

## CHAPTER 29

# The Development of Subjective Well-Being across the Lifespan

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Throughout life, individuals are constantly required to make decisions about how to spend their time and where to engage their efforts. Which career should I pursue? Which relationship partner is right for me? Should I continue following this diet and eat this apple or splurge for a bit with the chocolate cake? Each of these decisions—from the minor and inconsequential to the life-defining—requires us to consider our idiosyncratic goals and attempt to predict the ways in which our actions allow us to achieve these goals. And ultimately, many of us believe that if we make the right decisions—and have a little bit of luck—the final outcome will be a satisfying life full of happiness. Indeed, people seem to make decisions large and small based on the assumption that their choices will promote or maintain their happiness. Indeed, most people believe that the achieving a happy and satisfying life is a goal worth pursuing—and it might even be the ultimate goal in life for many people (Adler, Dolan, & Kavetsos, 2017; Diener, 2000; Gilbert, 2006).

But what is this state of happiness that seems to motivate much of what people do in life? Is “happiness” just a superficial feeling of mindless pleasure, or is it something deeper and more fulfilling? Does happiness actually im-

prove when good things happen (and drop when misfortune occurs)—or is happiness relatively stable, with lasting changes difficult to achieve? We all know those people who seem able to maintain their cheerful disposition despite repeated, severe setbacks; do these cases reflect a broader pattern where stable tendencies toward happiness or misery persist despite changing life circumstances? These and other questions motivate researchers who study what is colloquially referred to as “happiness” and more precisely described as “subjective well-being” (SWB; Diener, Suh, Lucas, & Smith, 1999) in the psychological literature.

In this chapter, we discuss the concept of SWB, paying particular attention to people’s intuitions about it and the specific research questions that are motivated by these intuitions. We start with an overview of the definitions of SWB, focusing both on what it is and what it is *not*. We then move to a discussion of questions that are especially relevant when considering SWB in the context of lifespan development. For instance, we discuss reasons why one might expect stability or change in well-being over time, focusing specifically on the empirical evidence about the extent to which SWB actually changes. Next, we review evidence about the

development of SWB over the lifespan. Finally, we discuss areas for future research on stability and change in SWB.

### What Is SWB?

SWB reflects a person's overall, subjective evaluation of the quality of his or her life as a whole. According to Diener (1984), three characteristics distinguish SWB from other, potentially similar constructs. First, the judgments of interest are *subjective*. They reflect a person's own evaluation of his or her life. Thus, SWB can be distinguished from more objective evaluations of quality of life (Diener, Lucas, Schimmack, & Helliwell, 2009). For example, some philosophical approaches to understanding the "good life" attempt to derive objective lists of characteristics that make up and define the good life, such as dedication to a particular cause or living according to a certain moral code. Relatedly, many psychologists focus on a set of constructs that fall under the umbrella of "psychological well-being" (Keyes, Shmotkin, & Ryff, 2002; Ryff, 1989). This approach uses expert opinion and psychological theory to derive a list of critical dimensions that define psychological well-being. A potentially thorny problem with these more objective approaches (both philosophical and psychological) is that it is difficult, if not impossible, to come up with an uncontroversial list of characteristics that unambiguously define the good life. It may, at first blush, seem that some amount of consensus is possible; for instance, most models of the good life posit that strong social bonds are a necessity. However, it quickly becomes apparent that deep disagreement exists, and few criteria are available for resolving differences in what boils down to opinions about how one should lead a life. Furthermore, even if a comprehensive list of important characteristics could be compiled, different people might weight different life domains differently. For some, sacrifices to the quality of their personal relationships may be justified by the sense of purpose that they find in their jobs. For others, close family ties are more important than career advancement. The fact that different people value agency and communion to differing degrees attests to the complexity of objective approaches. Fortunately, the subjective element of SWB allows different people to weight different domains and experi-

ences in ways that match their own views about their lives and foregoes the need to impose some external definition of a satisfying life.

A second defining feature of SWB is that it is a global evaluation of one's life as a whole. There are many domains of life that could be evaluated, including health, occupational success, and personal relationships. SWB researchers assume that the positive and negative features of one's life add up to an overall sense of whether life is going well or going poorly. As noted earlier, different individuals may weight different domains differently, and positive circumstances in one domain can balance negative life circumstances in another to create an overall sense that life is going well. Accordingly, SWB measures typically focus on overall levels of well-being that reflect this idiosyncratic differential weighting of different life domains.

An important component of this second criterion is that the object that is being evaluated—the thing that is *going well*—is the person's life as a whole. Psychologists study all kinds of evaluations: evaluations of one's social relationships, of one's competence, of one's intelligence, and so on. Each of these may contribute to an overall sense of happiness and subjective feelings of well-being; but they do not replace evaluations of one's life as a whole.

