding refers to taking steps to prevent participants, researchers, and other people involved in the trial from knowing which participants received treatment and which

did not. These procedures are used to minimize participant selection and response biases, which are the major threats to the internal validity of the findings. RCT has been increasingly used to examine the causal relationships between educational interventions and student outcomes (Schneider et al. 2007). However, blinding teachers and students to an innovative educational intervention or reassigning them randomly to different classrooms can cause ethical concerns. Hence, the use of quasi-experimental design is more appropriate in educational research that involves an intervention.

Cross-References

- [Cluster Randomized Trial](#)
- [Factorial Design](#)
- [Statistical Experimental Design](#)

References

- Campbell, D. T., & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research*. Chicago: Rand McNally & Company.
- Fisher, R. A. (1935). *The design of experiments*. Edinburgh: Oliver and Boyd.
- Kerlinger, F. N., & Lee, H. B. (2000). *Foundations of behavioral research* (4th ed.). Belmont: Cengage Learning.
- Schneider, B., Carnoy, M., Kilpatrick, J., Schmidt, W. H., & Shavelson, R. J. (2007). *Estimating causal effects: Using experimental designs and observational design*. Washington, DC: American Educational Research Association.

Experiments

- [Experimental Design](#)

Exploratory Data Analysis

- [Data Analysis](#)

Exploratory Factor Analysis

James W. Griffith

Department of Medical Social Sciences,
Northwestern University Feinberg School of
Medicine, Chicago, IL, USA

Description

History

Charles Spearman was perhaps the first user of factor analysis; he used the technique to make inferences about the nature of intelligence (e.g., Spearman 1904). Since then, researchers have used exploratory factor analysis (EFA) in a variety of disciplines to understand how latent variables (aka *factors*) can help to understand statistical associations among constructs such as personality traits, mental abilities, biological characteristics, and workplace performance. Factorial validity is also mentioned later, so it is redundant to have it twice.

Sample Considerations

EFA is considered a large-sample. Recommendations for the required sample size vary and rules of thumb are generally insufficient. Based on their review of EFA used in psychological research, Fabrigar, Wegener, MacCallum, and Strahan (1999) recommended samples of 100 or more under “good conditions” (i.e., with four or more variables per each anticipated factor to be extracted and variables having high *communalities*, which is a high degree of association with the common factors in the data). They recommended samples of 200 or more under “moderate conditions” and cautioned that no sample size may be adequate if the data are not amenable to EFA. To the extent that one can posit certain characteristics of a to-be-collected dataset, one can conduct a computer simulation of his or her EFA to get a better sense of the required number of observations that would be needed for a particular EFA. Because an EFA attempts to create factors based on correlations among variables (see entry on

Pearson's Correlation), datasets without large correlations between at least some variables will be ill-suited to EFA.

Use and Interpretation

EFA can help to group statistically homogenous sets of variables. EFA differs from confirmatory factor analysis (CFA) in that the former is data driven and seeks to identify a previous unknown structure in the data, whereas the latter is theory driven; it tests how well a hypothesized structure fits the data. Because EFA can be used before a theory is well developed about the interrelationships among variables or questionnaire items, it often precedes CFA in a line of research. Ideally, an EFA should result in interpretable factors on which observed variables load on one factor while remaining statistically independent from other factors. Interpretation of a factor structure is used in test validation and construction, including the assessment of factorial validity (i.e., the degree to which an observed factor structure fits with a particular theory or posited structure of a test).

Factor Extraction and Rotation

Researchers are faced with many choices when using EFA (e.g., Fabrigar et al. 1999), including what methods and assumptions to employ for factor extraction (e.g., maximum likelihood, least squares), how many factors to extract and interpret, how to rotate the factors to enhance interpretability (e.g., orthogonal vs. oblique rotations), and what to name the factors after they have been extracted. Many techniques exist for determining the number of factors to extract.

