

THE SUBJECTIVE EVALUATION OF WELL-BEING IN ADULTHOOD: FINDINGS AND IMPLICATIONS*

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In recent years, a wealth of data focused on the perceived quality of life in adulthood has been produced. Strengthened by improved measures and methodologies, the findings from these research efforts have in some cases challenged, and in other cases confirmed, earlier conclusions regarding the experience of Subjective Well-Being (SWB) across the adult lifespan. Within this article, evidence indicating the importance of demographic, personality, and cultural variables to the experience of SWB is reviewed, with a particular emphasis on the experience of well-being across the adult lifespan. High SWB is related to a number of important life outcomes, such as higher levels of relationship and marital satisfaction, success and satisfaction in work settings, improved ability to cope with stress, and better health outcomes. Evidence from a number of studies indicates that average levels of life satisfaction are relatively similar for groups representing early, middle, and late adulthood, whereas the affective components of SWB show some variability. These findings and their potential implications for interventions, policies, and future research are discussed.

Subjective indicators of the quality of life have long been integral to research directed at adult development and aging. For example, one of the earliest comprehensive measures of subjective well-being, the Life Satisfaction Scale (Neugarten, Havighurst, & Tobin, 1961) was specifically developed for use in research with older adults. Over the last three decades, momentum in the area of research focused on subjective well-being (SWB) has been building (for a review, see Diener, Suh, Lucas, & Smith, 1999). Improvements in the quality of instruments (Pavot & Diener, 2003) coupled with innovative methodologies (Diener, 2000) have steadily strengthened the empirical basis for the understanding of SWB. In some cases, current empirical findings have challenged earlier conclusions about the experience of SWB in adulthood, whereas other findings from earlier research efforts have been reinforced and validated by more recent data. In this article, we will review some of the emerging findings from the study of SWB in adulthood, and discuss their potential implications for further research, interventions, and policy.

In the first section of this review, we offer a definition of SWB, discuss several of the issues surrounding research on SWB, review the general research findings, and identify the long-term benefits of chronic SWB. In the second section of the article we focus on findings from SWB research that are more specific to aging, including studies linking SWB to physical health, longevity, and resistance to the effects of stress. We also review some of the prominent models of coping in late adulthood. In a final section, we consider the implications of current findings for future research as well as for policy decisions and applied interventions.

Issues and General Findings on Subjective Well-Being

Defining Subjective Well-Being

Currently, most researchers who investigate SWB conceptualize it as a broad, multi-faceted domain, which encompasses cognitive and affective sub-components. A representative example is offered by Diener et al. (1999): "Subjective well-being is a broad category of phenomena that includes people's emotional responses, domain satisfactions, and global judgments of life satisfaction" (p. 277). SWB therefore represents a general area of scholarship, not a specific construct.

The affective components of SWB (encompassing both moods and emotions) include positive affect (PA) and negative affect (NA). The affective components of SWB represent ongoing or "on-line" (Diener, 2000: 34) evaluations or reactions to the events that people are currently experiencing. Although it is difficult to demonstrate that PA and NA are independent at any one moment of an individual's experience, these affective components become increasingly divergent as the measurement time-frame is expanded (Diener & Emmons, 1984). Because most researchers of SWB are interested in relatively long-term moods, rather than momentary experiences, it is advantageous to include measures of both PA and NA in research designs (Diener et al., 1999).

The cognitive components of SWB represent evaluative judgments of the quality of life. These judgments are usually referred to as life satisfaction or domain satisfaction(s). Domain satisfactions are focused on evaluations of specific facets of life such as work, marriage, or leisure. Global life satisfaction judgments represent cognitively-based evaluations of one's life as a whole (Pavot & Diener, 1993a).

The components of SWB are usually intercorrelated, but they often show differential relations with other variables and moderate correlations with each other. For example, using a multitrait-multimethod approach, Lucas, Diener, and Suh (1996) demonstrated that pleasant affect, unpleasant affect, and life satisfaction are related but separable constructs. Thus, it is usually advantageous to assess each component separately, with specifically dedicated measures that accurately tap each construct (Pavot & Diener, 2003). Unfortunately, many early efforts directed toward the assessment of SWB often involved very simple measurement instruments (frequently, a single survey item assessing a concept such as satisfaction or happiness), with the result that distinctions between the components of SWB were impossible to detect, and potentially unique relations between these distinct compo-

nents and other variables were obscured. In other instances, multiple-item scales were multidimensional, with components that did not neatly map onto basic psychological categories. In either case, these measures were thus ill-suited to inform us regarding the specific dynamics of the subcomponents of SWB. The affective components of SWB often do vary independently of each other and also independently of life satisfaction. It is important to use measures that can reveal these dynamics, particularly in research intended to assess the level and quality of SWB across adulthood, in order to detect both qualitative as well as quantitative changes in the subjective experience of adults as they age. For example, does the quality of our emotional experience shift across adulthood, and if so, in what way? What sort of changes might occur with regard to the experience of life satisfaction? Specific, domain-focused measures are required in order to provide clear answers to these questions. These and other issues of measurement will be further discussed in a later section.