Finally, SWB measures focus on *positive* aspects of the evaluation of life. Rather than emphasizing constructs such as depression and anxiety—topics that have typically been the focus of clinical psychology—SWB researchers usually provide a balanced focus on the positive and negative evaluations. Thus, research on SWB extends beyond clinical psychology to involve social, personality, and developmental psychologists, as well as researchers from related fields such as economics, sociology, and political science.

So why don't well-being researchers simply use the term *happiness* to capture what they mean by this global evaluation? Why would they replace a simple, widely understood term with a much more cumbersome bit of jargon? The answer primarily lies in the fact that there are multiple meanings of the term *happiness*. In one use of the term, *happiness* captures precisely what well-being researchers hope to assess with their measures of SWB. When people say that someone lived a "happy life" or that they themselves "just hope to be happy," they are typically referring to this broad evaluation of

one's life as a whole. Yet happiness has another common meaning, one that refers to a very specific affective experience that happens over a short period of time, such as being happy while taking a long bike ride or watching a funny movie. These latter experiences may not reflect the broader and deeper form of evaluation that SWB researchers hope to assess. For this reason, well-being researchers often rely on the term SWB. We discuss these issues in more detail below when overviewing the measurement of SWB.

### **Measuring SWB**

It seems intuitive that if we want to know how happy someone is with his or her life as a whole, we should just ask. Indeed, given the importance of subjectivity to the construct, self-report methods are sometimes seen as the only method—or at least the “gold standard” method—for assessing SWB. However, this simple intuition does not reflect the complexity of assessing SWB. Namely, there are reasons to be skeptical of self-reports. People might not have perfect memory for all the relevant criteria by which a life could be judged, they may misunderstand the question we pose to them, or they may simply be unwilling to provide an honest answer. For these reasons, measurement is a central issue in the study of SWB, and one that has proven to be particularly contentious. In the sections that follow, we first cover standard self-report measurement approaches—but we also discuss concerns about these measures and alternative measurement techniques.

Many different approaches for obtaining self-reports exist (Diener, 1984). First, it is possible to ask people quite directly how happy or satisfied they are with their lives overall, using a small set of face valid items. This approach, which is typified by measures of life satisfaction or happiness (Diener, Emmons, Larsen, & Griffin, 1985; Lyubomirsky & Lepper, 1999), assumes that people can reflect on the various life domains that they consider to be important, weight the domains by some internal scheme, and then aggregate across domains to derive an overall evaluation. Diener and others have referred to these judgments as “cognitive” evaluations of well-being because these kinds of judgments seemingly require respondents to explicitly consider and report an overall evaluation of their lives.

Cognitive judgments can be contrasted with affective evaluations of well-being. Presumably, people whose lives are going well experience frequent and perhaps somewhat intense positive emotions, and they experience infrequent or relatively mild negative emotions. Thus, one could get a sense of a person's SWB by assessing that person's typical emotional experiences. Importantly, positive and negative emotional experiences are somewhat independent, which means that they should be assessed separately to obtain a comprehensive picture of a person's affective well-being (Schimmack, 2008).

A second issue that must be considered when assessing SWB concerns the time frame over which assessments are made. Recent research suggests that important differences emerge when well-being is assessed in a reflective, retrospective manner, as opposed to assessing it “online” as the experience of life circumstances is happening (Kahneman & Riis, 2005). For instance, when asked to evaluate his or her life as a whole, a respondent must consider a wide range of life domains, weight each by importance, then aggregate across all domains to derive an overall evaluation, at least if the report is to be considered valid (Schwarz & Strack, 1999). Because this task can be difficult (Schwarz, 1999), and because respondents typically provide responses to global life satisfaction questions too quickly to search their memory for all relevant information (Robinson & Clore, 2002a, 2002b), some researchers have suggested that respondents rely on a variety of heuristics that can negatively impact the validity of the responses that they provide (Kahneman, 1999; Schwarz & Strack, 1999). For example, Schwarz, Strack, and their colleagues suggested that broad life satisfaction judgments can be influenced by the weather at the time of judgment (Schwarz & Clore, 1983), preceding questions in a survey (Schwarz, Strack, & Mai, 1991), or whether one's favorite soccer team has recently won a game (Schwarz, Strack, Kommer, & Wagner, 1987). The large size of the effects found in these studies led the authors to suggest that well-being measures have problematic levels of validity (Schwarz & Strack, 1999).

Partly in response to these concerns, some scholars have suggested that studies should not rely on respondents to remember and accurately aggregate across experiences. Instead, these researchers believe it might be more valid to ask respondents relatively simple questions

about how they are feeling at one particular moment, then to aggregate many responses over time (Kahneman, 1999). For instance, ecological momentary assessment or experience sampling methods can be administered repeatedly throughout the day using participants' own mobile phones or specialized handheld devices. These methods can be used to track well-being over time (Mehl & Conner, 2012).

