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The evolving concept of subjective well-being: the multifaceted nature of happiness

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1. Evolving conceptions of subjective well-being: The multifaceted nature of happiness

Subjective well-being (SWB) is the field in the behavioral sciences in which people's evaluations of their lives are studied. SWB includes diverse concepts ranging from momentary moods to global judgments of life satisfaction, and from depression to euphoria. The field has grown rapidly in the last decade, so that there are now thousands of studies on topics such as life satisfaction and happiness. Scientists who study aging have shown particular interest in SWB, perhaps because of concern that declines in old age could be accompanied by deteriorating happiness. In this chapter we touch upon age trends in SWB, but our major goal is to alert researchers to the intriguing multi-faceted nature of this concept that has emerged in recent years.

1.1. Concern about happiness and the good life throughout history

A widely presumed component of the good life is happiness. Unfortunately, the nature of happiness has not been defined in a uniform way. Happiness can mean pleasure, life satisfaction, positive emotions, a meaningful life, or a feeling of contentment, among other concepts. In fact, for as long as philosophers have been discussing happiness, its definition has been debated. One of the earliest thinkers on the subject of happiness, the pre-Socratic philosopher Democritus, maintained that the happy life was enjoyable, not because of what the happy person possessed, but because of the way the happy person reacted to his/her life circumstances (Tatarkiewicz, 1976). Incorporated in Democritus's definition of happiness were ideas about disposition, pleasure, satisfaction, and subjectivity. However, this view was buried for centuries as Socrates, Plato, and Aristotle championed the eudemonia definition of happiness in which happiness consisted of possessing the greatest goods available (Tatarkiewicz, 1976).

Although there was little agreement among classical thinkers as to what the highest goods were, for Aristotle, they involved realizing one's fullest potential (Waterman, 1990). Most important, this view defined happiness according to objective standards, and pleasure was not considered central to this definition. In contrast, Aristippus advanced an extreme form of hedonism, the unrestrained pursuit of immediate pleasure and enjoyment (Tatarkiewicz, 1976). Happiness, for hedonists, was simply the sum of many pleasurable moments. This form of hedonism, of course being undesirable and impractical, led to a more moderate form of hedonism when the Epicureans sought to maximize pleasures, but with some degree of prudence. Stoics, on the other hand, sought to minimize pains.

Jeremy Bentham's term "utility," also with its roots in hedonism, later widened the meaning of pleasure to include "benefits, advantages, profits, good or happiness... [and the absence of] failure, suffering, misfortune or unhappiness" (Tatarkiewicz, 1976, p. 322). Happiness, for utilitarians, was thus equated with both

the presence of pleasure and absence of pain. Borrowing from Bentham, modern economists believe that people make choices designed to maximize utility.

Because of the multiplicity of meanings that happiness holds, researchers in this field often avoid the term. However, the term happiness has such currency in public discourse that it is often difficult to dodge. Some researchers prefer to use the term "subjective well-being" (SWB), although happiness is sometimes used synonymously with SWB as well. Echoing the beliefs of Democritus, the term subjective well-being emphasizes an individual's own assessment of his or her own life – not the judgment of "experts" – and includes satisfaction (both in general and satisfaction with specific domains), pleasant affect, and low negative affect.

In the 20th Century psychologists and other scientists became interested in studying happiness, answering the questions – What is happiness? Can it be measured? And what causes happiness? – with empirical methods. In a landmark paper, Jahoda (1958) called for the inclusion of positive states in definitions of well-being, which sparked a paradigmatic shift in conceptions of mental health. No longer was the absence of mental illness sufficient for mental health; happiness became important as well.

Wessman and Ricks (1966) conducted early intensive personality work on happy people. Like many of the early SWB researchers, they were interested in the characteristics of a happy person. Is the happy person well-liked, balanced, et cetera? However, the scientific study of happiness still generated a bit of doubt. When Wilson (1967) wrote about "avowed happiness," his discussion hedged on whether it was real happiness that scientists were measuring, although he did not fully define the state.

A watershed finding in SWB research came when Bradburn discovered that positive affect (PA) and negative affect (NA) are independent (Bradburn, 1969). By demonstrating that positive and negative emotions form separate factors that are influenced by different variables, Bradburn's findings lent empirical support to Jahoda's notion of mental health. In addition, the independence of PA and NA became important to the study of happiness because it suggested that happiness is not unidimensional, but instead is at least two-dimensional. In other words, PA and NA are not simply polar ends of a single continuum, and thus need to be measured separately. Andrews and Withey's (1976) contribution to the science of SWB was to include the third, cognitive component of life satisfaction. At the same time, Campbell et al. (1976) were exploring a fourth form of SWB, domain satisfaction.

In 1984, Diener reviewed the field of SWB, including the various theories and known characteristics of happy individuals at the time. Large national studies of SWB concluded that most Americans were indeed happy, regardless of age, race, sex, income, or education level (Myers and Diener, 1995). Since 1990 there has been an explosion of research in the field, with a large number of SWB studies now occurring in the area of gerontology as well. Neugarten et al. (1961), for example, developed a scale that measures life satisfaction specifically among the elderly.

1.2. Chapter overview

Why is SWB important? First, high SWB leads to benefits (see Lyubomirsky et al., 2002 for a review), not the least of which include better health and perhaps even increased longevity (Danner et al., 2001). Second, people the world over think SWB is very important. In a survey of college students from 17 countries, Diener (2000) found that happiness and life satisfaction were both rated well above neutral on importance (and more important than money) in every country, although there was also variation among cultures. Furthermore, respondents from all samples indicated that they thought about happiness from time to time. Thus, even those from relatively unhappy societies value happiness to some extent. Third, SWB represents a major way to assess quality of life in addition to economic and social indicators such as GNP and levels of health or crime (Diener and Suh, 1997). In fact, SWB captures aspects of national conditions that the other measures cannot. Thus, when used in conjunction with the objective measures, SWB provides additional information necessary to evaluate a society. Fourth, SWB is frequently assessed as a major outcome variable in research on the elderly (George, 1986), and on other target groups. SWB is an important indicator of quality of life and functioning in old age.

The present chapter will review several key areas. However, we will also discuss how the field is moving in new directions. Formerly researchers were searching for the core of SWB, but it is clear that there are multiple components that combine in complex ways, and that no single one of them reflects "true happiness." Instead, SWB must be studied as a multi-faceted phenomenon. People combine the basic building blocks of SWB in different ways.

Some of the topics and questions we will address are as follows:

1. Structure: What are the major components under the umbrella of SWB, and how do they relate to one another?
2. Frequency vs. intensity: Is it the frequency, duration, or intensity of good feelings and cognitions that compose SWB?
3. Temporal sequence and stages: The picture of SWB changes depending on whether one examines moments or longer time frames, such as lifetimes.
4. Stability and consistency: Is there enough temporal stability in people's feelings, and consistency across situations, to consider SWB a personality characteristic? Or is SWB entirely situational?
5. Affect vs. cognition: SWB includes both affective evaluations of one's life (e.g. pleasant feelings, enjoyment, etc.), but also a cognitive evaluation (e.g. satisfaction, meaning, etc.). Which is more important?
6. The functioning mood system: Even happy people experience unpleasant emotions, and the picture of SWB we are advocating does not equate happiness with uninterrupted joy. Adaptive emotions involve being able to react to events, and not being stuck in happy or sad moods.
7. Tradeoffs: Although happiness is desirable, people want to feel happy for the right reasons. Additionally, there are times when people are willing to sacrifice fun and enjoyment for other values.

8. Implications for measurement and research with the elderly: Given the multifaceted nature of SWB, various measures cannot be assumed to be substitutes for one another.

Different measures may provide divergent conclusions about the well-being of the elderly. Thus, the choice of measures should be an informed decision.

2. Hierarchical structure: the components of SWB

In this section, we review the components that make up the domain of subjective well-being. We present these components as a conceptual hierarchy with various levels of specificity (see Fig. 1). At the highest level of this hierarchy is the concept of SWB itself. At this level, SWB reflects a general evaluation of a person's life, and researchers who work at this level should measure various components from lower levels in the hierarchy to get a complete picture of an individual's overall well-being. At the next highest level are four specific components that provide a more precise understanding of a person's SWB. These components – positive affect, negative affect, satisfaction, and domain satisfactions – are moderately correlated with one another, and they are all conceptually related. Yet, each provides unique information about the subjective quality of one's life. Finally, within each of these four components, there are more fine-grained distinctions that can be made. Some researchers, for example, may want to focus on specific negative emotions or satisfaction with specific life domains.