An *eigenvalue* represents the variance of a factor, and eigenvalues are used to guide the numbers of factors to be extracted. Early techniques include extracting factors with eigenvalues greater than 1, as well as the scree test, in which eigenvalues are plotted in descending order of size and the analyst looks for a marked point of drop in their values; eigenvalues above the drop are retained. Contemporary and more complicated

techniques include parallel analysis (for a tutorial and review, see Hayton et al. 2004) and Velicer's (1976) minimum average partial (MAP) test. In parallel analysis, the eigenvalues from the observed data are compared to simulated data in which all variables are uncorrelated. This is a way to control for the fact that some eigenvalues will be larger than others based on sampling error. Velicer's MAP seeks to find the number of components that minimizes residual correlations after the components are partialled from the correlation matrix.

The rotation of factors can enhance their interpretability. Broadly speaking, factor rotations can be orthogonal in which factors are uncorrelated (e.g., varimax rotation) or oblique in which factors are allowed to intercorrelate (e.g., oblimin, promax). Which rotation to use depends upon *a priori* theory and, after trying several rotations, which rotation leads to the most sensible solution. The interpretation of factors and their loadings is a blend of art and science and is aided greatly by background knowledge of the variables being analyzed.

New Directions and Further Reading

Current new directions for EFA include the integration of exploratory techniques with structural equation modeling and confirmatory factor analysis. For example, exploratory structural equation modeling (Asparouhov and Muthén 2009) combines aspects of each by allowing the researcher to specify parts of a hypothesized model but includes more flexibility such as the inclusion of covariates and correlated residuals in the model.

There are many texts available for further reading on EFA, and many books on psychometric analysis cover it. A classic text is Gorsuch (1983). A user-friendly introduction and how-to guide can be found in Tabachnick and Fidell (2007). A mathematical presentation can be found in Johnson and Wichern (2007). Theoretical background on EFA and other psychometric techniques is available in Nunnally and Bernstein (1994).

Cross-References

- [Factor Analysis](#)
- [Factorial Invariance](#)
- [Factorial Validity](#)
- [Latent Variables](#)
- [Psychometric Analysis](#)

References

- Asparouhov, T., & Muthén, B. (2009). Exploratory structural equation modeling. *Structural Equation Modeling*, 16, 397–438. <https://doi.org/10.1080/10705510903008204>.
- Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychology research. *Psychological Methods*, 4, 272–299.
- Gorsuch, R. L. (1983). *Factor analysis* (2nd ed.). London: Lawrence Erlbaum Associates.
- Hayton, J. C., Allen, D. G., & Scarpello, V. (2004). Factor retention decision in exploratory factor analysis: A tutorial on parallel analysis. *Organizational Research Methods*, 7, 191–205. <https://doi.org/10.1177/1094428104263675>.
- Johnson, R. A., & Wichern, D. W. (2007). *Applied multivariate statistical analysis* (6th ed.). New York: Pearson Education.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.
- Spearman, C. (1904). “General intelligence” objectively determined and measured. *The American Journal of Psychology*, 15, 201–292.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). New York: Pearson Education.
- Velicer, W. F. (1976). Determining the number of components from the matrix of partial correlations. *Psychometrika*, 41, 321–327.

Expression of Amusement, Joy

- [Laughter](#)

External and Internal Assets

- [Developmental Assets](#)

Extradyadic Relations

Kristen P. Mark¹ and Katherine R. Haus²

¹Department of Family Medicine & Community Health, University of Minnesota Medical School, Minneapolis, MN, USA

²Department of Applied Health Science, School of Public Health, Indiana University, Bloomington, IN, USA

Synonyms

[Extradyadic sex](#); [Extramarital relations](#); [Extramarital sex](#); [Infidelity](#)

Definition

Extradyadic relations refer to sexual or emotional infidelity outside of the agreed-upon negotiations of the relationship. While sometimes referred to as extramarital relations, in this entry, extradyadic relations will encompass infidelity regardless of marital status; it is important to note though that extradyadic sex is not considered infidelity in the context of an open relationship.