It should be noted that the above definition and conceptualization of well-being is one among several alternatives. The view of well-being, which emphasizes life satisfaction and positive and negative affect, has been labeled the “hedonic view” (Ryan & Deci, 2001: 143). An alternative view, emphasizing autonomy, human growth and actualization, represents the “eudaimonic” perspective (Ryan & Deci, 2001: 145). Within the eudaimonic perspective, alternative conceptualizations have been proposed. For example, Ryff and Keyes (1995) have proposed a construct of psychological well-being that is distinct from SWB, and which is represented by six aspects of actualization including autonomy, growth, self-acceptance, life purpose, mastery, and positive relatedness. In their self-determination theory, Ryan and Deci (2000) have emphasized the importance of self-actualization to well-being and also have identified the fulfillment of three basic psychological needs (autonomy, competence, and relatedness) as essential for psychological growth, integrity, and well-being.

It is not possible to prove that one definition or another is correct. Rather, definitions offer a starting point for the exploration of phenomena. Alternative definitions are often useful, and perhaps are essential, to the complete examination and eventual understanding of a given construct. The definition which we have adopted helps us define what we are about to discuss, but it does not preclude additional definitions and areas of content that others might cover. Our definition is intended to include much, but not all, of the work conducted in this broad area.

The Importance of Subjective Well-Being as a Cause of Success

A frequently voiced concern regarding SWB is focused on the value of happiness. Does it really matter whether people are happy? Won't their lives proceed, even very successfully, whether they are happy or not? Is happiness necessarily a good thing?

Fortunately, a wealth of data is now available to address this very fundamental question. Virtually every relevant study has indicated significant life benefits for

people with high SWB. For example, individuals reporting high SWB had stronger social relationships than less happy individuals (Diener & Seligman, 2002). In longitudinal studies, people with higher levels of SWB were more likely to be married at a later measurement (Marks & Fleming, 1999; Lucas, Clark, Georgellis, & Diener, 2003). High individual SWB is a strong predictor of marital satisfaction (Glenn & Weaver, 1981). In the workplace, employees higher in dispositional positive affect receive higher supervisor ratings and better pay (Diener, Nickerson, Lucas, & Sandvik, 2001; Staw, Sutton, & Pelled, 1994). In stressful circumstances, positive affect is associated with more effective coping and better overall outcomes (Fredrickson & Joiner, 2002). High SWB is associated with lower levels of suicidal ideation and behavior (Diener & Seligman, 2002). Thus, SWB is related to successful outcomes in a variety of life domains. People with high levels of SWB are more successful in relationships, more successful on the job, and better equipped to successfully cope with stress.

A number of the studies indicating a relation between high SWB and positive life outcomes have been correlational in design; therefore, it would not be appropriate to think of SWB as a causal factor in these instances. Nevertheless, some of the relevant research has been experimental in nature (e.g., laboratory studies of the outcomes of moods), and other designs have been longitudinal (both long-term and over a number of days), and these results give at least suggestive evidence of causality.

The above represents only a brief sampling of the research focused on the benefits of long-term SWB. For a more comprehensive review, the reader is directed to Lyubomirsky, King, and Diener (2002).

The Measurement of SWB

One aspect of research on SWB that has improved to a substantial degree is the measurement of SWB. Early attempts to measure SWB often involved the use of a single questionnaire item, embedded in a larger, multi-purpose survey instrument. Although such minimal measures have been demonstrated to have a degree of validity (Pavot & Diener, 1993b), they tend to have modest temporal or test-retest reliability, and the internal consistency of a single-item cannot be determined. Further, responses to such single-item assessments can be significantly influenced by momentary mood states, or by other items placed before them in a larger questionnaire (Schwarz & Strack, 1991; Pavot & Diener, 1993b). Another disadvantage is that these simple assessments could not be used to separately measure the distinct components of SWB, so that any potential distinction between the cognitive and affective components was obscured.

Fortunately, a number of multiple-item instruments for the assessment of SWB have been developed. Several multiple-item measures, such as the Affectometer 2 (Kammann & Flett, 1983), and the PANAS (Watson, Clark, & Tellegen, 1988) have been created to assess the affective components of SWB, whereas other multiple-item instruments, such as the Satisfaction With Life Scale (Diener, Emmons,

Larsen, & Griffin, 1985; Pavot & Diener, 1993a) are available for assessing the cognitive component of SWB. Other instruments, such as the Oxford Happiness Inventory (Argyle, Martin, & Lu, 1995) include both life satisfaction and affective items. All of these measures have demonstrated good psychometric characteristics, and have been used in the assessment of SWB with good success.

In addition to improvements in the traditional, self-report measures of SWB, several alternative methodologies have been developed. Prominent among these techniques is Experience Sampling Methodology (ESM; Diener, 2000; Scollon, Kim-Prieto, & Diener, 2003). This method involves the random sampling of a person's moods and cognitions over time, using palm computer technology as both a cuing device and a data-recording instrument. Using ESM, it is possible to obtain a record of the ongoing experiences of the individual, rather than relying on retrospective self-reports, which are subject to several potential types of bias or error, such as failures or distortions of memory retrieval, or the effects of the momentary mood state of the respondent (Cutler, Larsen, & Bruce, 1996; Schwarz & Strack, 1991). By averaging ESM data across a large number of occasions, the effects of momentary mood fluctuations or transient situational circumstances can be cancelled out. Thus, ESM can, under appropriate circumstances, provide an alternative to more traditional self-report assessment instruments.