2.1. Positive and negative affect

Pleasant and unpleasant affect reflect basic experiences of the ongoing events in people's lives. Thus, it is no surprise that many argue that these affective evaluations should form the basis for SWB judgments (Frijda, 1999; Kahneman, 1999). Affective evaluations take the form of emotions and moods. Although there are debates about the nature of and relation between these two constructs (Morris, 1999), emotions are generally thought to be short-live reactions that are tied to specific events or external stimuli (Frijda, 1999), whereas moods are thought to be more diffuse affective feelings that may not be tied to specific events (Morris, 1999). By studying the types of affective reactions that individuals experience, researchers can gain an understanding of the ways that people evaluate the conditions and events in their lives.

Much research on affective evaluations has been focused on the ways that emotions and moods can be categorized, and there are two general approaches to this issue. Some researchers focus on determining whether there are a small number of basic emotions. Researchers who work from this perspective generally try first to identify the basic features of emotions. They can then go on to examine variations in these features in order to determine which emotions are basic. Frijda (1999), for

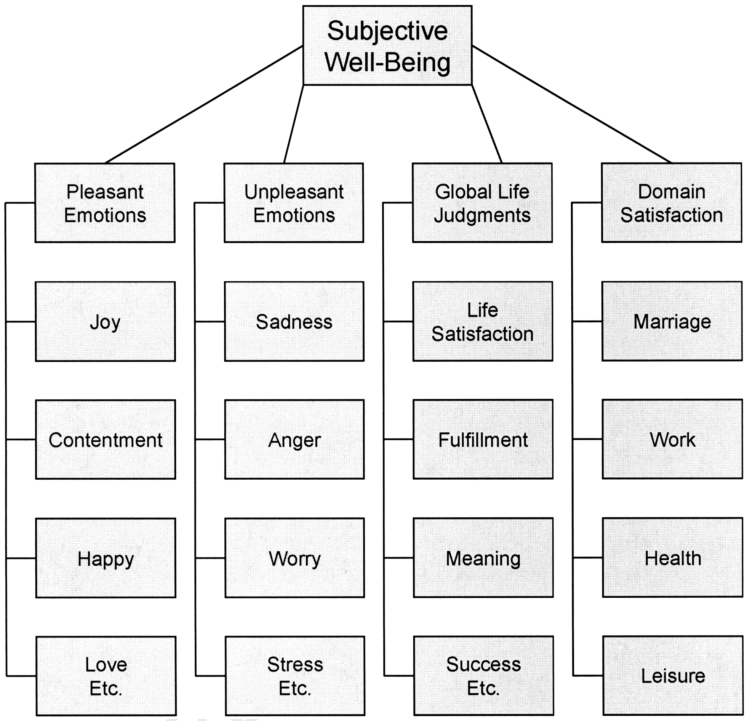

Fig. 1. A hierarchical model of happiness.

example, argued that there are five basic features of emotions. First, emotions involve affect, meaning that they are associated with a feeling of pleasure or pain. Second, emotions include an appraisal of an object or event as good or bad. Third, the elicitation of an emotion is generally associated with changes in behavior toward the environment (or at least with changes in the readiness for specific behaviors). Fourth, emotions often involve autonomic arousal. And finally, emotions often involve changes in cognitive activity.

By examining variation in these features, researchers can classify which emotions are basic. For example, some researchers have argued that a basic emotion will have a distinct action readiness or motivational property (Izard, 1977; Frijda, 1986). Seemingly different emotions with the same action tendency may then be seen as variations of the same basic emotion. Other researchers have avoided analyzing the component parts of emotions, instead relying on criteria such as whether there is a universally recognized facial expression for the emotion (e.g. Ekman et al., 1972). Some of the basic emotions that have been identified are listed under the Positive and Negative Affect headings in Fig. 1 (though see Ortony and Turner, 1990, for a more complete review of the basic emotion literature).

An alternative to the basic emotion approach is the dimensional approach. Researchers working from this perspective have noted that certain emotions and moods tend to be highly correlated both between individuals and within individuals

over time. For example, individuals who experience high levels of sadness are also likely to experience high levels of other negative emotions such as fear or anxiety. The fact that these emotions are correlated suggests that they may result from some of the same underlying processes. Thus, according to the dimensional approach, it should be possible to identify certain basic dimensions that underlie the covariation among the various emotions and moods that people experience. Research into the causes and outcomes of emotional experience can then progress by focusing on these underlying dimensions rather than on the individual emotions themselves. Subjective well-being researchers often focus on emotional dimensions rather than specific emotions, because over long periods of time, distinct emotions of the same valence are moderately to strongly correlated (Zelenski and Larsen, 2000).

Most dimensional models of emotions have focused on two underlying dimensions. Russell (1980), for example, argued that the orthogonal dimensions of pleasantness and arousal can be used to describe the variation in emotional experience. According to this model, each emotion can be described by noting the extent to which it is a pleasant emotion and the extent to which it is an aroused emotion. An emotion like excitement, for example, would be a pleasant, highly aroused emotion; whereas an emotion like contentment would be pleasant but much lower in arousal. By plotting emotions on these two dimensions, researchers have developed circumplex models of emotional structure, with most emotions located somewhere on the outer circle formed by orthogonal pleasantness and arousal axes (see Larsen and Diener, 1992, for a discussion of circumplex models; see Fabrigar et al., 1997 and Watson et al., 1999 for recent evidence on the circumplex structure).

Other researchers have argued that although pleasantness and arousal are useful dimensions in a descriptive sense, these axes do not reflect the underlying systems that are responsible for the affect that individuals experience. Watson and Tellegen (1985), for example, argued that the pleasantness and arousal dimensions should be rotated 45° to form separate activated positive and negative affect dimensions. Positive affect is a combination of arousal and pleasantness, and it includes emotions such as active, alert, and excited; negative affect is a combination of arousal and unpleasantness, and it includes emotions such as anxious, angry, and fearful. Like other researchers before him (e.g. Costa and McCrae, 1980), Tellegen (1985) noted that the positive affect dimension is closely aligned with the broad personality trait of extraversion, whereas negative affect is closely aligned with the broad personality trait of neuroticism. Tellegen (1985) argued that together, these extraversion/positive affect and neuroticism/negative affect dimensions reflect two underlying personality systems that are responsible for many of the individual differences in affect and behavior. Thus, he argued, studying these rotated dimensions (rather than arousal and pleasantness) is more likely to prove fruitful when attempting to understand the basic processes underlying personality and emotion.

The disagreements about the structure of affect have led to a sometimes confusing debate about whether positive and negative affect are really separable and independent dimensions (as we have suggested in Fig. 1). Part of the confusion regarding this issue has to do with the fact that the dimensions that are most likely to

be independent (the activated positive and negative affect dimensions in Watson and Tellegen's (1985) model) were given names that suggest bipolarity. Watson et al. (1999) recently renamed these constructs as positive activation and negative activation to emphasize the activated nature of these dimensions and to avoid some of this confusion. Yet, the debate is not simply semantic, and there are many unresolved issues regarding the independence of positive and negative affect. Some researchers have suggested that at any given moment, positive and negative affect are bipolar, whereas when aggregated over time they become independent (Diener and Emmons, 1985). According to this view people cannot experience positive and negative emotions simultaneously (Diener and Iran-Nejad, 1986), but over time, people could experience high levels of both. Other researchers have suggested that positive and negative emotions can, in unusual circumstances, be experienced at the same time (Larsen et al., 2001). Whatever the final outcome of this debate, it seems wise to separately assess positive and negative affect, especially in light of the fact that there are often different correlates of the two.

2.1.1. Frequency and intensity of positive and negative affect

A final issue that arises when assessing affective components of well-being is what type of emotional experience we should measure. At any given moment a person may experience either high or low intensity emotions. Is the person who experiences intense positive emotions better off than the person who is only mildly happy most of the time, or is the frequency with which an individual experiences positive emotions the most important factor in determining overall affective well-being? Research shows that the intensity with which one feels emotions is not the same thing as the frequency with which he or she feels these emotions, and these two aspects of emotional experience have distinct implications for well-being.