Description

Infidelity is the most commonly reported cause of relationship dissolution and divorce in the United States (Amato and Previti 2004) and the fallout from infidelity can have a devastating negative impact on well-being (Thompson and O’Sullivan 2016). Research on extradyadic relations is inconsistent with limitations in methodologies (Blow and Hartnett 2005a) and conflicting findings from study to study (Blow and Hartnett 2005b). Although most research focuses on vaginal sex occurring outside of a marital relationship, behaviors can range from kissing, oral sex, or other sexual behaviors to intense emotional relationships or close friendships. In addition to the

methodological issue of defining extradyadic relations, there are a number of other methodological considerations with research on this topic. Inconsistencies in how relationships are defined (e.g., one-time interactions, affairs) and differences across samples (e.g., married couples, cohabitating couples) make prevalence data difficult to obtain and predictive data difficult to generalize. Nevertheless, research on the prevalence of infidelity suggests that between 20% and 40% of men and between 20% and 25% of women have ever engaged in extradyadic affairs. However, this gender gap is narrowing with more recent studies citing men and women as engaging in similar rates of infidelity (23% of men and 19% of women; Mark et al. 2011; Fincham and May 2017). See Blow and Hartnett (2005a) for a review of the methodological considerations in extradyadic relations research.

Many researchers have attempted to explain and predict infidelity due to the potentially damaging impact its occurrence has on relationships. The predictors of infidelity can be categorized into three main categories: demographic, interpersonal, and intrapersonal. Research related to each is outlined below.

Demographic Predictors

Gender: Although gender is the most commonly studied demographic predictor, recent research suggests that men and women engage in similar levels of infidelity, especially when both sexual and emotional extradyadic behaviors are examined (Allen et al. 2005; Fincham and May 2017; Mark et al. 2011; Treas and Giesen 2000).

Relationship Status: Married women are less likely to report extradyadic relations than cohabiting or dating women. This link has not been found in men and is likely due to the level of commitment in the relationship rather than the status of marriage itself (Prevetti and Amato 2004). Indeed, those who hold higher ratings of commitment within their relationships are less likely to engage in extradyadic behaviors (Fincham and May 2017).

Education: The research on education is mixed, with some studies reporting that highly educated individuals are more likely to engage in infidelity than less educated individuals (Atkins

et al. 2001; Martins et al. 2016; Treas and Giesen 2000) and other studies reporting the reverse or no relationship at all (Adamopoulou 2013; Allen et al. 2005; Fincham and May 2017). One study found higher education to be predictive of infidelity only among women (Martins et al. 2016).

Income: Individuals with higher incomes have been found to be more likely to engage in extradyadic relations (Allen et al. 2005; Atkins et al. 2001), though this finding may be a function of more opportunity to meet potential extradyadic partners rather than income itself. This finding may also be moderated by gender, as suggested by Munsch, who found that women “breadwinners” (p. 469) were less likely to engage in extradyadic relationships than men “breadwinners” (2014). Economic dependency was also found to impact extradyadic relationship likelihood among both women and men, suggesting that extradyadic relationships can also be used as a way to influence the equity within relationships with a “breadwinning” spouse (Munsch 2015).

Religion: Extradyadic relations have been reported more often in individuals who report no religious affiliation than in individuals who do (Burdette et al. 2007; Fincham and May 2017; Mattingly et al. 2010), although religious affiliation has not always been a significant predictor of infidelity (Haseli et al. 2019; Mark et al. 2011).

Interpersonal Predictors

Some studies have found low marital or relationship satisfaction to be a significant predictor of extradyadic relations (Atkins et al. 2001; Fincham and May 2017; Glass and Wright 1985; Haseli et al. 2019; Owen et al. 2013; Spanier and Margolis 1983), whereas other studies have either not found this link (Choi et al. 1994) or found it only for women but not for men (Mark et al. 2011; Prins et al. 1993). However, relationship satisfaction is often inconsistently defined thereby making it difficult to compare findings across studies (Blow and Hartnett 2005b). Sexual dissatisfaction has been found to be a significant predictor of extradyadic relations, particularly related to the decline in sexual frequency as marriage length increases; this predictor was especially found for men (Liu 2000). Additionally, some research suggests that incompatibility with a committed

partner in terms of sexual attitudes and values is predictive of infidelity for women, but not men (Mark et al. 2011). Big five personality characteristics have also been found to impact a committed partner's likelihood of engaging in extradyadic relations, as women with partners high in neuroticism and men with partners high in narcissism were both more likely to engage in infidelity (Altgelt et al. 2018). Other research suggests that partner incompatibility is more important when predicting infidelity than other intrapersonal factors (Haseli et al. 2019).

