This is a preprint version of the following article:
Brey, P. (2012). Well-Being in Philosophy, Psychology, and Economics. In Brey, P., Briggle, A. & Spence, E. (Eds.), *The Good Life in a Technological Age* (pp. 15-34). Routledge.

Well-Being in Philosophy, Psychology and Economics

Philip Brey

Well-being has traditionally been a topic of philosophical study, but has in recent decades become an important concern in other fields as well, particularly psychology and economics. Empirical research on well-being and happiness has become very influential in the policy world, in which its measurement is increasingly used to guide social and economic policy. In this chapter, I will introduce and discuss the study of well-being and happiness in philosophy, psychology and economics. These fields have been chosen because they are the ones in which well-being has been studied most extensively. Next to introducing the study of well-being in these fields, I will also discuss academic studies of the relation between well-being and technology.

In the next section, I will discuss how well-being has been taken up in philosophy, and I will introduce and critique major philosophical approaches to well-being, which include hedonism, desire-satisfactionism and objective list theories (including perfectionism and capability theories). The section that follows focuses on the psychological study of well-being. It discusses its history, its central concepts and methods, such as the notion of subjective well-being, and the new field of positive psychology. This section is then followed by a review of the role of well-being in economics, which focuses on the emerging field of happiness economics and on happiness and quality of life indices. The chapter will be concluded with a discussion of the relation between well-being and technology, as it is studied (or has been failed to be studied) in philosophy, psychology, economics and other fields.

2. Philosophical Theories of Well-Being

In philosophy, well-being (the good life, happiness) has been studied since the ancient Greeks. It is an important theme in the works of Aristotle, as it is in ancient Greek philosophy throughout. In modern philosophy, well-being and happiness take centre stage in the works of 18^{th} and 19^{th} century philosophers Jeremy Bentham and John Stuart Mill, who present a modern version of hedonism as part of their theory of utilitarianism. In contemporary philosophy, well-being remains an important topic that has received increased attention in the past thirty years. It is generally recognized that there are three major types of theories of well-being in philosophy: hedonist, desire-fulfillment and objective theories (Parfit, 1986; Griffin, 1986; Sumner, 1996). These will now be discussed in turn.

Hedonism (and other mental state theories)

Hedonist theories hold that only pleasure is intrinsically good, and pain is the only intrinsic bad. A person's life therefore goes well to the extent that he or she is able to accumulate pleasure and avoid pain. To strive for well-being is to strive for the greatest balance of pleasure over pain. Modern hedonism finds its roots in the works of the utilitarian philosophers John Stuart Mill and Jeremy Bentham, who both argued for the centrality of pleasure in well-being. Earlier forms of hedonism date back to antiquity, including the teachings of Epicurus in the third and fourth century B.C., who held that a good life is attained by maximizing pleasure and by avoiding protracted fear and bodily suffering.

Quantitative hedonism, or simple hedonism, is the view that the value of pleasure is only determined by its quantity (involving parameters like duration and intensity) and not by its quality. It therefore does not matter what type of pleasure one has or what its source is. A better life is in all circumstances one in which the amount of pleasure is maximized and the amount of pain is minimized. Quantitative hedonism was originally proposed by Jeremy Bentham (1789). It has since then come under severe criticism. A powerful objection to it, brought forward by John Stuart Mill (1863), is that certain types of pleasure seem more desirable or worth having than others. As Mill argues, it is better to be an unsatisfied human than a satisfied pig. In other words, if one lives a deprived life, in which one only satisfies one's most primitive urges and pursues only bodily pleasures, then one's life is not necessarily good. One misses out on so-called higher pleasures, that may involve experiences of friendship, knowledge, art, contemplation and refinement in taste. These are pleasures that are more worthwhile than the so-called lower pleasures. *Qualitative hedonism*, proposed by Mill, holds that some pleasures are more valuable or pleasurable than others. A good life is therefore not merely a life in which the duration and intensity of pleasure is maximized, but one in which the highest pleasures are well-represented.

Hedonism, in either its qualitative or quantitative form, has been criticized for not answering sufficiently to our intuitions about what makes a life good. One of the most powerful objections is the *experience machine objection* of Robert Nozick (1974). Nozick hypothesizes the existence of an "experience machine" that uses neurostimulation to simulate a nonexistent world which provides the user with constant gratification. The user experiences any kind of pleasure, without being able to distinguish the simulated world from a real one. Nozick argues that many people would choose not to plug into such a machine for the rest of their lives, because people value real events and experiences and want to live a real life, which they believe is not provided by being hooked up to an experience machine. This, he argues, demonstrates that hedonism does not provide us with an adequate account of well-being.