Schimmack and Diener (1997) used experience sampling methods to demonstrate that emotional intensity can be separated from frequency. Specifically, by assessing moods and emotions repeatedly over time, researchers can assess frequency by summing the number of times a person reports experiencing an emotion. Intensity can be determined by examining the average intensity of that emotion when a person reports feeling it. The importance and validity of these two components can then be determined by comparing these scores with other measures of well-being.

In their investigation of this issue, Diener et al. (1991) suggested that frequency of emotional experience was more important for overall well-being than was intensity. Specifically, they argued that there were both theoretical and empirical reasons for focusing on frequency information. First, at a theoretical level, it seems as though the processes that lead to intense positive emotions are likely often to lead to intense negative emotions, and thus very intense emotions often cancel each other out. Laboratory studies show, for instance, that people who use dampening or amplifying strategies with emotion are likely to use the same strategies with both positive and negative affect (Larsen et al., 1987; Diener et al., 1992). Thus, people who experience positive emotions intensely will likely experience negative emotions intensely, a finding that is supported by research on individual differences in affect intensity (Larsen and Diener, 1987).

A second theoretical reason why intensity should not affect overall levels of well-being is that very intense emotional experiences are very rare. Diener et al. (1991) reviewed evidence showing that extremely intense positive and negative emotions (those that get the highest scores on emotion scales) are very rare when emotions are sampled repeatedly over time. Thus, if these events occur infrequently, they are unlikely to influence overall levels of well-being.

A third reason why researchers might focus on frequency information is that frequency-based measures appear to have better psychometric characteristics. Kahneman (1999), for instance, argued that it is not difficult to determine whether one is feeling positive or negative at any given moment. Reports based on this type of question are likely to be valid and to have a similar meaning across respondents. On the other hand, it is difficult to accurately report how intensely positive or negative one is feeling, and the meaning of an intensity scale may vary across individuals. Intensity reports may mean different things for different people. Research on this issue does suggest that frequency-based measures have more validity than intensity based measures. For example, Thomas and Diener (1990) and Schimmack and Diener (1997) both found that people could recall frequency information better than intensity information. It is not surprising that Diener et al. (1991) and Schimmack and Diener (1997) both found that frequency reports were more strongly related to global well-being measures.

To determine people's general level of affective well-being, frequency measures appear to be theoretically and empirically more desirable than intensity measures. Yet, there are cases where intensity information can be important. Wirtz et al. (2002), for example, found that when people's emotions were sampled multiple times over the course of a spring break vacation, the intensity of their emotions was a better predictor of desire to go on another similar vacation than was the frequency of their emotions. In addition, research suggests that the intensity of emotions may be related to specific personality traits. Eid and Diener (1999) found that intra-personal variability in emotion was related to neuroticism and lower levels of overall happiness. Thus, intensity information can be useful for examining certain questions about emotional well-being.

2.1.2. Recommendations

Although debates about the nature of affective well-being continue, researchers interested in SWB can confidently tap the emotional well-being components by assessing a broad range of positive and negative emotions. Researchers who are interested in recording a general sense of a person's affective well-being will want to examine the separable positive and negative affect dimensions. Researchers who are interested in specific emotions should consider the debates about basic emotions and insure that they include multiple-item measures of these more specific components. We should note, however, that the study of emotions can occur at even more specific levels. Researchers can assess specific emotions, but they can also go on to examine specific situations in which these emotions can be elicited. For example, some individuals may feel anger in some situations but not in others. Researchers must tailor their emotion assessment strategies to the specific research

questions in which they are interested. If separate emotions do not produce different results, they can be aggregated. Although the frequency of emotions appears to be more related to long-term happiness, the intensity of emotions will certainly be of interest for many research questions.

Affect reflects a person's ongoing evaluations of the conditions in his or her life. It is easy to see why these dimensions make up an important part of the general subjective well-being construct. It would be hard to imagine a person saying he or she has high well-being if that person experiences high levels of negative affect and low levels of positive affect. Yet, we must caution that affective well-being, alone, does not appear to be sufficient for most people when they provide an overall evaluation of their lives. People do not seem to want purely hedonistic experiences of positive affect. Instead, people want these experiences to be tied to specific outcomes that reflect their goals and values, as we will discuss later in the section on Trade-offs. Thus, domains beyond affective well-being must be assessed to gain a complete understanding of a person's well-being.

2.2. Life satisfaction

The affective components of well-being described above reflect people's ongoing evaluations of the conditions in their lives. We can contrast this type of evaluation with global judgments about the quality of a person's life. Presumably, individuals can examine the conditions in their lives, weigh the importance of these conditions, and then evaluate their lives on a scale ranging from dissatisfied to satisfied. We refer to this global, cognitive judgment as life satisfaction. Because we assume that this judgment requires cognitive processing, much research has focused on the way that these judgments are made.

After years of research, we now know quite a bit about how life satisfaction judgments are made. For example, it appears as though most individuals do not (and perhaps cannot) examine all aspects of their lives and then weight them appropriately. Instead, because this task is difficult, people likely use a variety of shortcuts when coming up with satisfaction judgments (Robinson and Clore, in press; Schwarz and Strack, 1999). Specifically, people are likely to use information that is salient at the time of the judgment. For example, Schwarz and Clore (1983) showed that seemingly irrelevant factors such as the weather at the time of judgment can influence ratings of life satisfaction. This research suggests that current mood can influence ratings of life satisfaction, even if that current mood is not indicative of one's overall levels of affective well-being.

Yet, even with the use of these shortcuts, there is substantial temporal stability in people's life satisfaction judgments (Magnus and Diener, 1991; Ehrhardt et al., 2000). This is because much of the information that is used in making satisfaction judgments appears to be chronically accessible. In other words, people's satisfaction judgments are based on the information that is available at the time of the judgment, but much of that information remains the same over time. If there are domains in people's lives that are extremely important to them, this information is likely to

come to mind when people are asked to make judgments about their life satisfaction. In fact, there is evidence that people seem to know what type of information they use when they make life satisfaction judgments. Schimmack et al. (2002), for example, found that those domains that people said were important in making life satisfaction judgments were more strongly correlated with life satisfaction than domains that were rated as being less important. So although the processes by which satisfaction judgments are made can often lead to what may be thought of as mistakes, in many cases people use relevant and stable information, resulting in stable and meaningful satisfaction judgments.

The research on the processes of satisfaction judgments has led to a greater understanding of the relation between affective and cognitive well-being. It appears that people do use their affective well-being as information when judging their life satisfaction, but this is only one piece of information. The weight that this information is given varies across individuals and cultures. Suh et al. (1998), for example, found that participants from individualistic cultures relied on their affective well-being to a greater extent than participants from collectivist cultures when judging life satisfaction. Collectivists, in contrast, relied more on whether or not significant others thought their life was on the right track. Additional information beyond affective well-being is used when constructing life satisfaction judgments. Thus, the association between affective and cognitive well-being will not be perfect, and will vary across samples. Even within a culture, individual differences can moderate what type of information is included in global judgments. For example, the daily experience of pleasure is a greater predictor of life satisfaction for individuals high in sensation seeking than for those low in sensation seeking (Oishi et al., 2001).

Other sources of information that people may use include comparisons with important standards. Campbell et al. (1976) argued that individuals look at various important life domains and compare these life domains to a variety of comparison standards. For example, an individual may compare her income to the income of those around her, to the income she had in the past, or to the income she desires for the future. Interestingly, just as people seem to be very flexible in the type of information that they use when making satisfaction judgments, they also seem flexible in the way they use this information. Diener and Fujita (1997) noted, for example, that social comparison effects are not always consistent across studies or across individuals. Sometimes people may look at individuals who are better off and see these individuals as inspirations (resulting in positive well-being), whereas at other times this type of comparison would lead to a negative comparison and lower levels of well-being.

The advantage of life satisfaction as a measure of well-being is that this type of measure captures a global sense of well-being from the respondent's own perspective. People seem to use their own criteria for making this judgment, and research has begun to identify what these criteria are and how they vary across individuals. Yet, the processes that allow for these individual differences also allow for irrelevant information to be included in satisfaction judgments. People often use whatever information is at hand at the time of judgment, and sometimes this can lead to

unreliable or less valid measures. However, on average, the research suggests that although experimental studies can demonstrate the errors that people make, most information that is used in satisfaction judgments is information that is chronically accessible and, presumably, important to the individual.

