

# New Measures of Well-Being

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**Abstract** We present new measures of well-being to assess the following concepts: 1. Psychological Well-Being (PWB); 2. Positive Feelings, Negative Feelings, and the balance between the two (SPANE-P, N, B); and 3. Positive Thinking. The PWB scale is a short 8-item summary survey of the person's self-perceived functioning in important areas such as relationships, self-esteem, purpose and meaning, and optimism. The scale is substantially correlated with other psychological well-being scales, but is briefer. The scale provides a single overall psychological well-being score and does not yield scores for various components of well-being. The Scale of Positive and Negative Experience (SPANE) yields a score for positive experience and feelings (6 items), a score for negative experience and feelings (6 items), and the two can be combined to create an experience balance score. This 12-item brief scale has a number of desirable features compared to earlier measures of positive and negative feelings. In particular, the scale assesses with a few items a broad range of negative and positive experiences and feelings, not just those of a certain type, and is based on the frequency of feelings during the past month. A scale to measure Positive Thinking is also presented. Basic psychometric statistics are presented for the scales based on 573 college students at five universities.

## New Measures of Well-Being

When examining the standard scales for assessing well-being, we were impressed with the need for measurement scales in several domains—positive and negative feelings, positive thinking, and a brief scale of psychological well-being (PWB).

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The scale in this article entitled Psychological Well-Being has since been renamed as the Flourishing Scale. Further psychometrics and other data concerning the scale can be found in the article:

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These concepts are related to one another and to life satisfaction, although the types of well-being are separable (Lucas, Diener, & Suh, 1996; Ryff, 1989) and must, therefore, be assessed separately. Although scales exist to measure several of these constructs, the instruments have limitations that make additional measures desirable. We present a short measure of psychological well-being (PWB) designed to complement the longer scales that are available and a measure of negative and positive feelings that is designed to better assess ongoing feelings of well-being. An initial scale to assess positive thinking contains both positive and negative items. We present the psychometric properties of the scales, such as reliabilities and convergent correlations with other relevant measures.

The scales in this chapter are similar to measures that were first presented in Diener and Biswas-Diener's *Happiness: Unlocking the Mysteries of Psychological Wealth* (2008). Several items were altered or dropped, and we report here psychometric analyses that examined features of the revised scales such as internal and temporal reliability, factor structure, discriminant validity of the scales from one another, and convergent validity with other similar scales. The measures in this chapter, and their shortened names, are:

- Positive Experience (SPANE-P)
- Negative Experience (SPANE-N)
- The Balance of Positive and Negative Experience (SPANE-B)
- Positive Thinking (PTS)
- Psychological Well-being (PWB)

## Why New Scales?

### *Positive and Negative Feelings*

Scales exist to assess pleasant and unpleasant emotions, and probably the most widely used is Watson, Clark, and Tellegen's (1988) Positive and Negative Affect Schedule, called the PANAS. There are several limitations of this measure that motivated us to develop an alternative scale to assess pleasant versus unpleasant feelings. The PANAS was designed to measure a specific conception of emotional well-being and ill-being, and thus assesses some states that are usually not considered to be feelings. In addition, the scale fails to measure a number of important positive and negative feelings that are considered to be important to well-being. For example, the Positive Affect items of the PANAS include "strong," "alert," "active," and "determined," which many would not consider to be feelings. One can feel "active" and "alert" if one is scared, and "strong" when one does not feel emotional. "Determined" can be seen as a motivational state, but is not necessarily a pleasant or desirable one in all instances. For example, respondents might be "determined" because they are angry and vengeful. In addition, some feelings on the PANAS, such as "inspired," are rare and very specific. Thus, the scale does not with certainty reflect feelings that will enhance well-being.

The Negative Affect items include many adjectives that are more widely agreed to be emotional experiences, but some feelings are notable by their absence. For example, the scale does not include “sad” or “depressed,” which are core negative feelings. Indeed, the “depression” facet of neuroticism predicts life satisfaction better than all facets of neuroticism (e.g., anxiety, anger, vulnerability) combined (Schimmack, Oishi, Furr, & Funder, 2004), suggesting the centrality of “sad” and “depressed” in understanding people’s well-being. Furthermore, some feelings are represented by a number of similar adjectives, such as “jittery,” “nervous,” “scared,” and “afraid.” The inclusion of four synonyms for anxiety means that the scale is heavily weighted with one specific type of feeling. Thus, fully forty percent of the items represent various forms of fear, whereas sadness is not represented at all. This derives from the fact that Watson and colleagues consider negative feelings to be both negative and aroused, and, therefore, unaroused, unpleasant feelings were omitted from their scale. Thus, the PANAS represents a narrow definition of positive and negative feelings based on highly aroused forms of these feelings. However, well-being and ill-being include many feelings that are not of the highly aroused type.

