

Original Papers

Polish Psychological Bulletin
2013, vol.44(2), 176-184
DOI -10.2478/ppb-2013-0020

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The Validity and Utility of Global Measures of Subjective Well-Being

Abstract Research interest in topics such as happiness, the quality of life, and the experience of well-being has dramatically increased in the past four decades. Global measures of Subjective Well-Being (SWB) have long held a prominent position in this burgeoning body of research (Diener, 1984; Pavot, 2008). Despite their widespread acceptance and use, the validity and utility of global measures of SWB have been challenged at several levels of analysis. These critiques have ranged from the conceptual basis of SWB (e.g. Ryan & Deci 2001; Ryff, 1989; Ryff & Singer, 2008) to very specific concerns about the context of the assessment situation and the cognitive processes involved in formulating a response to such measures (Pavot & Diener, 1993a; Schimmack & Oishi, 2005; Schwarz, & Strack, 1999). The purpose of this paper is to review and address some of the more prominent critiques of global measures of SWB, and to discuss methodological procedures and strategies for minimizing threats to the validity and increasing the utility of global measures of SWB.

Keywords: subjective well-being; psychological well-being

From its beginning, the modern empirical pursuit of happiness or well-being has been centered around subjective data (Diener, 1984). These data have predominantly been obtained from respondents via self-reported, broadly-based, wholistic assessment instruments, often referred to as “global measures” of subjective well-being (SWB). A wealth of understanding regarding the correlates and outcomes of SWB has been achieved through the use of such global measures (Diener, Suh, Lucas & Smith, 1999; Lyubomirsky, King, & Diener, 2005), and the ongoing and future studies that are using or will use such measures are quite likely to further increase our knowledge of SWB.

Despite these impressive results, the validity and utility of global measures of SWB have been challenged in recent years from several directions. At the conceptual level, alternative well-being constructs have challenged the philosophical assumptions of SWB, and thus the validity and utility of measures designed to assess SWB. At the empirical level, proponents of more recently developed assessment techniques have emphasized the potential shortcomings of global measures, such as memory failures or biases, or responses influenced by the affective and cog-

nitive context at the time of inquiry. As a remedy, these researchers have advocated for newer alternatives, such as the Experiential Sampling Method (ESM; Csikszentmihalyi & Larson, 1987) and the Day Reconstruction Method (DRM; Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004). Both ESM and DRM methods are centered around the frequent assessment of the emotional or affective experience of the respondent, rather than inquiring about the respondent’s subjective experience in broader, more general terms. Because these on-line ESM reports or daily summaries are obtained in close temporal proximity to the actual experiences of the respondent, the potential problems with recall and memory search heuristics are reduced. But ESM and DRM methods of assessment appear to have some method-specific shortcomings as well.

This paper is structured in six parts. The first section includes a brief review of the emergence of the SWB construct and a comparison of SWB with the alternative construct of Psychological Well-Being (PWB). The next section is focused on global measures of SWB, with the goal of identifying their strengths, their weaknesses, and some of the notable findings that have been achieved through their

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use. The third and fourth sections describe and review some of the emerging alternative assessment methodologies in a similar way. The next section reviews several methodological steps that can reduce or alleviate many of the potential assessment issues surrounding the use of global measures of SWB, and thereby increase the validity and utility of such measures. A concluding section will offer a summary discussion and exploration of future research questions.

Subjective Well-Being (SWB) and Psychological Well-Being (PWB)

The development of the modern empirical study of well-being, as well as the classical philosophical ideas that have emerged in modern well-being constructs, have been examined in detail elsewhere (Diener, 1984; Diener et al., 1999; Kashdan, Biswas-Diener, & King, 2008; Haybron, 2008; Ryff, 1989; Waterman, Schwartz, & Conti, 2008). This paper will offer only a brief summary of these topics; the reader is directed to the sources cited above for a more comprehensive review.