Although it can be a desirable alternative to more traditional forms of assessment, it should be noted that ESM is a costly and complex methodology, and it may not always be the optimal choice for every design. ESM is often a desirable technique for assessing average moods, or moods in specific situations (e.g., social versus nonsocial situations). It has a particular advantage in the assessment of the affective components of SWB, because these components are vulnerable to memory distortions when assessed retrospectively (Kahneman, 1999). On the other hand, if the investigator is more interested in global judgments rather than specific affective dynamics, more traditional methods (e.g., multiple-item self-report questionnaires) might be preferable. A review by Scollon, Kim-Prieto, and Diener (2003) discusses specific circumstances and conditions under which ESM would be more or less advantageous.

An additional source of data to supplement self-reports of subjective well-being involves the use of informant reports, obtained from spouses, family, friends, co-workers, or others acquainted with the target individual. Self-reports of life satisfaction have been demonstrated to substantially correlate with informant ratings of life satisfaction (Pavot, Diener, Colvin, & Sandvik, 1991). Sandvik, Diener, and Seidlitz (1993), in a multi-method design, utilized self-reports of life satisfaction along with ESM measures, interviewer ratings and informant reports, and found moderate-to-strong intercorrelations between these alternative methodologies. But these relations are not so strong as to be redundant with each other, and the use of multiple methods of assessment is likely to reveal some unique information from these measures.

Other assessment methodologies have been developed and validated; current options include interviews, physiological measures, reaction-time measures via

computer presentations, and ratings of facial expression (e.g., smiling). The greatly enhanced array of alternative methodologies affords contemporary SWB researchers the ability create complex assessment batteries for the measurement of the components of SWB. Careful construction of such assessment batteries can allow investigators to combine complementary techniques and greatly reduce the potential threats to validity that are inherent when using a single methodology. More extensive discussions of these and other measurement issues are available in Larsen and Fredrickson (1999) and Pavot and Diener (2003).

Temperament and SWB

Among the many variables that have been demonstrated to have a relation to SWB, the stable and pervasive effects of temperament, particularly the broad personality dimensions of extraversion and neuroticism, are the most reliable and fundamental predictors of SWB (DeNeve & Cooper, 1998). Neuroticism has been shown to have consistent relation to negative affect (Fujita, 1991), whereas Extraversion has been reliably identified as a predictor of positive affect (Lucas & Fujita, 2000). These two broad personality traits have often been characterized as the primary links between personality and SWB (e.g., Costa & McCrae, 1980).

The consistent and longitudinally stable nature of the temperament-SWB connection has led to considerable investigation of a possible genetic link between the two constructs. Several researchers have examined the data from behavior-genetic studies and have arrived at estimates of the heritability of long-term SWB that range from 40%–55% (for positive emotionality and negative emotionality, respectively) (Tellegen, Lykken, Bouchard, Wilcox, Segal, & Rich, 1988) up to a more recent estimate of 80% for the stable portion of SWB (Lykken & Tellegen, 1996). Although there may be reasons to be cautious in the interpretation of such large heritability estimates (for a more lengthy discussion, see Diener et al., 1999), it does appear that a noteworthy proportion of SWB is dispositional in nature. However, there is also evidence that SWB can fluctuate over time (Kozma, Stone, & Stones, 1997). Most contemporary conceptual models assume both stability and variability among the constituent components of SWB (Diener et al., 1999).

Adaptation

Although many life events and life changes may exert large influences on our day-to-day subjective evaluations and emotional experiences, it appears that, with certain important exceptions, such events and changes often have a limited influence on an individual's long-term level of SWB, particularly when compared to the influence of personality. The process of adaptation (Brickman & Campbell, 1971) has been offered as an explanation for the limited long-term impact of many life experiences. According to this view, when people experience a positive change or good event in their lives, they experience a brief period of greater happiness. But with the passage of time, habituation or adaptation to their new situation or

circumstances will result in an eventual return to a baseline or typical level of happiness, a baseline which appears to be largely established by temperament. The dynamic equilibrium model (Headey & Wearing, 1992) describes such a relationship between life events, adaptation, and personality/temperament. According to the dynamic equilibrium model, personality/temperament is the source of our baseline level of SWB. Life events can temporarily create a dynamic impetus that acts to displace our subjective experience in a positive or negative direction, but our personality/temperament exerts a counter-balancing force that moves us back toward equilibrium and our normal baseline level of SWB (Headey & Wearing, 1992).

The tremendous capacity for adaptation that people have demonstrated has implications for the exclusive use of subjective measures in the assessment of the quality of life (Diener & Suh, 1998). Many individuals facing difficult circumstances, such as persons with severe disabilities or with mental disorders (Diener & Diener, 1996), continue to report positive levels of SWB.

Adaptation exerts a pervasive homeostatic effect on SWB, but at least some events and/or circumstances seem capable of moving a person's set point. Traumatic or stressful experiences, such as serving as a caregiver for an individual with Alzheimer's disease (Vitaliano, Russo, Young, Becker, & Maiuro, 1991), or becoming a widow (Lucas, Clark, Georgellis, & Diener, 2003; Stroebe, Stroebe, Abakoumkin, & Schut, 1996) can produce long-term reductions in SWB. Further, there is evidence of gender differences in perceived quality of life in the longer term following spousal loss (Fry, 2001). Periods of unemployment can also have lasting effects, even after an individual becomes employed again (Lucas, Clark, Georgellis, & Diener, 2004). Thus, SWB is not always subject to complete adaptation; life events and circumstances can, under some circumstances, significantly and lastingly affect a person's chronic level of SWB.

