

## PSYCHOMETRIC PROPERTIES OF THE LIFE REGARD INDEX—REVISED: A VALIDATION STUDY OF A MEASURE OF PERSONAL MEANING<sup>1</sup>

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**Summary.**—A validation study of the English version of the 28-item Life Regard Index—Revised was undertaken with a sample of 91 participants from the general population. All previous studies of the Index have examined the Dutch version. The test-retest reliabilities at 8 wk. for the total Index ( $r = .87$ ), Framework ( $r = .82$ ), and Fulfillment ( $r = .81$ ) subscales were very high. Cronbach alphas were .92, .83, and .87, respectively. A significant restriction of range was observed at the high-meaning end of the scale. Factor analysis only weakly supported the theorized two-factor structure. A very high disattenuated correlation between the Framework and Fulfillment subscales was observed ( $r = .94$ ). The Index appeared to have adequate evidence supporting its concurrent and discriminant validity when compared with measures of hopelessness, spiritual well-being, and other measures of personal meaning. A significant positive association was found between the index and the Marlowe-Crowne Social Desirability Scale ( $r = .38$ ). The Index was also significantly associated with sex (women scoring higher) and marital status (divorced people scoring lower). Revisions of the English version may address the restriction of range problem by employing a 5-point rating scale, instead of the current 3-point scale, or by adding more discriminating items. Further factor-analytic studies with larger samples are needed before conclusions can be drawn regarding this scale's factor structure.

The recent issue of the *American Psychologist* (2000) devoted entirely to aspects of "positive psychology," such as hope, happiness, and optimism, may mark a shift in Psychology's traditional focus on pathology to a more balanced view that also considers normal and desirable adjustment. As a part of this trend, a person's sense of meaning and purpose in life and its relationship to mental and physical health are gaining increasing theoretical and empirical attention. For example, the role of personal meaning has been empirically examined in several areas of study, including psychotherapy (Debats, 1996), gerontology (Reker, Peacock, & Wong, 1987), substance abuse (Newcomb & Harlow, 1986), love-styles (Prasinos & Tittler, 1984), and AIDS (Schwartzberg, 1993; Bower, Kemeny, Taylor, & Fahey, 1998). Personal meaning is central to at least one theory of personality (e.g., Maddi, 1967) and several theories of mental health and well-being (e.g., Frankl, 1973; Antonovsky, 1979; Yalom, 1980). More recently, personal meaning has been

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linked theoretically (Ryff & Singer, 1998) and empirically (Bower, *et al.*, 1998) to physical health outcomes. Ryff and Singer (1998) argued that living with a sense of meaning and purpose is connected to the "physiological substrates of flourishing" (p. 218), thought to be optimal allostasis, immune competence, and cerebral activation asymmetry. Despite the growing awareness of the importance of personal meaning in many subfields of psychology and elsewhere, the measurement of personal meaning remains in its relative infancy and deserves far more research attention.

In this article, after briefly describing available measures of personal meaning and reviewing studies examining the properties and correlates of the Life Regard Index-Revised (Debats, 1998), we address the two primary goals of this study: First, we explore evidence of reliability, validity, factor structure, and correlates of the English version of the Life Regard Index-Revised with an adult North American sample. All information currently available concerning the scale refers to the Dutch version. Second, we examine the relationship between the Life Regard Index-Revised and the Life Attitudes Profile-Revised (Reker, 1992), measures of hopelessness, spiritual well-being, religiosity, and social desirability as well as demographic variables.

### *Measures of Personal Meaning*

Several measures of personal meaning are available. The Purpose in Life test (Crumbaugh & Maholick, 1969), the most commonly used test in early investigations of personal meaning, does not distinguish between personal meaning and the sources from which it is derived. As a result, the Purpose in Life test appears to weight Protestant, western, and middle-class values and meaning-systems more heavily than other sources of meaning (Debats, 1996). This problem as well as others, such as loading substantially on social desirability ( $r = .57$  with Marlowe-Crowne Social Desirability Scale; Crowne & Marlowe, 1960), have led some authors to criticize severely the validity of the Purpose in Life test as a measure of meaning in life (Braun & Dolmino, 1978; Yalom, 1980).