The well-being constructs that lie at the center of current empirical research have generally evolved from two classical philosophical traditions, the eudaimonic tradition and the hedonistic tradition. Based on the philosophy of Aristotle, the eudaimonic tradition proposes that the good life is achieved through virtuous living and fulfilling one's greatest potential, rather than the experience of pleasure per se (although pleasure is a potential by-product of such achievement). The contemporary construct of psychological well-being (PWB; Ryff, 1989; Ryff & Singer, 2008) largely stems from this classical eudaimonic view. The construct of PWB has been proposed as a multidimensional model, encompassing six dimensions: Self-acceptance, positive relations with others, personal growth, purpose in life, environmental mastery, and autonomy (Ryff, 1989; Ryff & Singer, 2008). Similar conceptual themes are found in the long-standing concepts of self-actualization (Maslow 1971) and the fully-functioning person (Rogers, 1961), as well as more recent formulations such as self-determination theory (Ryan & Deci, 2000).

A second classical philosophical view arises from the perspective of Epicurus. Generally, this philosophical stance is known as hedonism. From the alternative viewpoint of hedonism, the experience of well-being involves the achievement of a preponderance of pleasant over unpleasant experiences (Haybron, 2008). Whether the pleasure-producing behaviors are also virtuous behaviors is less clearly articulated; this has left the hedonistic view open to criticism on moral grounds. SWB has generally been characterized as stemming exclusively from the hedonic tradition. Viewing SWB in this light appears to create a clear, distinct conceptual break between SWB and PWB, and implicitly portrays the experience of SWB as the result of a successful, but perhaps amoral, pursuit of pleasure. But the

use of this characterization appears to represent an oversimplification of the SWB construct (Deci & Ryan, 2008).

SWB has generally been viewed as having a tripartite structure (Arthaud-Day, Rode, Mooney, & Near, 2005; Diener, 1984). These components include positive (or pleasant) affect (PA), negative (or unpleasant) affect (NA) and life satisfaction. Clearly PA and NA are hedonistic in nature, but the additional component of life satisfaction expands the SWB construct to include the cognitive evaluation of one's life. Such a judgment is influenced by a respondent's emotional state (Schimmack, 2008), but it is also likely to include evaluation of at least some additional aspects of experience, such as a sense of autonomy and a sense of meaning and purpose in life, elements of well-being that are normally attributed to the eudaimonic perspective. The experience of a preponderance of PA over NA is an important factor in SWB, but the element of life satisfaction appears to reach beyond the bounds of pure hedonistic pursuit to at least partially encompass eudaimonic elements as well.

Thus, distinctions between these constructs, although they are important, have likely been overstated (Deci & Ryan, 2008). An overemphasis of the differences between constructs tends to obscure and obfuscate the overlapping aspects, and may be an impediment to the overall understanding of well-being (Kashdan, Biswas-Diener, & King, 2008). Both PWB and SWB are critical elements of any comprehensive understanding of human experience. From the perspective of the empirical assessment of well-being, it appears that the elements of SWB (positive and negative emotion, satisfaction with life) lend themselves to clear operational definition, and are perhaps more easily translated into the everyday experience of people, relative to the facets of PWB (Kashdan et al., 2008). The relatively straightforward nature of the SWB construct has contributed to its widespread use in a wide array of applied as well as theoretical research designs. Thus it is the assessment of SWB, rather than PWB, that is of concern to many investigators. While remaining mindful of alternative conceptualizations of well-being, in the balance of this paper I will focus on the assessment of SWB. Other sources (eg., Kashdan et al., 2008; Ryan & Deci, 2008; Ryff & Singer, 2008) can provide the interested reader with more detailed discussions of the PWB/SWB discourse.

Global Measures of SWB

The contemporary study of happiness, or SWB, can be argueably be traced to seminal research in the 1960's and 1970's. From a psychological perspective, research on emotion by Bradburn and Caplovitz (1965) produced the provocative finding of the relative independence of PA and NA, and the concept of affect balance. Bradburn introduced the Affect Balance Scale (1969) as an assessment of PA and NA. In the next decade, large scale sociological

surveys (Andrews & Withey, 1976; Campbell, Converse, & Rodgers, 1976), attempted to measure the perceived quality of life in the United States. Included in these surveys was either a single item (Andrews & Withey, 1976) or brief multi-item measure (Campbell, et al., 1976) asking the respondent to make a subjective judgment regarding their satisfaction with the quality of their life. Thus, in the case of these surveys, a single survey item or brief multi-item index served as a global measure of overall life satisfaction. In either case, an element of SWB (quality of life or life satisfaction) is assessed with a global measure.

