MICHAEL F. STEGER and TODD B. KASHDAN

STABILITY AND SPECIFICITY OF MEANING IN LIFE AND LIFE SATISFACTION OVER ONE YEAR

ABSTRACT. Meaning in life and life satisfaction are both important variables in well-being research. Whereas an appreciable body of work suggests that life satisfaction is fairly stable over long periods of time, little research has investigated the stability of meaning in life ratings. In addition, it is unknown whether these highly correlated variables change independent of each other over time. Eighty-two participants (mean age = 19.3 years, SD 1.4; 76% female; 84% European-American) completed measures of the presence of meaning in life, the search for meaning in life, and life satisfaction an average of 13 months apart (SD = 2.3 months). Moderate stability was found for presence of meaning in life, search for meaning in life, and life satisfaction. Multiple regressions demonstrated specificity in predicting change among these measures. Support for validity and reliability of these variables is discussed.

KEY WORDS: life satisfaction, meaning in life, test–retest reliability well-being

INTRODUCTION

Psychologists are increasingly interested in understanding human well-being (e.g., Seligman and Czikszentmihalyi, 2000; Seligman et al., 2005). As this interest grows, pressure also mounts to provide psychometrically sound research tools. For example, in their argument for the necessity of an ambitious national well-being index, Diener and Seligman (2004) highlighted the importance of using psychometrically sound and rigorously validated measures of well-being constructs. The purpose of this study was to evaluate the basic psychometric properties of two well-being measures. Specifically, we examined the longitudinal stability and specificity of the Meaning in Life Questionnaire

(MLQ; Steger et al., 2006a) and the Satisfaction with Life Scale (SWLS; Diener et al., 1985).

Theoretically, unless life circumstances change considerably, both meaning in life and life satisfaction should be stable over time. A handful of studies have assessed the stability of MLQ and SWLS scores. The stability of scores on the MLQ scales has only been investigated in terms of moderate lengths of time. Scores appear stable over 2 weeks, with test–retest stability coefficients of 0.80 on the MLQ-Presence of meaning subscale and 0.68 on the MLQ-Search subscale (Steger, 2005). Over 1 month, the test–retest stability coefficients were 0.70 for the MLQ-Presence of meaning subscale, and 0.73 for the MLQ-Search for meaning subscale. Research using a different measure of meaning in life found stability over a 2-year span of time (i.e., test–retest correlation of 0.46 on the meaningfulness subscale of Antonovsky's (1987) Sense of Coherence scale; King et al., 2006). More research has been conducted on the stability of the SWLS. Over moderate lengths of time, scores appear very stable, with test–retest correlations ranging from 0.79 and 0.89 over time periods ranging from 2 weeks to 2 months (Pavot and Diener, 1993). SWLS scores also appear stable over even longer time periods (see Ehrhardt et al., 2000; Fujita and Diener, 2005; Schimmack and Oishi, 2005, for review). Thus, both the MLQ and SWLS appear stable in the near-term. In the long-term, the SWLS appears moderately stable, yet with considerable unexplained variance, suggesting that it might be reasonably sensitive to changes due to life events (Pavot and Diener, 1993), and, in fact, research suggests that life events like divorce and unemployment (Lucas, 2005; Lucas et al., 2004) with some indication that recent events have greater impact (Suh et al., 1996).

The MLQ and SWLS are linked to two related yet distinct traditions in well-being research. The MLQ assesses meaning in life, which is a prominent indicator of psychological well-being (PWB; see e.g., Ryff and Singer, 1998). The SWLS assesses life satisfaction, which is a leading measure of subjective well-being (SWB; see e.g., Diener, 2000). PWB research articulates a set of criteria believed to be necessary for optimal human functioning,

and is theoretically concerned with people's full engagement with life and fulfillment of their potential. For example, Ryff's (e.g., 1989) theory of PWB asserts that the attainment of well-being involves purpose in life, meaningful relationships, self-acceptance, autonomy, environmental mastery, and personal growth. PWB research draws on theory to identify external criteria by which everyone's well-being is judged. In contrast, SWB research measures well-being as each individual's global perceptions of an abundance of life satisfaction and positive affect and absence of negative affect (see Diener, 2000). Meaning in life, which is the extent to which people experience their lives as comprehensible and full of meaning and purpose, is representative of PWB, and life satisfaction, which is the extent to which people have positive cognitive evaluations about their lives as a whole, is representative of SWB (Lent, 2004).