2.3. Domain satisfactions

The fourth component that is included in our hierarchical model of SWB is domain satisfaction. Domain satisfaction reflects a person's evaluation of the specific domains in his or her life. Presumably, if we were able to assess all the important domains in a person's life, we would be able to reconstruct a global life satisfaction judgment using a bottom-up process. But, as we noted above, the process by which the domain satisfaction judgments are aggregated, and the weight that is given to each domain may vary by individuals. Diener et al. (2002), for example, found that happy individuals were more likely to weight the best domains in their life heavily, whereas unhappy individuals were more likely to weight the worst domains in their life heavily. Thus, domain satisfaction scores do not simply reflect the component parts of a life satisfaction judgment, and they can provide unique information about a person's overall well-being.

More importantly, domain satisfaction will be important for researchers interested in the effects of well-being in particular areas. For example, if a researcher is trying to foster increased well-being at work, job satisfaction may provide a more sensitive measure of these effects than any global well-being scale will. Similarly, researchers who work with certain populations may want to separately assess domain satisfactions that are particularly relevant for that group. Students may be very concerned about grades and learning, whereas the elderly may be more concerned about health and social support. Thus, domain satisfaction scores can provide information about the way individuals construct global well-being judgments; but they can also provide more detailed information about the specific aspects of one's life that are going well or going poorly.

2.4. Convergent and discriminant validity of SWB components

Conceptually, each of the components of well-being represents a distinct way of evaluating one's life. Positive and negative affect reflect the immediate, on-line reactions to the good and bad conditions of one's life. Domain satisfactions reflect the cognitive evaluation of specific aspects of one's life. Life satisfaction reflects a global judgment that is constructed through somewhat idiosyncratic processes across individuals, but which provides useful information about a person's satisfaction with life as a whole. Research on the discriminant validity of these constructs shows that they are not only theoretically distinct, but also empirically separable. Lucas et al. (1996), for instance, used self- and informant-reports of well-being constructs to examine the convergent and discriminant validity of positive affect, negative affect,

and life satisfaction. Different methods of measuring the same construct tended to converge, and the correlations across methods of measuring the same construct were usually stronger than the correlations between measures of different constructs. Thus, the empirical evidence suggests that positive affect, negative affect, and life satisfaction are empirically distinct constructs.

2.5. Summary

There are a number of separable components of SWB. To obtain a complete picture of an individual's evaluation of his or her life, more than one component must be measured. For researchers who are interested in attaining a complete evaluation, we recommend that they assess positive affect, negative affect, satisfaction with important domains, and life satisfaction. Depending on the specific research question, additional components may be needed. For example, researchers who are interested in specific emotions like anxiety, anger, joy, or love should make sure to administer reliable and valid measures of these emotions. These researchers may want to focus on the basic emotion literature when choosing measures; whereas researchers who want a general understanding of affective well-being can focus more on the broad affective dimensions. Furthermore, researchers need to consider the time-frame of their measures, an issue to which we now turn.

3. Temporal sequence and stages

In this section we describe the multifaceted nature of SWB with an emphasis on the unfolding of different stages or components over time. These components, ranging from external events to global judgments of one's life, are depicted in Fig. 2. In particular, we highlight the transition between the stages and the divergences among measures of the different stages. Although convergence of measurement is often regarded as the ideal, we will see that discrepancies are also interesting and can inform a theory of SWB.

Our conceptualization begins with two basic premises. First, we have organized our model in terms of sequential stages that unfold over time. Thus, the temporal stages are seen as alternative facets of SWB, and are not identical to one another. Second, no one stage or component can be considered "true" happiness. For instance, both momentary affect and memory for emotions are important to SWB.

At step one, events happen to people, but their effects on long-term well-being are weak (Suh et al., 1996). In fact, all demographics account for less than 20% of variance in SWB (Campbell et al., 1976). Because there are many intervening steps between an event and the construction of a global life satisfaction judgment, events can only have a distal effect on SWB. On the other hand, according to our model, events are expected to have greater influence on online emotional reactions. For example, daily events such as health, family, and social interactions, have an

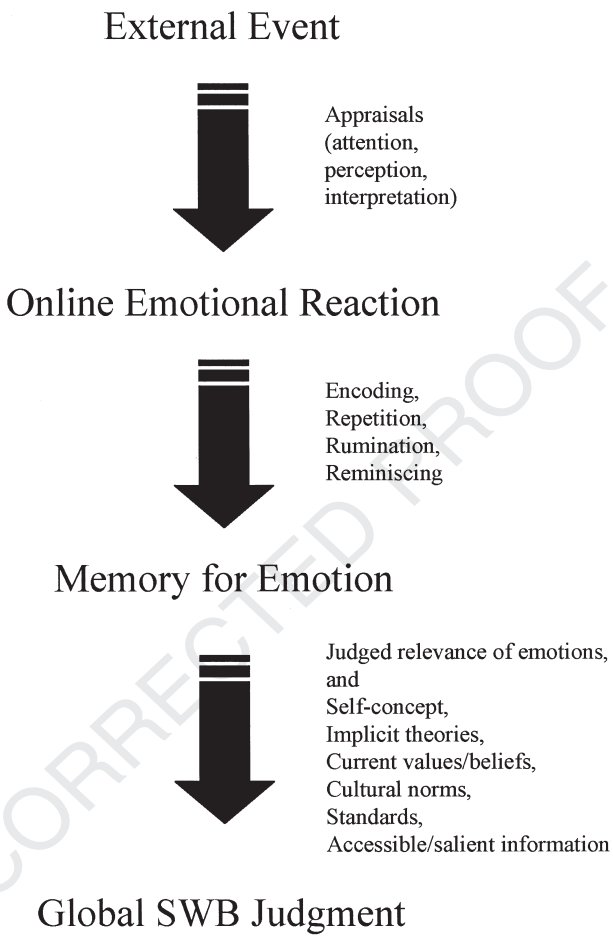

Fig. 2. A temporal stage model of subjective well-being.

impact on the daily mood of nursing home patients (Lawton et al., 1995), but we would not expect daily events to influence global judgments as strongly. In addition, the emotional impact of events will depend largely on people's appraisals, that is, individual differences in attention, perception, and interpretation of the event. Lazarus (1982, 1984) has written extensively on the subject of appraisals, therefore, we will not go into much detail here. For our model, it is sufficient to say that the transition from an event to one's emotional reaction involves evaluating whether the event is good or bad for one's goals and whether one has the resources necessary to cope with the event. Obviously not everyone will react the same way to the same events because events hold different meanings for different people.

The next stage, the on-line emotional reaction, is itself complex and multifaceted. The many aspects of a single emotional experience include physiological responses, nonverbal or behavioral expressions, and the verbal labeling of emotions. Even

among these subcomponents of a single temporal stage there are sometimes discrepancies. For instance, a "repressor" might deny feelings of anxiety while showing increased perspiration, heart rate, and so forth (e.g. Weinberger et al., 1979). The verbal on-line measures are postulated to relate to memory for emotions, the next phase, but less so to global evaluations. On-line emotions become encoded in memory by a number of processes, including repetition of emotional information, rumination, and reminiscing, which can influence the degree of relation between on-line experience and the recall of that experience.

Once the on-line emotions are encoded in memory, they do not remain static. Instead, the memory is constantly reconstructed, and this is a critical feature of our model. We treat memory as a separate phenomenon from on-line experience. Some factors involved in the transition from on-line emotion to memory for emotion – that is, factors responsible for the discrepancy between the two stages – include self-concept (Diener et al., 1984; Feldman Barrett, 1997), current beliefs (Levine et al., 2001), implicit theories (Ross, 1989), and cultural norms (Oishi, 2000). To illustrate, when McFarland et al. (1989) asked women to recall their mood during menstruation, they found that women recalled more negative emotion than they previously reported on-line. Furthermore, the amount of negative emotion remembered was moderated by the women's implicit theories about the relation between menstruation and mood. Similarly, Feldman Barrett (1997) found that individuals who scored high on trait measures of neuroticism overestimated in retrospect the amount of negative emotion they experienced online, while individuals high in trait extraversion overestimated the amount of on-line positive emotion. In describing the discrepancy between on-line emotions and memory, Robinson and Clore (in press) noted that two strategies of retrieval can guide recall. Recollections over a wide time frame (e.g. over the past month or year) rely on heuristic information, such as the self-concept. For narrower time frames (e.g. the past hour or day), people use a "retrieve and aggregate" strategy. That is, they recall specific instances of felt emotion and aggregate them to form their retrospective reports. In support of this notion and our model, Scollon et al. (2002) found that recalled reports were predicted by self-concept measures above and beyond on-line emotion.