Chamberlain and Zika (1988) examined the Sense of Coherence scale (Antonovsky, 1983a) and stated that principal components analysis did not support the theoretical structure of the scale. Also, poor test-retest reliability was reported in the initial study ( $r = .63$ ; Antonovsky, 1983a). These considerations coupled with Antonovsky's recommendation (1983b) to use only the full scale (not solely the meaning subscale) suggests that further investigations are needed before the Sense of Coherence scale might be considered an adequate measure of personal meaning.

Other promising measures of personal meaning exist. The Life Attitude Profile-Revised (Reker & Peacock, 1981; Reker, 1992) has been increasingly studied (e.g., Reker & Fry, *in press*) and applied (e.g., Fry, 2001) in several

examinations of personal meaning across the lifespan. Another recently developed scale, the Personal Meaning Profile (Wong, 1998) awaits further study and application. Techniques have also been developed for extracting the extent and sources of meaning-systems from narrative accounts (e.g., Ebersole & Quiring, 1991; Ebersole, 1998; Sommer & Baumeister, 1998). The reader is referred to Reker (2000) for more on the dimensionality and measurement of personal meaning.

*Examinations of the Life Regard Index and Life Regard Index-Revised*

Currently, the scales with the most empirical attention and support are the Life Regard Index (Battista & Almond, 1973) and the Life Regard Index-Revised (Debats, 1998), although the available evidence is still limited and uncertain. These tests derive from Battista and Almond's conception and operationalization of personal meaning (1973), termed positive life regard. Positive life regard is defined as "an individual's belief that he is fulfilling his positively valued life-framework or life-goal" (Battista & Almond, 1973, p. 409). The Life Regard Index is a 28-item scale designed to measure positive life regard independent of *a priori* assumptions regarding the source or "true nature" of meaning (Battista & Almond, 1973). The Life Regard Index was designed to measure two factors thought to constitute positive life regard: Framework, viewing one's life from a particular perspective and having a positively valued framework or life goals, and Fulfillment, a belief or feeling that one is fulfilling or has fulfilled one's life goals. The original scale has a 5-point Likert-type format and seven positively and seven negatively phrased items for each subscale, presented in homogeneous clusters. A number of studies examined or reported psychometric properties of the original test (5-point Likert-type scale version; Battista & Almond, 1973; Prasinis & Tittler, 1984; Florian & Snowden, 1989; Zika & Chamberlain, 1992; Van Ranst & Marcoen, 1997).

The revised version, proposed by Debats (1998), employs a 3-point scale, intermixes positive and negative questions, and includes small wording changes. The Life Regard Index-Revised appears to overcome some of the weaknesses of the original scale. For example, Debats (1990) demonstrated the effects of mood induction and a biased response set when items are presented in homogeneous blocks. This problem was not observed when the item-order was randomized (Debats, 1990). For this reason, Life Regard Index-Revised was chosen for evaluation.

Unfortunately, there is some confusion regarding the format and name of the scale being assessed in various studies. Debats and colleagues (Debats, 1990; Debats, Lubbe, & Wezeman, 1993; Debats, Drost, & Hansen, 1995) revised the format of the Life Regard Index as indicated above, but referred to the scale as the "Life Regard Index" in published accounts. To add fur-

ther confusion, only 23 items of the full version were examined (Debats, *et al.*, 1993) and applied (Debats, 1996) in other studies in which the scale was called the Life Regard Index. Only recently has the revised (28-item, 3-point rating scale) version been presented as a distinct scale, the Life Regard Index-Revised (Debats, 1998). Other contemporaneous studies (e.g., Chamberlain & Zika, 1988; Van Ransst & Marcoen, 1997) evaluating the Life Regard Index used the original format.