Hedonist theories are part of a larger class of *mental state theories* of well-being. Mental state theories hold that well-being depends on the presence of certain types of mental states in humans. These could be cognitive, affective, emotional, volitional, or mixed. Hedonism is by far the most prominent type of mental state theory. *Happiness theories of well-being* are a second prominent type. Proponents of such theories usually argue that happiness is different from mere pleasure, and that happiness is something more than or different from the mere experience of positive feelings. On a *cognitive view of happiness*, happiness involves a positive attitude to one's life as a whole, or the tendency to evaluate one's life positively. This is a cognitive state that need not be accompanied by positive feelings at all. *Hybrid views of happiness* hold that happiness is constituted by different kinds of cognitive states, for instance by a combination of pleasant feelings and positive evaluations of one's life. On *hedonistic views of happiness,* happiness is a purely hedonic state and therefore either equals pleasure or constitutes a particular form of it (Brülde, 2007). On this view, a happiness theory of well-being is a particular kind of hedonistic theory.

Desire-fulfillment theories

Desire-fulfillment theories, also called *preference-satisfaction theories*, hold that well-being lies in the fulfillment of one's desires. Desire-fulfillment theories emerged in the 19th century, in part as an outgrowth of welfare economics. Welfare economists wanted to have objective criteria for measuring well-being or utility in economic subjects. However, pleasure and pain are in people's heads and therefore cannot be easily measured. So economists instead came to a conception of well-being as the satisfaction of preferences or desires. People are normally able to state their preferences and rank them in relation to each other, which then allows economists to measure preferences and include them in 'utility functions' in which value is attached to the satisfactions of preferences.

Next to this practical advantage, a more fundamental advantage of desire-fulfillment theories over hedonist theories is that they are capable of avoiding the "experience machine" dilemma. This dilemma can be avoided because desire theories can account for the fact that people sometimes desire that one's experiences are real. For example, if one desires to be genuinely loved by people, and an "experience machine" simulates people that seem to love one, then one's desire is not really satisfied, because this love is only simulated and not real. Therefore, this love can be held to be of less value than genuine love.

Three major types of desire-fulfillment theories have been proposed (Crisp, 2008). *Simple desire-fulfillment theories (*also called *present desire theories)* hold that one is better off to the extent that one's current desires are fulfilled, and the best life is one in which all one's actual desires are fulfilled. A major problem with this view is that many desires that people have seem to go against their long-term interests. An angry and impulsive adolescent, who chooses a life of crime and substance abuse and engages in reckless acts, may follow his short-term desires but is not likely to be better off by following them in the long run. He would have a better life by suppressing some of his impulsive desires and choosing different ones.

Reflective or *comprehensive desire-fulfillment theories* give priority to one's reflective preferences that concern one's life as a whole. If it is one's preference, upon reflection, to have a long and happy life, then this preference would trump short-term preferences that seem to go against this goal. An objection to reflective theories is that they, also, may result in choices that are not optimal for a particular person. Take, for example, an orphan monk who has lived a very sheltered life, but then wins the lottery. He now has two choices: to either stay in the cloister and give away his prize, or to live a new life outside the cloister. Since he has no conception of what life may be like outside the cloister, he chooses, after much careful reflection, to remain a monk. It is conceivable that the monk did not make the choice that is best for him, because he was not properly informed about the alternatives. But if this is the case, then the reflective view does not give us the best account of well-being (cf. Crisp, 2008).

Informed desire-fulfillment theories hold that the best life one could lead is the life in which all desires are fulfilled that one would have if one were fully informed of one's situation. Relevant information could include information about possible alternative courses of action and objects of desire, about possible and likely consequences of actions, and about one’s own psychological makeup and behavioral tendencies. If one is properly informed, the idea is, one would be smart about the desires that one would have and strive to satisfy, both in terms of ensuring a good fit between one’s desires and one’s character, and in terms of choosing (sets of) desires that one is sufficiently likely to be able to realize.

A general objection to desire-fullfillment theories is that it presents a very abstract, formal theory of well-being that does not tell us anything about the sources of well-being. It tells us that a necessary and sufficient condition of well-being is that our desires are satisfied. But it does not tell us anything about the source of these desires. Yet, it would seem that it is not the case that things are good for us because we desire them, but rather that we desire things *because* they are good for us. Yet, desire theories tell us nothing about the reasons why things may be good for us. In addition, they have a difficult time accounting for so-called defective desires: desires that seem to be bad for one, such as base, poorly cultivated and pointless desires. People may hold such desires even after being properly informed, but if this is the case, it is not clear that we should conclude that satisfying them improves the quality of their lives more so than alternative courses of action would.

Objective list theories

Objective list theories hold that well-being is the result of a number of objective conditions of persons rather than the subjective experience of pleasure or the fulfillment of subjective desires. They propose that there are goods that contribute to our well-being even if we do not desire them or experience pleasure from them. Well-being is attained by living a life in which one is in possession of all or most of the goods on the list. The list is objective in the sense that items on the list increase the value of one’s life independently of one’s tastes, attitudes, traits or interests. Acquiring goods or doing things on the list makes one’s life better, even if one does not desire or want them.