Intrapersonal Predictors

Research suggests that individuals with more permissive sexual attitudes toward infidelity are more likely than those with less permissive sexual attitudes to engage in infidelity (Fincham and May 2017; Haseli et al. 2019; Martins et al. 2016). Higher sexual interest in both men and women has also been associated with a higher likelihood of extradyadic sex (Treas and Giesen 2000; Fincham and May 2017). Mood has been shown to be a predictor of men's sexual infidelity such that men with an increased tendency to engage in regretful sexual behavior during a sad or anxious affective state were more likely to engage in extradyadic sex than men without that tendency (Mark et al. 2011).

Research on personality characteristics related to infidelity has found that low agreeableness, high extraversion, high neuroticism (e.g., high in anxiety, worry), low conscientiousness (Barta and Kiene 2005), and high psychoticism (e.g., high in aggression, hostility; Buss and Shackelford 1997) are all related to an increased propensity to engage in extradyadic relations. Narcissism has also been found to influence an individual's preferred type of relationships, also contributing to higher rates of infidelity (Alavi et al. 2018). Regarding personality characteristics, Alavi and colleagues discuss the dark triad (Machiavellianism, psychopathy, and narcissism) and the impact that they can have on rates of infidelity, finding that higher levels of Machiavellianism and psychopathy contributed to higher ratings of intentions to engage in infidelity, though narcissism did not (Alavi et al. 2018). In terms of attachment style, DeWall et al. (2011) found that avoidant

attachment (i.e., someone who desires independence, is self-sufficient, and avoids being close to others) predicted a greater propensity to engage in infidelity when combined with low levels of relationship commitment. Several other studies found those with the insecure attachment styles of anxious or avoidant to be much more likely to engage in infidelity than those with secure attachment styles, as they are adjusted differently toward romantic relationships (Fincham and May 2017; Haseli et al. 2019; McDaniel et al. 2017). Research has also shown that being and feeling powerful significantly predicted both the intention to engage in and the actual engagement in extradyadic relations; this finding was significant for both men and women (Lammers et al. 2011). Research by Mark et al. (2011) examined sexual excitation (e.g., factors that may sexually arouse) and sexual inhibition (e.g., factors that may inhibit sexual arousal) and found that men and women who exhibited a higher propensity of sexual inhibition due to performance concerns and a lower propensity of sexual inhibition due to performance consequences were more likely to engage in infidelity. A greater propensity for sexual excitation was found to be predictive of extradyadic sex in men, but not women. Finally, research indicates that those who are exposed to parental infidelity during their childhood are also much more likely to engage in extradyadic relations than those who do not share these experiences (Fincham and May 2017; Haseli et al. 2019; Weiser et al. 2017b). This experience has actually been found to double the rates of infidelity among those who have been exposed to parental infidelity (Fincham and May 2017).

The link between extradyadic relations and quality of life has primarily been centered around negative outcomes in relationships as mentioned above (e.g., lower sexual and relationship satisfaction). However, some research does suggest that a subset of couples may experience positive relationship outcomes after infidelity. These positive outcomes include a newfound ability to communicate about the relationship with their partner, an increase in closeness after working through the infidelity (Olson et al. 2002), and an overall improvement of the relationship following infidelity (Atwater 1982). However, it is likely that this

potential for growth is only possible when forgiveness is also present, as this is one of the only predictors for post-traumatic growth (Heintzelman et al. 2014).