Some authors have lumped studies examining different versions together as evidence for the validity of the Life Regard Index-Revised (e.g., Debats, 1998), although few studies have actually reported the properties of the full, revised scale. The relevance of this problem is emphasized by the fact that there is evidence the different versions are not equivalent. Debats (1990) found that altering the ordering of the questions produced a difference in scores that fell just short of significance on the Fulfillment subscale ( $t = -1.87$ ,  $p < .06$ ). It is also noteworthy that the shape of the distribution of full-scale scores is more normal for the original 28-item, 5-point Likert version (Battista & Almond, 1973) than for the revised 23-item, 3-point Likert version (Debats, *et al.*, 1993). Although these findings may reflect differences in the samples studied rather than psychometric differences between the versions, this is an unaddressed empirical question. Until these questions are addressed, it is more conservative to consider the scales as related but distinct scales. Summary statements regarding the psychometric properties must distinguish which form of the scale was under investigation.

Three validation studies have examined the Life Regard Index-Revised (3-point Likert scale, 28-items, mixed-item version). These studies used the Dutch version. Debats (1990) found a moderate Pearson correlation between scores on Framework and Fulfillment subscales ( $r = .54$ ) and Cronbach alpha estimates of internal consistency of .86 (total scale), .80 (Fulfillment), and .79 (Framework) with a sample of 122 psychology students. A factor analysis (principal components, varimax rotation) generally supported the theoretical structure of the scale, although four items loaded on the factor opposite that predicted (in the following tables, those items are denoted 3FR-, 7FR-, 5FU+, 6FU+). Nineteen of the items loaded higher than .30 on the theoretically predicted factor and not substantially on the other factor. The Life Regard Index-Revised total scores correlated positively with measures of elation ( $r = .33$ ) and negatively with anxiety ( $r = -.37$ ) and depression ( $r = -.32$ ). The scale was significantly and positively associated with years of previous education, happiness, and life satisfaction. No means or standard deviations were reported for the subscales or the full scale.

Debats, *et al.* (1993) administered the 28-item, 3-point Likert version of the Life Regard Index and concluded its factor structure adequately approximated the theorized structure with a 2-factor solution but accounted only

for 32 to 37% of variance. Five items [3FR-, 7FR-, 4FR-, 6FU+, 5FR+; item identifiers as given by Battista and Almond (1973), and here in Table 2] did not function in the 2-factor solution and were eliminated from subsequent analysis making comparison with studies of the 28-item version impossible.

Debats, *et al.* (1995) provided evidence for the validity of the Life Regard Index-Revised using qualitative means. Written accounts of meaningful life events were rated and generally supported the validity. In particular, the Life Regard Index-Revised scores were strongly associated with interpersonal dimensions of well-being. We now turn to the present study, the first evaluation of the English version of this index.

#### METHOD

##### *Subjects*

Ninety-one volunteers were recruited in various community, adult education, and church settings in California, New Jersey, and Wyoming. Only people expressing interest in participating in the study were given materials. Participants were 74.5% ( $n=70$ ) female, 25.5% ( $n=24$ ) male, ages from 20 to 80 years, with a mean of 46.0 ( $SD=16.7$ ). Ethnic/racial composition was 85.7% ( $n=78$ ) Euro-American with the remaining 14.3% ( $n=13$ ) divided into six other ethnic identifications including Asian ( $n=2$ ), African American ( $n=3$ ), Hispanic ( $n=1$ ), Native American ( $n=3$ ), Pacific Islander ( $n=3$ ), and Other ( $n=1$ ). Marital status was reported as 57.6% ( $n=53$ ) married, 31.5% ( $n=29$ ) single, and 10.9% ( $n=10$ ) divorced. Highest education achieved was reported by 8.8% ( $n=8$ ) as high school, 5.5% ( $n=5$ ) professional degree, 37.4% ( $n=34$ ) college, 39.6% ( $n=36$ ) master's degree, and 8.8% ( $n=8$ ) M.D. or Ph.D. Forty-six percent ( $n=42$ ) of the sample reported having no children, 54% ( $n=49$ ) had one or more children ( $M=1.6$ ,  $SD=1.8$ ). Of the 91 participants, 26% ( $n=24$ ) indicated no specific religious affiliation, 24% ( $n=22$ ) Episcopal, 11% ( $n=10$ ) Roman Catholic, and 33% ( $n=30$ ) indicated one of 15 other denominations including Atheist and Other.