Demographic Findings

A sizable number of demographic variables have been examined with regard to their relation to SWB. A complete review of such studies is far beyond the scope of the present review. But a brief sketch of some of these findings is in order.

Sex differences in SWB have been examined in a number of studies (Diener et al., 1999). Most frequently, either very small or no differences in SWB between men and women have been found. When differences do appear, women usually report higher SWB than men, although these differences can often be eliminated when other demographics are controlled (e.g., Inglehart, 1990). The finding that women tend to report at least the same, if not greater, levels of happiness when compared to men is paradoxical, in light of the often cited statistic that twice as many women as men in the United States report major depression (Holmes, 2001). Differential rates in clinical disorders, however, may not necessarily reflect general differences in the normal range of emotional experience for men and women (Lucas & Gohm, 2000). Still, recent reviews focused on gender differences in SWB

consistently indicate that women tend to experience greater levels of unpleasant affect (e.g., Nolen-Hoeksema & Rusting, 1999). A partial explanation may lie in the finding that women appear to experience both positive emotions and negative emotions more intensely than men (Fujita, Diener, & Sandvik, 1991). In addition to differences in affect intensity between men and women, different social roles and differences in status in relationships might also serve to explain gender differences in SWB (Nolen-Hoeksema & Rusting, 1999).

Education is usually observed to have a small positive correlation with SWB (Campbell, Converse, & Rogers, 1976; Cantril, 1965), and can be a factor in the experience of SWB for people with lower incomes (Diener, Sandvik, Seidlitz, & Diener, 1993). Part of education/SWB relation appears to be accounted for by the covariation of education with income and occupational status (Campbell, 1981), rather than as a direct effect of education per se. In some respects, education may have a negative effect on SWB, because education may raise the aspirations and expectations of an individual. If these higher expectations are not met, individuals might experience reduced SWB (Diener et al., 1999).

Religion appears to be beneficial to SWB, although the benefits of religion appear to vary between individuals (Diener et al., 1999). For some, religion can provide a sense of meaning in life (Pollner, 1989). Church membership might also provide a form of social support (Moberg & Taves, 1965). Many unanswered questions regarding the benefits of religion remain. For example, do the established findings, based primarily on Christianity, generalize to other religions, such as Islam or Buddhism?

A common belief is that increased income is a source of increased SWB, but the relation between income and SWB is complex, and the evidence is often at odds with the prevailing viewpoint. In a recent review of the relation between money and SWB, Diener and Biswas-Diener (2002) offer several replicable findings. At the level of nations, the correlation between a nation's wealth and the reports of SWB from its citizens is generally strong. Within nations, however, a different pattern emerges. For the most part, the correlations between income and SWB are small, although there is a tendency for a greater link between income and SWB in poorer nations. Another observation is that the economic growth in the past few decades, particularly among the most economically developed nations, has had a negligible effect with regard to increasing happiness. Further, those who prize material goals more than other values tend to be less happy (Diener & Biswas-Diener, 2002). Thus, it appears that income has a decreasing influence in richer nations and among wealthier groups, and that rising material aspirations have to some degree offset the effects of growing income.

These few variables are intended only as examples of some of the demographic factors that have been found to be correlated with SWB. More complete examinations of demographic factors and SWB are available in Diener (1984) and Diener et al (1999).

Perhaps the summary point of the relations between SWB and demographic variables is that these relations typically account for modest amounts of variance

in the overall prediction of SWB, relative to factors such as temperament and social relationships. Nevertheless, the demographic profile of an individual is likely to influence her or his SWB to some degree, and demographic data can potentially add to the overall understanding of the person's subjective experience.

Social Relationships

Good quality social relationships represent a very influential, if not critical factor in the experience of high levels of SWB. Diener and Seligman (2002), in an investigation of the characteristics of very happy people, found that both self—and peer-ratings of the quality of relationships were higher for individuals of a “very happy” group (p. 83) than relationship ratings for a comparison group reporting lower levels of happiness. “All members of the high happiness group reported good-quality social relations, leading the authors to conclude that good social relationships “form a necessary but not sufficient condition for high happiness...” (Diener & Seligman, 2002: 83). The importance of social relationships to emotional goals also figures prominently in theories focused on adult development (Carstensen & Charles, 1998). For example, the process of identifying and giving priority to affectively rewarding social interactions when perceived time available is limited is central to socioemotional selectivity theory (Carstensen, 1995).

Culture and SWB

An individual's socio-cultural environment exerts a ubiquitous influence on behavior and perceptual experience; the experience of SWB is not exempt from this influence. Cross-cultural comparisons have revealed a substantial effect on SWB. It should be noted that many “cross-cultural” studies are actually national comparisons, because data tend to be collected within countries, and the alignment of cultures and nations may not be perfect, and is subject to change (Hermans & Kempen, 1998). Nevertheless, comparisons between nations appear to offer a reasonable proxy to pure cross-cultural designs. Diener, Oishi, and Lucas (2003), in a review of relevant studies, estimated that substantial variance in positive emotions (18%), negative emotions (11%), and life satisfaction (12%) is due to between-nation differences. Thus, culture appears to account for variance with regard to all the major components of SWB. A number of factors have been identified as influences on the relation between culture and SWB.