Despite well-cited concerns about global survey methods, empirical evidence for the superiority of online experiential measures of well-being over global, retrospective reports is surprisingly hard to find. First, the initial research showing that retrospective reports were highly malleable were based on studies with extremely small samples, and more recent attempts to replicate the original effects have consistently found much smaller effects, if those effects can be reproduced at all (Lucas & Lawless, 2013; Yap et al., 2017). In addition, research suggests that repeatedly asking respondents the same question over and over again (as is required in more intensive, online [i.e., *in vivo*] assessment strategies) can create unique measurement problems that negatively affect the validity of the resulting measures (Baird & Lucas, 2011; Baird, Lucas, & Donnellan, 2017; Watson & Tellegen, 2002). Finally, recent research shows that when the two types of measures are explicitly pitted against one another in tests of criterion validity, the global retrospective measures typically perform as well or better than the aggregated online measures (Hudson, Lucas, & Donnellan, 2016). Thus, the concerns about the validity of global reports of SWB are not consistently supported by empirical evidence.

As noted earlier, the subjective nature of SWB might make it seem as though self-reports are the only option for assessing the construct. However, alternatives do exist. For instance, it seems likely that happy people will emit signs of their happiness to others who know them well, and indeed, research shows that informant reports tend to correlate moderately with self-reports of SWB (Schneider & Schimmack, 2009). In addition, there may be cognitive or behavioral signs that a person is happy, and measures that tap these signals may be used to supplement and validate the self-report measures that exist. Although the details of these methods are outside the scope of the present chapter, these alternatives to self-report may be used to assess SWB.

## The Stability of SWB

Now that issues of measurement have been considered, we turn to more substantive research focused on testing people's intuitions about the nature of SWB. Most importantly, we focus on questions about whether SWB changes over time. Early research on SWB focused on identifying reliable predictors of well-being measures. One common theme that emerged from this early research was that the many factors that people might expect to impact happiness—factors such as income, health, and life events—exhibited surprisingly weak associations with SWB measures (Diener et al., 1999). This robust empirical finding, when combined with additional evidence that scores on SWB measures are moderately to strongly heritable (Lykken & Tellegen, 1996; Roysamb, Nes, & Vitterso, 2014) and consistently correlated with stable personality traits (Lucas & Diener, 2015) led some to question whether change in SWB is even possible. Specifically, some researchers proposed that people are stuck on a “hedonic treadmill,” where events may impact well-being in the short term—but that people inevitably adapt over time, resulting in no lasting impact of major life circumstances over time (Brickman & Campbell, 1971; Headey & Wearing, 1991). Thus, the individual differences in happiness that people notice are attributable not to the effects of different life circumstances, but rather to differences in underlying personality traits between people. In other words, some people are just born happy, whereas others are far less sanguine by nature.

In recent years, this somewhat pessimistic view of the possibility for change has been challenged by research on the change that occurs in SWB measures over time. In this chapter, we focus on two types of change. The first is rank-order change, which reflects the extent to which those who are especially high in well-being at one point in time maintain that relatively high level over time. The second form is mean-level change, which reflects the extent to which people change in similar ways after similar experiences (e.g., major life events) or across the lifespan, and whether there are normative trends in the typical levels of well-being that are reported at different periods. In this section, we focus on rank-order stability and change.

Evidence about the long-term rank-order stability or consistency of SWB measures has accumulated quickly over the past decades. This

is due, in part, to the fact that global measures of life satisfaction have been included in many long-running panel studies, in which the same participants were followed year after year for many years of their lives. These studies provide important evidence regarding the short- and long-term stability of well-being measures. For instance, Lucas and Donnellan (2007, 2012) used data from up to four different nationally representative panel studies to examine stability over intervals up to and beyond 20 years. They showed that year-to-year consistency is quite high—around .50 to .60. These stability coefficients are especially impressive given the fact that single-item measures with limited reliability were used. Importantly, however, these stability coefficients declined systematically within increasing intervals. Indeed, after 20 years, the predicted stability was closer to .20 or .25 across studies—a figure that is much lower than the 1-year stability estimates. Furthermore, the decline in stability appeared to asymptote at this lower level, suggesting that with even longer intervals, some degree of stability remains.

Together, these patterns of results provide a more nuanced view of rank-order stability and change in SWB measures. First, the high year-to-year stability suggests that scores are reasonably consistent over time. Information about an individual's level of SWB at one time point is useful for predicting future scores. There is little reason to believe that SWB is an ephemeral individual difference. Second, the fact that stability coefficients weaken with increasing intervals suggests that real change does occur. Finally, the fact that stability coefficients asymptote near .20 or .25 suggests that there may be a temperament-based core to well-being. Notably, the empirical evidence from panel studies is supported by meta-analytic summaries of stabilities from many different studies that vary in interval length (Anusic & Schimmack, 2016; Schimmack & Oishi, 2005).