In a comprehensive review of both philosophical perspectives and empirical findings related to well-being, Diener proposed the construct of SWB (Diener, 1984). As noted above, this construct included both the affective components of PA and NA and the cognitive, judgment component of life satisfaction. As part of this extensive review, Diener (1984) compiled a list of then-existing measures that were intended to assess one or more of the components of SWB (Diener, 1984, p. 546). Some of these measures are focused on the affective components of SWB (e.g., Kammann & Flett, 1983; Larsen 1983), whereas others involve a judgment of the quality of life or life satisfaction (Diener, Emmons, Larsen, & Grifflin, 1985). A few of the listed measures attempt to assess SWB holistically. Many of these measures continue to be used in contemporary research; virtually all of these instruments fall into the “global measures” category.

Reliability is a prerequisite for validity; the reliability of global measures of SWB has been examined in a number of studies. Overall, global measures of SWB have shown good levels of reliability across varying intervals of time. In a meta-analysis, Schimmack and Oishi (2005) reported that multi-item life satisfaction measures yielded temporal reliabilities of about .70 for short intervals; they observed reliabilities for single-item measures of about .50 for comparable intervals. Reliability coefficients for single-item measures declined to the range of the low .20's after 15 years; reliabilities for multi-item scales for the same interval were somewhat higher (Schimmack & Oishi, 2005). As an example of a specific result for a single-item measure, using the data from a long-term panel study, Fujita and Diener (2005) found that the stability coefficient (i.e., reliability coefficient) for a single-item assessment of life satisfaction over a one year period was .56; the stability of the measures then declined to .24 after 16 years. In comparison, the test-retest reliability of the 5-item Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Grifflin, 1985) was observed to be .80 for a one-month span (Steger, Frazier, Oishi, & Kaler, 2006), and .54 across a four-year interval (Magnus, Diener, Fujita, & Pavot, 1993). These varying levels of reliability point to both the temporal stability of global measures and their sensitivity to changes that take place over time. Initially High reliability estimates indicate substantial stability for the life satisfac-

tion component of SWB over relatively short periods of time. The size of reliability coefficients tends to decline as test-retest intervals increase; this greater variability in reported life satisfaction levels may be reflective of ongoing life events and changing life circumstances as time intervals become greater. For example, the life satisfaction of clients in therapy (as measured by the SWLS) showed an increase over the course of their treatment (Pavot & Diener, 1993b). Vitaliano, Russo, Young, Becker, and Maiuro, (1991) showed a decline in the life satisfaction for the spousal caregivers of Alzheimer's patients, as the patients dementia worsened. These and other results (e.g., Lucas & Donnellan, 2007) indicate that global measures of SWB are sensitive to changing conditions and circumstances in the respondent's life.

Contemporary measures that are focused on the affective components of SWB include the Scale of Positive and Negative Experience (SPANE; Diener, Wirtz, Tov, Kim-Prieto, Choi, Oishi, & Biswas-Diener, 2010) and the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). The PANAS includes 10 items intended to assess positive affect, and 10 items focused on negative affect. Using the most global instruction (experienced affect “in general”), the PANAS has shown test-retest reliability of .68 for the positive affect sub-scale and .71 for the negative affect sub-scale over an eight-week interval (Watson et al., 1988). The SPANE includes six positive and six negative affect adjectives, and has shown test-retest reliabilities of .62, .63, and .68 for the positive, negative, and affect-balance composite scales, respectively (Diener et al., 2010). Although these reliability estimates are slightly lower than those for the PANAS scales, it should be noted that the SPANE consists of fewer items (12 adjectives versus 20), and thus may be desirable when time and space constraints are a consideration.