At the broadest stage are global constructions, including life satisfaction. This stage is influenced by all the previous stages, but again, the degree to which depends on proximity. Thus, on-line experiences can influence global constructions. For example, someone who constantly experiences unpleasant mood would probably evaluate his/her life as unsatisfactory. However the extent to which on-line emotions influence global constructions depends on people's memory for emotions. In support of this, Schimmack et al. (2002) found that not only did hedonic memories correlate with life satisfaction judgments, but changes in memories correlated with life satisfaction as well. In addition to affective information, life satisfaction judgments incorporate several other sources that vary across cultures and individuals. As discussed earlier, these include cultural norms (Suh et al., 1998), and irrelevant but salient information (Schwarz and Clore, 1983). In some sense, global judgments such as life satisfaction, meaning in life, and fulfillment, capture the non-hedonistic

meanings of happiness that were advanced by Democritus and Aristotle (even though the global judgments are subjective).

The current picture of SWB is more complex than any one stage can capture. Although each component is influenced by the previous stages, the stages are uniquely influenced by additional factors such as self-concept. Furthermore, there is evidence that the various stages converge moderately, but there are also processes that lead to differences between the stages. Likewise, the different stages of SWB are expected to predict different outcomes. For example, two studies indicate that recalled emotion is a better predictor of behavioral choices than on-line emotion. Wirtz et al. (2002) had students record their on-line emotions during a vacation and found that the degree to which students wanted to take a similar vacation later was strongly predicted by how much fun and enjoyment participants recalled, more so than the amount of fun and enjoyment they reported during the vacation. Similarly, in a study of dating couples, Oishi (2002) found that couples who misremembered interactions with their romantic partner as being more pleasant than in on-line reports were more likely to have intact relationships six months later.

In terms of practical application, the emerging evidence in support of a multi-componential approach to SWB raises new concerns about the measurement of SWB among the elderly. For instance, how should researchers measure the SWB of an elderly person with memory loss? The meaning of global or retrospective measures might be challenged because recollections about past emotions incorporate self-concept information, perhaps to an even greater degree than actual experience. And as memory loss becomes more severe, we predict, the recall of emotions will be more strongly influenced by self-concept. If researchers only rely on retrospective reports, they may be learning more about the self-concept of the elderly than about moment-to-moment experiences.

Philosophically, reconstructive memory also poses an intriguing question: Is happiness the *experience* or the *memory* of pleasant emotions? According to our model, no one measure deserves elevated status. Both the experience and memory (which includes some self-concept information), along with other components, are important. Nor can the different measures be considered substitutes for one another. Often researchers measure a single component or several components to see what correlates most highly with a given outcome measure. Such a practice belies the complexity and inter-relatedness of the different levels of SWB.

What the multi-component approach to SWB suggests is that measures at each stage provide interesting information, but researchers need to understand and specify the components of SWB they are measuring. In some ways, each stage of SWB reflects a different philosophical tradition of happiness. For example, on-line emotion is related to hedonistic views of happiness, whereas global judgments are more closely related to eudaimonia or Democritus's ideas. In the measurement section, we will discuss what researchers need to consider in order to assess SWB. For instance, most researchers would prefer to measure only the recall or global stages of SWB, and we will discuss how valid this practice seems to be.

4. Stability and consistency of SWB

Subjective well-being variables are thought to reflect the actual conditions in a person's life. Thus, when these conditions change, reports of SWB should change accordingly. Yet, because there is some degree of stability in these conditions, we should also expect SWB measures to be relatively stable over time. Furthermore, SWB constructs are influenced by a variety of stable personality factors, a finding that supports the notion that SWB should be relatively stable (Diener and Lucas, 2000), because adult personality is very stable (Costa and McCrae, 1988). In fact, in the literature, there are even debates about whether SWB should be considered a trait or a state (Veenhoven, 1994, 1998; Stones et al., 1995; Lykken and Tellegen, 1996; Ehrhardt et al., 2000). In this section, we review the evidence regarding the stability and consistency of well-being constructs.

There is considerable evidence that SWB variables do exhibit some degree of stability. Magnus and Diener (1991), for example, found that life satisfaction scores exhibited stability coefficients of 0.58 over a 4-year period. Even when different methods of assessment were used to measure life satisfaction (e.g. self- and informant-reports), stability was high ($r = 0.52$). Ehrhardt et al. (2000) examined life satisfaction reports in a large, nationally representative German panel study, and they found stability coefficients of 0.27 across 10 years. For the purposes of this chapter, we reanalyzed this data set (with an additional 5 years of satisfaction reports; see Lucas, Clark, Georgellis, and Diener, in press) and found that stability coefficients did not drop off as the length of the study increased. The correlation between life satisfaction in the first year of the study and life satisfaction in the 15th year was still 0.28. We should also note that this satisfaction measure is a single-item scale, and thus, it probably does not have ideal psychometric characteristics. Across those 15 years, stable between-person variance accounted for 44% of the total amount of variance in these measures. Thus, there is considerable stability in life satisfaction scores over long periods of time; though there are also changes that occur within persons over time.

Additional research shows that positive and negative affect scores are also somewhat stable over time. Watson and Walker (1996), for example, found 6- to 7-year stability coefficients in the range of 0.36 to 0.46 for positive affect and negative affect in a student sample, and Costa and McCrae (1988) found 6-year stability coefficients in the 0.50 range in an adult sample. Costa and McCrae's findings are particularly impressive given that these stability coefficients compared self-reports of affect with spouse ratings of affect. Thus, like Magnus and Diener's (1991) longitudinal study of life satisfaction, stability cannot be explained solely by stability of self-concept or by response artifacts.

The stability of well-being measures does not mean, however, that these measures are insensitive to changing life circumstances. On the contrary, Lucas et al. (in press) and Clark et al. (2002) used the 15-year German panel study described above to show that life satisfaction scores increased following marriage and decreased following widowhood or unemployment. Thus, life circumstances do influence life satisfaction scores, as we would expect. Interestingly, in both the Lucas et al. study

and the Clark et al. study, satisfaction scores were very stable from the periods before an event to the periods after the event, suggesting that relative satisfaction scores are stable even in the face of changing life circumstances (also see Costa et al., 1987) that can influence mean levels.

A different way to examine the stability of SWB constructs is to look within persons across situations. If well-being reflects a person's evaluation of his or her life as a whole, we would not expect scores to be completely determined by changing situational factors. Diener and Larsen (1984) examined this question by asking participants to complete mood reports multiple times a day for multiple days. They found that positive affect, negative affect, and life satisfaction were very stable even across diverse situations. For example, positive affect in work situations correlated 0.70 with positive affect in recreation situations, and negative affect in work situations correlated 0.74 with negative affect in recreation situations (similar correlations were found across social vs. alone situations and across novel vs. typical situations). Correlations were even higher for life satisfaction scores, often around 0.95. Thus, well-being is not completely determined by situational factors. A substantial proportion of the variance in well-being reports is stable across situations and even over long periods of time.

We should also note that, to some extent, the consistency of well-being may vary across cultures. Oishi et al. (2002), for example, showed that there is less consistency in affect in samples from Japan than there is in samples from the United States. In other words, people's affect varies to a greater extent across situations in Japan than it does in the United States. Thus, the notion of a happy person may be less meaningful in Japan because there is less person-level variance in SWB scores. Clearly more research is needed, but we recommend that researchers interpret the stability and consistency data cautiously until we can determine the factors that moderate the extent to which people are stable over time and across situations.

5. Affect vs. cognition

SWB includes both an affective (i.e. on-going evaluations of one's life) and a cognitive component (i.e. life satisfaction). Theorists have long debated the degree to which affect and cognition are related (see Zajonc, 1980; Lazarus, 1982, 1984). This controversy bears particular relevance to the study of SWB because it highlights the dependence, and yet separability, of the two systems, suggesting a need to measure affect and cognition separately (even though they are not entirely independent) in order to gain a more complete picture of SWB.