Research has consistently demonstrated relations between measures of meaning and well-being. Those who feel their lives are meaningful are more optimistic and self-actualized (Compton et al., 1996), experience more self-esteem (Steger et al., 2006a), and positive affect (e.g., King et al., 2006), as well as less depression and anxiety (Steger et al., 2006a) and less suicidal ideation (Harlow et al., 1986). In addition, clinical populations also report lower meaning in life (Crumbaugh and Maholick, 1964; Frenz et al., 1993; Nicholson et al., 1994). The relations between life satisfaction and other indices of well-being are pervasive and well-established across a large number of studies. Overall, those who are satisfied with their lives are less depressed and have higher self-esteem and optimism, and there is some indication that clinical populations score lower on the SWLS and that their scores increase over the course of therapy (for reviews see Diener et al., 1999; Pavot and Diener, 1993).

As one might suspect from this brief review, meaning in life and life satisfaction are highly correlated. Correlation coefficients have ranged from 0.41 (Steger et al., 2006a) to as high as 0.71 (Chamberlain and Zika, 1988). Findings at the high end of this range have prompted concerns about the relative independence of the two constructs, and particularly about the discriminant validity of meaning in life measures. Considering that both

scales contain some error variance, correlations in the 0.70s suggest substantial shared variance. The MLQ was developed in response to these concerns, and a multitrait-multimethod matrix (MTMM) analysis utilizing informant reports and one month test–retest scores supported the distinctiveness of the MLQ from the SWLS, as well as measures of optimism and self-esteem, particularly in comparison with other meaning in life measures. The discriminant validity of the SWLS has also been supported in previous research. One MTMM analysis using informant reports, daily reports, and test–retest scores demonstrated the independence of the SWLS from measures of optimism and self-esteem (Lucas et al., 1996). However, the possibility remains that meaning in life and life satisfaction could converge over long intervals. Perhaps when prompted in an individual assessment session, individuals distinguish between life satisfaction and meaning, but those perceptions merge over time, or are tied to a global "wellness" variable that reveals its influence over time. Little is known about the long-term longitudinal relations among these variables.

Most previous research on meaning in life has neglected to consider the extent to which people are searching for meaning in their lives. Historically, the degree to which people are actively searching for meaning in their lives has been considered a core psychological motivation (Frankl, 1963, Maddi, 1970). The search for meaning is characterized by open-mindedness, as well as by inquisitive and reflective thinking, and as such might affect the way people interpret and evaluate their experience (Steger et al., 2006b). People need to comprehend their experience, and identify important pursuits and themes in their lives. People who are searching for meaning are more likely to retain some ambiguity about how they evaluate their past and current life situation, recognizing some degree of discrepancy between the actual and the desired. These cognitive processes might be expected to negatively influence life satisfaction ratings. Thus the search for meaning is thought to be important to well-being processes.

The absence of life meaning should, theoretically, drive people to seek it out. As part of a dynamic process, a deficit in meaning would stimulate people to search for it, resulting in

them discovering a satisfying purpose and meaning in their lives. The strength of the search for meaning should abate somewhat as people find meaning, yet remain an important motivation for most people. Research has supported a moderate, inverse relation between the presence of and search for meaning in life, both concurrently and longitudinally over a one month period of time (Steger et al., 2006a). However, how much meaning people perceive in their lives and how much they are searching for meaning are largely independent (Steger et al., 2006b). Thus, many people simultaneously feel their lives are meaningful and also are searching for meaning. Their search might be concentrated on finding new or additional sources of meaning as their engagement in activities varies over time. For example, those who derive meaning from parenting may look for additional sources as their children leave home. Alternatively, people could concentrate on accounting for the impact of particular events that broadly impact individuals' lives. For example, people might seek to understand the impact on their lives of romantic commitment, having children, or losing loved ones without losing their beliefs in their lives' meaning. Thus, the dynamic interplay between the search for meaning and the presence of meaning, as well as satisfaction with life, could be quite complex over time. Those searching for meaning in life might eventually find it in the future, suggesting a positive relation between today's search and next year's presence of meaning. Alternatively, they might find their lives increasingly meaningless if their search for meaning is prolonged, suggesting a negative relationship. There have been no empirical tests of such hypotheses.

The central purpose of the present study was to investigate whether the MLQ and SWLS possess adequate stability over 1 year. Evidence of stability would bolster the case for their inclusion in psychological research in general, but would further recommend them for use in longitudinal studies of well-being. As reviewed above, there is already evidence that the SWLS is sufficiently stable for such studies, but this evidence is not available for the MLQ. Both measures already meet one criterion that researchers conducting longitudinal research often use:

brevity. The MLQ uses five items to measure the presence of meaning and five items to measure the search for meaning. Likewise, the SWLS is only five items long.