Beyond reliability, another approach to establishing the validity of global measures of SWB is to determine the degree to which such global measures are correlated with other assessments, both other self-reported measures of SWB, and assessments using a different methodology, particularly assessments that are distinct from self-reports. Informant reports are one such source. A number of studies (e.g., Pavot, Diener, Colvin & Sandvik, 1991; Pavot & Diener, 1993a; Sandvik, Diener, & Seidlitz, 1993) have reported moderate correlations between self and informant reports of life satisfaction. In a meta-analysis of 44 studies, Schneider and Schimmack (2009) found a mean correlation between informant-reports and self-reports of well-being of .42. In addition, self-reports of one or more facets of SWB have been found to correlate with evaluations of written interviews by trained raters (Diener et al., 1985). The consistently observed convergence of self-reported, global measures of SWB with these alternative methods of assessment suggests that self-reported measures of SWB represent a valid methodological option.

The reliability and validity of global measures of SWB have been supported; but further questions remain: Do they have utility? Can they be of value in real-world settings? Can they be informative in more than trivial ways?

One approach to examining the question of utility is to consider what understanding of well-being we have gained from research using global measures of SWB. The list of useful specific findings produced from such measures to date is considerable; I will only attempt to offer a handful of examples.

Early findings based on global measures of SWB included the identification of the link between SWB and temperament, particularly the relation of extraversion to Λ and neuroticism to NA (Costa & McCrae, 1980; Lucas, 2008). From this and many subsequent studies, we now understand that personality exerts a substantial (but not exclusive) influence on the level of well-being experienced by individuals. We have come to a better understanding of the process of adaptation, as applied to subjective emotional experience, in terms of both its broad influence (Brickman & Campbell, 1971; Brickman, Coates, & Janoff-Bulman, 1978) and its limits (Diener, Lucas, & Scollon, 2006). Dynamic equilibrium theory (DET; Heady and Wearing, 1992) combines the considerable effects of temperament on SWB with the process of adaptation to explain both the relative stability of SWB within individuals over time and the limited effect that most life events exert on our SWB "set point." A recent revision of DET (Heady, 2008) acknowledges evidence for both the limited effect of adaptation to certain events (e.g., death of a spouse) and the existence of individual differences in adaptation. We understand that many demographic variables, such as gender and age, have limited relations to SWB (Diener, 1984; Diener, et al., 1999), and that the relationship between SWB and wealth is a complex one (Diener, Ng, Harter, & Arora, 2010). We also know that the materialism which often accompanies wealth can be toxic to an individual's SWB (Kasser, 2004). And we are becoming aware of cultural and societal differences, in terms of both the expression of SWB, and sources of SWB (Kitayama, Mesquita, & Karasawa, 2006; Kuppens, Realo, & Diener, 2008; Suh, Diener & Updegraff, 2008). And in recent years, investigators have begun to identify both neurological (e.g. Davidson, 2004) and genetic markers (e.g. DeNeve, 2011) that are associated with the experience of emotion and SWB.

In brief, we have acquired considerable knowledge of SWB, much of it gained through the use of global SWB measures. Yet even that knowledge would be of somewhat limited value if the experience of happiness or SWB itself was not associated with some benefit. A growing and increasingly compelling body of data indicates that there are indeed multiple benefits associated with a positive level of SWB (Lyubomirsky, et al., 2005).

Better social relationships (Diener & Seligman, 2002), a tendency towards prosocial or helping behaviors (Isen,

Horn, & Rosenhan, 1973), more highly rated job performance (Staw, Sutton, & Pelled, 1994) and higher earning potential are included among the benefits of SWB that have been identified thus far. It also appears that positive affect is a factor in increasing resiliency (Cohn, Fredrickson, Brown, Mikels, & Conway, 2009), which in turn acts as a buffer against stress and adversity. Happy people have reduced risk for clinical depression and anxiety problems (Diener & Seligman, 2002). And a large body of evidence (Diener & Chan, 2011) suggests that SWB is associated with good health outcomes and longevity. Positive SWB appears to be associated with desirable outcomes in several important life domains. Based on this knowledge, strategies for enhancing SWB are emerging, although it appears that attempting to achieve "super-happiness" is not necessarily desirable (Diener & Biswas-Diener, 2008; Oishi, Diener, & Lucas, 2007).