Let us consider a few such lists. Derek Parfit has proposed a list that includes as items moral goodness, rational activity, the development of one’s abilities, having children and being a good parent, knowledge, and the awareness of true beauty (Parfit, 1984). James Griffin’s list includes accomplishment, the components of human existence (autonomy, capability, and liberty), understanding, enjoyment and deep personal relationships (Griffin, 1986, p. 60). John Finnis, finally, has proposed a list that includes life, knowledge, play, aesthetic experience, friendship, practical reasonableness and religion (Finnis, 1980, p. 60).

Objective list theories can be distinguished not only by what items the list contains but also by the explanation, if any, of why they are on the list. Philip Kitcher (1999) has made a distinction between bare and explanatory objective theories of well-being. *Bare objective theories* merely present a list of items that have no single unifying element. Each item on the list contributes to well-being, independently of the others. *Explanatory objective theories* identify a fundamental element that unifies all the items on the list and explains why they contribute to well-being. Most contemporary objective list theories are explanatory theories.

Perfectionism constitutes the most influential explanatory objective list theory. Perfectionist theories hold that what items on the list have in common is their contribution to the realization or perfecting of human nature. Whether it stems from biology or divinity, we have an intrinsic nature that provides us with a *telos* or end that defines what kinds of things are good and bad for us. For example, most perfectionist would hold that it is part of our nature for us to flourish when we attain friendship or knowledge. The best possible life is one in which one's human nature is fully realized and one acts in such a way as to contribute to such a realization. Typically, perfectionist theories exhort people to put in effort to develop their faculties, so as to excel in art, science, culture or sports, as well as to excel in everyday living.

One famous perfectionist theory is Aristotle's theory of *eudaimonia*. Aristotle held that the good for human beings is found in the cultivation of human virtues, that is, human capacities that are part of their *telos*, and particularly in the cultivation of rationality. This would result in the highest good for human beings, which he called *eudaimonia*, or personal flourishing (often translated as 'happiness'). Thomas Hurka (1993) has presented a well-known neo-Aristotelian perfectionist theory. He holds that human nature is geared towards three sorts of perfection. Physical perfection is the optimal functioning of our biological systems and finds its highest form in athleticism. Theoretical and practical perfection are the optimal formation of intentions and beliefs and our optimal way of acting on them. Well-being is realized through the physical, theoretical and practical perfecting of ourselves.

Martha Nussbaum (2000) has presented a *capability theory* of well-being, a neo-Aristotelian theory according to which well-being is dependent on capabilities, which are real possibilities of persons to be or do something, such as capabilities to read, be healthy, or take care of others. Nussbaum has presented a list of ten capabilities that she considers necessary for well-being and that derive from human nature. They include capabilities like bodily health, bodily integrity, practical reason, play, and control over one's environment. Nussbaum does not claim that everyone must have all ten capabilities to attain well-being. Rather, she claims that normally, people would want to realize most of these capabilities, but can also choose that some of them are less important for them.

A frequent objection to objective list theories is that they are paternalist by claiming that things may be good for people even if they do not want or value them. Critics hold that such a claim fosters elitism and may have undesirable political consequences if it is used to legitimize social policies. A related objection is that objective list theories deny that people are different, and that different things may be good for different people. Objective list theorists can accommodate this objection to some extent, by pointing out that items on the list can often be realized in very different ways, and may themselves be subjective (e.g., enjoyment). They could also, as Nussbaum does, make certain items on the list dependent on individual characteristics or preferences. A final objection to objective list theories is that items on the list often seem incomparable. Is a life with little friendship but much knowledge better than a life with much friendship and little knowledge? This objection seems to be more difficult for bare objective theories than for explanatory ones.

Conclusion

Hedonism, desire-satisfactionism and objective list theories have for long been the three main rival approaches to well-being in philosophy. A resolution between them does not appear to be in view. Some authors have attempted to resolve the issue by combining two or more of the three approaches. One way to create a hybrid version is to include pleasure or desire-satisfaction on the objective list. Another approach is to argue that some desires correspond with objective needs (Hamilton, 2003). Desires are subjective and needs are objective, but some desires may be expressive of genuine needs, whereas others are not. Yet another approach is to argue that informed desire-fulfillment or informed qualitative hedonism would result in the selection of items on objective list approaches, or to suggest that objective list items are relative to persons and circumstances, thereby narrowing the gap between the approaches. In these ways and others, philosophers are trying to overcome the stalemate between the three approaches