The appeal of using these measures conjointly in longitudinal studies would be augmented if it can also be shown that people's scores capture unique and specific variance. There is some conceptual overlap between life satisfaction and the presence of meaning in life, in that they both index positive subjective impressions people form regarding their lives. However, whereas life satisfaction concerns whether people like their lives or not, the presence of meaning is more specifically concerned with the extent to which people feel their life matters, makes sense, or has purpose. Although most people who do feel their lives matter, make sense, or have purpose may also like their lives, it might not be the case that everyone who likes their lives feels they make sense or have purpose. Likewise, as reviewed previously, there is conceptual overlap between the presence of meaning and the search for meaning. Thus, the degree to which these measures share variance, as well as the degree to which each measure captures specific variance, is important to future research using these measures. If, for instance, next year's scores on the MLQ-Presence of meaning subscale are predicted by current scores on the SWLS and both MLQ subscales, then it makes little sense to use these measures in the same study. However, if next year's scores on the MLQ-Presence of meaning subscale are only predicted by current MLQ-Presence scores controlling for the SWLS and MLQ-Search for meaning subscale, then researchers can begin to isolate the factors that uniquely predict increases or decreases in meaning in life. The second purpose of this study was to establish this specificity for the SWLS and MLQ subscales.

METHOD

Participants

Undergraduate students were recruited from introductory psychology courses at a large, Midwestern university. Three-hundred-and-fifty-nine participants completed an initial paper

and pencil questionnaire battery containing measures of meaning in life and life satisfaction in small groups in classroom settings. Participants were 20.3-years-old on average (SD = 3.9), mostly female (66%), and mostly European-American (75%), followed by Asian (8%), Asian-American (6%), African-American (4%), Hispanic (1%), and Native American (< 1%), with 4% indicating "other." During consent, they were told about a slip of paper accompanying the materials on which they could indicate their willingness to participate in a 1-year follow-up study, as well as provide email contact information. Three-hundred-and-thirty-two people completed this re-contact slip. An email containing measures of meaning in life and life satisfaction was sent to the email address participants provided after approximately 13 months. Participants were not offered any compensation. We received 45 returned emails due to incorrect or expired email addresses, meaning that 287 emails were delivered. Given that email accounts remain active for several months after students discontinue enrollment, it is also possible that some of the emails we sent were delivered to email accounts that were no longer used, though not expired. Eighty-three participants responded to the email an average of 13.0 months later (SD = 2.3 months). These participants were 19.3-years-old on average (SD = 1.4), mostly female (76%), and mostly European-American (84%), followed by Asian-American (8%), African-American (3%), Hispanic, Asian, and those indicating "other" (1% each). One person's score on the scale used to assess the presence of meaning in life was more than three standard deviations below the mean and subsequently eliminated as an outlier, leaving 82 participants. The participation rate was 29% among those who consented to participate and to whom email solicitations were presumably delivered.

Procedure

As noted previously, participants were given a packet containing measures of the presence of meaning, search for meaning, and life satisfaction, as well as a slip of paper they could use to consent to a follow-up in 1 year. After an average of 13 months, participants were sent a follow-up email containing these same measures, with the items contained in a common item pool, as

well as a copy of the consent form. Reminder emails were sent out approximately 3 weeks after the initial email. Those who participated in the follow-up entered their responses in the text of the email and sent it back to the investigator.

Materials

The Meaning in Life Questionnaire

The MLQ (Steger et al., 2006a) consists of two subscales, assessing the Presence of meaning and the Search for meaning in life, each containing five items rated from 1 (Absolutely True) to 7 (Absolutely Untrue). The MLQ has demonstrated good reliability and stability, as well as robust structural validity (Steger et al., 2006a). A multitrait-multimethod matrix, as discussed above, indicated excellent convergent and discriminant validity. The internal consistency in the present sample was good at both Time 1 ($\alpha = 0.83$, MLQ-Presence; $\alpha = 0.84$, MLQ-Search) and Time 2 ($\alpha = 0.88$, MLQ-Presence; $\alpha = 0.83$, MLQ-Search). Evidence of short-term test–retest stability are discussed in the introduction.

The Satisfaction with Life Scale

The SWLS (Diener et al., 1985) is a five-item scale assessing positive cognitive appraisals of life in general, with items (e.g., "In most ways my life is close to the ideal") rated from 1 (Strongly Disagree) to 7 (Strongly Agree). An extensive body of research has supported the reliability and validity of the SWLS (e.g., Diener et al., 1985; Pavot and Diener, 1993). Test–retest findings are reviewed in the introduction. The internal consistency in the present sample was good at both Time 1 ($\alpha = 0.84$) and Time 2 ($\alpha = 0.87$).

