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## Ed Diener and the Science of Subjective Well-Being

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Although this book is not intended to be a festschrift, the opening chapter does highlight the contributions of one person: We show how the field of subjective well-being has been shaped and influenced by the efforts of Ed Diener. His impact has resulted not just from his own extensive body of empirical work, but also from his thoughtful and integrative review papers, his edited volumes, his wide-ranging collaborations with a large number of scientists around the world, his work with the popular press, and his success in training a substantial number of well-equipped PhD and postdoctoral students who have gone on to make their own contributions to the field of subjective well-being.

In tracing Ed Diener's contributions, we begin by noting that he had a successful research career before he turned to subjective well-being. In fact, prior to his work on positive characteristics, Ed Diener focused on some of the darker aspects of human nature. Before the 1980s he worked primarily on the topic of deindividuation (e.g., Diener, Fraser, Beaman, & Kelem, 1976), the notion that people in a group would sometimes behave in ways that were against the values and morals of the individuals in the group, such as is often the case with lynching, pillaging, gang rape, genocide and other autocracies committed by groups. The title of his dissertation, completed in 1975, was: "Prior destructive behavior, anonymity, and group presence as antecedents of deindividuation and aggres-

sion," so it is obvious that Ed Diener was a card-carrying member of the Dark Side before he helped define the field of positive psychology. By the time he achieved tenure at the University of Illinois, he was a leading authority on aggression and group violence, and had produced important papers on related topics such as gun ownership and crime, stealing, and television violence. He was a poster child for normative psychology at the time, which focused on negative aspects of human nature and behavior.

All this changed in the early 1980s, however. In 1980, Ed Diener took his first sabbatical. He went to the Virgin Islands for a year, with the explicit goal of changing the focus of his research career. He felt he had gone about as far as he wanted to go with the topic of deindividuation, and so went to the Virgin Islands to think long and hard about what to do next. He kept in touch with his graduate students back at Illinois, via letters, since the Internet and e-mail had not been invented yet. During that year he read through several distinct literatures, including political psychology and evolution, but reported to his graduate students that he found them unsatisfying for a number of reasons. When he finally got back to Illinois, no one knew what to expect. He called his research team together and made the announcement that he wanted to study what makes people happy. His graduate students were shocked, and most thought he had spent too much time on the beach during his sabbatical. Nevertheless, they went along with him, partly to humor him and partly because the topic was something that seemed new and interesting.

In 1980 most of the research that had been done on happiness and related constructs was survey research. Not much systematic work had been done in terms of defining and measuring this construct. And so Ed Diener and his research team set out to do some basic descriptive and measurement evaluation research, turning first to the experience sampling method to track people over time in terms of their day-to-day reports of subjective well-being. Diener also began a systematic review of the existing literature and taught a graduate seminar on subjective well-being in 1982.

Ed Diener's review of the literature culminated in 1984 when he published an article titled "Subjective Well-Being" in the *Psychological Bulletin*. This paper soon became a citation classic, and then a mega-citation classic, having been cited, as of this writing, over 1,265 times. Diener (1984) gave an overview of the field of subjective well-being that was, at the time, not the focus of psychological research. This paper was not only the cornerstone of a very fruitful and successful empirical research program of the Diener lab but also ignited many other laboratories, in the United States and around the world, to study the topic of subjective well-being. Starting in 1984 the number of papers published each year on subjective well-being doubled from the previous year, with this rapid acceleration in research output being sustained for almost a decade. Ed Diener himself has published over 200 papers since 1984, along with three books. His work has had a

strong impact on the field. His work has been cited over 10,000 times, and he has 22 papers that are citation classics (over 100 citations each) and two papers that are mega-citation classics (over 1,000 citations each; one was the *Psychological Bulletin* paper mentioned above, and the other was the publication of his Satisfaction with Life Scale, the most widely used assessment instrument in subjective well-being research).

Ed Diener's contributions to the field are manifold and lasting. He is interested in the refinement of theoretical models of subjective well-being, the development and application of measurement instruments for assessing subjective well-being, and the conditions, consequences, and correlates of subjective well-being. He is fascinated by the possibilities that cross-cultural settings are opening for researching the universal causes of happiness, but also for detecting indigenous structures and correlates of subjective well-being. Most recently, his work concerns the many positive consequences that subjective well-being has for the single individual and also for society in general. The insights he has gained from all of his work have convinced him that it is necessary for policy makers to not only consider economic criteria for evaluating the state of a society and its members, but they must also include national indicators of subjective well-being as a basis for policy decision and improving the wealth and the well-being of a society. We now review a few selected aspects of his contributions in more detail.