Psychology

The psychology of happiness and well-being started to take off in the 1950s, when an increasing number of psychologists started studying positive emotions and feelings of well-being, next to negative emotional states that were their dominant object of study. Part of this research belonged to the new approach of humanistic psychology, founded by Abraham Maslow and Carl Rogers, which emphasized humans uniqueness, human potential, and psychological growth. Additional roots are found in the 1960s, when American survey organizations started doing surveys of people's happiness and satisfaction. During the 1970s and 1980s, happiness emerged as a serious research topic in the social and behavioral sciences, and the number of journal publications on happiness and quality of life was on the rise. The psychology of happiness started taking shape as a field in the 1980s, due to the seminal work of Ed Diener and others. Diener coined the term "subjective well-being" (Diener, 1984) and showed how to measure and study it, inspiring many psychologists to follow his lead. Diener has made major contributions to the psychological measurement of well-being and to the influence on well-being of temperament and personality, income and culture. Further important developments in the 20th century were Mihaly Csikszentmihalyi's seminal publications on flow and optimal experience (Csikszentmihaly, 1990), the start of the Journal of Happiness Studies in 1999 and the publication of the book *Foundations of Hedonic Psychology* (Kahneman, Diener and Schwarz, 1999).

Another important occurrence in the 1990s was Martin Seligman's 1998 presidential address to the American Psychological Association (APA). In his address, Seligman argued that psychology had largely been preoccupied with studying and treating mental illness, and argued that it should balance this focus with an alternative approach with a focus on studying and improving people's positive functioning and well-being. He called this approach *positive psychology*. Its aim was defined as finding and nurturing talent and making normal life more fulfilling (Seligman & Csikszentmihalyi, 2000). Positive psychology quickly was embraced by psychologists and has generated numerous studies and activities, among which was launch of the *Journal of Positive Psychology* in 2006.

Concepts and methods

The psychological study of happiness and well-being is sometimes referred to as “happiness psychology” or “psychology of happiness”. By far the most frequently used term nowadays, however, is “positive psychology”. This will be the preferred term in the remainder of this chapter. Strictly speaking, the scope of positive psychology is broader than that of happiness psychology, as it does not only include well-being but also the study and nurturing of talent and genius. “Hedonic psychology” is a term that refers more specifically to the study of positive and negative feelings. It “is the study of what makes experiences and life pleasant or unpleasant, and concerns itself with feelings of pleasure and pain, of interest and boredom, of joy and sorrow, and of satisfaction and dissatisfaction. (Kahneman, Diener & Schwarz, 1999, p. ix). Psychological research on happiness and well-being is sometimes also subsumed under more general scientific labels that include “happiness studies” and “the science of subjective well-being”.

The central concept in the psychology of happiness is *subjective well-being*, often abbreviated as SWB. Subjective well-being is an individual’s current evaluation of their happiness. SWB is sometimes contrasted with *objective well-being* or happiness. Daniel Kahneman, for example, has argued that psychology should study objective happiness, which he defines as people’s real-time positive sensations and feelings of happiness (Kahneman, 1999). Such sensations and feelings, however, are difficult to measure. Diener instead proposes to study people’s own judgments of their feelings and degree of happiness. These are much easier to measure, for example through surveys and interviews, but also in controlled experiments. He argues that people’s judgments of their own happiness are generally reliable, because in general people are happy if they think they are happy. This assumption remains controversial, however, with critics like Kahneman arguing that self-reports of happiness are not very reliable.

Diener has argued that there are three major components to SWB: positive affect (pleasurable feelings); negative affect (painful feelings) and *life satisfaction* (Diener and Lucas, 1999). Life satisfaction is how people assess the balance between positive and negative affect in their lives as a whole, and how well their lives measure up to their aspirations and goals. It is often contrasted with happiness, which is considered to be a temporary state of positive affect, whereas life satisfaction is a cognitive appraisal that tends to change little over time. SWB is hence both affective and cognitive: it includes hedonic evaluations that are guided by emotions and feelings, as well as assessments of people’s lives as a whole based on their aspirations and expectations.

Methodologically, the study of SWB involves obtaining people’s reports on their experienced happiness, (life) satisfaction, and positive and negative feelings. Such reports are often collected by means of questionnaires which contain questions like “How happy are you?”, “How satisfied are you with your life as a whole?” and “Do you find beauty in most things?”. Answers are often given on a sliding scale. Another important method is real-time “experience sampling” where the subjects are asked to report their current mood in real-time. Usually, the goal of studies in SWB is to find correlations between self-reported positive states and other variables, such as individual traits and social indicators like income and health. Many studies involve large-scale social surveys, but studies may also make use of smaller-scale surveys or controlled real-time experiments in which variables are modified. The study of objective well-being, on the other hand, requires the recording of physiological data in real time, such as brain activity or bodily responses, which are then interpreted as representing either positive or negative feelings and emotions.

Theories and applications

Bruni and Porta (2005) argue that psychological research on happiness tends to use either a *hedonic* or an *eudaimonistic* notion of happiness. The hedonic tradition, exemplified by Kahneman, Diener and Schwarz (1999), defines happiness in terms of pleasure and good feelings, and attempts to measure such states, either through objective or subjective measuring procedures. The field of hedonic psychology is hence defined as:

> "the study of what makes experiences and life pleasant or unpleasant. It is concerned with feelings of pleasure and pain, of interest and boredom, of joy and sorrow, and of satisfaction and dissatisfaction. It is also concerned with the whole range of circumstances, from the biological to the societal, that occasion suffering and enjoyment." (Kahneman, Diener & Schwarz, 1999, p. ix).