RESULTS

Attrition Analysis and Descriptive Statistics

Those who participated in the follow-up were younger than those who did not ($t(359) = 2.49$, $p < 0.05$, $d = 0.31$), possibly because older students would be more likely to have graduated and had their university-sponsored email accounts

deactivated. They were not significantly different on other demographic measures. There were no significant differences among those who did and did not participate in terms of the search for meaning or life satisfaction ($ts < 1.10$, $ps > 0.29$). There was a non-significant trend for those who participated to score lower in presence of meaning than those who did not participate in the follow-up (t (359) $= 1.71$, $p = 0.09$, $d = 0.21$).

Mean scores are shown in Table I. Paired-samples t-tests indicated a non-significant trend for MLQ-Presence scores to increase from Time 1 to Time 2 (t-pair (80) $= 1.86$, $p = 0.06$, $d = 0.23$). No other differences were significant (t-pair < 1.45, $ps > 0.15$).

Correlations and Stability Analyses

In order to assess the stability of scores over 1 year's time, correlation coefficients were computed. The full correlation matrix is provided in Table II. At Time 1, the intercorrelations among the MLQ-Presence, MLQ-Search, and SWLS were in line with previous reports (Steger et al., 2006a). More importantly, all three variables showed evidence of stability over 13 months, with MLQ-Search achieving a large effect size ($r = 0.50$, $p < 0.001$), and MLQ-Presence ($r = 0.41$, $p < 0.001$) and SWLS ($r = 0.40$, $p < 0.001$) achieving medium to large effect sizes. No previous research has investigated the long-term stability of the presence of meaning or the search for meaning, so there is no basis for comparison for these values. The stability coefficient

TABLE I

Descriptive statistics at Time 1 and Time 2, 1 year later

	Time 1	Time 2 (13 months later)
MLQ-Presence	23.3 (5.0)	24.2 (5.7)
MLQ-Search	24.1 (6.2)	23.0 (7.3)
SWLS	24.3 (5.6)	24.3 (6.0)

$N = 82$.

Note: Standard deviations are in parentheses; MLQ-Presence = Meaning in Life Questionnaire, Presence of meaning subscale; MLQ-Search = Meaning in Life Questionnaire, Search for meaning subscale; SWLS = Satisfaction with Life Scale.

TABLE II
Correlation coefficients among variables, as well as stability coefficient over 1 year

		Time 1			Time 2		
		MLQ-P	MLQ-S	SWLS	MLQ-P	MLQ-S	SWLS
Time 1	MLQ-P						
	MLQ-S	−0.25*					
	SWLS	0.49***	−0.28*				
Time 2	MLQ−P	*0.41***	−0.05	0.29**			
	MLQ-S	−0.22*	*0.50***	−0.26*	−0.01		
	SWLS	0.30**	−0.05	*0.40***	0.63***	−0.13	

$N = 82$.
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.
Numbers in italics and boldface are test–retest stability coefficients. MLQ-P = Meaning in Life Questionnaire, Presence of meaning subscale; MLQ-S = Meaning in Life Questionnaire, Search for meaning subscale; SWLS = Satisfaction with Life Scale.

for this sample is smaller than that reported in previous unpublished research on the stability of the SWLS over 4 years (0.54, see Pavot and Diener, 1993). Thus, reports from this sample may be somewhat less stable than other research, although these results should be considered in light of the fact that the formatting of the questionnaires differed from Time 1 (paper and pencil) to Time 2 (email).

At Time 2, MLQ-Presence scores had a large positive correlation with SWLS scores ($r = 0.63$, $p < 0.001$), but not significantly more so than at Time 1 (test of difference between correlation coefficients not significant, $p = 0.20$). One reason for this might be methodological. In order to condense the questionnaires for the emails sent out to acquire follow-up data, the items were bunched together in a common block of 15 items, with the 10 MLQ items immediately preceding the 5 SWLS items. This is in contrast to their presentation as distinct scales separated by other questionnaires in the initial, paper and pencil administration. Given that these two variables are typically correlated with medium to large effect sizes (Steger et al., 2006a), perhaps this methodological detail led to an artificial

increase in their correlation. On the other hand, perhaps these two variables become indistinguishable over time. Momentarily salient information (e.g., pleasant weather, Schwartz and Strack, 1999) might differentially affect meaning in life and life satisfaction ratings in the short term. If, on the other hand, the two variables are rooted in the same, underlying ''wellness'' factor, then momentary influences should disappear and ratings should merge over time. To rule out this possibility, we performed a series of multiple regressions designed to establish specificity in predicting scores on these measures.