### **The Structure of Subjective Well-Being**

In the mid-1980s there was an active debate about the nature of, and relationship between, positive and negative affect. Diener and Emmons (1984) wrote an influential paper demonstrating that trait measures of positive affect (PA) and negative affect (NA) were essentially uncorrelated, meaning that how much of one affect a person tended to experience had no bearing on how much of the other he or she experienced. This finding led the way for conceptualizing the independent contributions of each to the hedonic component of overall subjective well-being. Today, many researchers view this hedonic component of subjective well-being as the ratio of PA to NA, over time, in a person's life (Larsen & Prizmic, Chapter 13, this volume) and view it as an important component in the overall structure of subjective well-being.

Diener and colleagues also investigated other dimensions of affective experience in relation to subjective well-being, including the characteristic intensity and frequency of affective experience (Diener, Larsen, Levine, & Emmons, 1985). It turns out that the typical intensity with which people experience their affective states, although an interesting dimension in its own right (e.g., Larsen & Diener, 1987), has no impact on overall subjective well-being (Larsen & Diener, 1985). Rather, what turns out to be the best predictor of global subjective well-

being, in terms of affective experience, is the frequency of positive compared to negative states in a person's life over time (Larsen, Diener, & Emmons, 1985). Indeed, one of the best short measures of the affective component of subjective well-being is that developed by Fordyce (1988), which asks people to estimate the percent of time they feel happy, the percent of time they feel neutral, and the percent of time they feel unhappy over a given time period (e.g., the past year), such that it adds up to 100%. This measure correlates very highly with a wide variety of criterion measures of subjective well-being, including the long-term ratio of PA to NA assessed with experience sampling measures (Larsen et al., 1985).

Subjective well-being has another component in addition to the hedonic component; it includes a cognitive judgment about one's life, as a whole, as satisfying. Some researchers refer to this as life satisfaction, and most see it as an essential feature in the overall structure of subjective well-being. It is possible for judgments of life satisfaction to be at variance with the hedonic component (e.g., a starving artist who has a lot of negative affect and little positive affect in his or her life, but nevertheless judges his or her life to be satisfying and worthwhile). However, in most populations the life satisfaction component and the hedonic component of subjective well-being are at least moderately and sometimes highly correlated (Diener, Napa-Scollon, Oishi, Dzokoto, & Suh, 2000).

### **The Measurement of Subjective Well-Being**

Can happiness be measured—and, if yes, in which way? An answer to this question is fundamental for an empirical science of subjective well-being. Ed Diener often tells the anecdote about his interest as a student, in the happiness of farm workers (because his parents owned a big farm) and that he wanted to conduct a study on this topic as a part of his school requirements. His professor refused this project for two reasons. First, he thought that happiness could not be measured, and second, he was convinced that farm workers could not be happy. This experience might have motivated Ed Diener's strong emphasis on measurement issues, particularly the development of measurement methods and their validation.

Because *subjective well-being* refers to affective experiences and cognitive judgments, self-report measures of subjective well-being are indispensable. With his collaborators Ed Diener developed the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985), which became the standard measure of life satisfaction in the field and has been translated into many languages. Moreover, he developed measurement procedures for the affective components of subjective well-being such as the intensity and frequency of emotion (Larsen & Diener,

1985; Schimmack & Diener, 1997), and was one of the early proponents of experience sampling methods using beepers and hand-held computers to assess affective states in people's natural lives. His main messages concerning the measurement of subjective well-being are (1) that subjective well-being can be assessed by self-report with substantial reliability and validity, (2) that each measurement method has advantages and pitfalls, and (3) that the more complete assessment of subjective well-being requires a multimethod assessment tool (e.g., Diener, 1994; Diener & Eid, 2006; Scollon, Kim-Prieto, & Diener, 2003). Psychology offers many methods that can be used to assess facets of subjective well-being, such as self-reports, peer reports, observational methods, physiological methods, emotion-sensitive tasks such as the speeded recall of happy experiences, and other cognitive tasks such as word-completion and word recognition tasks (Sandvik, Diener, & Seidlitz, 1993; Lucas, Diener, & Larsen, 2003). All these different methods do not perfectly converge, because they assess different facets of subjective well-being and can be affected by specific biases, but the differences between these methods often contain important information. Thomas and Diener (1990), for example, found that people overestimate their emotional intensity and underestimate the frequency of their positive affect when recalling emotional experiences. This finding shows that there is a bias in the recall of affective experiences that only can be detected by using several methods (in situ assessment vs. recall assessment). Both methods contain important information. Although the recall might be biased, it might strongly determine how people reconstruct their lives and might guide future behavior. In contrast, experience sampling methods measure affect in situ and might provide more information about subjective well-being in real time. Multimethod assessment procedures of emotions offer many important insights into the structure and processes of subjective well-being (Larsen & Prizmic-Larsen, 2006), and Ed Diener's ideas of measurement issues have strongly influenced the development of assessment methods (Pavot, Chapter 7, this issue) as well as the development and application of sophisticated statistical tools for analyzing subjective well-being data (Eid, Chapter 8, this issue).