The hedonic tradition in psychology clearly corresponds with the hedonist tradition in philosophy, although its inclusion of satisfaction as a relevant parameter also makes it extend to desire-satisfaction approaches.

Eudaimonic approaches hold that happiness includes objective factors that go beyond subjective experiences and attitudes. Specifically, it includes the actualization of human potential. Eudaimonic approaches therefore correspond to objective list approaches in philosophy, and more specifically to perfectionist approaches. A very influential eudaimonic theory is Martin Seligman's theory of authentic happiness (Seligman, 2002). Seligman holds that a good life is a life that integrates three types of lives: the pleasant life, the engaged life and the meaningful life. The pleasant life is attained by having (and learning to have) positive feelings about the present, past and future. The engaged life is a life in which engagement and involvement are pursued, in work, intimate relations and leisure. In engaged activity, one's attention is completely focused and time loses meaning. One experiences a kind of "flow", as Csikszentmihalyi (1990) has called it. To pursue engaging activities, one must have character strengths and virtues ("signature strengths") that allow one to execute activities in an engaged manner. Finally, the meaningful life is a life in which one's signature strengths and talents are used in the service of things that one believes to be bigger than oneself. Seligman supplements his theory with an account of positive individual qualities such as kindness, wisdom and perseverance, that are held to contribute to a good life.

Research in positive psychology is applied with the aim of developing positive practices that enhance human well-being. These positive practices are aimed to support positive experiences, positive individual qualities, or positive social processes and institutions, such as nurturing families, healthy workplaces, and positive civic and political processes. Techniques that are developed include therapeutic techniques and programs as well as social and organizational techniques and programs. Surveys in positive psychology are also increasingly being used to guide policy (Diener et al., 2009). Concepts and data of positive psychology are also being used more and more in other fields of study in which an understanding of well-being is relevant. One of these fields is economics, to which we will now turn.

Well-Being in Economics

Economics is a third field, next to philosophy and psychology, in which well-being has become an important research topic. Recent decades have seen the emergence of happiness economics, a new branch of economics that studies the economic conditions for happiness and well-being. Yet, notions of well-being have always played a role in economics. In what follows, I will first consider the role of well-being in classical and neoclassical economics, after which I will chart the emergence of the new approach of happiness economics and the recent interest in national and international quality of life indices as policy instruments for economic development.

Neoclassical and welfare economics

Well-being has for a long time played a role in economics, directly or indirectly, through the notion of utility. In neoclassical economics, the dominant approach to microeconomics since the late 19th century, economic behavior is typically explained in terms of attempts of individuals to increase their *utility*. Utility is a measure of relative satisfaction, and the utility of a good or service is the total satisfaction derived from consuming it. Neoclassical economics has been influenced by utilitarianism, and 18th and 19th century doctrine championed by Jeremy Bentham and John Stuart Mill, in which happiness is conceptualized as utility, a quantitative measure of pleasure or satisfaction, and which prescribes that only those actions should be undertaken that maximize utility.

In neoclassical economics, the notion of utility mostly takes on an explanatory role, instead of the normative role it has in utilitarianism. Neoclassical economics aims to explain how prices, outputs and income distributions are determined in markets as a function of supply and demand. Some of its central assumptions are that individuals aim to maximize their utility and that they have rational preferences among outcomes that can be associated with a value. In late classical and early neoclassical economics, it was assumed that utility could be cardinally measured, i.e., that goods and services could be given numerical values that expressed the amount of satisfaction that individuals would receive from them, and that would correspond with increases or decreases in their happiness.

However, since the 1930s, cardinal notions of utility were rejected in favor of ordinal notions. Ordinal utility only determines relative preferences between pairs of goods or services, but does not define any absolute measure of satisfaction for them. As a consequence of this development, some argued that economics no longer provided measures of happiness or satisfaction. As Frey and Stutzer (2002, p. 43) put it: “Utility was deprived of all content and was reduced to a preference index reflecting revealed behavior”. Happiness and (unquantified) individual preferences are, they claimed, distinct notions that may not always correlate strongly. For instance, knowing that people tend to prefer apples over pears may not tell you much about their significance for human well-being. Thus, while the new notion of utility still aims to say something about individual happiness or satisfaction, it does so in a more indirect and less reliable way.