Specificity Analyses and Unique Stable Variance

Multiple regression equations were performed using the Time 2 MLQ-Presence scores, MLQ-Search scores, and SWLS scores as the criterion variables in three separate analyses. The predictor variables in all three regressions were the respective Time 1 MLQ-Presence scores, MLQ-Search scores, and SWLS scores. Thus, these analyses assessed whether the only significant predictor of Time 2 scores on a given measure was the Time 1 administration of that same measure. In other words, are scores on any given measure capturing specific variance above and beyond that captured by the other two measures Given that those who participated in the follow-up assessment were younger that those who did not, age was included as a covariate in these analyses to rule out any potential age-related response bias. To reduce the impact of potential multicollinearity, all Time 1 MLQ and SWLS scores were standardized prior to entry in the multiple regressions.

The first analysis predicted Time 2 MLQ-Presence scores from Time 1 MLQ-Presence scores, Time 1 MLQ-Search scores, Time 1 SWLS scores, and age (see Table III). As evidence of specificity, Time 1 MLQ-Presence scores were the only significant predictors of MLQ-Presence scores 1 year later ($\beta = 0.40$, $p < 0.01$). Specificity was demonstrated in the other two analyses as well, with Time 1 MLQ-Search predicting Time 2 MLQ-Search ($\beta = 0.45$, $p < 0.01$) and Time 1 SWLS predicting Time 2 SWLS ($\beta = 0.34$, $p < 0.01$), without any other Time 1 scale accounting for significant variance. These findings further

TABLE III

Regression analyses of the specificity of the MLQ-P, MLQ-S, and SWLS in predicting scores over 1 year

	b	SE_b	95% C.I.	β	Adj. R^2
DV = Time 2 MLQ-P					0.13**
Age	−0.02	0.08	−0.18, 0.15	−0.02	
MLQ−P	0.40	0.12	0.16, 0.64	0.40**	
MLQ−S	0. 0.06	0.11	−0.15, 0.28	0.07	
SWLS	0.05	0.13	−0.20, 0.31	0.05	
DV = Time 2 MLQ-S					0.24***
Age	0.09	0.08	−0.06, 0.25	0.13	
MLQ-P	−0.03	0.12	−0.26, 0.21	−0.03	
MLQ-S	0.42	0.10	0.22, 0.63	0.43***	
SWLS	−0.10	0.12	−34, 0.14	−0.10	
DV = Time 2 SWLS					0.15**
Age	−0.09	0.08	−0.25, 0.08	−0.12	
MLQ−P	0.15	0.12	−0.10, 0.40	0.15	
MLQ−S	0.10	0.11	−0.12, 0.32	0.10	
SWLS	0.34	0.13	−0.25, 0.08	0.32*	

$N = 82$.

$**p < 0.01$, $*** p < 0.001$.

Note: 95% C.I. = Upper and lower bounds of 95% confidence intervals around b; Adj. R^2 = Adjusted R-square, MLQ-P = Meaning in Life Questionnaire, Presence of meaning subscale; MLQ-S = Meaning in Life Questionnaire, Search for meaning subscale; SWLS = Satisfaction with Life Scale

support the specificity over time of these scales. Although these constructs were highly correlated at both time points, there was evidence of stable variance, specifically measured by each scale, over a 13-month interval.

We also estimated the proportion of shared variance compared to unique variance by comparing across-time, same-measure correlations with across-time, different-measure correlations for each measure pair. Time 1 MLQ-P scores shared approximately 70.7% of the variance with Time 2 SWLS scores (correlations of 0.30/0.41). Time 1 SWLS scores shared approximately 75.0% of the variance with Time 2 MLQ-P scores (0.30/0.40). This suggests that a large proportion of the stable variance in presence of meaning and life satisfaction judgments is shared.

Time 1 MLQ-P scores shared approximately 53.7% of the variance with Time 2 MLQ-S scores (−0.26/0.40), whereas Time 1 MLQ-S scores only shared approximately 10.0% of the variance with Time 2 MLQ-P scores (−0.05/0.50). Similarly, Time 1 SWLS scores shared approximately 65% of the variance with Time 2 MLQ-S scores (−0.26/0.40), whereas Time 1 MLQ-S scores only shared approximately 10% of the variance with Time 2 SWLS scores (−0.05/0.50). Taking into consideration the generally negative correlations among the search for meaning and the presence of meaning and life satisfaction as well, this pattern of findings suggests that finding life to be satisfying and meaningful tends to make a search for meaning less likely, accounting for moderate shared variance. However, searching for meaning in life seems to have little tendency to lead to increased meaning or life satisfaction, with little shared variance.