As reviewed above, there are a number of important feelings that are omitted from the PANAS. For example, love and other terms referring to affectionate feelings are usually considered to be important emotions but are omitted from the PANAS. Feelings such as pride, envy and jealousy, contentment, joy, and happiness are not assessed. Although the expanded PANAS-X (Watson & Clark, 1994) includes many of these feelings, this scale is not used frequently in the well-being field, in part because of its length, and in part because it measures attentiveness, joviality, and self-assurance that are not precisely the types of feelings that well-being researchers want to assess.

Another important shortcoming of the PANAS and other existing scales is the problem that they omit feelings that might be important in some cultures or to certain individuals. For example, *schadenfreude* is an emotion that is often mentioned as a German emotion-word for which there is no word in English. Scollon, Diener, Oishi, and Biswas-Diener (2004) mention words such as “sukhi” and “aviman” in India and “shitashima” and “fureai” in Japan, which do not exist in English or in many other cultures. Furthermore, East Asians deem low-arousal positive emotions such as “calm” and “relaxed” to be more desirable than North Americans do (Tsai, Knutson, & Fund, 2006), suggesting that low arousal positive emotions that are missing from the PANAS might be important correlates of well-being in other cultures. Finally, high arousal positive emotions are stronger predictors of life satisfaction among sensation seekers than among non-sensation seekers, on weekends than on weekdays, and when the concept “excitement” is experimentally primed than when the concept “peace” is primed (Oishi, Schimmack, & Colcombe, 2003). In sum, the PANAS is limited in that it includes descriptors that are not feelings and omits other feelings that are widely believed to be core emotional feelings, as well as emotions that are important in some cultures, to some individuals, and in certain situations. The scale does not reflect the difference in the desirability of feelings in different contexts and cultures.

An example of why the adequate sampling of feelings is essential for an adequate measure of well-being can be offered based on a hypothetical comparison of young and old adults. On the PANAS positive emotions scale, young adults might score higher than the elderly simply because they are more energetic and lead lives that are more active and arousing. Young people are likely to score higher on terms such as “active” and “strong,” even if they feel no more positive than old people. In contrast, the elderly might score higher on pleasant terms such as “contented” and “happy,” although these feelings are not assessed by the PANAS. Thus, the PANAS might yield conclusions that would be completely reversed if a different set of adjectives were employed. The PANAS assesses highly activated or aroused states rather than the full range of pleasant/desirable and unpleasant/undesirable feelings.

What of other scales designed to measure positive and negative feelings? Lucas, Diener, and Larsen (2003) review measures of positive emotions, including the PANAS and other scales. Several of the scales they review are very long, and each of them suffers from certain deficiencies. For example, some of the scales are based on a checklist format that yields less reliable results, and several of the scales measure concepts such as surprise, joviality, and vigor that do not adequately sample the positive feelings composing well-being.

In conclusion, we created a scale called the Scale of Positive and Negative Experience, or SPANE for short. The SPANE brief name is followed by a P, N, or B to indicate the scales for Positive Experience, Negative Experience, and the Balance between the two. The SPANE includes broad descriptors for positive and negative feelings, as well as a number of positive and negative emotions that are central to the experience of well-being.

How can we avoid the omission of feelings, which is a major shortcoming of the PANAS, and include all positive and negative feelings without making an exhaustive list that would create a scale that is prohibitively long? Our solution was to include broad desirable and undesirable words that describe in general terms the feelings people approach and avoid. For the desirable feelings we included three descriptors: “Good,” “Positive,” and “Pleasant.” These three adjectives all describe the feelings people seek and value, and should apply to a wide range of more specific feelings. Thus, our scale can reflect the indefinite number of positive feelings because it uses broad words that apply to all of these experiences. The three adjectives are each alternative ways of describing the feelings that people desire and enjoy, regardless of arousal and other qualities.

Similarly, for negative feelings, we used three general descriptors that apply to all feelings that people avoid: “Bad,” “Negative,” and “Unpleasant.” Again, these items should allow us to reflect specific feelings that a scale with narrower items might miss. If people were to mean something different by “bad” and “unpleasant,” this will be revealed in our empirical findings. In other words, if there are still concerns because the three good and three bad words are not identical in meaning and refer to different qualities of feelings, this should become evident when we analyze the associations of the items.

Another problem in measuring affective well-being is that some feelings might be experienced as positive in some cultures and as negative in other cultures, for

example “pride” and “gratitude” (Kitayama, Markus, & Kurosawa, 2000; Scollon et al., 2004; Oishi, 2007). By inclusion of general desirable feelings (good, positive, and pleasant) and undesirable feelings (bad, negative, and unpleasant), we largely avoid this problem because we allow the respondents themselves to determine whether their experience is pleasant/desirable or unpleasant/undesirable. If people think of certain pleasant feelings as being undesirable, this will be uncovered in our findings.