### Changes in SWB Following Life Events

Research on the rank-order stability of SWB shows that respondents' scores on these measures can change over time. This finding alone does not clarify whether any changes occur in systematic and predictable ways following major changes in life circumstances. However, just as the inclusion of well-being measures in long-running panel studies allowed research-

ers to evaluate the long-term stability of SWB, the availability of long-term follow-up data has allowed researchers to examine whether SWB changes after the experience of major life events. This research confirms that such changes in life circumstances are associated with corresponding changes in well-being scores, and that, at least for some people and some events, the changes that occur can last a long time or perhaps even be permanent.

In one of the earliest studies to examine this question, Lucas, Clark, Georgellis, and Diener (2003) used data from the long-running German Socio-Economic Panel (GSOEP) study to examine how life satisfaction changed before and after the experience of marriage and widowhood. This study showed that the pattern of changes varies across the two events. For marriage, participants experienced small increases in life satisfaction as they approached the year of the event, followed by relatively quick returns to original baseline levels of life satisfaction within a few years. In other words, individuals (on average) tended to show adaptation to marriage, but the observed increase appeared to be temporary. For widowhood, on the other hand, respondents reported sharp declines in life satisfaction, with slow adaptation. Life satisfaction levels never returned to their baseline levels, even many years after the event. Thus, widowhood appeared to alter trajectories of well-being for individuals (on average). Subsequent research has tended to replicate these results in other panel studies (Anusic, Yap, & Lucas, 2014a, 2014b; Yap, Anusic, & Lucas, 2012).

These analyses have also been conducted with other life events, and these studies confirm that there is no single answer to the question of whether life satisfaction and other forms of well-being change following major life events; that answer depends on the specific event being studied (see Luhmann, Hofmann, Eid, & Lucas, 2012, for a meta-analytic review). Lucas (2007) showed that lasting disabilities appear to be associated with moderate to large drops in life satisfaction, whereas divorce is associated with, at most, small changes following the event (though those who divorce seem to be lower in life satisfaction even long before the event of divorce occurs; Lucas, 2005).

Collectively, there is support for the claim that mean levels of life satisfaction can exhibit lasting changes after life events, depending on the event. An additional conclusion that may be drawn from these studies, however, is that the

specific pattern of changes that occurs also varies across individuals. For most events studied, there is a great deal of variability in the patterns of observed changes. For instance, Lucas and colleagues (2003) showed that although on average people quickly adapted to the event of marriage, some people experienced large and lasting boosts in life satisfaction after the event, and these were balanced by a group of respondents that actually declined in life satisfaction following what many would expect to be a positive event. Thus, an important goal for future research is to identify individual-level factors that can explain when and why more or less complete adaptation occurs (Anusic & Lucas, 2014; Yap, Anusic, & Lucas, 2014).

### Research on Age and Well-Being

In addition to evaluating how well-being is related to life events, researchers are also interested in documenting normative levels of well-being across the lifespan. This work helps to answer the fascinating basic question of when (or even if) individuals experience a “prime” of their lives (i.e., the period of peak happiness for most people). This work on age-graded patterns in well-being may also help elucidate the psychological processes that underlie people’s subjective assessments of their well-being. For instance, early scholars believed that well-being likely follows a similar trajectory to physical prowess: peaking in young adulthood and declining thereafter (Banham, 1951; Bühler, 1935). This prediction is rooted in the notion that subjective well-being is a relatively accurate reflection of the objective conditions of people’s lives, which, in several important ways, tend to worsen with age (Diener & Suh, 1998; Wilson, 1967). For example, older adults tend to have worse health outcomes (e.g., Idler, 1993) and more restricted social engagement (Carstensen, 1992) compared with their younger counterparts.

In contrast to classic predictions about declines in happiness with age, contemporary scholars have emphasized that the psychological maturity that accompanies age may lead to *increases* in SWB. For example, biologically predetermined emotional maturation—analogueous to physical maturation—may produce increases in individuals’ emotional stability as they age, facilitating an enhanced sense of well-being (e.g., fewer negative emotions) (Bleidorn

et al., 2010; Roberts, Wood, & Caspi, 2008). Beyond biology, social-psychological factors, such as an increasing awareness of limited time left to live, may also lead older individuals to engage in strategies designed to maximize positive emotions and minimize negative ones (Carstensen, 1995; Carstensen, Isaacowitz, & Charles, 1999). For example, socioemotional selectivity theory posits that older adults select into situations that foster positive affect and mitigate negative affect—and when such selection is not possible, they engage in emotional regulation to a greater degree than do younger persons (Charles & Carstensen, 2008; Charles & Piazza, 2009; Charles, Piazza, Luong, & Almeida, 2009).