Research in the area of extradyadic relations is expanding in part due to technological advances that offer opportunity to connect with potential extradyadic partners in ways that have not traditionally been available. With the advance of technology has come the advent of online platforms and social media applications that facilitate the search for extradyadic interactions. This has contributed to an influx in research centering around the role that these platforms can have in relationships. Higher social media use on Twitter and Facebook has been found to contribute to lower rates of relationship satisfaction (Clayton 2014). Some studies have found that those who exhibit higher social networking behaviors via social media may also be more prone to infidelity (Clayton 2014; Haseli et al. 2019). Additionally, those who spend time on platforms that are geared exclusively toward those who are seeking extradyadic relationships are also much more likely to engage in infidelity (Fincham and May 2017; McDaniel et al. 2017). Additionally, specific sites may be used by people of different demographics in their pursuit of extradyadic relations, as more men than women seeking to engage in infidelity report using Tinder to facilitate that interaction (Weiser et al. 2017a). As methods of online communication continue to grow and change, so too does the amount of research to be conducted on technology-mediated infidelity and the impact of technology on the infidelity landscape. However, future researchers must be mindful of the methodological concerns outlined by Blow and Hartnett (2005a), such as the need for consistency in the definition of extradyadic sex, confidentiality, sample diversity, and validated and consistent measurement of the construct.

Cross-References

- ▶ Casual Sex and the Quality of Life
- ▶ Compulsive Sexual Behavior Inventory
- ▶ Dating Relationships

- ▶ Emotional Well-Being
- ▶ Family Conflicts
- ▶ Marital Adjustment
- ▶ Marital Conflict and Health
- ▶ Mood
- ▶ Mood Disorders and Sexuality
- ▶ Psychological Well-Being, Marital Risk, and Advice Seeking
- ▶ Relationship Contingency and Sexual Satisfaction
- ▶ Relationship Satisfaction
- ▶ Sexual Behaviors Desired Frequency
- ▶ Sexual Functioning
- ▶ Sexual Satisfaction
- ▶ Trust

References

- Adamopoulou, E. (2013). New facts on infidelity. *Economics Letters*, 121, 458–462. <https://doi.org/10.1016/j.econlet.2013.09.025>.
- Alavi, M., Mei, T. K., & Mehrinezhad, S. A. (2018). The dark triad of personality and infidelity intentions: The moderating role of relationship experience. *Personality and Individual Differences*, 128, 49–54. <https://doi.org/10.1016/j.paid.2018.02.023>.
- Allen, E. S., Atkins, D. C., Baucom, D. H., Snyder, D. K., Gordon, K. C., & Glass, S. P. (2005). Intrapersonal, interpersonal, and contextual factors in engaging in and responding to extramarital involvement. *Clinical Psychology: Science and Practice*, 12, 101–130.
- Altgelt, E. E., Reyes, M. A., French, J. E., Meltzer, A. L., & McNulty, J. (2018). Own and partner personality traits as predictors of infidelity. *Journal of Social and Personal Relationships*, 35, 600–614. <https://doi.org/10.1177/0265407517743085>.
- Amato, P. R., & Previti, D. (2004). People's reasons for divorcing: Gender, social class, the life course, and adjustment. *Journal of Family Issues*, 24(5), 602–626. <https://doi.org/10.1177/0192513x03254507>.
- Atkins, D. C., Baucom, D. H., & Jacobson, N. S. (2001). Understanding infidelity: Correlates in a national random sample. *Journal of Family Psychology*, 15, 735–749.
- Atwater, L. (1982). *The extramarital connection: Sex, intimacy, and identity*. New York: Irvington.
- Barta, W. D., & Kiene, S. M. (2005). Motivations for infidelity in heterosexual dating couples: The roles of gender, personality differences, and sociosexual orientation. *Journal of Social and Personal Relationships*, 22, 339–360.
- Blow, A. J., & Hartnett, K. (2005a). Infidelity in committed relationships I: A methodological review. *Journal of Marital and Family Therapy*, 31(2), 183–216.