On the one hand, researchers such as LeDoux (2000) argue that some simple emotions such as fear can occur without complex cognitive processing, or as a result of unconscious processing (Zajonc, 1980). Similarly, some people have been shown to deny their subjective feelings, despite showing a physiological reaction to events (Shedler et al., 1993). Both lines of evidence suggest that non-verbal, non-cognitive measures (e.g. eyeblink startle and cortisol) might detect reactions that self-report measures do not.

On the other hand, cognitive appraisals play an important role in shaping our reactions to events. For example, if a student feels responsible for getting a good grade on an exam (appraisal), then she will feel happy about it. As well, cultural norms provide a frame for interpreting events. That is, the emotions a person feels will tend to fit into his or her worldview. Returning to our example, the student who feels responsible for the event of making a good grade on an exam might not label her feeling as pride if her culture regards pride as a sinful emotion. Indeed, cultural norms for emotions are strongly related to reports of subjective experience (see Eid and Diener, 2001), and the rank ordering of societies on measures such as life satisfaction bear considerable resemblance to the rank ordering of societies on emotion norms (see Diener et al., 2000). Thus, self-report measures will detect what individuals label about their subjective feelings, although this is only one aspect of the emotional experience.

An added complication to the affect–cognition debate stems from disagreements about what constitutes cognition (Mathews and MacLeod, 1994). Some theorists argue that cognition includes only higher-order processing; other definitions include lower-order processes such as attention. Although we recognize the importance of attention in affect regulation (see Mathews and MacLeod, 1994; Segerstrom, 2001), of central importance to the present discussion of SWB are the higher-order conscious processes such as cognitive judgments or global evaluations of one's life.

By treating affect and cognition as partially separable constructs, we invite the possibility that one can be satisfied with one's life, and yet experience little pleasant affect, and vice versa. To illustrate, let us consider the SWB of a spouse and caretaker of an Alzheimer's patient. Narrative accounts of individuals who have cared for family members with Alzheimer's disease (e.g. Bayley, 1999) suggest a caretaker's daily life is fraught with frustration and difficulty, with brief and infrequent joys. Despite a preponderance of negative affect, however, the caretaker might still evaluate his overall life positively. This discrepancy between affect and cognitive judgments can occur for several reasons.

First, as discussed in the previous section, people rely on different sources of information when constructing global judgments. Even though enjoyment in a domain tends to correlate with satisfaction in that domain, affective information might be highly important for some people, but irrelevant for others (e.g. Oishi et al., 2001). One possibility is that with certain life tasks such as caregiving or with certain life stages, affect is given less weight in judgments of life satisfaction (cf. Carstensen, 1995), although this remains an empirical question. Second, the individual's culture will provide a framework for interpreting the importance of affect. As noted earlier, cultures differ in the degree to which they rely on affective information in life satisfaction constructions (Suh et al., 1998). But the impact of culture extends further because cultures also clearly differ in what they consider normative tasks. Thus, in a culture in which caring for the elderly is expected, the caretaker might derive a sense of satisfaction from doing the "right thing" and following cultural norms, even though the caretaking is unpleasant.

Third, the works of LeDoux (2000) and Shedler et al. (1993) suggest that the caretaker may be unable or unwilling to articulate his subjective emotional

experience. Physiological measures might indicate a different picture, again underscoring the need for multiple measures, including non-cognitive ones.

Finally, people may rely on different standards in judging life satisfaction than in evaluating specific events. For example, daily affect may be determined by whether one is meeting one's lower-level goals, whereas global judgments may be determined by higher-level, more abstract goals. This allows for one's moment-to-moment affect to be quite negative while the bigger picture might reveal a sense of satisfaction for fulfilling some larger goal. Unfortunately, these questions have not yet been empirically tested, and it remains for future research to uncover which standards influence the different types and levels of SWB.

6. The functioning mood system

Although negative emotions are usually unpleasant, theorists have recognized their functionality. For example, fear can motivate us to avoid danger, anger can push us to correct an injustice, and sadness can make us withdraw so that we can renew our resources and make new plans of action after loss. Volumes have been written on the adaptive functions of negative emotions, but much less on the positive side. Recently, Fredrickson (1998, 2001) outlined a "broaden and build model" explaining that the function of positive emotions is to lead to sociability, play, and exploration. Thus, positive emotions help us build our social and material resources, and help us learn new behaviors for the future. Positive emotions occur when things are going well, and when we have the time to engage in actions that will benefit us later.

If emotions are, in many cases, functional and adaptive, and the emotion system has come to us through evolution to guide behavior, it would seem dysfunctional never to experience any negative emotions. In other words, it would also be maladaptive to chronically experience high positive moods all of the time, regardless of the circumstances. After all, the adaptiveness of the emotion system depends on its ability to provide calibrated feedback about one's relation to the environment, and chronic states of any valence would fail to serve that purpose because they are unresponsive to events. Berenbaum et al. (2002) have similarly noted that there is nothing inherently good or bad about emotions of either valence, but rather excesses of either happiness or sadness present problems. A person who can only feel happy would not be able to avoid danger or other bad situations; such a person would be overly expansive and take on new goals even when it is not appropriate. This kind of behavior can best be seen in manics. In extreme form, manics start more projects than they can finish, and they do not exercise caution and good judgment in planning. This is not the picture of happiness that we are advancing. Happiness is not to be equated with mania or uninterrupted ecstasy. Instead, the adaptable happy person should have moods that fluctuate to some degree in reaction to good and bad events.

Indeed the data support both of these notions. First, in studies of thousands of people, we have found that it is very rare for people to be at a 10 on a 10-point scale,

or to be at the very top of the Satisfaction With Life Scale (SWLS: Diener et al., 1985). Furthermore, even when people rate themselves as extremely satisfied, we find in follow-up that they are usually not at the top of the scale two years later. That is, people might occasionally move up to a euphoric state, but they do not stay there for long (Diener and Seligman, 2002).

Second, even happy people have pleasant and unpleasant moods. An investigation of 22 individuals who scored in the top 10% on various SWB measures revealed that even these people, although extremely satisfied with life, occasionally had unpleasant affect. Diener and Larsen (1984) found that although people have stable and consistent average moods, their momentary moods fluctuate. Thus, it is possible for happy people to react to events but still maintain an average positive level around which their moods fluctuate. This allows even happy people to react to negative events and not be stuck in a high happy mood.

But clearly chronic unrelieved negative emotion is undesirable and unhealthy. For one thing, people usually do not function well under conditions of severe and prolonged negative affect (Headey and Wearing, 1989; Hays et al., 1995; Hammen, 2002). This state is very unpleasant, and prolonged NA can interfere with quality of life as well as produce a greater likelihood of negative life events. Thus, whereas temporary experiences of negative affect are normal and can be functional, prolonged negative affect is often very dysfunctional.

7. Tradeoffs

Just as the above conception of happiness is not the picture of uninterrupted ecstasy, we believe that people, moreover, do not desire a life of unvariegated joys, at least not without some qualifications. First, people want their happy feelings to be justified. This view marks a clear departure from hedonistic philosophy in which personal enjoyment was considered the ultimate goal (Tatarkiewicz, 1976). Robert Nozick's (1974) philosophical idea of an "experience machine" provides a good example of why good feelings alone are not enough. Nozick (1974) imagines an experience machine that would create the subjective feeling of being engaged in fun, exciting, pleasant activities of one's choosing – for instance, writing a novel, making a new friend, feasting on a fine dinner, or lounging on a tropical beach. The experience machine would provide all the sensations that would ordinarily accompany the activity, but in actuality, the person would be lying in a laboratory hooked up to a computer.

Certainly few people would choose to plug in to the experience machine, even though the feelings it provides are desirable. As Nozick (1974) points out, there is more that matters than people's experiences from the inside. In fact, when we asked college students to rate some hypothetical scenarios and varied aspects of each scenario (such as whether the event occurred in reality or was the product of an experience machine, we found that the reality of events was extremely important, even for intensely pleasant and joyous activities. In particular, when the event involved achievement, momentary pleasure and memory of the event were

secondary, but reality was essential. In other words, it would be pointless to plug in to the experience machine to feel as if one has won the Nobel Prize, when, in fact, one has not.