### **The Determinants of Subjective Well-Being**

Diener's research indicates that there is no sole determinant of subjective well-being. Some conditions seem to be necessary for high subjective well-being (e.g., mental health, positive social relationships), but they are not, in themselves, sufficient to cause happiness. His research has identified a number of conditions that appear to be necessary for happiness, or are correlated with happiness, though no single condition or characteristic is sufficient to bring about happiness in itself.

Research out of the Diener lab supports the idea of Costa and McCrae (1980) that personality factors, especially extraversion and neuroticism, are important contributors to subjective well-being. Extraversion most likely influences subjective well-being because it is related to feeling more positive emotions and having a lower threshold for activating positive affect. On the other hand, neuroticism is strongly related to feeling more negative emotions and a lower threshold for activating negative affect. The two personality traits thus work in reciprocal fashion to influence the hedonic component of subjective well-being.

Diener and Seligman (2002) examined the characteristics of the happiest 10% of a college student sample. They compared the upper 10% of consistently very happy people to average and very unhappy people. The very happy people were highly social, with strong romantic and other close social relationships, compared to less happy groups. They were more extraverted, more agreeable, less neurotic, and lower on several Minnesota Multiphasic Personality Inventory (MMPI) psychopathology scales. The happiest subjects did not exercise significantly more, participate in religious activities significantly more, or experience more objectively defined good events. Diener and Seligman (2002) concluded that good social relations were necessary for happiness. The happiest group experienced generally positive, but not ecstatic feelings, most of the time, though they also reported occasional negative moods. This finding suggests that even very happy people have a responsive emotion system that reacts appropriately to life events.

Some researchers have implicated genetic determinants of subjective well-being based on data from twin studies. Some of these studies, conducted at the University of Minnesota and reviewed by Lykken (1999), found that monozygotic twins reared apart are more similar in happiness levels than are dizygotic twins who were reared together. The twin studies (and adoption studies as well) suggest that some portion of the variability in happiness is likely due to genetic contributions. Studies of specific gene influences suggest that genes linked with a propensity toward depression or extraversion and neuroticism might be responsible for the genetics of subjective well-being.

Some researchers, and many popular writers, have interpreted the genetic evidence to mean that happiness is determined by DNA endowment. This is not true for several reasons, as Diener has argued in several places. First, in most genetic studies, there is a fair amount of variability in happiness over time. Although the long-term or setpoint level of happiness a person reports across two or more time periods has a heritable component, people's moods and emotions and level of satisfaction—and hence their subjective well-being—moves up and down, over time, in reaction to life events. A second piece of evidence supporting environmental effects on subjective well-being also comes from the twin

studies. Researchers typically find that early family environment (twins who grow up in the same home) has an influence on levels of positive affect that the twins experience as adults. In other words, something about the shared family environment in childhood predisposes individuals to later feeling less or more positive emotions, such as joy, enthusiasm, and engagement.

Diener's lab has also provided evidence for environmental effects on subjective well-being in terms of the large differences between nations in life satisfaction and other subjective well-being variables. The poorest and richest nations, for example, differ substantially in subjective well-being (Diener & Suh, 1999). Former Communist nations, which have recently gone through political transition, show much lower rates of subjective well-being than nearby non-Communist nations (Diener & Seligman, 2004). So the larger environment seems to influence happiness, and it would appear unlikely that these national differences are due to genetic differences (see Inglehart & Klingemann, 2000, for a fuller exposition of this argument).