##### *Procedure*

People agreeing to participate in a "study of life attitudes and beliefs" were given materials to complete and return either in person or by mail. Those wanting to return materials by mail were given addressed and stamped envelopes. Eight weeks later, participants had the option of receiving and returning retest materials by mail or electronically. Reminders were sent one and two weeks later.

##### *Scales*

To establish the concurrent and discriminant validity of the Life Regard

Index-Revised, it was compared to a number of other measures, including Life Attitude Profile-Revised (Reker, 1992), the Spiritual Well-being Scale (Paloutzian & Ellison, 1991), the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960), the Hopelessness Scale (Everson, Goldberg, Kaplan, Cohen, Pukkala, Tuomileto, & Salonen, 1996) and two single-item indicators measuring the importance of religion and spirituality in life (Gorsuch & McFarland, 1972; Gorsuch & Miller, 1999).

The Life Attitude Profile-Revised (Reker, 1992) is a 48-item scale composed of six separate dimensions: Purpose, Coherence, Choice and Responsibility, Death Acceptance, Existential Vacuum, and Goal Seeking, and two composite scales, the Personal Meaning Index and Existential Transcendence. Questions are presented in a 7-point Likert format anchored by 1: Strongly Agree and 7: Strongly Disagree. The stability and internal consistency of the six dimensions and two composite scores range from .77 to .91 for diverse samples. The factor structure as well as the concurrent and discriminant validities of the Life Attitude Profile-Revised have been generally supported (Reker, 1992).

The Spiritual Well-being Scale (Paloutzian & Ellison, 1991) is a 20-item measure scored on a 6-point Likert scale anchored by 1: Strongly Agree and 6: Strongly Disagree, providing a general indication of subjective well-being and the quality of one's spiritual life in both a religious and an existential sense as defined by Moberg (1979) and Moberg and Brusek (1978). Two subscales, Religious Well-being and Existential Well-being, were designed to provide an indication of religious well-being and life purpose/life satisfaction (Paloutzian & Ellison, 1991), although several studies provide evidence questioning the factor structure of the scale (e.g., Ledbetter, Smith, Fischer, & Vosler-Hunter, 1991; Miller, Fleming, & Brown-Anderson, 1998). For this reason, only the full-scale score was employed in the present study. The Spiritual Well-being Scale shows high test-retest reliability. Across seven samples, overall coefficients alpha ranged between .82 and .99 (Bufford, Paloutzian, & Ellison, 1991).

The Marlowe-Crowne Social Desirability Scale measures the need of subjects to obtain the approval of others by responding in socially and culturally acceptable ways (Crowne & Marlowe, 1960). The scale showed good internal consistency ( $KR-20 = .88$ ), with test-retest reliability of .89 (Crowne & Marlowe, 1960).