DISCUSSION

The primary purpose of this investigation was to evaluate the longitudinal stability of the MLQ and SWLS. Scores on these measures appeared to be moderately stable over 1 year. In conjunction with the good short-term stability of these measures, our confidence is increased that these measures index constructs that have continuity over people's lives, rather than wax and wane in response to fleeting, momentary influences. At the same time, the 1-year test–retest stability of these measures indicated that considerable unexplained variance remained, suggesting that the measures in the present study suggested that they are adequately sensitive to life events that influence levels of meaning in life and life satisfaction.

How do the stability coefficients found in the present study compare to other measures? Research on personality and intelligence provides a comparison. One meta-analysis of the Big Five personality traits (i.e., extraversion, neuroticism, openness, agreeableness, and conscientiousness) in samples of individuals at least 10-years-old found that 1-year test–retest coefficients ranged from 0.48 (agreeableness) to 0.59 (extraversion) (Bazana and Stelmack, 2004). However, this study also found an inverse

relation between age at the onset of the study and stability coefficients. Personality is more stable among older individuals. For example, 4-year stability estimates were higher in a sample of college students, as indexed by extraversion and neuroticism (0.73 and 0.54, respectively, Magnus et al., 1993). Research directly comparing the stability of life satisfaction and personality has found personality to be more stable over time (Fujita and Diener, 2005). Intelligence on the other hand appears extremely stable over 1 year (0.80, Pinion, 1995). Thus, compared to stable traits like personality and intelligence, both meaning in life and life satisfaction appear more malleable over time.

We found life satisfaction scores scores to be less stable than the reports in previous studies. For example, a recent meta-analysis of test–retest studies suggested that 1-year test–retest coefficients ranged from 0.55 to 0.75 when multi-item measures were used, with an expected value of around 0.65 (Schimmack and Oishi, 2005). This implies that all of the estimates of stability could be lower than other research has found. One possible explanation for this is that stability of life satisfaction scores appears to increase with age (Ehrhardt et al., 2000). The low stability estimates in our relatively young sample is consistent with this finding.

In light of this, the high stability of the search for meaning appears somewhat surprising. The search for meaning refers to people's efforts to comprehend and integrate their experience into a coherent whole, and research supports the idea that these efforts are linked to open-mindedness and ruminative and fatalistic cognitive styles (Steger et al., 2006b). Although we might expect those searching for meaning to eventually find it, reducing their search at some later date, it would appear that people's efforts to satisfactorily comprehend their experience persist. In addition, the college years are a time of considerable identity, relational, and vocational development, which might make the search for meaning especially relevant to the present sample.

The second purpose of this study was to assess the specificity of these measures in predicting scores 1 year later. In support of their specificity, the only significant predictors of scores on each

of these scales were scores on the same scale from 13 months earlier. Although these variables are related to differing degree, the strong evidence for specificity provides good support for the effectiveness of the measures used in the present study. To some degree, this is due to the design of these measures. As noted previously, the MLQ was designed to correct some of the problems that had been noted regarding other meaning measures, including the very high covariation with other well-being measures. The MLQ was designed to assess the essential components of the presence of and search for meaning that were most distinct from other, existing well-being measures, including the SWLS. Thus, the MLQ and SWLS appear stable and specific over time. Evidence of the specificity of the measures does not detract from the fact that these variables are related to each other, as the correlational analyses revealed evidence of shared variance among the variables, particularly between the MLQ-P and SWLS.

Participants' search for meaning was not related to higher presence of meaning 1 year later. We had anticipated that people's search for meaning would be related to higher presence of meaning levels 1 year later. It is possible that the near-zero correlation between Time 1 search and Time 2 presence of meaning indicates that some people found meaning and others were frustrated in their search. Interestingly, lower levels of Time 2 search were predicted by both Time 1 presence of meaning and life satisfaction. It appears that those who are typically searching for meaning are no closer to achieving meaning and life satisfaction 1 year later, whereas those who find their lives to be meaningful and satisfying are less likely to be searching. Given that the search for meaning appears remarkably stable, we must contemplate the possibility that people who are typically searching for meaning are not particularly successful in finding it. This stability also highlights the importance of better understanding the differences between momentary or short-term bouts of searching for meaning and more trait-like, long-term searching for meaning. It is possible that briefer interludes of searching do, in fact, lead to enhanced perceptions that one is leading a satisfying or meaningful life, and the momentary or

daily dynamics between the search for meaning and well-being should be explored in future research.