Other results that also argue against the idea that subjective well-being is determined by genetic inheritance come from Diener and colleagues' longitudinal studies in Germany (Diener, Nickerson, Lucas, & Sandvik, 2002; Lucas, Clark, Georgellis, & Diener, 2004). They repeatedly find that people who become unemployed are less happy, and they remain so for many years, compared to people with steady employment. Diener and colleagues also report, similarly, that women who get married are, on average, somewhat happier than their unwed counterparts for several years (Lucas, Clark, Georgellis, & Diener, 2003).

A final piece of evidence for environmental effects comes from data on widows. Studies show that widows remain less happy for several years after their partner dies. That is, genetic predisposition notwithstanding, widows, on average, are made less happy by the tragedy that befalls them. In sum, many findings argue that happiness is not solely genetic—the environment matters too. Although genetic effects are undoubtedly important, cultural and situational factors also influence subjective well-being, sometimes strongly.

Furthermore, there is evidence that different conditions and outcomes make different people happy. For example, Diener and colleagues have shown that the correlates of happiness vary between young versus old people (Diener & Suh, 1998). Similarly, Diener, Suh, Smith, and Shao (1995) reported that there are different correlates of happiness in different cultures. Of course, at some basic level, Diener (e.g., Diener, Diener, & Diener, 1995) has argued that there are probably universals—for example, having close social relationships—but there are also specific conditions, characteristics, and activities that make some people more satisfied but that have little effect on others.

When it comes to considering the determinants of subjective well-being, Diener has made the analogy to a recipe rather than a single cause. Most good

recipes call for several ingredients. Some ingredients are essential, others are merely helpful or add a particular flavor or texture to the outcome. But there is no single key ingredient that, by itself, produces the outcome; instead one needs to have multiple ingredients put together in the right way. A similar case holds for subjective well-being—one needs several important and necessary ingredients, but no single one of them, by itself, produces a happy person.

### **The Consequences of Subjective Well-Being**

The pursuit of happiness is a right that every American possesses, according to the Declaration of Independence. The term *happiness* even appears in several drafts of the European Union constitution. To be happy is one of the major goals, if not the ultimate goal, of human beings. To be happy is a quality itself, and a lot of research has been devoted to identifying the conditions for, and the causes of, happiness. During the last few years the consequences and benefits of happiness have also come into the focus of research. Happiness might not only be a goal of life but also a means for reaching other goals and for facilitating desirable behaviors and outcomes. In a recent review Lyubomirsky, King, and Diener (2005) showed that happy people are successful in many life domains and that this success is at least partly due to their happiness (see Oishi & Koo, Chapter 14, this volume; King, Chapter 21, this volume). Happy people are more social, altruistic, active, like themselves and others more, have strong bodies and immune systems, and have better conflict resolution skills. Moreover, pleasant moods promote creative thinking. Many of these results have been found in cross-sectional and experimental studies, and it will be one of the most fascinating research questions of the future to analyze the consequences of subjective well-being in long-term studies over the lifespan and to see whether interventions to enhance subjective well-being (see Emmons, Chapter 23, this volume; King, Chapter 23, this volume) will have sustainable and long-lasting effects.

### **Cross-Cultural Research on Subjective Well-Being**

Although the pursuit of happiness seems to be a general drive of life, there are strong inter- and intracultural differences in the way people appreciate happiness and in the routes to happiness (Suh & Koo, Chapter 20, this volume). Ed Diener's lab has contributed to our understanding of cultural differences in subjective well-being in many important ways (for an overview, see Diener & Suh, 2000). There are strong national differences in citizens' overall satisfaction with life. Although most people are happy, Diener, Diener, and Diener (1995) could

show that international differences in subjective well-being are positively correlated with international differences in income, individualism, human rights, and societal equality. There are universal predictors of subjective well-being that have been found in several nations, such as extraversion (Diener, Oishi, & Lucas, 2003) and marriage (Lucas, Clark, Georgellis, & Diener, 2003), but there are also differences between nations. In individualistic nations judgments of subjective well-being are more strongly based on the emotions people experience and their self-esteem, whereas financial satisfaction was a stronger predictor in poorer countries. Life satisfaction is more strongly related to autonomy, feelings of meaning, and growth in Western cultures than in Eastern ones. However, in collectivistic cultures, those higher in autonomy are also higher in levels of problems such as suicide and divorce (Diener & Suh, 2003). Nations also differ in the norms for experiencing positive emotions, with Eastern nations devaluing some positive emotions such as pride and satisfaction (Eid & Diener, 2001). There are also strong differences between cultures in the stability and variability of affective experiences across situations, with Japanese and Hispanic Americans showing higher intraindividual variability in positive affect than European Americans, for example (Oishi, Diener, Scollon, & Biswas-Diener, 2004). These few results show that Ed Diener's work has formed the cornerstones of a cross-cultural psychology of subjective well-being that helps us to understand how to live a happy life all over the world.