The Hopelessness Scale (Everson, *et al.*, 1996) is comprised of two items ("I feel that it is impossible to reach the goals I would like to strive for," and "The future seems to me to be hopeless, and I can't believe that things are changing for the better"). Responses are on a five-point Likert scale anchored by 0: Absolutely Disagree and 4: Absolutely Agree. The two items are moderately correlated ( $r = .53$ ) and were originally taken from a

battery of psychosocial questionnaires. Everson, *et al.* (1996) defined hopelessness as "negative expectancies about oneself and the future." Scores from 2,428 respondents ranged from 0 to 8 ( $M=2.7$ ,  $SD=2.0$ ). Those with the lowest scores (0, 1, or 2) comprised 52.8% of the sample. Those with mid-range scores (3, 4, or 5) formed a "moderately hopeless" group and represented 36.1% of the sample. High scores (6, 7, or 8) accounted for 11% of the sample and were deemed "highly hopeless."

One of the single-item indicators was used to assess the importance of religion in the lives of respondents. One item ("Circle the number which indicates how important religion is to you"), measured on a 10-point scale, was drawn from Gorsuch and McFarland (1972) as these authors reported that the single-item indicator for religion was generally equal to multi-item scales they investigated. The correlation of this single-item indicator with intrinsic Religiosity as defined by Feagin (1964) was reported as .84. A similar single-item scale was employed to measure the importance of spirituality in the lives of respondents ("How important is your spirituality to you").

## RESULTS

### *Descriptive Statistics and Reliability*

Table 1 presents basic descriptive statistics. Cronbach alphas, and test-retest reliabilities at 8 to 9 weeks for the Life Regard Index-Revised as well as the Framework and Fulfillment subscales. Scores on the Framework and Fulfillment subscales were correlated at .80. Corrected for attenuation, Framework and Fulfillment were correlated at .94, and with the full scale at .94 and .95, respectively.

TABLE 1  
DESCRIPTIVE STATISTICS FOR THE LIFE REGARD INDEX-REVISED  
AND FRAMEWORK AND FULFILLMENT SUBSCALES ( $N=91$ )

Scale	<i>M</i>	<i>SD</i>	Range	Cronbach $\alpha$	Test-Retest
Life Regard Index-Revised	73.06	10.57	42-84	.92	.87
Framework	36.53	5.27	22-42	.83	.82
Fulfillment	36.53	5.89	18-42	.87	.81

\* Fifty-five percent ( $n=50$ ) of participants returned retest materials. Test-retest reliabilities were calculated at eight weeks.

### *Checking Theoretical Structure*

To check the 2-factor structure proposed by Battista and Almond (1973) and supported by other studies (e.g., Debats, 1990; Debats, *et al.*, 1993) we subjected our data from 91 subjects on the 28-item scale to a maximum likelihood estimate factor analysis, specifying two factors and a promax oblique rotation ( $kappa=4$ ). We chose the oblique rotation due to the high interfactor correlation. Table 2 summarizes item loadings and communalities on

TABLE 2  
FACTOR LOADINGS AND COMMONALITIES FOR MLE PROMAX ROTATION

Descriptor†	Item‡	Promax Loadings		<i>h</i> <sup>2</sup>
		Fulfillment	Framework	
Accomplishment blocked	1FU-	1.03*		.71
Attaining goals	5FU+	.85*		.57
Excited, energetic	6FU+	.67*		.46
Passion in life	1FU+	.66*		.31
Living fully	4FU+	.60*		.53
Purpose in life	2FU+	.58*		.31
Achievement blocked	5FU-	.46*		.47
Activities valueless	7FU-	.40*		.21
Activities unimportant	4FU-	.38		.22
Purpose in living	2FR+	.37		.21
Events insignificant	6FU-	.35	.32	.38
Others more directed	7FR-		.97*	.75
No direction	1FR-	.23	.64*	.66
Significant meaning	1FR+		.60*	.37
Others feel better	2FU-		.59*	.41
Clear direction	4FR+		.50*	.32
Life deeply fulfilling	3FU+		.49*	.38
No deep beliefs	6FR-	.24	.47*	.42
Need commitment	3FR-		.43*	.24
Life confusing	4FR-		.41*	.25
Aims and goals	7FR+		.38	.08
Accomplishment	7FU+	.32	.37	.41
No interest in life	5FR-		.35	.12
No life purpose	2FR-		.34	.08
Personal framework	3FR+	.30	.33	.33
Philosophy of life	6FR+		.32	.22
Wasted potential	3FU-	.26	.30	.27
Energy is focused	5FR+	.22	.30	.22