By using the general labels for feelings, we also side-step the knotty debate about which feelings are truly emotional. Regardless of whether an experience is an emotion, a mood, or neither, it is captured in our measure if it is perceived to be a desirable or undesirable feeling. For example, our scale should reflect states that are pleasant and desirable but might not be emotions, for example “interested” and “engaged.” In addition, if people are interested, but unpleasantly so, this will be reflected in our three general negative terms. Thus, the use of general feelings allows us to assess a full range of positive and negative feelings regardless of their source, and this approach seems to be the most sensible one when it is people’s subjective well-being that is of interest. Our scale reflects pleasures and pains as well as emotions. We need not constrain ourselves to emotion scales, which were created by researchers whose goal was to study emotions.

Besides the six items used to measure general feelings, our positive and negative feelings scales also included a number of important emotions. For positive feelings beyond the general three, we included: “Contented,” “Happy,” and “Joyful.” These were all considered to be so important and widely desirable that they were deemed worthy of assessment beyond the general adjectives. Schimmack (2003) found that “happy” predicts life satisfaction beyond specific positive emotions such as pride, being affectionate, or excited, but that these emotions did not predict life satisfaction after “happy” was controlled. For negative feelings we included: “Sad,” “Afraid,” and “Depressed.” Thus, beyond the general descriptors of negative and positive feelings, we included feelings that are often considered to be the most important forms of these experiences related to feelings of well-being and ill-being. Furthermore, these terms reflect a range of activation from low to high arousal, and, therefore, capture feelings from around the emotion circumplex (see Larsen & Diener, 1992, for a description of this structure).

### ***Psychological Well-Being***

In recent years, a form of well-being in addition to subjective well-being has emerged from theorists such as Deci and Ryan (e.g., Ryan & Deci, 2000, 2001) and Ryff (1989) based on the idea of universal human needs and effective functioning. These approaches are labeled “psychological well-being” and are based in part on humanistic theories of positive functioning. The authors argue that they are distinct from subjective feelings of well-being even if they overlap empirically. Whereas subjective well-being is defined as people’s evaluations of their lives, psychological well-being is thought to represent optimal human functioning. The aspects of

psychological well-being we assess in the Psychological Well-Being Scale (PWB), and names of some of those who have been advocates for the desirability of these states are:

- Meaning and purpose (Ryff; Seligman)
- Supportive and rewarding relationships (Ryff; Deci and Ryan)
- Engaged and interested (Csikszentmihalyi; Ryff; Seligman)
- Contribute to the well-being of others (Maslow; Ryff; Deci and Ryan)
- Competency (Ryff; Deci and Ryan)
- Self-acceptance (Maslow; Ryff)
- Optimism (Seligman)
- Being respected (Maslow; Ryff)

Our goal was to be very brief, and yet reasonably comprehensive. Importantly, we do not claim to fully measure each of the separate components of PWB because our goal of brevity precluded this. Our aim was to create a broad overview of a person's PWB, and researchers who need valid measures of the specific components must employ longer scales.

Why not simply use the existing scales by Ryff or Deci and Ryan? First, we wanted a very brief scale because many surveys cannot include measures with more than a short number of items. Second, we hoped to include several aspects of well-being that are not included in the existing scales, for example "engagement and interest," and "optimism." Csikszentmihalyi (1990) has made the case that engagement and flow are core components of well-being and psychological capital, and, therefore, we included one item measuring this domain. Seligman (2002) suggested that well-being is made up of feelings of engagement and interest, pleasure, and meaning and purpose. Peterson and Seligman (2004) made the case that optimism is important to healthy functioning, and, therefore, we assessed this concept. We employed an item on feeling respected, a human need listed by Maslow (1958). Finally, we included an item on contributing to the well-being and happiness of others, in part because this has been related to health (Brown, Nesse, Vinokur, & Smith, 2003). In addition, some models of effective functioning have been criticized for being too individualistic and not weighting a person's contributions to others. From the Ryff and Deci and Ryan theories, we created items to assess: meaning, positive social relationships (including helping others and one's community), self-esteem, and competence and mastery. Thus, our scale is a broad measure of a number of aspects of psychological well-being using a very brief format.

### ***Positive and Negative Thinking***

A major recommendation for people seeking happiness has been that they need to develop positive thinking and decrease their propensity for negative thinking. Norman Vincent Peale (1956) popularized this notion with his bestseller *The Power of Positive Thinking*. Although his advice was seen as naïve in some academic circles, the idea that people's habits of thoughts could influence their subjective well-being became respectable with the proven effectiveness of cognitive behavioral

therapy (Meichenbaum, 1977). Aaron Beck, Rush, Shaw, and Emery (1979) and Albert Ellis (2001) advanced the idea that the way people think about the world can influence their emotions and feelings of well-being. Richard Lazarus (1982) demonstrated in laboratory experiments that the way people thought about perceived stimuli has a large influence on their responses to them. Thus, Peale's ideas became more respectable among psychologists. At the same time, Buddhist and other Eastern approaches to contentment began to receive attention and study in the west (Tsai, Miao, & Seppala, 2007).