Within neoclassical economics, the concept of utility is mostly used to explain economic behavior and is not, as it is in utilitarianism, a normative notion that prescribes how one should act. An important exception is *welfare economics*, a normative branch of microeconomics that aims to measure and improve *social welfare*. Welfare economics particularly aims to assist the public sector, which has always had promotion of the general welfare as a central aim. It does so by developing and evaluating economic solutions that aim to improve social welfare by generating outcomes that maximize overall utility. Social welfare is the overall welfare of society, and is a function of the individual welfare or well-being of all individuals in society. Being a branch of neoclassical economics, welfare economics has also moved from cardinal to ordinal measures of utility, and it has been questioned whether these are adequate for determining social welfare (Cooter and Rappoport, 1984).

Happiness Economics

While well-being was not a central concern of early and mid-20th century economics, it reemerged as a topic in the 1970s (Bruni and Porta, 2005). The 1970s were the stage for a debate about the *paradox of happiness* in economics. This debate was initated by the American economist and demographer Richard Easterlin, who had found on the basis of surveys that people in high-income countries were not significantly happier than people in low-income countries (at least, ones in which incomes reached a certain threshold), and that rises of income above a certain threshold within countries did not seem to yield significant increases in happiness (Easterlin, 1974). Easterlin's data showed that the correlation between happiness on the one hand and income and wealth on the other was not as strong as previously believed. Another important contribution was the publication of *The Joyless Economy* by Tibor Scitovsky (1976), in which he argued, against economic orthodoxy, that people's individual preferences in capitalist consumer societies would not necessarily generate happiness for them and that more wealth, income and consumer products did not necessarily equal more happiness. The 1970s also saw other works critical of assumptions of neoclassical economics, by authors like Hirsch, Arkelof and Sen, that rethought rational choice theory, criticized preference rankings as a model for economic value, uncoupled the link between wealth and happiness, and infused other disciplines into economics like psychology and sociology.

In the wake of these developments in the 1970s, happiness emerged in economics as a topic of study in its own right. Under the assumption that an important, if not the only, value of economic activity lies in its contribution of individual happiness, economists engaged in studies of the correlation between economic processes and individual well-being. They considered how economic factors like income, wealth, unemployment and social security, as well as social and institutional factors like freedom, relationships and good governance, affects individual well-being. Some economists went even further than this to argue that happiness should become the new metric of economics, replacing monetary value or ordinal utility as the values that economics aims to optimize. On this conception of economics, economic and public policies should not aim to maximize GDP but should rather aim to maximize gross national happiness, as measured through some happiness index.

Happiness economics often incorporates psychological approaches and typically measures happiness in terms of self-reported subjective well-being (SWB). It makes frequent use of large-scale surveys that enable it to study correlations between self-reported well-being and economic and social indicators. Its major application are in public policy, in which it is helpful in evaluating and improving policies that aim to improve social welfare or individual happiness.

Quality of life indices

In the past twenty years, happiness and quality of life indices have taken on a major role in public policy. Usually, these indices have a strong basis in economics, and they frequently include sociological and psychological perspectives as well. These indices are used to measure happiness or quality of life within nations and to make comparisons between nations. Some also include cities or regions.

While the notions of happiness and quality of life are sometimes used interchangeably, quality of life may also refer to what Ruut Veenhoven (1995) has called "*livability*". Livability is not a quality of individuals but of environments or societies, and refers to the extent that these allow the satisfaction of human needs and hence well-being. A country may have a high degree of livability but people may nevertheless fail to be happy because they do not make good use of the resources provided by their environment.

Indices that measure quality of life in terms of objective environmental conditions or resources may be called resource-based indices. External factors measured by them are for instance GDP per person, mean years of schooling, job security and life expectancy. Other indices aim to measure subjective conditions in persons that are believed to reflect their well-being. They include utility-based indices which measure individual preferences and indices that use psychological measures of subjective well-being. Yet another type of index makes use of Amartya Sen's (1980, 1993) and Martha Nussbaum's (2000) work in capability theory. In such indices, the development of major human capabilities is measured, such as the capability to read, to feed oneself, and to participate in political processes. These capabilities are believed by them to be a better indicator of human welfare than the availability of resources.

The *Human Development Index* (HDI) was established in 1990 by the United Nations Development Program and provides an annual ranking of countries by their level of human development. It was devised with the purpose of shifting the discussion of development from a focus on GDP to people-centered criteria. Sen's capability approach is the major inspiration behind the index. The current HDI indexes three variables, life expectancy at birth, mean years of schooling and expected years of schooling, and gross national income per capita, to arrive at a composite index for development. Human development, in turn, is believed to give an indication of the quality of life in indexed nations (UNDP 2011).

The Economist Intelligence Unit's *quality-of-life index* combines subjective life-satisfaction surveys with objective determinants of quality of life to arrive at a ranking of the quality of life in different countries. Objective determinants include health, family life, GDP per person, climate and gender equality, amongst others (The Economist 2011). *Mercer's Quality of*

Living Survey is an annual survey of the most livable cities. It uses 39 objective criteria, such as safety, education, hygiene, culture, environment, political-economic stability and public transportation (Mercer 2010).