The relative wealth of a nation is often a strong predictor of the mean level of SWB reported by its citizens. Diener and Biswas-Diener (2002) reviewed a number of studies that found correlations between national wealth and national SWB in the range of .60 to .70. A number of factors, including democratic governance, human rights and equality tend to covary with national wealth, suggesting that the relation between national wealth and national SWB could be said to be determined by several factors rather than simply wealth per se. The income-SWB relation appears to be strongest when income is low, a situation where small increments in

wealth can have a substantial impact on other quality of life factors; the strength of the relation is substantially diminished in economically developed nations (Biswas-Diener & Diener, 2001).

Cultural differences in perceptual styles and self-serving biases also appear important to cross-cultural differences in SWB. Self-serving bias refers to a tendency to perceive oneself in a more favorable light than may be objectively warranted; self-enhancement, or the tendency to rate oneself more positively than others, would be one example. East Asians demonstrate a reduced tendency toward self-serving bias, relative to other groups (e.g., Heine et al., 2000); tendencies toward self-critical evaluations and attributions are greater among East Asians (Heine et al., 1999). Oishi (2001), using a daily diary technique, found that summary weekly life satisfaction judgments made by European Americans were significantly higher than the average of their daily satisfaction ratings during each day of the same seven days. In contrast, similar summary judgments by Asian Americans were nearly identical to their average daily ratings of satisfaction.

Using an individualist versus collectivist framework, differences in approach versus avoidance orientation might also contribute to cross-cultural differences in SWB. Lee, Aaker, and Gardner (2000) found that the collectivist tendency to think about one's group membership made people focus on negative consequences (avoidance focus), whereas thinking about oneself, independent of others, led to a focus on positive consequences (approach focus). These culturally-based approach versus avoidance orientations appear to carry through to SWB contexts. Elliot, Chirkov, Kim, and Sheldon (2001) demonstrated that Asian Americans, South Koreans, and Russians were more likely to pursue avoidance goals than were European Americans. Thus, perceptual biases and the pursuit of differing goals may contribute to cross-cultural differences in SWB.

From another perspective, cross-cultural differences in SWB could be a reflection of differing societal priorities and values (Diener et al., 2003). Although respondents in all countries agreed that life satisfaction and happiness are important, Diener (2000) found that respondents from some countries, such as those in Asia or the Pacific Rim, assigned a lower importance to SWB than did people in Latin American nations. In some cultures, pursuit of positive emotions and SWB may be sacrificed in order to achieve other, more valued goals. It is still to be determined whether the strategy of sacrificing positive experience in the short run can lead to higher levels of later life satisfaction (Diener et al., 2003).

Aging and Subjective Well-Being

The Dynamics of SWB across Adulthood

Some early SWB researchers were pessimistic about the experience of SWB as people move through adulthood. In a review of the correlates of happiness, Wilson (1967) pointed to youth as a consistent predictor of SWB, with younger people reporting higher SWB than older adults. More recent studies generally have not

been supportive of this conclusion. Researchers have not found evidence for an overall decline in SWB as individuals move through adulthood, although evidence for a decline in one component (positive affect) is sometimes uncovered. The dynamics in the relation between age and SWB are variable, and empirical findings sometimes differ, depending on the type of measure that is used (Diener & Suh, 1998), and the specific component of SWB (e.g., PA, NA, or life satisfaction) that is assessed (Lucas & Gohm, 2000).

Two rather opposite lines of thought regarding age effects on SWB tend to be prominent. One perspective is based upon the change that typically occurs over time in terms of objective life conditions, such as income, health, and social support. These conditions tend to decline with age, and therefore it is expected that SWB will decline as well (Wilson, 1967). The second general perspective places emphasis on the regulation of emotion (Carstensen, 1995). Evidence from a number of studies suggests that emotion regulation tends to improve with age, and that improved emotion regulation is associated with higher SWB (Carstensen & Charles, 1998).

With regard to the life satisfaction component of SWB, several large cross-cultural assessments have found levels of life satisfaction to be remarkably consistent across the adult lifespan. Large-scale studies in the 1960s (Cantril, 1965), the 1980s (Inglehart, 1990), and the 1990s (Diener & Suh, 1998) have replicated this finding of stable levels of life satisfaction in adulthood.

The effects of age on the emotional components of SWB are less clear and more controversial. Inglehart (1990) reported a decline in affect balance (PA minus NA) across adulthood. Using data from the World Values Survey II (World Values Study Group, 1994), Diener and Suh (1998) reported a gradual but steady decline in reported PA across adulthood (respondents ranged in age from their 20s to their 80s). NA also showed a slight decline from the 20s to the 60s, but then increased among respondents in their 70s and 80s. Thus, observations of a decline in affect balance appear to be due to a slow but consistent decline in PA (Lucas & Gohm, 2000). Observations of decreased affect intensity (Diener, Sandvik, & Larsen, 1985) and increasing emotional control (Gross, Carstensen, Pasupathi, Tsai, Skorpen, & Hsu, 1997) as adulthood progresses are consistent with this theme. On the other hand, the above observations are not supportive of the perspective that increased emotional control will lead to increased PA and decreased NA (Carstensen, 1995; Carstensen, Pasupathi, Mayr, & Nesselroade, 2000). It is possible that methodological differences (e.g., different measures, differing sample characteristics) might account for some of the discrepant results; additional data may be required in order to clarify the specific affective dynamics involved.