People's habits of positive thinking are not the sole determinant of happiness because circumstances can influence well-being as well. Some circumstances and societies are so overwhelmingly negative as to overpower positive thinkers. However, the propensity to positive or negative thinking can influence a person's feelings of well-being, controlling for environmental circumstances. Thus, we developed and assessed a measure of the propensity to view things in positive versus negative terms. This tendency was measured earlier by Judge and Bretz (1993), who assessed people's responses to neutral objects such as standard paper, and to things that are common within a culture and therefore constant across people, such as speed limits.

Our approach to measuring a propensity to positive thinking was to assess people's positive versus negative thinking about important aspects of their lives—themselves, one's past and future, other people, and the world in general. Our Positive Thinking Scale (PTS) focused primarily on people's view of themselves and other people. Rather than examine people's positivity about neutral objects, we chose to examine people's thought propensities about important aspects of life, of oneself, and of others. Which approach leads to an assessment that best reflects one's general thought tendencies will be a question for future research, as will be the incremental validity beyond other types of measures.

## ***Satisfaction with Life***

In our study, we included an existing measure, the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) that has received extensive psychometric testing. Several thorough reviews of the scale exist (Pavot & Diener, 1993; Pavot & Diener, 2008). The primary reason for inclusion of the life satisfaction scale in the current study was to examine the associations of our new scales with it, and to determine whether they can predict life satisfaction.

## **The Current Study**

### ***Measures***

#### **The Scale of Positive and Negative Experience (SPANE)**

This measure is a brief 12-item scale with six items devoted to positive experience and six items designed to assess negative experience. Because the scale includes very general positive and negative experience and feelings, it assesses the full range

of positive and negative experience, including specific feelings that may be defined by one's culture. Because of the general items included in the scale, it can assess not only the pleasant and unpleasant emotional feelings that are the focus of most scales, but also reflects other states such as interest, flow and engagement, and physical pleasure.

The SPANE has several other desirable features. It asks people to recall their activities and experiences during the past four weeks and to report these feelings. The period of one month was selected in order to give an adequate sample of feelings, rather than focusing on a short time that might not have been representative. At the same time, events occurring during the previous month can be easily recalled, and are, therefore, more likely to be based on experience, not just on a person's general self-concept. Thus, one month was selected in order to provide a balance between sampling adequacy and memory accuracy. The scale items, however, can be used with other time frames, such as "Yesterday," "Past week," or "In general."

Another desirable feature of the SPANE is that the responses are in terms of the amount of time during which the respondent has experienced each feeling. Responses linked to time, such as "Very rarely or never" and "Very often or always," might possibly vary in interpretation across respondents but are much more likely than many types of descriptors to be used in a similar way across people. After all, "Always" and "Never" are absolute terms that should have the same meaning to all respondents. In contrast, measures that inquire how much a person had particular experiences, but without indicating either time or intensity, are open to greater ambiguity. Intensity is harder to calibrate across respondents because they can mean different things by "a lot" or "slightly." Furthermore, when scales inquire as to how much a person experiences a particular feeling, and they do not indicate time or intensity, the response is ambiguous in terms of whether the person felt the feeling rarely but very intensely, frequently but very mildly, or some other combination of time and intensity. Thus, our scale makes explicit the time duration frame of reference and uses response categories that are tied to objective time.

Another advantage of using the time response format is that it is more closely related to global well-being than is emotional intensity. Diener, Sandvik, and Pavot (1991) argued that global reports of well-being are more closely linked to the duration of positive versus negative experiences than to the intensity of the experiences. For one thing, it is possible that people who experience positive emotions in a generally intense way are also more likely to experience negative emotions in an intense way as well, thus negating the enhanced value of intense positive experiences. Diener, Colvin, Pavot, and Allman (1991) demonstrated that some of the factors that lead to intense positive feelings when a person succeeds will create more intense negative feelings when the person fails, for example. Diener et al. showed that the duration of positive versus negative experiences is empirically a stronger predictor of general well-being than is the intensity of these feelings. Thus, our use of the time response format should enhance the validity of our feelings scale.

The SPANE consists of 12 items, six of which are positive and six of which are negative. Each item is scored on a scale ranging from 1 to 5, where 1 represents "very rarely or never" and 5 represents "very often or always." The positive and



negative scales are scored separately because of the partial independence or separability of the two types of feelings. The summed positive score can range from 6 to 30, and the negative scale has the same range. The two scores can be combined by subtracting the negative score from the positive score, and the resulting SPANE-B scores can range from  $-24$  to  $24$ . The SPANE is shown in the Appendix.