Gallup's *global wellbeing survey*, in contrast, only uses subjective data. It simply asks respondents from different nations to evaluate the quality of their lives on a scale from 0 to 10, where 0 indicates the worst possible life and 10 the best possible life. It then uses this survey to rank nations according to the percentage of people in it that are thriving (score of 7 or above for their current life and 8 or above for their expected life) (Gallup 2010). The recent OECD *Better Life Index* is interesting because it lets users decide for themselves how to weigh different indicators in ranking the quality of life in different countries. The index combines objective indicators like housing, income and work-life balance with the subjective indicator of life satisfaction (OECD 2011).

Some countries have started to use happiness indices to guide national policies, and are using them as a supplement or alternative to GDP as a measure of progress. Bhutan is the first country to measure its progress in terms of *gross national happiness* (GNH), using sophisticated surveys to measure the population's level of well-being. Other countries that are using, or considering using, GNH indices include Thailand, China, Australia, Canada, France and the United Kingdom. Critics of GNH argue that such indices can easily be slanted by governments who may define GNH in ways that suit their interest, and that the existence of different national indices will make international comparisons difficult.

Well-being and technology

In spite of the pervasive role of technology in modern society and contemporary life, very little research on well-being has focused on technology. Technology hardly registers as a topic in positive psychology or happiness economics, and in philosophy the situation is not much better. In what follows, I will review some of the work on well-being and technology that does exist, and I will look forward to the future study of this topic.

The benefits and disadvantages of modern technology for human life have been a topic of discussion since the Enlightenment in the 17th century. Enlightenment thinkers believed that the application of science had the potential of giving humanity unlimited control over nature, they believed that human reason was fully capable of comprehending reality and anticipating the future, and they believed that technology would mostly be used for good ends. As a result, they had a generally positive view of technology as a means for improving one's living conditions and for personal liberation. The 17th century philosopher René Descartes, for example, held that the technological application of science would bring ever more control of nature and would yield an unlimited number of devices that would allow people to enjoy without effort all that the earth could offer them (Descartes 1637).

The optimistic vision of technology of the Enlightenment is still well-represented in society. Technology is frequently seen as an instrument of social and economic progress that makes people's lives better. It is seen as a means that gives people additional powers to get what they want or need, thereby are better able to realize the good life. On a hedonist version of this perspective, technology is believed to reduce pain by reducing labor and hardship and improving health, and to increase pleasure by expanding the time and opportunities for pleasurable experiences. On a desire-satisfactionist view, technology is seen as a powerful means for the fulfillment of desires, such as desires for food, luxury products, travel, or social interaction. On an objective list or eudaimonic view, finally, technology is seen as a means to more successfully secure items on the objective list or to realize one's potential and perfect oneself.

Enlightenment optimism about technology and its implications for well-being was countered in the 20th century. The early 20th century saw the widespread expansion of the industrial sector, the establishment of rationalized production processes and labor patterns, rapid urban growth, and the emergence a consumer society based on mass production and marketing. It became clear during the 20th century that modern technology did bring achievements, but also had major drawbacks. Technology was used on a large scale for the purpose of war and persecution, and enabled the unprecedented destruction that resulted from the First and Second World Wars, including the atrocities of Auschwitz and Hiroshima. In addition, many technological developments have proven harmful to nature or to health and have created environmental problems that are a threat to humankind. The promised improvements in the quality of life often appeared to be ambiguous as well. Labor processes were rationalised and therefore became more monotonous and impersonal. And while the consumer society brought many benefits, it has also been claimed to yield exuberant materialism and a loss of spiritual values and feelings of community.

Social theorists and philosophers of the 20th century therefore often arrived at negative evaluations of modern technology and the industrial society that evolved with it. They criticised the Enlightenment's philosophy of control and the idea that technology was predominantly good. They emphasised the negative and destructive nature of technology and posited that, rather than being freed by it, mankind was being made subservient to technology. They also declared that humanity had lost control of technology, which had now developed according to its own logic, and that rather than being improved, the quality of life was often worsened by processes of rationalization, uniformity, alienation and shallow consumption.

This negative attitude towards technology and the industrial society was voiced strongly in critical theory, an influential social-philosophical approach initiated by representatives of the so-called Frankfurt School, a group of German thinkers that, from the 1930s onwards, engaged in influential social criticism. Its members include Theodor Adorno, Max Horkheimer, Herbert Marcuse and Jürgen Habermas. They built on the work of Karl Marx and Max Weber, who, as the founder of sociology, held that bureaucratic organisations built after the industrial revolution propagated a new form of suppression through their rationalization of labor practices, an 'iron cage' that limited human potential. One of the most influential works in critical theory was *One-Dimensional Man* by Herbert Marcuse (1964), a work that was one of the spearheads of the 1960s counterculture. In it, Marcuse argued that advanced industrial society has imprisoned humankind in a system of production and consumption in which people are held captive in monotonous jobs in order to buy ever more new products, and which has rendered critical thinking and conduct impossible.