Our findings should be interpreted in the context of several limitations. First, this research was conducted using a sample of mostly female, mostly European-American undergraduate students, and findings might not generalize to the broader population or to clinical samples. Undergraduate students might be more likely than other samples to experience change and transition. For example, relationships are known to be a highly regarded source of meaning in people's lives (e.g., Klinger, 1977). Undergraduates might experience greater turnover in relationships due to graduation, drop-out, or other factors than adult samples. Likewise, research conducted with more diverse samples might reveal important differences in how the meaning and life satisfaction interact over time. For example, there is evidence that the search for meaning, which is typically associated with less presence of meaning and well-being in cultures that emphasize independence (Steger et al., 2006b), is unrelated to the presence of meaning in cultures that emphasize interdependence to a greater degree (i.e., Spain; Steger et al., in press). Such findings suggest that the nature and experience of the search for meaning could differ across cultures. If the search for meaning is experience positively, it could be implicated in upward spirals of increasing levels of the presence of meaning and well-being. Research using these measures in age and ethnicity-diverse populations should be pursued. In addition, the next phase of research involving these measures as tools in outcome assessment must establish their sensitivity to change in therapy in clinical populations.

Second, the response rate was somewhat low. However, given that participants were not offered any incentive to complete the measures a year after their initial research involvement, and the high mobility of college student populations, this level of participation seems reasonable. Nonetheless, attrition analyses suggested that those who completed follow up measures were younger than those who did not complete the follow-up. Although age was not a significant factor in specificity analyses, it is unclear how these differences could have affected our

findings. As noted previously, stability of life satisfaction appears positively related to age, and examining the stability of the MLQ scales in older samples might yield higher coefficients.

Psychologists are increasingly concerned with understanding the factors associated with the achievement of enduring well-being. The Meaning in Life Questionnaire and Satisfaction with Life Scale offer promise as tools to enable psychologists to gauge the impact of their efforts. As tools like these become increasingly available (e.g., Lopez and Snyder, 2003), our understanding of how people fully live their lives and reach their potential will continue to grow as well.

REFERENCES

Antonovsky, A.: 1987, Unraveling the Mystery of Health: How People Manage Stress and Stay Well (Jossey-Bass, San Francisco).

Bazana, P.G. and R.M. Stelmack: 2004, Stability of personality across the life span: A meta-analysis, in R.M. Stelmack (ed.), On the Psychobiology of Personality: Essays in Honor of Marvin Zuckerman (Elsevier Science, New York), pp. 113–144.

Chamberlain, K. and S. Zika: 1988, 'Religiosity, life meaning, and wellbeing: Some relationships in a sample of women', Journal for the Scientific Study of Religion 27, pp. 411–420.

Compton, W.C., M.L. Smith, K.A. Cornish and D.L. Qualls: 1996, 'Factor structure of mental health measures', Journal of Personality and Social Psychology 71, pp. 406–413.

Crumbaugh, J.C. and L.T. Maholick: 1964, 'An experimental study in existentialism: The psychometric approach to Frankl's concept of noogenic neurosis', Journal of Clinical Psychology 20, pp. 200–207.

Diener, E.: 2000, 'Subjective well-being: the science of happiness and a proposal for a national index', American Psychologist 55, pp. 34–43.

Diener, E., R.A. Emmons, R.J. Larsen and S. Griffin: 1985, 'The satisfaction with life scale', Journal of Personality Assessment 49, pp. 71–75.

Diener, E. and M.E.P. Seligman: 2004, 'Beyond money: Toward an economy of well-being', Psychological Science in the Public Interest 5, pp. 1–31.

Diener, E., E.M. Suh, R.E. Lucas and H.L. Smith: 1999, 'Subjective well-being: Three decades of progress', Psychological Bulletin 125, pp. 276–302.

Ehrhardt, J.J., W.F. Saris and R. Veenhoven: 2000, 'Stability of life satisfaction over time', Journal of Happiness Studies 1, pp. 177–205.

Frankl, V.E.: 1963, Man's Search for Meaning: an Introduction to Logotherapy (Washington Square Press, New York).

Frenz, A.W., M.P. Carey and R.S. Jorgensen: 1993, 'Psychometric evaluation of Antonovsky's Sense of Coherence Scale', Psychological Assessment 5, pp. 145–153.

Fujita Diener, F. E.: 2005, 'Life satisfaction set point: Stability and change', Journal of Personality and Social Psychology 88, pp. 158–164.

Harlow, L.L., M.D. Newcomb and P.M. Bentler: 1986, 'Depression, self-derogation, substance use, and suicide ideation: Lack of purpose in life as a mediational factor', Journal of Clinical Psychology 42, pp. 5–21.