Of course, the idea that well-being is determined by the objective circumstances of people’s lives as well as by intrapersonal factors (e.g., emotional maturity) are not mutually exclusive. And as we discuss below, the empirical associations between age and well-being seem to support both perspectives. That said, as we described in greater detail earlier in this chapter, global well-being (people’s top-down evaluations of the quality of their lives and affective experiences) and experiential well-being (actual *in vivo* experiences of well-being) are at least partially separable (e.g., Hudson, Lucas, & Donnellan, 2017; Lucas, Diener, & Suh, 1996). As a consequence, global and experiential well-being could potentially exhibit differential associations with age (Hudson, Lucas, & Donnellan, 2016). Moreover, one might expect life circumstances and psychological maturity to have different implications for global and experiential well-being. For example, the greater emotional maturity that accompanies age might positively bias individuals’ global evaluations of their well-being, even given equivalent experiential well-being (Charles et al., 2016). Stated differently, even if the positivity of people’s emotional experiences does not vary with age, differences in mental perspective might nevertheless cause older adults to report more positive overall impressions of their lives. For these reasons, we discuss age trajectories in global and experiential well-being separately in the following sections.

### Age Trajectories in Life Satisfaction

Historically, the majority of research examining age trajectories in well-being has focused on

simple linear trends in life satisfaction (i.e., does life satisfaction increase or decrease with age?). The empirical literature based on simple linear models has been considerably mixed, with studies variously finding that life satisfaction increases with age (Lucas & Gohm, 2000; Prenda & Lachman, 2001; Vaux & Meddin, 1987), that it decreases with age (Freund & Baltes, 1998; Mroczek & Spiro, 2005), or that adults express similar levels of life satisfaction irrespective of age (Diener & Suh, 1998; Hamarat, Thompson, Steele, Matheny, & Simons, 2002).

Within the past 15 years, however, a growing body of literature has begun to question whether a simple linear model is adequate and has instead suggested that life satisfaction follows a quadratic—U-shaped—trajectory across adulthood, such that life satisfaction tends to decline throughout young adulthood and perhaps middle adulthood, before rebounding in advanced age (e.g., Blanchflower & Oswald, 2008; Stone, Schwartz, Broderick, & Deaton, 2010). Although several studies have converged on the basic shape of this quadratic trajectory, they diverge with respect to when life satisfaction reaches its nadir—with estimates ranging from people's mid-30s (Clark & Oswald, 1994; Shields & Wheatley Price, 2005) or 40s (Blanchflower & Oswald, 2004; Frijters, Haisken-DeNew, & Shields, 2004), to their mid-50s (Stone et al., 2010) or even 60s (Blanchflower, 2001). Likewise, some studies suggest age is unrelated to levels of well-being, at least until around age 70 (Baird, Lucas, & Donnellan, 2010).

Nevertheless, it is useful to consider whether the U-shaped curve for life satisfaction is consistent with the ideas that both objective life circumstances and psychological maturity contribute to people's overall sense of well-being. For example, drops in life satisfaction across young adulthood may reflect transitions into increasing amounts of time at work versus leisure, in addition to adopting more generative (and sometimes stressful) roles, such as caring for children, partners, and aging parents—which may, on occasion, foster reductions in positive affect and elevations in negative affect (e.g., Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004). In contrast, late-life gains in life satisfaction are consistent with differences in mental perspective (e.g., awareness of a limited time left to live) spurring older adults to select into more positive situations and to otherwise engage in strategies designed to maximize positive affect and minimize negative feelings

(Carstensen, 1995; Carstensen et al., 1999). Collectively, these findings may indicate that, at least in terms of life satisfaction, individuals do not experience a “prime” of their lives so much as a midlife nadir—and moreover, the notion of “midlife crises” may contain perhaps the trappings of a kernel of truth.

Four caveats regarding the body of literature supporting a U-shaped association between age and life satisfaction are worth highlighting. First, cross-sectional correlational studies examining age-related differences in well-being may be susceptible to cohort effects. Namely, the associations between age and life satisfaction may not represent true developmental effects, but may rather be an artifact of people of different ages within one sample being born during especially prosperous or trying times (e.g., older adults may have greater well-being simply because they lived through more prosperous economic times). Somewhat mitigating this concern, several studies provide support for the idea that the quadratic age pattern in life satisfaction is robust to cohort effects. Specifically, the quadratic pattern has emerged in multiple cohorts within single cultures, and it has also robustly replicated across more than 70 countries with diverse histories (Blanchflower & Oswald, 2008), including America (Blanchflower & Oswald, 2004; Stone et al., 2010), Western European countries (Baird et al., 2010; Blanchflower, 2001; Blanchflower & Oswald, 2004; Clark & Oswald, 1994; Frijters et al., 2004; Shields & Wheatley Price, 2005), and South Africa (Powdthavee, 2005).

Second, the extent to which the U-shaped age pattern in life satisfaction generalizes across cultures—especially less-developed ones—remains poorly understood. Specifically, few studies have examined age patterns in life satisfaction within poorer, less-developed countries. And the limited evidence currently available is somewhat mixed with respect to whether late-life rebounds in life satisfaction occur only in wealthier, more developed nations (Deaton, 2008), or whether the quadratic trajectory is more or less universal across cultures (Blanchflower & Oswald, 2008). To the extent that middle- to late adulthood is associated with gains in well-being only in wealthier countries (Deaton, 2008)—and life satisfaction therefore drops relatively linearly with age for those in less developed nations—this may suggest that late-life difficulties in less developed countries (e.g., health problems without adequate medical

care) overwhelm the positive effects of greater psychological maturity.