From the standpoint of Autonomic Nervous System (ANS) response, Lawton, Kleban, Rajagopal, and Dean (1992) observed that older participants reported fewer ANS symptoms accompanying typical emotion than younger or middle-aged individuals. Levenson, Carstensen, Friesen, and Ekman (1991) also found lower levels of ANS activity among older versus younger participants, but further found that the differential autonomic configuration for emotions such as anger and fear simi-

lar for the two groups, indicating the continuity of emotional responsiveness across the lifespan. Lawton (2001) offers an emotion-regulation explanation for findings indicating reduced ANS arousal, suggesting that control of ANS responses might act to conserve biological resources at a life stage where such resources may be reduced. Several theories (Labouvie-Vief, Hakim-Larson, DeVoe, & Schoeberlein, 1989; Carstensen, 1995; Blanchard-Fields, 1998) appear to converge on the theme of the integration of cognition and emotion as maturity progresses, in general facilitating and improving the efficiency of emotional responses, particularly in social contexts. However, as Lawton (2001) notes, concepts such as emotion regulation have not been operationalized uniformly, with the result that the underlying processes involved are not well understood.

SWB, Health, and Longevity

Physical exercise appears to be an important factor in both physical and psychological well-being for older adults (Blumenthal & Gullette, 2002). Along with benefits to the cardiovascular system, the data from several studies have provided support for the psychological benefits of exercise, particularly of negative mood states such as anxiety, tension, and depression (e.g., Blumenthal, Williams, Needels, & Wallace, 1982). In particular, the use of exercise in the treatment of depression has been a focal point (Gullette & Blumenthal, 1996). Potential biological links may involve increased norepinephrine neurotransmission, reduced post-exercise cortisol response, and/or increased levels of beta-endorphins (Blumenthal & Gullette, 2002).

Findings from a number of studies indicate that happy people are at less risk of mortality from a wide range of potential causes. In terms of death due to injury, results from a longitudinal study (across a 19-year period) of Scandinavians indicate that dissatisfaction with life predicts unintentional fatal injuries as well as intentional injuries (Koivumaa-Honkanen, Honkanen, Koskenvuo, Viinamaki, & Kaprio, 2002). In addition, people with a positive, optimistic outlook appear to be less vulnerable to coronary heart disease. Kubzansky, Sparrow, Vokonas, and Kawachi (2001) found that optimistic attributional style was correlated with a reduced incidence of cardiovascular disease after a ten-year period. In a similar vein, Ostir, Markides, Black, and Goodwin (2000) studied 2000 older Mexican-Americans and found that positive emotionality significantly predicted both survival and mobility.

In an interesting study focused on the relationship between SWB and longevity, Danner, Snowdon, and Friesen (2001) analyzed the emotion content of handwritten autobiographies of 180 Catholic nuns and found that such content was strongly associated with longevity 60 years after the brief autobiographies were written. These brief life summaries were written by the women as they entered the religious life. The researchers read and analyzed the emotion content of the autobiographies. Specifically, the positive emotional content of these writings was strongly inversely related to risk of mortality in late life. Despite the fact that the women in

the sample led somewhat atypical lives and likely had healthier than average lifestyles, individual differences in expressed positive emotion in early adulthood still was a strong predictor of longevity for this group.

In a large-scale prospective study, Levy, Slade, Kunkel, and Kasl (2002) examined attitudes about aging among older adults. Older adults with positive self-perceptions of aging experienced greater longevity, an average of 7.5 years greater than other adults with less positive perceptions, after controlling for factors such as age, gender, functional health, socioeconomic status, and loneliness. The effect of a positive attitude toward aging was greater than the effects observed for smoking and exercise.

A substantial and growing body of evidence indicates that positive emotionality, life satisfaction, optimism, and other facets of SWB can be instrumental in reducing susceptibility to both accidents and disease, and in turn these characteristics are associated with increased longevity. Further research will be required to more precisely articulate the underlying mechanisms, but the extant evidence reinforces the significant role that SWB can play in determining the overall quality of life of people moving into late adulthood.

Caregiving and SWB

A very common experience in late adulthood involves acting in the role of caregiver, often for a spouse or sibling with a terminal condition such as Alzheimer's disease. From the perspective of SWB, it appears that caregiving may have mixed effects. Potential benefits of caregiving may include increased levels of personal efficacy and mastery and enhancement of self-worth (Kramer, 1997). Whether an individual acting as a caregiver experiences these positive outcomes may depend on a number of factors, such as differences in motivation and attitude (Kramer, 1997). It also appears that differences in the ethnicity of caregivers may be associated with a different set of predictors of beneficial outcomes (Lawton, Rajagopal, Brody, & Kleban, 1992; Kramer, 1997). In several studies the care recipient's level of independent functioning was a predictor of satisfaction with the caregiver role (Kramer, 1997). In a recent meta-analysis, Vitaliano, Zhang, and Scanlan (2003) examined data from 23 research reports examining the effects of acting as caregiver for a family member with dementia. Caregivers were at a slightly greater risk for health problems when compared to noncaregivers, with the risk factor moderated by gender and health category. Caregivers generally showed increased levels of stress hormones and decreased levels of antibodies (Vitaliano et al., 2003). But what is the impact of caregiving on SWB? Vitaliano, Russo, Young, Becker, and Maiuro (1991) found that caregivers of Alzheimer's patients indicated deteriorating SWB over time. Caregiving situations of course involve very complex combinations of environmental factors, resources, personality dispositions, and other variables. Nonetheless, it appears that caregiving has the potential to be, depending on the situational and personal circumstances, either beneficial or detrimental to the physical and psychological well-being of the caregiver.