Note.—Loadings < .20 omitted. Correlation between the promax rotated factors .68. †As nominated by Chamberlain and Zika (1988). ‡Item identifiers as given in Battista and Almond (1973). \*Loads  $\geq$  .40 on theorized factor and < .30 on other factor.

these two factors, which accounted for 33.0% and 7.1% of the variance, respectively. Fifteen items met the criterion of loading greater than .40 on the predicted factor and less than .30 on the other factor. Of the 13 items not meeting these criteria, five loaded between .30 and .40 on the predicted factor and less than .20 on the other factor (4FU-, 7FR+, 2FR-, 5FR-, 6FR+), five loaded less than .40 and greater than .20 on both factors (6FU-, 7FU+, 3FR+, 3FU-, 5FR+), and three loaded greater than .30 on the opposite factor than predicted but not on the predicted factor (2FU-, 2FR+, 3FR+). The vast majority of the items exhibited very low commonalities. The promax rotation yielded factors correlated at .68. A goodness-of-fit test was significant ( $\chi^2_{323} = 537.97$ ,  $p < .001$ ), indicating that the 2-factor solution is not



a good model for these data. These results offer very little evidence for the existence of the theorized two-factor structure, but the ratio of subjects to items was well below 5:1 recommended usually as required.

Part-whole correlations, item means, standard deviations, and percentages of respondents endorsing each item in a high-meaning direction are summarized in Table 3. Several items such as 2FR- and 7FR+ lack variance and discriminative power, yet may be more useful with clinical samples. In general, we observed a skewed distribution with a high percentage of respondents endorsing items in the direction of high meaning.

TABLE 3  
ITEM ANALYSIS FOR THE LIFE REGARD INDEX-REVISED

Item	Part-Whole Correlations			Descriptive Statistics		
	Framework	Fulfillment	Index	M	SD	% High Meaning Endorsement
1FR+	.63	.43	.55	2.78	0.55	85
3FU+	.54	.61	.61	2.80	0.50	85
2FR-	.26	.20	.24	2.93	0.34	95
5FR-	.39	.27	.34	2.81	0.54	88
2FU+	.33	.45	.41	2.80	0.52	86
4FU-	.41	.44	.45	2.75	0.59	82
2FR+	.44	.46	.48	2.66	0.64	75
3FR-	.55	.44	.52	2.13	0.96	53
1FR-	.81	.67	.78	2.61	0.73	76
7FR-	.78	.60	.72	2.52	0.74	66
7FR+	.36	.11	.24	2.81	0.56	89
1FU-	.43	.68	.59	2.60	0.70	73
6FR-	.63	.60	.65	2.86	0.49	91
6FR+	.53	.42	.50	2.78	0.44	79
2FU-	.56	.53	.57	2.63	0.69	75
4FR-	.55	.46	.53	2.55	0.79	73
5FU-	.54	.65	.63	2.45	0.82	66
3FU-	.48	.55	.55	2.06	0.95	48
7FU+	.58	.67	.67	2.60	0.71	74
1FU+	.45	.63	.57	2.53	0.75	68
5FU+	.46	.65	.59	2.58	0.68	69
7FU-	.43	.52	.51	2.81	0.49	86
4FR+	.69	.48	.61	2.44	0.79	63
6FU+	.58	.67	.66	2.35	0.84	59
5FR+	.55	.44	.52	2.19	0.90	52
6FU-	.54	.65	.63	2.86	0.44	89
4FU+	.60	.72	.70	2.40	0.86	64
3FR+	.64	.60	.65	2.50	0.71	62

\*Correlation of each item with the two subscales and the full scale. †High meaning endorsement refers to a response of 3 on positive items, e.g., 3FR+, or a 1 on negative items, e.g., 3FR-.