### ***Psychological Well-Being (PWB)***

The Psychological Well-Being scale (PWB) consists of eight items describing important aspects of human functioning ranging from positive relationships, to feelings of competence, to having meaning and purpose in life. Each item is answered on a 1–7 scale that ranges from Strong Disagreement to Strong Agreement. All items are phrased in a positive direction. Scores can range from 8 (Strong Disagreement with all items) to 56 (Strong Agreement with all items). High scores signify that respondents view themselves in very positive terms in diverse areas of functioning. Although the scale does not individually measure facets of psychological well-being, it does yield an overview of positive functioning across the domains that are widely believed to be important. The PWB is shown in the Appendix.

### ***Positive Thinking Scale (PTS)***

The Positive Thinking Scale (PTS) is composed of 22 items, 11 of which represent positive thoughts and perceptions and 11 of which represent low negative thinking. The 22 items are answered on a yes–no format. The negative items are reverse scored with a “no” response counting as a “1”; and for the positive items a “yes” response counts as a “1.” After reversing the negative items, the 22 items are added, thus yielding scores that range from 0 to 22. The scale is presented in the Appendix.

### ***Participants***

Data collection occurred for all samples in the fall of 2008. The *N*'s for different analyses vary in size because a few participants had missing data, and because the ancillary scales were given at some locations but not at others.

*Sample 1.* Respondents from the Introductory Psychology participant pool at the University of Illinois volunteered to participate in order to earn course bonus points during the fall semester of 2008. The sample included 61 women and 13 men. Participants answered the survey twice, approximately one month apart. Besides the core new scales, respondents at this and some other locations completed additional surveys for the purpose of examining convergent validity.

*Sample 2.* College of New Jersey had 75 women and 11 men who responded to the survey at one particular time only.

*Sample 3.* Singapore Management University had 115 female and 66 male respondents.

*Sample 4.* California State University East Bay had 64 respondents, with 10 males, 41 females, and 13 who did not indicate their sex.

*Sample 5.* Students at East Carolina University responded twice to the core survey scales, with 31 male and 104 female participants, and 33 who did not indicate their sex.

### ***Convergent Validity Scales***

We used a number of well-being measures in order to determine the convergence of the new scales with established measures. For traditional subjective well-being, we included the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985), and, at some locations, Fordyce's (1988) single item measure of happiness, which is answered on a 11-point scale ranging from "Extremely happy (feeling ecstatic, joyous, fantastic!" down to "Extremely unhappy (utterly depressed, completely down)". Lyubomirsky and Lepper's (1999) 4-item scale of happiness was also used at some universities. The Lyubomirsky scale (SHS) asks how happy the respondent is in four different ways. We also included the Watson and colleagues' PANAS (1988), which is currently the most widespread measure of positive and negative feelings. We also included at some locations Scheier, Carver, and Bridges' LOT-R (1994), which assesses optimism, and the UCLA Loneliness Scale (Russell, 1996), which is a marker of poor social relationships. We also included Deci and Ryan's Basic Need Satisfaction Scale (BSN; 2000), which has 21 items to assess competence, supportive relationships, and autonomy. Finally, we administered the 54-item version of Ryff's (2008) scale with 9 items to measure each of the following concepts: Autonomy, Growth, Mastery, Relationships, Self-esteem, and Purpose and Meaning. Thus, we can determine the associations of our new scales with a wide variety of other well-being measures.

### **Results**

Table 1 shows the means and standard deviations for each of the new scales, as well as the internal reliabilities, temporal reliabilities, and scale ranges. As can be seen, the mean score for each of the scales is in the positive range above the neutral point of the scales. The internal reliabilities are adequate, and the temporal stabilities show that some changes occurred over the period of one month, but that there was nonetheless substantial stability over time in the scores.

Table 2 presents the scores for the scales that correspond to approximate percentiles, in order to provide norms for the scales. It must be remembered, however,

**Table 1** Psychometric statistics on the new scales

	Mean (SD) <sup>1</sup>	Cronbach's alpha	Temporal stability <sup>2</sup>	Scale range
Psychological Well-Being				
PWB	45.4 (6.2)	0.86 N=568	0.71 N=261	8–56
SPANE (Feelings)				
P (Positive)	22.1 (3.7)	0.84 N=572	0.62 N=261	6–30
N (Negative)	15.6 (3.9)	0.80 N=567	0.62 N=261	6–30
B (Balance)	6.5 (6.7)	0.88 N=566	0.68 N=261	–24 to 24
Positive Attitudes (PTS)				
Positive	9.2 (2.0)	0.70 N=564	0.73 N= 261	0–11
Negative <sup>3</sup>	6.4 (2.8)	0.75 N=563	0.76 N=261	0–11
Total	15.5 (4.2)	0.81 N=555	0.79 N=261	0–22

<sup>1</sup>N was 573 for the means.