- Blow, A. J., & Hartnett, K. (2005b). Infidelity in committed relationships II: A substantive review. *Journal of Marital and Family Therapy*, 31(2), 217–233.
- Burdette, A. M., Ellison, C. G., Sherkat, D. E., & Gore, K. A. (2007). Are there religious variations in marital infidelity? *Journal of Family Issues*, 28, 1553–1581.
- Buss, D. M., & Shackelford, T. K. (1997). Susceptibility to infidelity in the first year of marriage. *Journal of Research in Personality*, 31, 193–221.
- Choi, K. H., Catania, J. A., & Dolcini, M. M. (1994). Extramarital sex and HIV risk behavior among US adults: Results from the National AIDS Behavioral Survey. *American Journal of Public Health*, 84, 2003–2007.
- Clayton, R. B. (2014). The third wheel: The impact of twitter use on relationship infidelity and divorce. *Cyberpsychology, Behavior and Social Networking*, 17, 425–430. <https://doi.org/10.1089/cyber.2013.0570>.
- DeWall, C. N., Lambert, N. M., Slotter, E. B., Pond, R. S., Deckman, T., Finkel, E. J., et al. (2011). So far away from one's partner, yet so close to romantic alternatives: Avoidant attachment, interest in alternatives, and infidelity. *Journal of Personality and Social Psychology*, 101(6), 1302–1316.
- Fincham, F. D., & May, R. W. (2017). Infidelity in romantic relationships. *Current Opinion in Psychology*, 13, 70–74. <https://doi.org/10.1016/j.copsyc.2016.03.008>.
- Glass, S. P., & Wright, T. L. (1985). Sex differences in type of extramarital involvement and marital dissatisfaction. *Sex Roles*, 12, 1101–1120.
- Haseli, A., Shariati, M., Nazari, A. H., Keramat, A., & Emamian, M. H. (2019). Infidelity and its associated factors: A systematic review. *Journal of Sexual Medicine*, 16, 1155–1169. <https://doi.org/10.1016/j.jsxm.2019.04.011>.
- Heintzelman, A., Murdock, N. L., Krycak, R. C., & Seay, L. (2014). Recovery from infidelity: Differentiation of self, trauma, forgiveness, and posttraumatic growth among couples in continuing relationships. *Couple and Family Psychology: Research and Practice*, 3, 13–29. <https://doi.org/10.1037/cfp0000016>.
- Lammers, J., Stoker, J. I., Jordan, J., Pollmann, M., & Stapel, D. A. (2011). Power increases infidelity among men and women. *Psychological Science*, 22(9), 1191–1197.
- Liu, C. (2000). A theory of marital sexual life. *Journal of Marriage and the Family*, 62, 363–374.
- Mark, K. P., Janssen, E., & Milhausen, R. R. (2011). Infidelity in heterosexual couples: Demographic, interpersonal, and personality-related predictors of extra-dyadic sex. *Archives of Sexual Behavior*, 40, 971–982.
- Martins, A., Pereira, M., Andrade, R., Dattilio, F. M., Narciso, I., & Canavarro, M. C. (2016). Infidelity in dating relationships: Gender-specific correlates of face-to-face and online extradyadic involvement. *Archives of Sexual Behavior*, 45, 193–205. <https://doi.org/10.1007/s10508-015-0576-3>.
- Mattingly, B. A., Wilson, K., Clark, E. M., Bequette, A. W., & Weidler, D. J. (2010). Foggy faithfulness: Relationship quality, religiosity, and the perceptions of dating infidelity scale in an adult sample. *Journal of Family Issues*, 31, 1465–1480.
- McDaniel, B. T., Drouin, M., & Cravens, J. D. (2017). Do you have anything to hide? Infidelity-related behaviors on social media sites and marital satisfaction. *Computers in Human Behavior*, 66, 88–95.
- Munsch, C. L. (2015). Her support, his support: Money, masculinity, and marital infidelity. *American Sociological Review*, 80, 469–495. <https://doi.org/10.1177/0003122415579989>.
- Olson, M. M., Russell, C. S., Kessler, M., & Miller, R. B. (2002). Emotional processes following disclosure of an extramarital affair. *Journal of Marital and Family Therapy*, 28, 423–434.
- Owen, J., Rhoades, G. K., & Stanley, S. M. (2013). Sliding versus deciding in relationships: Associations with relationship quality, commitment, and infidelity. *Journal of Couple and Relationship Therapy*, 12, 135–149. <https://doi.org/10.1080/15332691.2013.779097>.
- Prevetti, D., & Amato, P. R. (2004). Is infidelity a cause or consequence of poor marital quality? *Journal of Social and Personal Relationships*, 21, 217–230.
- Prins, K. S., Buunk, B. P., & VanYperen, N. W. (1993). Equity, normative disapproval, and extramarital relationships. *Journal of Social and Personal Relationships*, 10, 39–53.
- Spanier, G. B., & Margolis, R. L. (1983). Marital separation and extramarital sexual behavior. *Journal of Sex Research*, 19, 23–48.
- Thompson, A. E., & O'Sullivan, L. F. (2016). Drawing the line: The development of a comprehensive assessment of infidelity judgments. *Journal of Sex Research*, 53(8), 910–926. <https://doi.org/10.1080/00224499.2015.1062840>.
- Treas, J., & Giesen, D. (2000). Sexual infidelity among married and cohabitating Americans. *Journal of Marriage and the Family*, 62, 48–60.
- Weiser, D. A., Niehus, S., Flora, J., Punyanunt-Carter, N. M., Arias, V. S., & Baird, H. (2017a). Swiping right: Sociosexuality, intentions to engage in infidelity, and infidelity experiences on tinder. *Personality and Individual Differences*, 133, 29–33. <https://doi.org/10.1016/j.paid.2017.10.025>.
- Weiser, D. A., Weigel, D. J., Lasaz, C. B., & Evans, W. P. (2017b). Family background and propensity to engage in infidelity. *Journal of Family Issues*, 38, 2083–2101. <https://doi.org/10.1177/0192513X15581660>.