Most of the criticisms leveled at global measures of SWB involve two principal areas of concern. The first area of concern is the potential of the respondent's current mood state to influence their assessment of their overall SWB. Several demonstrations of the influence that the respondent's current mood can exert on ratings of their overall happiness have supported these criticisms of global SWB measures (e.g., Schwarz & Clore, 1983; Schwarz & Strack, 1999). In some cases, rather trivial mood-relevant events (e.g., sunny versus cloudy days) have been shown to influence self-reports of well-being (Schwarz & Clore, 1983). It appears that single-item global measures are particularly vulnerable to the influence of current mood (Pavot & Diener, 1993a).

In addition to the potential influence of current mood, a second area of concern involves the cognitive processes that the respondent uses to create their response. A number of studies have indicated that potential memory failures, biases, and cognitive heuristics might, under some circumstances, influence these processes (Schwarz & Strack, 1999). Empirical evidence indicates that the cognitive process used by a respondent can be influenced by the context of the question(s) requiring them to make a judgment of their overall SWB. For example, when a question regarding overall SWB is embedded in a larger survey, the items preceding the SWB inquiry can create a cognitive context that influences the information used to formulate the response to the global SWB item. In a noteworthy demonstration of this item-order effect, Strack, Martin, and Schwarz (1988) presented a question regarding dating frequency either immediately before or after a question about the respondent's overall life satisfaction. When the dating item was presented first, responses to the two items were significantly positively correlated ($r = .66$) when the global life satisfaction item was presented first, the items, a small negative correlation was observed ($r = -.12$) (Strack et al., 1988). Thus, when the respondent's romantic life was highlighted by the dating frequency question, the relative level of satis-

faction within this domain became very salient in forming the response to the subsequent life satisfaction question. When the two were reversed, the salience of the dating frequency domain was reduced. The vastly different results would lead to far different conclusions regarding the importance of dating to SWB, and have obvious implications for the measurement of global SWB.

Taken together, these demonstrations of the effects of current mood and contextual effects represented a strong challenge to global measures of SWB. If everyday mood shifts or small contextual changes can dramatically affect reports of global SWB, to use such reports as data would be ill-advised, to say the least. Subsequent research, however, has produced evidence that suggests that these threats to the validity of global measures of SWB, while potentially important concerns, may not be of as great a magnitude as some of the early demonstrations suggest (Eid & Diener, 2004; Pavot & Diener, 1993a; Schimmack & Oishi, 2005). Further, much of the potential influence of these effects can be reduced, if not eliminated, with methodological care. Specific methodological strategies for increasing the validity of global SWB measurement will be discussed in a later section.

Experiential Sampling Method (ESM)

Originating in the groundbreaking work by Csikszentmihalyi and colleagues (Csikszentmihalyi, & Larson, 1987; Csikszentmihalyi, Larson, & Prescott, 1977), which resulted in the concept of “flow” (Csikszentmihalyi, 1990), ESM methodology has become a prominent technique for the assessment of current emotional experience. When using ESM, frequent experiential reports of the respondent’s ongoing activity and emotional state are gathered, generally via some form of digital technology. Across time (typically several days or weeks), these accumulating experiential reports provide a detailed readout of the respondent’s emotional dynamics and level of SWB. Proponents of ESM point out that these frequent reports are made in close temporal proximity, if not during, the individual’s experience of emotion, and therefore are not subject to the same memory problems and biases as are retrospective global measures. Further, because the reports are obtained across multiple times and situations, contextual factors which might influence responses can be analyzed and compared to the emotional experiences associated with them. The ecological validity of ESM tends to be high; reports are gathered in real-world settings rather than in the laboratory (Scollon, Kim-Prieto, & Diener, 2003). Data obtained with this method of assessment have been characterized as approaching objective happiness (Kahneman, 1999), and have been termed the “gold standard” of well-being assessment (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004, p. 431). ESM potentially represents a sorely needed alternative methodology for examining emotional experience and SWB.