<sup>2</sup>All values  $p < 0.001$ .

<sup>3</sup>High score signifies low negative attitudes.

that these norms are based only on college students. Norms for broader groups will need to be generated in future research.

Table 3 shows the correlations of the new scales with each other, and with the Satisfaction with Life Scale. As can be seen, the scales correlate at a moderate level with each other and with life satisfaction. This suggests that there are some common influences that affect feelings, attitudes, life satisfaction, and psychological well-being. It is possible that response styles, self-perceptions, and general well-being affect all of the scales, and these different influences will need to be explored in future studies.

Table 4 presents the correlations of the new feeling-scales with other scales that measure similar concepts in order to examine the convergent validity of the scales. As can be seen, the SPANE scales are substantially associated with the PANAS scales and the more global measures of happiness as well. The convergence of the SPANE scales and the corresponding PANAS scales was 0.59, 0.70, and 0.77. The SPANE positive and negative experience scales correlate more strongly with the SHS and Fordyce scales than do the corresponding PANAS scales; but the PANAS does as well when it comes to the balance score, perhaps because the balance score reflects the positive–negative dimension more strongly, with less influence from arousal than occurs in the individual positive and negative scales of the PANAS. Whereas the individual PANAS scales are highly saturated with high arousal emotions, the difference between the positive and negative scales may better capture the

**Table 2** Norms for new scales approximate percentile rankings

Scale	Approximate percentile	Score
PWB (Range 8–56)	10	36
	20	40
	50	46
	80	50
	90	52
SPANE-P (Range 6–30)	10	17
	20	18
	50	22
	80	25
	90	26
SPANE-N (Range 6–30)	10	10
	20	12
	50	15
	80	18
	90	20
SPANE-B (Range –24 to 24)	10	–3
	20	0
	50	6
	80	11
	90	14
PTS (Range 0–22)	10	9
	20	12
	50	16
	80	19
	90	20

**Table 3** Intercorrelations of scales

	PWB	SPANE-P	SPANE-N	SPANE-B	PTS-P	PTS-N	PTS-Tot
PWB							
SPANE-P	0.62						
SPANE-N	0.51	0.58					
SPANE-B	0.64	0.88	0.90				
PTS-P	0.60	0.45	0.40	0.48			
PTS-N	0.53	0.46	0.50	0.54	0.48		
PTS-Tot	0.64	0.53	0.53	0.59	0.81	0.91	
SWLS	0.62	0.55	0.42	0.54	0.50	0.52	0.59

*N* = 563; all *p*'s < 0.001.

**Table 4** Correlations of feelings scales

	SPANE-P	SPANE-N	SPANE-B	PANAS-PA	PANAS-NA	PANAS-BAL
PANAS-PA	0.59	–0.41	0.57			
PANAS-NA	–0.41	0.70	–0.63	–0.24		
PANAS-BAL	0.65	–0.71	0.77	0.77	–0.80	
SHS	0.66	–0.52	0.67	0.60	–0.45	0.68
Fordyce	0.65	–0.51	0.66	0.56	–0.46	0.65

*N* = 563, all *p*'s < 0.001.

**Table 5** Correlations of psychological well-being scales

	PWB	BSN total
BSN-Total	0.69	
<i>Ryff Scales</i>		
Autonomy	0.39	0.41
Mastery	0.73	0.76
Growth	0.67	0.65
Relationships	0.65	0.81
Purpose	0.63	0.66
Self-Acceptance	0.70	0.76
Total	0.80	0.86

$N = 74$ ; all  $p$ 's  $< .001$ .

pleasantness dimension of emotions, and, therefore, reflect well-being more than the individual PANAS scales.

Table 5 represents the correlations of the Psychological Well-Being scale with two other related scales, Ryff's (2008) and Ryan and Deci's (2000). These scales provide yardsticks against which to assess the convergent validity of the shorter PWB. As can be seen, PWB correlated with the other scales moderately to strongly, except for the two Autonomy scales, which were more modestly associated with PWB.

### ***Factor Structure of the Scales***

Each of the scales was subjected to a principal axis factor analysis. For the SPANE-P of positive feelings, there was one eigenvalue above 1.0 (3.6), which explained 60% of the variance in the scale items. The factor scores ranged from 0.57 for Contented to 0.82 for Happy. For the SPANE-N scale of negative feelings, there was one eigenvalue above 1.0 (3.1), which explained 52% of the variance in the items. The factor scores varied from 0.49 for Afraid to 0.77 for Bad. For the SPANE-B score reflecting the balance of positive and negative feelings, the first factor was strong, accounting for 45% of the variance in responses.