Extradyadic Sex

► Extradyadic Relations

Extramarital Relations

► Extradyadic Relations

Extramarital Sex

- ▶ [Extradynamic Relations](#)
-

Extraversion, Stable

- ▶ [Oxford Happiness Questionnaire](#)
-

Extreme Political Violence

- ▶ [Terrorism](#)
-

Extreme Response Bias

- ▶ [Life Satisfaction Ratings and Response Formats](#)
-

Extreme-Groups Validity

- ▶ [Known-Groups Validity](#)
-

Extroversion

Bruce Headey
Melbourne Institute of Applied Economic and
Social Research, The University of Melbourne,
Melbourne, VIC, Australia

Synonyms

Extroversion is the more common American spelling, extraversion the British.

Definition

Extroversion is a personality trait. The opposite end of the continuum is introversion. Extroverts are sociable, outgoing, assertive, and excitable. Introverts are not necessarily shy but are less likely to seek company and seek excitement.

Description

Virtually all taxonomies of human personality include extroversion or a similar trait. The term was coined by the psychoanalyst, Carl Jung (1921), and made popular by the German-born, British-based psychologist, Hans Eysenck (Eysenck and Eysenck 1969). Other taxonomies, which include extroversion as a basic trait, are Cattell's 16 Personality Factors (Cattell et al. 1957), and the Big Five Personality Domains (Costa and McCrae 1991). Eysenck and Eysenck (1969) claimed to trace designation of extroversion and neuroticism as basic personality traits to the work of the Greek, Galen of Pergamon, who wrote about the four humors or temperaments. Extroverts tend to be "choleric" and "sanguine," whereas introverts tend to be "phlegmatic" and "melancholic."