Despite its high potential to eliminate many of the cognitive issues that are concerns for retrospective global measures of SWB, the ESM has some limiting factors. One major issue involves the amount and complexity of the resulting data. Even a relative brief interval of assessment using the ESM approach tends to produce a very large mass of data that must be analyzed (Scollon et al., 2003). ESM studies tend to involve considerable costs, in terms of both money and time, and they are likely to be perceived as demanding and intrusive from the perspective of the respondent. After the initial novelty of being studied wears off, participants may grow tired of completing the reports, and resort to simply repeating the same responses over time in a stereotypical way. For example, Stone, Kessler, and Haythornwaite (1991) have estimated that the quality of data tends to decline after 2-4 weeks of data collection.

Day Reconstruction Method (DRM)

The DRM (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004) occupies something of an intermediate position between ESM and traditional global reports. The DRM method involves a detailed account of the respondent’s entire day, reported in a daily diary format. The respondent is asked to report on their experiences, broken down into specific episodes (e.g., moving to and from different locations, interacting with different people). The various episodes are then rated, primarily for their emotion content. Thus the DRM method moves away from the demands for random responses spread across the day to a predictable (and more controllable) diary entry at the end of the day. It is a less intrusive approach which obtains responses in reasonable temporal proximity to the experienced events. Further, the expense and constant monitoring of an ongoing digital response system is eliminated.

The DRM approach offers a number of advantages when compared to global measures or to ESM, yet there may be inherent drawbacks as well. Although it does not involve random intrusions during the respondent’s daily routine, it does require a substantial block of time at the end of the day, in order to complete the daily diary entry. The exact amount of time required would of course vary, but is estimated to typically be a minimum of three-quarters of an hour (Kahneman et al., 2004). A further issue is that the DRM involves a temporal separation between the experiences of the day and the report of the experiences at the end of the day, which could reintroduce some of the memory issues inherent with global SWB reports, albeit to a lesser extent. Like ESM, DRM tends to be directed toward the temporally proximal affective experiences of the respondent; factors that may be sources of satisfaction such as a sense of engagement or meaning in life might not be fully accounted for.

For both the ESM and DRM approaches, current evidence suggests that the data that is produced is distinct

from data obtained via global measures of SWB. Global life satisfaction measures tend to correlate with variables related to material well-being, such as the experience of unemployment; emotion readouts from ESM tend to be more reflective of well-being in social relationships, such as the loss of a spouse (Schimmack, 2009). At the societal level, global life evaluations reveal much greater between-nation differences than do emotion reports (Helliwell & Barrington Leigh, 2010).

Improving the Validity of Global Measures of SWB

As summarized in an earlier section, Global Measures of SWB have demonstrated both validity and utility across a wide range of settings and uses. But in some respects, progress in developing a coherent summary of the overall SWB database has been disappointing. In a report some years ago, Diener and Seligman (2004) described the then-current state of well-being data as being obtained from a “haphazard mix” (p. 4) of assessment instruments of varying quality, usually completed by non-representative samples of respondents. It would be encouraging to report great progress toward improving the coherence of the database since that time, but there is evidence of only modest progress in a positive direction.

Among many possible sources for this state of disarray several seem particularly salient. One common problem is that many studies have not assessed SWB in its entirety. As noted earlier, a reasonable and empirically supported consensus for a three component model of SWB has been reached; the PA, NA, and life satisfaction components are empirically separable and show some level of empirical distinctiveness (Arthaud-Day et al., 2005; Lucas, Diener, & Suh, 1996). Yet many researchers will report assessing “subjective well-being” when they have only measured one or two components of the construct. For example, one study might report assessing “SWB” when only a measure of the life satisfaction component has been included; another study might report an assessment of “SWB” when only affect-relevant data has been obtained with a measure of PA and NA. This “apples to oranges” comparison can be a source of confusion when differing empirical patterns result. Unfortunately, a large proportion of relevant studies have failed to assess all three components of SWB (Diener & Seligman, 2004); this shortcoming, in turn, has contributed to confusion and empirical anomalies in the data.

The solution in this case is straightforward. More care must be taken by researchers to assess all three components of SWB with instruments that have demonstrated an acceptable level of reliability and validity. In cases where space or time limitations preclude detailed assessment, investigators should be explicit in their reports regarding the characteristics and focus of their specific measure.