However, for SPANE-B, a second factor emerged with an eigenvalue above 1.0 (1.4) and accounted for 12% additional variance in responses. An examination of the scree plot of eigenvalues also suggested a two-factor solution. The two rotated factors were correlated  $-0.54$ , with an oblimin rotation that did not restrict the factors to being orthogonal. The six positive items loaded 0.65 (Contented) to 0.84 (Happy) on the first factor, and  $-0.36$  (Joyful) to  $-0.51$  (Positive) on the second factor. The negative items loaded 0.61 (Afraid) to 0.80 (Bad) on the first factor, and  $-0.28$  (Angry) to  $-0.53$  (Negative) on the second factor. Thus, there were two separate factors for the valence of experience, although the two factors were inversely related. The greater independence of the PANAS positive and negative scales is due in part to their placement in the emotion circumplex in the high arousal quadrants. Furthermore, the time format of the SPANE is likely to lead to stronger inverse correlations between the two types of feelings (Diener & Emmons, 1985).

For the PWB, there was a single factor with an eigenvalue above 1.0 (4.0), which explained 50% of the variance in responses. The factor scores varied from 0.58 for feeling respected to 0.76 for leading a purposeful and meaningful life. Thus, a single and clear single factor described the PWB. The factor structure of the Positive Thinking Scale was less clear, possibly because of the single yes–no response format, or possibly there are many different facets of positive and negative thinking. It may be that the tendency to positive thinking is domain-specific rather than being universal across various areas of content.

## Discussion

### *Psychological Well-Being Scale (PWB)*

The brief PWB performed well, with high internal and temporal reliabilities and high convergence with other similar scales. Because of the brevity of the scale, its psychometric strength is slightly lower than the two other scales that assess PWB, but still quite good. The PWB correlated very strongly with the total scores for the other psychological well-being scales, at 0.80 and 0.69. Thus, the PWB provides a good assessment of overall self-reported psychological well-being, although it does not assess the individual components of psychological well-being that are described in some theories. It should be noted, however, that Ryff's (2008) scale has been criticized because the subscales do not clearly form six separate factors, but overlap with each other and produce fewer than six separate factors. The PWB seems to reflect the common elements of the other scales. If an overall psychological well-being score is needed, and a brief scale is desirable, the PWB should be adequate. If separate subscale scores are needed, one of the other two scales should be used.

The PWB scale predicts the total Ryff score even when the Deci/Ryan score is entered first. In terms of predicting measures of SWB, the scale picks up about 70–80% of the predictable variance compared to the longer Ryff scale. That is, the Ryff scale performs better in prediction, but the PWB scale does substantially as well. In conclusion, the PWB scale assesses a strong first factor that converges with the other scales.

### *Feelings Scale (SPANE)*

The SPANE measure of feelings performed well in terms of reliability and convergent validity with other measures of emotion, well-being, happiness, and life satisfaction. The scale has several advantages over previous measures of feelings. For one thing, because of the general descriptors such as “positive” and “negative,” it can assess all positive and negative feelings, not just those specific feelings that are listed on the scale. For another, it can reflect the fact that some feelings are considered desirable by some and less desirable by others because it reflects the respon-

dent's own categorization of the pleasantness and desirability of the feelings. The scale should perform well across cultures because it is focused on the respondent's evaluations of their feelings, which can vary to some degree across cultures. Furthermore, the scale can reflect feelings such as physical pleasure, engagement, interest, pain, and boredom that are omitted from most measures of emotions. The scale also can reflect the full range of feelings, whether they are low or high in arousal. The SPANE is based on the duration during which people experience the feelings, with the advantage that this aspect of feelings predicts long-term well-being, and can also be better calibrated across respondents. Furthermore, the SPANE is based on feelings that occurred during the previous four weeks, and thus reflects a balance between memory accuracy and experience sampling. Thus, for measuring experiences that are related to well-being, the SPANE has a number of advantages over other measures. Although more research is needed on the scale, it should perform well in many contexts.

### ***Positive Thinking Scale***

Although this scale performed in an adequate way, with decent reliabilities and correlations with other measures of well-being, it is the scale in most need of further testing and development. Several questions are important. Might the measure perform better if responses were on a graded scale rather than simply being yes–no? Greater sampling of memories is needed, including both rumination and savoring, for example, and not just attention and interpretation. Another desirable future extension of the scale would be to include thoughts about nonsocial aspects of the world. An important question is whether the scale provides additional valid information beyond personality characteristics, such as neuroticism. Thus, the positive thinking scale shows initial promise but requires more psychometric work.