The second limitation on a hedonistic view of happiness is that people are willing, at times, to sacrifice momentary positive affect for other goals that they value. For example, Kim-Prieto (2002) found that Asian and Asian American students were more likely to choose tasks that met their parents' approval or tasks that would lead to achievement over other tasks that were described as fun and personally enjoyable. Thus, some individuals or groups may choose to maximize the non-hedonistic meanings of subjective well-being. Interestingly, Caucasian students preferred tasks that were fun or that maximized personal enjoyment. Other evidence comes from studies of self-improvement. Oishi and Diener (2001) found that when Caucasians were not good at a particular activity, they would switch to a different activity when given the opportunity. On the other hand, Asian Americans often pursued the activity they were not good at, but switched to a different activity if they were good at the first one. Such a strategy might improve one's skills, but would certainly not maximize immediate enjoyment (see also Heine et al., 2001).

8. Implications for measurement

Subjective well-being measures should tap well-being from a respondent's own perspective. For this reason, most studies of SWB have relied on self-report measures of the constructs. However, there are many reasons to be cautious in our interpretation of results based solely on self-report measures. Various response sets and response styles may influence people's ratings. Certain people may appear to be happier than others simply because they use high numbers on a response scale or because they want to look favorable in the eyes of the experimenter. Thus, although self-reports play a central role in SWB research, they must be supplemented with additional measurement techniques to obtain a complete understanding of the construct. In this section, we discuss the theoretical and methodological issues involved in selecting and using SWB measures (for a more detailed discussion, see Larsen and Fredrickson, 1999; Larsen et al., 2002; Lucas, Diener, and Larsen, in press).

Self-reports of SWB vary considerably in their complexity. A number of studies have shown that even the simplest of these – the single-item measures – can exhibit some degree of reliability and validity. Diener et al. (in press), for instance, showed that a single item measure (''cheerfulness'') could predict criterion variables 18 years later. In a separate investigation of this single-item measure, Diener et al. found that it correlated between 0.73 and 0.89 with a multiple-item measure of positive emotions that was assessed multiple times over a 3-month period. Similarly, Lucas et al. (in press) showed that a single-item measure of life satisfaction was relatively stable over time and was sensitive to changes in life events. Thus, if the focus of one's research is to get a relatively reliable and valid measure of well-being and one cannot afford to include a variety of self-report indicators, one can confidently assess these

constructs using single-item measures. Of course, multiple item measures will increase reliability and breadth of coverage, and therefore, they are more desirable when one can afford to include them.

There are a number of reliable and valid measures of well-being constructs (see MacKay, 1980; Larsen et al., 1985; Andrews and Robinson, 1991; Stone, 1995; Lucas et al., in press for reviews). Most measure one or more well-being constructs using items with clear face validity. For example, life satisfaction scales may ask respondents the extent to which they agree with statements like: "I am satisfied with my life" or "In most ways my life is close to my ideal" (Diener et al., 1985). Positive and negative affect scales may ask people to indicate the extent to which they experience a series of emotions like "happiness," "sadness," "anger," "affection," or "fear." As indicated in our discussion of the structure of well-being, the different components of well-being can be exhibited in different ways. One could experience a high frequency of positive affect without experiencing affect intensely at any particular moment. Thus, it is often useful to separate frequency from intensity when asking about SWB variables. Similarly, because affect does change from moment to moment, it is important to specify the time frame of well-being reports. If one is interested in relatively short term variation in well-being, one can choose emotion questionnaires that ask only about the past hour, the past day, or the past week. Researchers interested in longer term mood levels, on the other hand, may want to choose scales that ask about mood over the past month, year, or affect in general.

A desirable alternative to asking people to retrospectively judge their happiness is to assess SWB using experience sampling methods (ESM; also known as ecological momentary assessment, Stone et al., 1999). In ESM, participants report their mood multiple times over a relatively long period of time. For example, in some studies, participants may be asked to carry handheld computers that signal an alarm five times a day for seven days. Each time the alarm sounds, the participant completes an emotion report. By using ESM techniques, researchers can study affect as a state and a trait. For example, within-person analyses can elucidate within-person emotional processes. At the same time, an individual's entire set of emotion reports can be averaged to create a reliable trait measure of his or her well-being. Using this type of aggregation process eliminates the need for participants to recall and attempt to derive an overall emotion report. Kahneman (1999) reviewed evidence that individuals have difficulty remembering and aggregating across multiple occasions, and a number of studies have now shown that ESM reports often give different information about a person's overall well-being than do global reports.

The difficulties that people have in accurately recalling their affective experiences suggest that alternative measures should be used when possible. One easily administered alternative to self-report is the informant- or observer-report technique. Although informants may have their own set of biases and response sets, these are likely to be different than the biases and response sets of the target person, and together self- and informant-reports can provide valid information about a person's well-being.

There are two general types of observer reports. In the known-informant approach, friends and family members rate a target person's well-being. Presumably,

these known-informants see the target exhibiting well-being relevant behaviors in his or her life, and thus, they should be able to provide information about how happy that target individual is. In general, these informant reports show moderate to substantial convergence with self-report measures (McCrae and Costa, 1989; Diener et al., 1995; Lucas et al., 1996). An alternative to the known-informant approach is the expert-rater approach. Informants who do not know the target can be trained to interpret specific signals of emotional experience (Krokoff et al., 1989; Gottman, 1993). Raters can even be trained to interpret facial expressions of emotions. For example, in the Facial Action Coding System (FACS; Ekman and Friesen, 1975, 1978 in refs), raters are trained to recognize specific muscle movements that usually co-occur with emotional responses. The expert-rater approach has an important advantage over self-report and the known-informant reports: This technique can be used to attain relatively objective measures of a person's emotional response.

Along the same lines, researchers have looked beyond facial muscle movements to examine other physiological correlates of emotional feelings. Variables such as heart rate, heart rate acceleration, blood pressure, bodily temperature, finger temperature, respiration amplitude, and skin conductance have all been used to measure emotional response (Cacioppo et al., 2000). Other researchers have noted that activity in certain brain regions seems to be associated with both individual differences in emotional levels as well as within-person changes in emotional experience (Davidson, 1992). Thus, electro-encephalograms, PET scans and functional MRIs can be used to measure this differential activity. These measures, like the Facial Action Coding System, can provide relatively objective measures of well-being. However, much more research is needed before these measures can tap the subtle features that can be picked up in self-report measures. For example, many of the objective indicators of emotion seem to be able to distinguish positive emotions from negative emotions (and sometimes certain negative emotions from one another), but distinctions beyond these basic categories are difficult.

A final technique that researchers have used to measure well-being is to examine people's responses to emotion sensitive tasks. Seidlitz and Diener (1993), for example, asked people to recall as many happy experiences from their lives as they could in a short amount of time. Because performance on this task is correlated with well-being measures, it can be used as an alternative measure that is less susceptible to response styles and demand characteristics. Other researchers have exposed participants to word-completion tasks or word recognition tasks (for a review of these cognitive tasks, see Rusting, 1998). Happy people are more likely than unhappy people to complete word stems using positive words and they are quicker to recognize positive words. When social desirability, demand characteristics, or other measurement issues are a concern, these emotion sensitive tasks can provide a useful alternative to self-report measures.

Self-report measures of SWB are likely to remain the most frequently used measures of the constructs. These measures are quick and easy, they are sensitive enough to capture the subtle differences between the various components of well-being, and they have substantial reliability and validity. Yet, they are imperfect.

Researchers should use additional methods of measurement when possible. In addition, researchers who are interested in determining the way that people construct these judgments will need to use multiple self- and non-self-report techniques to understand these processes. Whatever the goal of the research, however, we recommend that people assess the multiple components of well-being separately when possible.

9. Implications for research on aging

Research on SWB over the lifespan offers a unique opportunity for psychologists interested in the processes underlying SWB judgments. SWB judgments are thought to reflect the conditions in one's life, and many of these conditions deteriorate in old age. Thus, studies of aging can provide a useful test of SWB theories. Yet when we examine the empirical evidence regarding age-related changes in SWB, there is somewhat of a paradox (Kunzmann et al., 2000). On the one hand, the objective conditions in one's life do seem to deteriorate. Income levels often decrease and the frequency of negative events including the death of one's spouse and friends and the experience of health problems often increase. Most research finds, however, that SWB levels remain stable over time, and sometimes these levels even increase (see Diener and Suh, 1998; Mroczek and Kolarz, 1998; Kunzmann et al., 2000; Lucas and Gohm, 2000; Lawton, 2001; Pinquart, 2001).