Martin Heidegger, one of the most influential philosophers of the 20th century, held a similarly pessimistic view, arguing that modern technology has infiltrated our entire way of thinking and feeling and had turned humankind and the world into standing reserves, commodities with a utility value. His vision has been taken up by neo-Heideggerians like Albert Borgmann and Hubert Dreyfus. A similar vision is found in the work of philosopher and sociologist Jacques Ellul, who portrayed technology as an unstoppable autonomous force that constructed social and political institutions according to its own logic and undermines the self-determination of humanity. Modern technology has also been seen as negative by other 20th-century post-modernist philosophers such Jean-François Lyotard and Jean Baudrillard.

In contemporary philosophy, Albert Borgmann is well-known for his critique of technology and of consumer culture. Borgmann (1984) argues that modern life is concentrated around devices whose sole function is to make available commodities, like water, transportation, and entertainment, and to do so rapidly, easily, safely and ubiquitously. As a result, he argues, people lose engagement with their environment and with each other. To regain engagement and the good life, he argues, we must choose more often for focal practices, like gardening, teaching, and social activities, and use low-tech, "focal" artifacts in them. Higgs, Light and Strong (2000) present detailed critiques of Borgmann's views and develop alternative philosophical perspectives on the implications of modern technology for our pursuit of a good life.

In economics and psychology, the topic of consumer culture, with its emphasis on acquiring, using and displaying consumer products, is perhaps also the main way in which technology is being related to well-being. Contemporary consumer products are, after all, the fruits of modern technology. Psychologists, economists, sociologists, historians and cultural theorists have been developing mostly critical assessments of consumer culture and its implications for well-being.

In economics, the stage for such critical assessments was set in the 1970s by Easterlin's paradox of happiness and Scitovsky's *The Joyless Economy*, both of which questioned the existence of a correlation between well-being and affluence. Some of the recent work in happiness economics maintains their focus on income, affluence and consumption. Not all of this research is critical of consumer society, however. American economist Stanley Lebergott (1993), for example, argues that people lead easier, happier lives in contemporary society than do people in low-tech societies and lauds the amount of choice and convenience offered in consumer societies.

Psychological studies of consumer culture and well-being focus on the manufacture and manipulation of desire and the implications of consumerism and materialism for self-esteem, emotional well-being, feelings of security and anxiety, mental stability and social relations (Kasser and Kanner, 2004). Kasser (2002) presents studies that indicate that people whose lives are focused on the accumulation of wealth and material possessions have a significantly greater risk of unhappiness, including anxiety, depression, low self-esteem, and problems with intimacy. Dittmar (2008) analyzes how much modern identities have become intertwined with material possessions and argues, like Kasser, that consumerism does not lead to happiness. She holds that consumer products are often acquired to repair or complete people's identities, but usually fail to do so.

The information revolution and the rise of the Internet have led to studies of the relation between information technology and well-being, particularly in psychology (Joinson, 2003;

Amichai-Hamburger, 2009). These studies focus on the consequences of using information technology for social relations, intimacy, personal development and emotional well-being. Psychologists have identified both positive and negative effects. Turkle (2011) is mostly critical, she argues that information technology (and technology generally) overwhelms and depletes us by the choices it offers and the lives it makes possible. In addition, it makes us more lonely, even if we become connected to more people. Joinson (2003) balances this perspective by emphasizing how online communities and relations can also enrich our lives and allow us to experiment with and develop our identity.

The relation between technology and well-being is also a theme in studies of the quality of working life, which consider job satisfaction, work stress and work-related well-being. In this research, much attention has gone to the impact of automation and deskilling and the role of technology in work-related stress. Well-being and technology are also being studied in healthcare, where the concept of “health-related quality of life" is used. This is an individual's satisfaction or happiness with domains of life that fall under the responsibility of health care providers and health care systems. Some of these studies also consider the impact of new medical technologies. Well-being is sometimes also being considered in technology assessment, a field of study in which the effects of technology are evaluated and anticipated for industry, the environment and society. In engineering design, finally, well-being is not often taken into account, but it has recently become a topic in value-sensitive design (Friedman, Kahn and Borning, 2006), an approach to design which seeks to integrate considerations of value into design processes.

While there is a variety of studies of the relation between technology and well-being, much of this work is limited in scope or volume, and much progress is still to be made. In particular, many more studies are needed of the implications of particular technologies and technological products for different dimensions of well-being. Also, a better understanding is needed of the interplay between technology, culture and social structure in as far as they affect well-being. There currently also hardly exists an idea of how well-being can be made a factor into technology policy. Much progress is also to be made in engineering design, in which the relation between design and well-being is currently hardly being thematized. Much is to be gained, also, from more collaboration between the disciplines: philosophy, psychology and economics, as well as policy studies and engineering.

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