### **National Indicators of Subjective Well-Being**

People pursue happiness, and the happiness of citizens has many benefits for society. How can policy use the insights that research on subjective well-being has uncovered? Diener and Seligman (2004) argue that national indicators are needed to inform policy makers about the well-being of their citizens. In their article "Beyond Money: Toward an Economy of Well-Being" they discuss the shortcomings of economic measures and outline the profits society can gain from enhancing the well-being of its citizens. Citizens that are high in well-being might facilitate governance, they can increase the wealth of a nation by earning more money and creating more opportunities for others, they might be more productive and profitable, they might be healthier and live longer, they might be less prone to mental disabilities and create more satisfying social relationships. Diener and Seligman (2004) outline the requirements that a national indicator of subjective well-being has to fulfill and propose a large-scale research program to develop and refine such indicators. Although the development of national indicators is in its initial stage, it is likely that Ed Diener will promote this topic in his future research and that this idea will gain the attention from policy makers that it deserves.

## Summary

Interest in subjective well-being and happiness has been an undercurrent in scholarly thinking for a long time. After all, Aristotle wrote an entire treatise—*The Nicomachean Ethics*—on happiness and the “good” life centuries ago. Even in psychology there has been a continuous line of scholars writing on optimal functioning, such as Maslow’s work on self-actualization. So what is really “new” in Ed Diener’s work and in the positive psychology movement that he helped create? What is new, and important, is that Diener and his colleagues have employed the empirical methods of scientific psychology to build up the knowledge base on subjective well-being, to create reliable and valid measures of subjective well-being, and to empirically test predictions derived from theories about subjective well-being. Previous scholars were more of the armchair variety, whereas Ed Diener and the new cohort of subjective well-being scientists represented in this volume are of a more empirical tradition. The application of the scientific method to various topics has proven amazingly powerful in the past two centuries in such areas as medicine, chemistry, and physics. It is now being applied to questions in psychology that have formerly been approached through such prescientific methods as introspection, narrative, or qualitative strategies.

The scientific method applied to questions of subjective well-being is yielding tremendous gains in our knowledge. We reviewed several areas of knowledge gain above that were mainly due to the work of Ed Diener, who is a relentless proponent of the scientific method. The scientific method is useful for several reasons. First, it is self-correcting. Scientists are methodologically skeptical, always searching for ways to put their best ideas in grave danger of being refuted. Science also awards higher credibility to findings that replicate, and the field encourages scientists to check each other’s work. And finally, science is incremental; individual scientists build on the work of others, adding pieces to the knowledge base as a field progresses. In this chapter, we have highlighted several areas where Ed Diener has laid the foundational findings upon which others are now building. The strength of this scientific foundation will ensure that knowledge built on it will survive the test of time and achieve a degree of permanence and credibility lasting well into the future.

Another way Ed Diener’s work is significant is his emphasis on how happiness is important, in and of itself. When people are asked, they say that subjective well-being is extremely important in their lives. For example, Diener has shown that college students the world over rated happiness and life satisfaction as very important or extremely important. In fact, in only one country did students rate money as more important than life satisfaction, and happiness was rated as more important than money in every single country examined. Attaining happiness in life appears to be an almost universal human goal.

Another way subjective well-being is important is that it appears to lead to many good outcomes in life. The work of Diener and colleagues has established that happy people are, among other things, more sociable and creative, they live longer and have stronger immune systems, they make more money, are better leaders, and are better “citizens” in their workplace. A host of good outcomes (e.g., marital satisfaction, job satisfaction, better coping) often follows from happiness. Thus, there are many reasons to suggest that high subjective well-being is extremely desirable at both individual and societal levels.

Given findings such as these, Diener has recently moved beyond science into the realm of social policy. He has shown that nations with higher mean subjective well-being (compared to low) have longer life expectancy, more job security, more political stability, lower divorce rates, better records of civil liberty, and more gender equality. He has argued that social policies need to be evaluated with respect to impact on national subjective well-being, not just economic or job-related outcomes. If the rights of citizens include the right to pursue happiness, then policies need to be established and evaluated with respect to fostering that right. In this way, the legacy of Ed Diener’s work will extend beyond his outstanding scientific record and may actually have an impact on how governments and businesses develop and evaluate social policy.

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