### **Future Research**

The initial psychometric data we collected here are encouraging, but obviously more work is needed. All of the scales can use more validation in terms of correlations with other relevant scales, with non-self-report measures such as informant reports, and in various populations and cultural groups. We included only college student samples, and, therefore, broader participant samples are a high priority for future research. Another priority for future research is to examine how the new scales and existing scales differ and converge when comparing groups and cultures. Finally, an important question for this entire area of research is to determine the sources of unique and common variance in the scales. Across types of well-being there is substantial convergence of the scales, and the source of this overlap, as well as the unique contributions of the scales, is an important avenue for future research.

## *Permission for Using the Scales*

Although copyrighted, the measures in this chapter may be used as long as proper credit is given. Permission is not needed to employ the scales and requests to use the scales cannot be answered because permission is granted here. This chapter can be used as the citation for the scales.

## **Appendix: The Scales**

### **Scale of Positive and Negative Experience (SPANE)**

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Please think about what you have been doing and experiencing during the past four weeks. Then report how much you experienced each of the following feelings, using the scale below. For each item, select a number from 1 to 5, and indicate that number on your response sheet.

1. Very Rarely or Never
  2. Rarely
  3. Sometimes
  4. Often
  5. Very Often or Always
- Positive  
Negative  
Good  
Bad  
Pleasant  
Unpleasant  
Happy  
Sad  
Afraid  
Joyful  
Angry  
Contented

Scoring: The measure can be used to derive an overall affect balance score, but can also be divided into positive and negative feelings scales, and can be divided even further into general and specific feelings.

Positive Feelings (SPANE-P): Add the scores, varying from 1 to 5, for the six items: positive, good, pleasant, happy, joyful, and contented. The score can vary from 6 (lowest possible) to 30 (highest positive feelings score).

Negative Feelings (SPANE-N): Add the scores, varying from 1 to 5, for the six items: negative, bad, unpleasant, sad, afraid, and angry. The score can vary from 6 (lowest possible) to 30 (highest negative feelings score).



Affect Balance (SPANE-B): The negative feelings score is subtracted from the positive feelings score, and the resultant difference can vary from  $-24$  (unhappiest possible) to  $24$  (highest affect balance possible). A respondent with a very high score of  $24$  reports that she or he rarely or never has any of the negative feelings, and very often or always has all of the positive feelings.

## Psychological Well-Being Scale (PWB)

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Below are 8 statements with which you may agree or disagree. Using the 1–7 scale below, indicate your agreement with each item by indicating that response for each statement.

- 7 Strongly agree
- 6 Agree
- 5 Slightly agree
- 4 Mixed or neither agree nor disagree
- 3 Slightly disagree
- 2 Disagree
- 1 Strongly disagree

- I lead a purposeful and meaningful life.
- My social relationships are supportive and rewarding.
- I am engaged and interested in my daily activities
- I actively contribute to the happiness and well-being of others
- I am competent and capable in the activities that are important to me
- I am a good person and live a good life
- I am optimistic about my future
- People respect me

Scoring: Add the responses, varying from 1 to 7, for all eight items. The possible range of scores is from 8 (lowest possible) to 56 (highest PWB possible). A high score represents a person with many psychological resources and strengths.

## Positive Thinking Scale (PTS)

The following items are to be answered “Yes” or “No.” Write an answer next to each item to indicate your response.

- I see my community as a place full of problems. (N)
- I see much beauty around me. (P)
- I see the good in most people. (P)
- When I think of myself, I think of many shortcomings. (N)
- I think of myself as a person with many strengths. (P)

- I am optimistic about my future. (P)  
 When somebody does something for me, I usually wonder if they have an ulterior motive. (N)  
 When something bad happens, I often see a “silver lining,” something good in the bad event. (P)  
 I sometimes think about how fortunate I have been in life. (P)  
 When good things happen, I wonder if they might have been even better. (N)  
 I frequently compare myself to others. (N)  
 I think frequently about opportunities that I missed. (N)  
 When I think of the past, the happy times are most salient to me. (P)  
 I savor memories of pleasant past times. (P)  
 I regret many things from my past. (N)  
 When I see others prosper, even strangers, I am happy for them. (P)  
 When I think of the past, for some reason the bad things stand out. (N)  
 I know the world has problems, but it seems like a wonderful place anyway. (P)  
 When something bad happens, I ruminate on it for a long time. (N)  
 When good things happen, I wonder if they will soon turn sour. (N)  
 When I see others prosper, it makes me feel bad about myself. (N)  
 I believe in the good qualities of other people. (P)

Scoring: Add a “1” for each of the “yes” responses to the 11 positive items, indicated by a (P). Add a “1” for each of the “no” responses to each of the negative responses (N). The (N) and (P) designations appear here for scoring purposes only, but should not be presented in the scales given to respondents.

The possible range of scores is 0 (most negative thinking) to 22 (most positive thinking). A high score indicates that the respondent sees much that is positive in the world and himself or herself, and in other people. A high score thus represents a tendency to think in positive ways and to not think in negative ways.

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