Theories of Coping in Old Age

As individuals move into the later stages of adulthood, some degree of age-graded loss becomes inevitable. Loss of physical strength, loss of economic power, and bereavement are typical. Yet the clear preponderance of evidence suggests that older adults experience very similar levels of life satisfaction, and only marginally reduced levels of positive affect, compared to individuals in early and middle adulthood. Although there are clearly large individual differences in the experience of aging, successful coping with the aging process appears to be the normative experience.

Several theorists have approached the process of coping and adaptation from a cognitive perspective. This approach places emphasis on a person's subjective perceptions of potentially stressful life events, and uses these subjective interpretations to account for individual differences in response to what may seem to be similar life experiences (Lazarus & Folkman, 1984). The overall process of appraisal is typically broken down into two components. Primary appraisal involves the process of determining whether an event is indeed stressful or non-stressful. Following a primary appraisal, an individual then decides how to adapt to the event by choosing to utilize resources from the environment (problem-focused coping), or from within themselves (emotion-focused coping). The process of estimating the cost of utilizing such resources is labeled secondary appraisal (Lazarus & Folkman, 1984).

Following a similar theme, Lang and Heckhausen (2001) have focused on perceived control over development, and how such perceptions are differentially related to SWB across the lifespan. Based on their findings, perceived high control over one's development may be beneficial in early and middle adulthood, when actual control resources may be ample. In contrast, for people in later adulthood, it may be more adaptive to adjust their perceptions of control to the demands of the situation, and to a level that is a positive and realistic evaluation of their general level of abilities.

In their conceptualization of the coping process, Brandtstädter, Wentura, and Greve (1993) use a framework involving accommodation and assimilation. According to this model, as age advances, accommodative processes allow older adults to disengage and lower aspirations toward some goals that are no longer achievable. Assimilative processes engage and direct the behaviors of older adults, and serve to encourage them to strive toward attainable goals. Assimilative processes involve directed, intentional activity that serves to preserve personal identity and self-esteem (Brändtstädter, Wentura, & Greve, 1993).

Several other models of successful aging have been proposed. Among the more prominent of these is the model of selective optimization with compensation (SOC; Baltes & Baltes, 1993). The SOC model incorporates three interactive elements. Selection refers to increasing restriction of an individual's world into fewer domains of function, as a result of the loss of adaptive potential function due to aging. Given such increasing restriction, successful adaptation involves identifying and

concentrating on high priority domains. Selection implies a reduction in the overall number of high-efficacy domains, yet it may also involve new or restructured domains and life goals (Baltes & Baltes, 1993). The second element of the SOC model, optimization, takes the perspective that people tend to engage in behaviors that augment their general reserves of resources and maximize their life courses in terms of quantity and quality. The final element, compensation, becomes operative when specific behavioral capacities are diminished or lost. Compensation might involve the use of new strategies or approaches toward goal attainment; compensation may also involve technology (e.g., the use of a motorized chair to maintain mobility). Thus, SOC involves a process of restructuring through which individuals select their highest priority activities and goals, identifying and reassigning resources to enable them to attain the desired goals, and compensate for lost or restricted behavioral capacities by adopting new psychological or behavioral strategies and/or the use of technology. The emphasis of the model is on the plasticity within individuals and the variability between individuals in terms of how the processes of the SOC model are accomplished (Baltes & Baltes, 1993).

A recent model of socioemotional change across adulthood is socioemotional selectivity theory (SST; Carstensen, 1995). According to SST, changes in the salience of specific socioemotional goals, particularly with regard to emotion regulation, result in changes in the strength of social motives, which in turn tend to reconfigure patterns of social interaction (Carstensen, 1995; Carstensen & Charles, 1998). In the SST model, as individuals move through the lifespan, social goals related to the self concept and information-seeking tend to be increasingly salient through early adulthood, and then decline in middle and late adulthood. In contrast, the goal of emotion regulation shows an opposite pattern, growing stronger across adulthood. Factors contributing to these socioemotional dynamics are experience and perceived limitations on time available (Carstensen, 1995). As people age, their need to seek information and to establish their self concept is diminished; conversely, the passage of time and the increasing salience of limitations on the time remaining in life motivate individuals to seek social interactions with higher potential for emotional rewards. Data from both longitudinal studies of social relationship dynamics (Carstensen, 1992) and from populations of the same age, but differing in perceived time limitations, such as healthy versus seriously ill young people (Carstensen & Fredrickson, 1992) are supportive of the SST model.

The SST model represents a challenge to some long-standing models of the social aspects of aging, such as disengagement theory (Cumming & Henry, 1961). These theories tend to explain reduced social contact in terms of psychodynamic processes, or societal biases toward the aged. SST reconfigures the view of aging into a time of life where socioemotional selectivity due to the increased salience of emotion regulation goals and perceived time limitations results in fewer, but more rewarding, social interactions.

The selective optimization with compensation model and socioemotional selectivity theory appear to be compatible; each emphasize a different aspect of development, and both provide a structure that allows for positive responses to de-

velopmental changes in adulthood. Taken together, these models represent a positive view of the aging process, in contrast to the more pessimistic earlier views such as disengagement theory.