Third, several studies have failed to replicate the U-shaped pattern. For example, although one study found evidence for a U-shaped pattern in life satisfaction among Germans (Frijters et al., 2004), at least three other large-sample studies did not find statistically significant quadratic associations between age and life satisfaction in Germany (Baird et al., 2010; Hudson et al., 2016; Winkelmann & Winkelmann, 1998). Nevertheless, the general preponderance of current evidence suggests the existence of a quadratic association between age and life satisfaction: thus, the lack of findings in these studies may represent sampling error.

Last, studies vary with respect to whether they modeled the literal, observed age trends in life satisfaction (e.g., Baird et al., 2010), versus the semipartial associations between age and well-being, controlling other relevant variables, such as income, health, and/or demographics (e.g., Blanchflower & Oswald, 2008). Notably, although the inclusion of covariates might help isolate the mechanisms responsible for age-graded changes in life satisfaction, this also has the potential to shift the interpretation of the studies' findings to represent hypothetical counterfactuals (e.g., what would we expect to observe in a hypothetical world where younger and older adults did not differ in terms of health?; Hudson et al., 2016). At least one study, however, suggests that the quadratic association between age and well-being emerges regardless of whether control variables are included in the models (Stone et al., 2010). Nevertheless, it remains possible that the apparent empirical consensus regarding the U-shaped association between age and life satisfaction in the current literature is exaggerated by "researcher degrees of freedom" regarding the specific models used in various studies and covariates included (Simmons, Nelson, & Simonsohn, 2011).

### Terminal Decline

In addition to evidence about the average levels of life satisfaction across the lifespan, there is evidence that levels of well-being, including life satisfaction, may fall sharply prior to death (Gerstorf et al., 2008; Mroczek & Spiro, 2005). This effect is called *terminal decline* in the literature. At least two interrelated explanations help to reconcile the finding that life satisfac-

tion stays either stable or increases in late adulthood with the existence of a terminal decline. First, in the words of Gerstorf and colleagues (2008), terminal decline occurs as a function of "distance to death rather than distance from birth (i.e., chronological age)" (p. 1149). In other words, the circumstances associated with dying contribute to declines in well-being, irrespective of a person's age when those circumstances occur. One consequence of this distinction is that it is possible that older individuals may experience increasing life satisfaction throughout the lattermost years of their lives, until health or other problems become so severe as to be imminently life threatening (which may occur at different ages for different individuals).

Second, and relatedly, the older adults who provide data in most ongoing studies are not representative of their age group more generally (Baird et al., 2010; Hudson et al., 2016). The explanation is that they have often lived longer than what is typical for a member of their birth cohort. Thus, the older adults present in most studies may be those who are healthy enough to enjoy late-life, age-graded increases in well-being sans any imminently terminal issues. Moreover, individuals with greater well-being may live longer than those with poorer well-being (Carstensen et al., 2011). Thus, those who survive to provide data in advanced old age may be a biased sample and only represent the most well-off individuals from their cohorts—which would produce an apparent, albeit ultimately misleading advanced-old age increase in well-being in cross-sectional studies. The concern is that the oldest participants in many studies are often highly selective members of their birth cohorts.

### Age Trajectories in Affect

For the remainder of this chapter, we discuss empirical evidence for cross-sectional age patterns in people's affective well-being. It is important to differentiate global affect (people's top-down assessments of their typical patterns of positive and negative emotions) and experiential affect (people's actual *in vivo* experiences of positive and negative emotions) because a variety of factors can bias people's top-down perceptions of their global affect, holding their actual affective experiences constant. For example, older adults may be biased toward remembering positive events over negative ones. If this is the case, they may not differ from



younger adults in terms of experienced affect, but they may nevertheless report more positive global affect (Charles et al., 2016).

In terms of operationalization, when individuals are asked to summarize their affective experiences over long periods of time (e.g., several weeks), research suggests that people are unable to accurately recall emotional information across such large timespans, which forces them to rely upon their top-down beliefs and expectations regarding their typical levels of affect (Robinson & Clore, 2002a, 2002b, 2007). In other words, when people are asked to summarize their affect across extended windows of time, they tend to report their beliefs about their typical affective experiences rather than their actual experienced affect. Thus, when discussing affect, we consider any studies that asked participants to summarize their typical affect over long periods of time (e.g., weeks, months) to have measured global affect. In contrast, when reviewing research on experiential affect, we include studies that measured affect via the experience sampling method (ESM; Shiffman, Stone, & Hufford, 2008), the day reconstruction method (DRM; Kahneman et al., 2004), or by asking participants to summarize their affective experiences from the previous day.