Twin studies have shown that extroversion is about 50% hereditary (Bouchard and McGue 2003). Interpersonal differences in extroversion remain about the same throughout adult life, which can lead researchers to say that the trait is stable in adulthood. However, this is not quite true. Maturation effects occur; people tend to become less extroverted and also less neurotic as they get older (Roberts and Mroczek 2008). Women, on average, rate lower on extroversion and higher on neuroticism than men (Eysenck and Eysenck 1969).

There is a considerable body of work which seeks to link differences in personality to differences in brain function. Eysenck himself believed that differences between extroverts and introverts are largely due to differences in cortical arousal. In his view, extroverts have lower levels of arousal and seek social stimulation and excitement in order to feel satisfied. Introverts, by contrast,

have high normal levels of arousal and easily become overstimulated (Eysenck and Eysenck 1969). Later studies have linked extroversion to higher than average sensitivity of the mesolimbic dopamine system to rewarding stimuli (Depue and Collins 1999) and also to increased blood flow in areas of the brain particularly associated with sensory and emotional experience (Johnson et al. 1999).

Measures of extroversion and neuroticism are usually self-reports. Typical items measuring extroversion are, “I am the life of the party” and “I like to be where the action is.” Scales taken from either the Eysenck Personality Inventory (EPI), or the Big Five Personality Domains (NEO-AC), have been widely used in quality of life research. Extroversion is just moderately positively related to measures of subjective well-being (SWB). Typical correlations are in the 0.10 to 0.20 range. Neuroticism, by contrast, is strongly negatively related to SWB, with correlations typically in the -0.30 to -0.40 range (Lucas 2008). Extroverts tend to experience more favorable life events and also extract more pleasure from these events than either introverts or neurotic individuals (Headey and Wearing 1989; Magnus et al. 1993; Larsen and Ketelaar 1991; Lucas and Baird 2004).

Cross-References

- [EPI \(Eysenck Personality Inventory\) Neuroticism Scale](#)
- [Quality of Life Research](#)

References

- Bouchard, T. J., & McGue, M. (2003). Genetic and environmental influences on human psychological differences. *Journal of Neurobiology*, 54, 4–45.
- Cattell, R. B., Marshall, M. B., & Georgiades, S. (1957). Personality and motivation: Structure and measurement. *Journal of Personality Disorders*, 19, 53–67.
- Costa, P. T., & McCrae, R. R. (1991). The NEO-AC. In *The NEO PI-R*. Odessa: PAR.
- Depue, R. A., & Collins, P. F. (1999). Neurobiology and the structure of personality: Dopamine, facilitation of incentive motivation and extroversion. *Behavioral and Brain Sciences*, 22, 491–517.
- Eysenck, H. J., & Eysenck, S. G. B. (1969). *Personality structure and measurement*. London: Routledge/Kegan Paul.
- Headey, B. W., & Wearing, A. J. (1989). Personality, life events and subjective well-being: Toward a dynamic equilibrium model. *Journal of Personality and Social Psychology*, 57, 731–739.
- Johnson, D. L., Wiebe, J. S., Gold, S. M., & Andreason, N. C. (1999). Cerebral blood flow and personality: A positron emission topography study. *American Journal of Psychiatry*, 156, 252–257.
- Jung, C. J. (1921). *Psychological types*. Zurich: Rascher Verlag.
- Larsen, R. J., & Ketelaar, T. (1991). Personality and susceptibility to positive and negative emotional states. *Journal of Personality and Social Psychology*, 61, 132–140.
- Lucas, R. E. (2008). Personality and subjective well-being. In M. Eid & R. J. Larsen (Eds.), *The science of subjective well-being* (pp. 171–194). New York: Guilford Press.
- Lucas, R. E., & Baird, B. M. (2004). Extraversion and emotional reactivity. *Journal of Personality and Social Psychology*, 86, 473–485.
- Magnus, K., Diener, E., Fujita, F., & Pavot, W. (1993). Extraversion and neuroticism as predictors of objective life events: A longitudinal analysis. *Journal of Personality and Social Psychology*, 65, 1046–1053.
- Roberts, B. W., & Mroczek, D. (2008). Personality change in adulthood. *Current Directions in Psychological Science*, 17, 31–35.