Approaching coping in adulthood from a different perspective, Vaillant (2000) presents evidence that the use of mature defenses in coping is predictive of positive psychological outcomes. Defenses are "involuntary mental mechanisms that distort our perception of internal and external reality to reduce subjective distress" (Vaillant, 2000: 89). Defenses considered to be of a high adaptive level include anticipation, altruism, humor, sublimation, and suppression. These defenses are in contrast to less adaptive reactions such as delusional projection, psychotic denial, and psychotic distortion. For two diverse groups of men, outcomes such as objective psychosocial adjustment, social supports, marital satisfaction, and joy in living were correlated with the use of adaptive defenses by these men as measured 20 years earlier (Vaillant, 2000). These positive outcomes were more highly correlated with the use of mature defense mechanism than were education or neuroticism.

Future Research

The research reviewed above has greatly advanced the understanding of the experience of SWB across the adult lifespan. A number of assumptions regarding the dynamics of emotional life and life satisfaction have been challenged, and the view of diminished levels of SWB, as an inevitable part of the aging process has in large measure been unsupported. But much remains for future investigators to accomplish.

One persistent shortcoming of research in the area of research on aging and SWB has been the use of relatively simple survey-based measures, measures that often have been weak in terms of their psychometric properties. Although the data from early surveys have been informative in many respects, the generally weak or undetermined psychometric nature of the measurement instruments makes such findings subject to several sources of error. Future research focused on aging and SWB should be enhanced with the new instruments and methodologies that have emerged from the study of SWB more generally (Diener, 2000; Pavot & Diener, 2003).

In addition to incorporating more sophisticated measures into their designs, future researchers should accept the challenge of developing longitudinal data bases to supplement the findings of the cross-sectional survey techniques that have been dominant in the past. Longitudinal data are essential in order to examine the dynamics of SWB within individuals across different stages of adulthood. Such data will enable investigators to better untangle the processes underlying changes in emotional experience across adulthood.

Along with the use of improved assessment instruments and stronger research designs, it is important that future researchers work toward clarifying concepts

related to SWB and the quality of life in adulthood. As an example, Lawton (2001) noted the need for emotion theorists to “incorporate better the concept of quality of life into their structural models of emotion” (p. 123). A general effort to move toward more consistent operational definitions and greater conceptual consensus and consistency across the wide array of relevant programs of research should facilitate the movement of researchers toward the goal of clearer understanding of the subjective experience of well-being.

Specific goals for researchers might include a focus on the dynamics of the individual concepts of SWB (e.g., positive affect, negative affect, and life satisfaction) in an effort to provide clearer answers regarding how mean levels of each type of well-being change or remain stable with age. With further specificity, future research could search for differences within the concepts, such as differential change in the levels of activated positive affect (e.g., excitement) versus unactivated positive affect (e.g., contentment); two very different subjective experiences, but both contained within the rubric of positive affect.

Another focal point for future study might involve a search for a different set of correlates of happiness for young and old. It may be the case that somewhat unique patterns of relations between an array of variables and SWB may emerge from such efforts. Finally, future work should be devoted to separating age effects from cohort effects in the experience of SWB.

Future research focused on the maintenance of engagement is also important. A common theme across several theories of successful coping is the critical element of maintaining engagement, particularly in terms of valued relationships. But such engagement must necessarily be selective in order to preserve the limited resources of older adults. Developing opportunities for older adults to maintain an optimal level of engagement, without creating situations which are unduly taxing and stressful could be an important goal of future work.

Implications for Policy and Applications

SWB is important for several reasons. A wide array of critical life outcomes are related to the level of chronic SWB which an individual perceives themselves experiencing. SWB is associated with improved social connectedness, positive health outcomes and increased resistance to the negative effects of stress, and success in the workforce. SWB data yield important feedback regarding the perceived success in living (and aging) for both individuals and for the larger societies which surround them because it reflects how people evaluate their own lives. Measures of well-being can be particularly informative for older adults, specifically in the areas of health maintenance and coping with the effects of stress.

Identifying areas of potential for intervention should be an important concern for policy makers. Issues such as the structure of adult daycare programs, other forms of respite care, increased opportunities for physical exercise, and opportunities for older adults to maintain involvement and engagement in the life of the

communities in which they reside are examples of interventions which might flow from policy makers who were informed of the findings of SWB and quality of life research.

Because of the value of the data that subjective indicators can provide, Diener (2000) proposed a "national index" of SWB indicators for the United States. A system of subjective indicators would provide an ongoing readout regarding the level of SWB perceived by individuals representing various ages, occupations, income levels, and regions of the country. This national index of subjective quality of life indicators could supplement the objective economic indicators (e.g., the GDP index, unemployment rates) and objective social indicators (e.g., crime rates, literacy). Such an ongoing effort could not only provide a wealth of information to researchers; it could provide feedback regarding the subjective effects of changes in social policies, and the impact of significant national events (e.g., war, terrorist attacks). A section of a national database could specifically be dedicated to older adults, a rapidly growing segment of the population, in order to inform policy makers with regard to determining needed interventions as well as the effectiveness of programs already in place. Some nations, such as Great Britain, have already begun to take an interest in their own nation's happiness (see Donovan & Halpern, 2002). Other countries would likely show increased interest in such measures as the potential benefits became apparent. A system of national indicators of well-being would give us a better view of individuals' well-being as they move through adulthood, especially if the system included a panel component that followed respondents over the years, providing much needed longitudinal data.

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