Beyond the distinction between global and experiential affect, research suggests that positive and negative affect are at least partially independent of one another (Watson, Clark, & Tellegen, 1988). Although a few studies have examined only “affective balance” (i.e., positive emotions minus negative ones; e.g., Ryff, 1989), most studies have separately estimated the associations between age and positive affect and age and negative affect. Therefore, in the sections that follow, we discuss global negative affect, global positive affect, experiential negative affect, and experiential positive affect separately.

### **Global Affect**

#### *Negative Affect*

A large body of research has examined the correlations between age and global affect. Generally, these studies have converged on the finding that negative affect tends to decline with age (Barrick, Hutchinson, & Deckers, 1989; Charles et al., 2016; Charles, Reynolds, & Gatz, 2001; Costa et al., 1987; Gross et al., 1997; Hudson et al., 2016; Lawton, Kleban, & Dean, 1993;

Lucas & Gohm, 2000; Mroczek & Kolarz, 1998; Vaux & Meddin, 1987). Indeed, very few studies have contradicted this general consensus by finding that age is unrelated to negative affect (Malatesta & Kalnok, 1984; Smith & Baltes, 1993), or that negative affect increases with age (e.g., Pinquart, 2001, meta-analyzed 142 studies and found a small negative correlation between negative affect and age, which reversed when covariates were included). The finding that negative affect tends to decrease with age is consistent with theories positing that biologically driven maturation processes promote emotional stability (Bleidorn et al., 2010; Roberts et al., 2008) and also that social-psychological factors, such as increasing awareness of limited time left to live, may encourage older adults to maximize positive emotions and minimize negative ones (Carstensen, 1995).

Despite the fact that research generally suggests that global negative affect decreases with age, an emerging body of research has begun to indicate that different discrete negative emotions may follow disparate trajectories across adulthood. Specifically, preliminary evidence suggests that most negative emotions—and especially anger—decrease across adulthood, whereas sadness appears to increase as a function of age (Hudson et al., 2016; Kunzmann, Kappes, & Wrosch, 2014; Kunzmann, Richter, & Schmukle, 2013). Further supporting this notion, several studies have found U-shaped quadratic associations between age and depression, such that depression is minimized in middle-age before escalating into old age (Gatz, Johansson, Pedersen, Berg, & Reynolds, 1993; Kessler, Foster, Webster, & House, 1992).

Why might sadness defy the general trend of negative affect decreasing with age? One potential explanation is that despite the fact that older adults appear to experience more success in regulating negative emotions, the incidence of sadness-provoking experiences (e.g., death of loved ones and other losses) may increase with advanced age. Moreover, it may be easier for adults to select out of anger- or frustration-promoting situations (e.g., social conflict) than to select out of sadness-promoting circumstances (e.g., experiences of loss) (Carstensen, 1995; Kunzmann et al., 2014).

#### *Positive Affect*

In contrast to research on global negative affect, which has generally converged on the notion

that negative affect ebbs with age, research on global positive affect has produced mixed findings. Specifically, several studies have found that positive affect increases as a function of age (Lucas & Gohm, 2000; Mroczek & Kolarz, 1998; Ryff, 1989; Vaux & Meddin, 1987). Others have found no association between age and positive affect (Barrick et al., 1989; Charles et al., 2001; Malatesta & Kalnok, 1984). Still others have found that positive affect *declines* as a function of age—either consistently across adulthood (Costa et al., 1987; Hudson et al., 2016; Kunzmann, 2008; Kunzmann, Little, & Smith, 2000; Pinguart, 2001)—or that it remains stable across most of life before declining in advanced old age (Charles et al., 2001). In one study, controlling for health reversed the negative association between age and positive affect (Kunzmann et al., 2000)—potentially suggesting that, holding health constant, older adults experience greater positive affect than do younger adults, and it is only failing health that counteracts and even overwhelms this effect. However, in another study, controlling health did not alter the negative association between age and positive affect (Hudson et al., 2016).

Unfortunately, there does not appear to be a simple explanation for the mixed findings regarding positive affect. One possibility is that global positive affect follows a quadratic trajectory across adulthood (Hudson et al., 2016; cf. Pinguart, 2001), and existing studies may not cover the lifespan long enough to observe this pattern. Thus, it may be the case that the mixed linear trends observed in prior studies are due to an underlying curvilinear effect. However, it remains an open question whether such a quadratic pattern would replicate in future studies.

Clearly additional research is needed to clarify how positive affect changes as a function of age. For example, it may simply be the case that positive affect does not vary across adulthood—and that the discrepant correlations between age and positive affect in the literature represent sampling error around an ultimately null effect. Alternatively, it may be the case that different mechanisms have counteracting effects on positive affect as individuals age. For example, meta-analyses suggest that certain facets of extraversion—which includes positive affect—may decline with age (Roberts, Walton, & Viechtbauer, 2006). This may counteract older adults' attempts to up-regulate positive

affect (Carstensen, 1995), producing a net zero effect. Ultimately, these and other possibilities should be explored and disentangled in future research.