For example, Diener and Suh (1997a) examined age differences in well-being in a sample of approximately 60,000 respondents from 43 nations. They found that life satisfaction increased very slightly, positive affect decreased slightly, and negative affect decreased from age 20 to 60, but then increased slightly among the oldest individuals in their sample. Lucas and Gohm (2000) showed that this effect did not vary substantially when the different nations were studied individually. A number of researchers have replicated these findings, showing little change in life satisfaction, slight declines in positive affect (correlations in the range of -0.05 to -0.12), and initial declines followed by a leveling effect or even subsequent increases in negative affect (Carstensen et al., 2000; Kunzmann et al., 2000). In a recent meta-analysis, Pinquart (2001) found that the average correlations between positive affect and age and between negative affect and age were both negative, but very small: $r = -0.03$ for positive affect and $r = -0.01$ for negative affect. There were also significant quadratic effects: Positive affect decreased more quickly and negative affect began to increase among the very old.

Diener and Suh (1998) suggested that some of the decrease in both positive and negative affect might be due to the measurement of high arousal positive and negative emotions. For example, older adults may feel as much pleasantness, but they may do so with less intensity, or they may be less likely to experience high arousal emotions such as excitement or energy. Pinquart's (2001) meta-analysis supported this hypothesis. Declines in the experience of emotions were greater among high arousal emotion scales than among low arousal emotion scales. Thus, when assessing emotions in older adults, researchers should tap a broad range of high arousal and low arousal positive and negative emotions.

We should also caution that much of the evidence for age changes in subjective well-being comes from cross-sectional studies. Both Kunzmann et al. (2000) and Pinquart (2001) noted that the size of age effects often varies depending on whether cross-sectional or longitudinal methods are used. Because cross-sectional studies conflate age effects with cohort effects, the interpretation of the correlations in these studies is somewhat unclear. Pinquart found that the decline in positive affect was steeper in longitudinal studies than in cross-sectional studies, whereas the decline in negative affect was less steep in longitudinal studies than in cross-sectional studies. Given that these differences across methodologies exist, researchers must be careful in interpreting evidence from cross-sectional studies. However, we should also note that in their examination of a large German panel study, Ehrhardt et al. (2000) found that people responded to the questionnaire differently after repeated measurements. Thus, age-related changes in longitudinal studies may be confounded with practice effects.

A final measurement issue regarding SWB over the life-span is the extent to which changes reflect true differences over time versus changes in the self-concept. Most research that examines age-related changes in SWB relies upon global, retrospective measures. As we noted in the section on measurement, the global measures require participants to be able to accurately remember and aggregate across many moments and many life domains. Older individuals may have a more stable sense of self-concept than younger individuals, and self-reports of emotional experience may reflect this stable self-concept. Similarly, older individuals may not be able to remember and aggregate across multiple experiences as well as younger individuals. Only a few studies have used experience sampling methods to examine the effects of memory on SWB reports of older people. For example, Carstensen et al. (2000) asked participants ranging in age from 18 to 94 years old to complete emotion reports multiple times a day. They found that, consistent with existing literature, reports of negative affect declined until about age 60, and then leveled off after that. Positive affect, in their study, did not show any significant changes across the different age groups.

Although questions about the influence of measurement issues remain, evidence from a variety of methodologies suggests that SWB does not decline very much over time. Thus, we must ask why SWB does not seem to change, even when external life circumstances are declining (Kunzmann et al., 2000). A number of theories have suggested that changes in life circumstances are balanced by changes in emotion regulation. Specifically, research suggests that as individuals mature, they are better able to regulate their emotions (e.g. Gross et al., 1997) or are more motivated to regulate their emotions. Carstensen (1995), for example, argued that as one ages, he or she monitors the amount of time he or she has left before death. This monitoring, in turn, leads to changes in goals. As one becomes more aware of (and closer to) one's mortality, he or she should place a higher premium on experiencing pleasant emotional states. Thus, emotion regulation theories suggest that SWB may, in fact, increase with age, even in the face of declining life circumstances.

Increasingly, researchers are focusing on the functional nature of SWB (Fredrickson, 1998, 2001; Lyubomirsky et al., 2002; Lucas and Diener, in press).

Researchers should keep this in mind when examining the SWB of older adults. If older adults do experience lower levels of well-being, this may not necessarily signal poor functioning. Instead, it may signal a functional response to real problems. Similarly, although some individuals may place a higher premium on experiencing positive emotions as they age (as Carstensen, 1995, suggested), others may be willing to trade positive well-being for other goals. Thus, researchers must examine changes in well-being within the context of the changing goals that individuals are likely to have as they age.

10. Conclusions: the take-home message(s) and directions for future research

From the early philosophical treatments of happiness to the modern science of subjective well-being, the concept of happiness has evolved considerably. Although subjective well-being can be defined simply as the way that people evaluate their lives, this simple definition belies the complex and multi-faceted nature of the construct. SWB is not a unitary dimension, and there is no single index that can capture what it means to be happy. Instead, SWB reflects a broad collection of distinct components, and to get a complete picture of one's well-being, researchers must understand the various ways that people can evaluate their lives. For example, an older individual may experience more health problems or financial difficulties than a younger individual, and these stressors may cause anxiety and negative emotions on a day-to-day basis. Yet, at the same time, the older individual may have a strong sense of satisfaction with the things he or she has accomplished over the course of an entire lifetime. Researchers who only focus on one component of well-being will not be able to capture the complex nature of these phenomena. A multi-faceted approach to SWB not only suggests the necessity of multiple measures, but the choice of measures should be theoretically meaningful. For example, if researchers are interested in making predictions about people's choices, then they might measure recalled emotions, rather than on-line experiences (Wirtz et al., 2002). Similarly, life events may have small effects on global evaluations, but rather larger effects on daily affect (e.g. Lawton et al., 1995).

Naturally, thorough SWB assessments are time-consuming, and this might discourage some researchers, but the payoff can be great in terms of understanding. Just as we do not assess intelligence, mental illness, creativity, or the Big Five with a few quick questions, we cannot expect to measure SWB with a five-minute global assessment. This is not to say that global assessments are useless, because they can provide valid and meaningful information. But they are very incomplete. To be thorough requires more in-depth measurement.

It is not solely for the sake of completeness, however, that we emphasize the multi-faceted nature of well-being. There are also many theoretical reasons for studying the components of well-being separately. We know, for instance, that the different components have different correlates. These findings have led researchers to suggest that distinct processes underlie the various components. Therefore, to develop a theory of these processes, researchers will need to understand the various

components separately. Furthermore, although it may seem intuitive that the various components would tap into the same underlying constructs, oftentimes different measures of well-being do not completely converge. Divergent measures need not be cause for despair. Instead, studying the reasons for these divergences can elucidate the processes that lead to the various well-being judgments.

One of the strongest recommendations we can make to SWB researchers and gerontologists is to examine low vs. high intensity emotions separately. If intense emotions are assessed such as PANAS PA (e.g. "active" from Watson et al., 1988) or Bradburn PA items (e.g. "on top of the world"), then the elderly might appear lower in PA. But if low arousal words, such as contentment or happy, are assessed, then we might not see a decline in PA with age (Lawton et al., 1992b; Lawton, 2001). Likewise, there might be no decline in frequency of emotions with age, but a decline in intensity. That is, people might experience anger with the same frequency, but with age, they may experience it less intensely. A similar argument can be applied to the valence of affect, highlighting the need to measure PA and NA separately.

More research on the elderly is needed, and this research should include at least two important aims. First, the structure of SWB needs to be more clearly identified among the elderly (e.g. Lawton et al., 1992a). In fact, more research on many specific populations is needed in order to understand the structure of SWB in various groups (e.g. ethnic/cultural groups). Second, future studies should examine the multi-components of SWB and explore the steps involved in the emotion sequence.

Finally, the evolving conception of SWB suggests that ideal SWB is not to be equated with uninterrupted euphoria. Such a view would place too great an emphasis on hedonism when there are clearly non-hedonistic aspects of SWB as well (e.g. global judgments such as life satisfaction, meaning, and fulfillment). Furthermore, we should consider what is functional, and this includes some negative feelings from time to time. Although pleasant emotions may be desirable, happiness is not the ultimate goal at all times. Rather, individual and cultural differences in the valuing of enjoyment suggest that people are willing to sacrifice feeling happy for other goals. And even when people do seek enjoyment, they want to feel good for the right reasons. Thus, we need to understand people's goals, and consider their feelings within the context of their values.

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