A second concern in SWB assessment involves the overwhelming preponderance of cross-sectional studies using a single methodology. Although single-method, cross-sectional studies can be useful, particularly in a new area of research, they tend to be of limited usefulness in answering advanced empirical questions. For example, a cross-sectional study in which a self-reported measure of SWB is found to be correlated with a self-reported measure of a particular personality trait can serve to focus attention on the relation between the two constructs. But it is not informative regarding causality, or the dynamics of the relation over time, nor even the degree to which the relation is the product of mere shared-method variance.

Another concern with single-method cross-sectional SWB research involves the potential effects of transient mood states and contextual factors that were described in an earlier section. Although the effects of these factors is often modest (e.g., Eid & Diener, 2004; Schimmack & Oishi, 2005), their potential to influence self-reports of SWB has been demonstrated (Schwarz & Strack, 1999). When a single assessment of SWB is obtained from a respondent at a single point in time, the degree to which the response has been influenced by transient mood or contextual factors remains an open question. But if SWB is assessed over multiple occasions, the effects of transient mood states and contextual variations can be tracked and potentially separated from long term SWB.

A solution to these possible threats to the validity of global SWB measures is to incorporate such assessments into a multi-method, longitudinal research design. Including informant reports in addition to self-reports of SWB, and measuring SWB on repeated occasions, can serve to greatly enhance confidence in the validity of the resulting data. Many classic longitudinal studies have spanned multiple decades of time; the image of such a time commitment has likely had a discouraging effect on researchers who otherwise might consider longitudinal designs. But much shorter intervals between assessments are possible. Using test-retest intervals as short as three to four weeks, with assessments at the beginning, middle, and end of the interval for example, can still produce useful longitudinal data that can address many validity concerns. Multiple-method, longitudinal research designs clearly represent an increased commitment in time and effort over simple, cross-sectional studies. But their potential worth is greatly enhanced by this additional investment, and they can still be far less complex and demanding than ESM or DRM methodology.

Discussion and Future Directions

In the general case, the overall validity and usefulness of global measures of SWB has been supported across a number of studies and within multiple applied settings. Potential threats to the validity of such global measures

have been identified and demonstrated. These concerns should be considered carefully as researchers design their assessments; for example, the use of multiple-method, longitudinal designs is highly encouraged as a strategy for future work that can greatly enhance confidence in the resulting data.

ESM and DRM represent important new methodological innovations which provide a complimentary approach to traditional global SWB assessments. Both ESM and DRM approaches avoid many of the potential problems of global measures, such as transient mood and contextual effects. But ESM and DRM involve complex designs and substantial commitment from respondents; the large data sets that they yield demand extensive analysis. It appears that ESM and DRM can provide accurate moment-to-moment readouts of the emotion components of SWB, but may miss some reflective, cognitive aspects. The sometimes observed discrepancies (e.g., Diener et al., 2010) between data obtained from ESM and DRM and data obtained from global measures of SWB suggests that these methods might be optimally informative when used together, rather than as exclusive alternatives. Global measures may sometimes be the only viable alternative when the situation imposes limitations on time and design complexity.

Another growing methodological trend is the use of the internet to gather data. Given the growing popularity of social media and “smart” phones, it is clear that many people are connected to the internet for some portion of the day. The internet could potentially greatly facilitate methodologies such as ESM and DRM, as it could eliminate the need for special data recording devices, and perhaps be less intrusive if the respondent was already connected to the internet. As an alternative to (or perhaps in conjunction with) ESM or DRM methodology, research involving global measures of SWB could also be conducted via the internet. Seligman, Steen, Park, and Peterson (2005) have made use of a website to gather data and demonstrate the effectiveness of techniques to increase well-being.

In addition to their continuing role in theoretical SWB research, global measures are likely to have a central role in emerging national well-being indices (Diener, 2000, 2006). Global measures, particularly life satisfaction measures, tend to effectively reflect differences between nations in terms of political rights and civil rights (Diener, Diener, & Diener, 1995). Global life evaluations correlate strongly with economic indicators (Diener, Kahneman, Tov, & Arora, 2010; Diener et al., 2010). It appears that global measures of SWB, with appropriate methodological care, will have a useful role in the assessment of SWB for some time to come.

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