### **Experiential Measures of Affect**

#### *Negative Affect*

In contrast to research on global affect, far fewer studies have examined age-graded patterns in experiential measures of affect. Nevertheless, aligning with research on global negative affect, these studies have almost universally converged on the idea that experiential measures of negative affect tend to decline as a function of age—irrespective of whether it is measured via ESMs (Carstensen, Pasupathi, Mayr, & Nesselroade, 2000; Riediger, Schmiedek, Wagner, & Lindenberger, 2009), the DRM (Hudson et al., 2016), or as a self-report summary of the prior day's affect (Charles et al., 2016). Only one study has found that negative affect, as measured via ESM, is invariant with respect to age (Charles & Pasupathi, 2003).

Once again aligning with research on global negative affect, the limited body of available research may indicate that sadness in particular defies the general pattern for negative affect by increasing with age. For example, one study based on DRM measures found that experiences of anger decreased with age, whereas experiential sadness increased across adulthood (Hudson et al., 2016). Similarly, in experimental contexts, as compared with younger persons, older adults report greater fear and sadness—but not anger or disgust—in response to emotionally evocative stimuli (Haase, Seider, Shiota, & Levenson, 2012). Thus, specific negative feelings may show distinct age trajectories.

#### *Positive Affect*

Paralleling research regarding global positive affect, studies have produced mixed findings with respect to the association between age and experiential measures of positive affect. For example, one study found that positive affect, as measured via ESM, increases with age (Riediger, Schmiedek, Wagner, & Lindenberger, 2009). Somewhat more ambiguously, another study found that the *difference* between positive and negative affect increased with age (Carstensen et al., 2011). In contrast, another

study found that DRM affect decreased with age (Hudson et al., 2016). Still other studies have found no association between experiential positive affect and age (Charles & Pasupathi, 2003; Carstensen, Pasupathi, Mayr, & Nesselroade, 2000). As with global positive affect, these studies may point to the idea that the true association between age and positive affect is close to zero.

Potentially reconciling the mixed findings with respect to experiential positive affect, one study recently found support for the notion that older adults may attempt to minimize *high-arousal* positive emotion (e.g., excitement) in lieu of low-arousal emotion (e.g., contentment) (Scheibe, English, Tsai, & Carstensen, 2013). This phenomenon might cause studies that use aggregate measures containing both high- and low-arousal positive emotions to find null effects. However, at least one other study failed to find support for the proposition that low-arousal emotions increase with age—instead finding that positive affect generally decreased with age, and satisfaction (a low-arousal positive emotion) was unrelated to age (Hudson et al., 2016).

### Summary of Age Trends

In summary, the existing literature provides some indication that average levels of life satisfaction decrease across young adulthood before reaching a nadir sometime between people's 30s and 60s, and subsequently rebounding in old age. In contrast, both global and experiential negative affect appear to decline in a relatively linear fashion across adulthood—with the exception that sadness appears to increase with age. Finally, the current literature is mixed and inconclusive with respect to positive affect, as both experiential and global positive affect have been variously found to be positively correlated, negatively correlated, or unrelated to age. These findings are collectively consistent with the notions that both objective life circumstances and intrapersonal factors contribute to individuals' SWB given what is known about trajectories of life circumstances and personality traits across the lifespan. Nevertheless, future research is needed to understand particularly the associations between age and positive affect. Moreover, future research is needed to test the cross-cultural generalizability of these findings.

### Conclusion

Researchers and laypeople alike are concerned about the extent to which happiness, or SWB, changes across the lifespan and whether well-being changes in response to life events. For those who seek to improve their lives, it is often important to know whether their substantial efforts will pay off; and one way to evaluate this is to assess whether their efforts at self-improvement co-occur with corresponding changes in the ways these people evaluate their lives. Presumably, those who are able to achieve important goals, to obtain the job they have been working toward for many years, or to develop the stable and supportive romantic relationships that they believe are valuable will be happier than those who fail at these tasks.

Initially, early research on SWB suggested there was a limit to people's ability to change. However, studies that use high-quality data from a wide range of sources suggest that these early conclusions needed amendment. The emerging view is that SWB shows some consistency across time, but levels can and do change with age and life events. The correlation between scores at two time points is far from unity, and there are individual differences in change over time. The experience of certain major life events such as widowhood or disability may disrupt people's happiness, causing lasting changes, at least for some people. Furthermore, research shows that the different components of well-being change in predictable ways over the lifespan; future research is needed to explain these changes and to determine whether they are due to biological maturation or to systematic changes in circumstances that occur as people age. Regardless of the causes of change, existing research on stability and change in SWB suggests the SWB is a developmental construct much the way personality traits are viewed as developmental constructs in contemporary theorizing about trait development. This perspective has important practical and theoretical implications for our understanding of people's evaluations of the success of their lives. Well-being is perhaps more stable and consistent than predicted by early models, but it is far from an immutable entity that stays perfectly constant across the lifespan. Researchers are actively working to address several inconsistencies in the literature and to document the processes that explain both stability and change in well-being.

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