King, L.A., J.A. Hicks, J.L. Krull and A.K. GaisoDel: 2006, 'Positive affect and the experience of meaning in life', Journal of Personality and Social Psychology 90, pp. 179–196.

Klinger, E.: 1977, Meaning and Void (University of Minnesota Press, Minneapolis, MN).

Lent, R.W.: 2004, 'Toward a unifying theoretical and practical perspective on well-being and psychosocial adjustment', Journal of Counseling Psychology 51, pp. 482–509.

Lopez, S.J. and C.R. Snyder (eds): 2003, Positive Psychological Assessment: A Handbook of Models and Measures (American Psychological Association, Washington, DC).

Lucas, R.E.: 2005, 'Time does not heal all wounds: A longitudinal study of reaction and adaptation to divorce', Psychological Science 16, pp. 945 950.

Lucase, R.E., A.E. Clark, Y. Georgellis and E. Diener: 2004, 'Unemployment alters the set-point of life satisfaction', Psychological Science 15, pp. 8 13.

Lucas, R.E., E. Diener and E. Suh: 1996, 'Discriminant validity of well-being measures', Journal of Personality and Social Psychology 71, pp. 616–628.

Maddi, S.R.: 1970, The search for meaning, in M. Page (ed.), Nebraska symposium on motivation (University of Nebraska Press, Lincoln, NE), pp. 137–186.

Magnus, K., E. Diener, F. Fujita and W. Pavot: 1993, 'Extraversion and neuroticism as predictors of objective life events: A longitudinal analysis', Journal of Personality and Social Psychology 65, pp. 1046–1053.

Nicholson, T., W. Higgins, P. Turner, S. James, F. Stickle and T. Pruitt: 1994, 'The relation between meaning in life and the occurrence of drug abuse: A retrospective study', Psychology of Addictive Behaviors 8, pp. 24–28.

Pavot, W.G. and E. Diener.: 1993, 'Review of the Satisfaction with Life Scale', Psychological Assessment 5, pp. 164–172.

Pinion, G.A.: 1995, 'Test–retest reliability of the Kaufman Adolescent and Adult Intelligence Test', Dissertation Abstracts International Section A: Humanities and Social Sciences 55, 3485.

Ryff, C.D.: 1989, 'Happiness is everything, or is it? Explorations on the meaning of psychological well-being', Journal of Personality and Social Psychology 57, pp. 1069–1081.

Ryff, C.D. and B. Singer: 1998, 'The contours of positive human health', Psychological Inquiry 9, pp. 1–28.

Schimmack, U. and S. Oishi: 2005, 'The influence of chronically and temporarily accessible information on life satisfaction judgments', Journal of Personality and Social Psychology 89, pp. 395–406.

Schwartz, N. and F. Strack: 1999, Reports of subjective well-being: Judgmental processes and their methodological implications, in D. KahnemanE. Diener and N. Schwartz (eds.), Well-Being: The Foundations of Hedonic Psychology (Russel Sage, New York), pp. 61–84.

Seligman, M.E.P. and M. Csikszentmihalyi: 2000, 'Positive psychology: An introduction', American Psychologist 55, pp. 5–14.

Seligman, M.E.P., T.A. Steen, N. Park and C. Peterson: 2005, 'Positive psychology practice: Empirical validation of interventions', American Psychologist 60, pp. 410–421.

Steger, M.F.: 2005, The development and validation of the Meaning in Life Questionnaire. Unpublished Doctoral Dissertation.

Steger, M.F., P. Frazier, S. Oishi and M. Kaler: 2006a, 'The Meaning in Life Questionnaire: Assessing the presence of and search for meaning in life', Journal of Counseling Psychology 53, pp. 80–93.

Steger, M.F., P. Frazier and J.L. Zacchanini: in press, 'Terrorism in two cultures: Traumatization and existential protective factors following the September 11th attacks and the Madrid train bombings', Journal of Trauma and Loss.

Steger, M.F., T.B. Kashdan, B.A. Sullivan and D. Lorentz: 2006b, 'The search for meaning in life: Basis in personality and cognitive style, and implications for psychosocial functioning', Manuscript under review.

Suh, E., E. Diener and F. Fujita: 1996, 'Events and subjective well-being: Only recent events matter', Journal of Personality and Social Psychology 70, pp. 1091–1102.

Address for correspondence:
MICHAEL F. STEGER
University of Louisville, Educational and Counseling Psychology
Room 308, Louisville, KY,
USA

E-mail: michael_f_steger@yahoo.com