*Concurrent and Discriminative Validity*

Summary statistics for the scales administered to test concurrent and discriminative validity are summarized in Table 4, as are intercorrelations between these scales and the Life Regard Index-Revised and its subscales. In general, the pattern of association suggests that the Life Regard Index-Revised has adequate concurrent and discriminative validity for the measured constructs. This revised index had significant and moderate to strong positive correlations with scores on the Purpose and Coherence subscales of the Life Attitude Profile-Revised, as well as the two composite scales, Personal Meaning and Existential Transcendence. There was also a significant negative correlation with the Existential Vacuum subscale as predicted. Also encouraging is the lack of significant correlations with the unrelated Death Anxiety and Goal Seeking (really a measure of adventure-seeking) subscales.

TABLE 4  
SUMMARY STATISTICS FOR OTHER SCALES AND CORRELATIONS WITH  
LIFE REGARD INDEX-REVISED AND SUBSCALES ( $N = 91$ )

Scale	<i>M</i>	<i>SD</i>	Range	<i>r</i>		
				Framework	Fulfillment	Full Scale
Life Attitude Profile-R						
Purpose	45.9	13.3	21-88	.43†	.39†	.44†
Coherence	40.7	7.5	22-55	.56†	.52†	.57†
Death Acceptance	35.6	10.3	11-74	.22	.03	.13
Existential Vacuum	23.2	8.1	8-42	-.54†	-.48†	-.54†
Goal Seeking	37.5	8.0	20-53	-.17	-.14	-.17
Composite Scales						
Personal Meaning	86.6	16.6	41-175	.61†	.56†	.62†
Existential Transcendence	101.7	27.5	33-175	.66†	.54†	.64†
Marlowe-Crowne Social Desirability	13.5	5.9	0-27	.36†	.35†	.38†
Spiritual Well-being Scale	93.0	17.2	49-120	.42†	.39†	.43†
Spirituality is important	9.0	1.6	1-10	.34†	.34†	.36†
Religion is important	7.1	3.2	1-10	.13	-.04	.04
Hopelessness Scale	7.0	1.4	3-8	-.37†	-.46†	-.44†

Note.—Complete correlation matrix available on request. \* $p < .05$ , two-tailed. † $p < .01$ , two-tailed.

The Life Regard Index-Revised showed significant and positive correlations with measures of spirituality. Spirituality could act an existential framework producing a greater sense of meaning. Spirituality could result from (or be defined as) having a sense of meaning or purpose. Indicating religion as important was unrelated to scores on the Life Regard Index-Revised. The expected significant negative correlation with hopelessness was also observed. The Life Regard Index-Revised significantly correlated ( $r = .38$ ) with

the Marlowe-Crowne Social Desirability Scale. Possible explanations for this relationship are explored further in the Discussion section.

#### *Life Regard Index-Revised and Demographic Variables*

Associations between the demographic variables (age, sex, marital status, parental status, religious affiliation, and education) and the Life Regard Index-Revised were examined. Because the Framework and Fulfillment subscales were highly correlated with each other and the full scale, the full scale was used as the response variable in these analyses. These six variables and interaction terms were placed in a generalized linear model (GLM) predicting Life Regard Index-Revised scores. This model yielded an Adjusted  $R^2$  of .21. Both sex and marital status were significant. Women reported higher scores than men ( $F=4.85$ ,  $p=.03$ ; 95% confidence interval for the difference of the means 3.3 to 15.5). A *post hoc* comparison (Tukey HSD) on marital status indicated that divorced people had significantly lower scores than married people (95% confidence interval 0.62 to 15.23). None of the other variables reached significance, nor were there significant interactions.

#### DISCUSSION

The Life Regard Index-Revised, as well as the Framework and Fulfillment subscales, appear to have excellent test-retest reliability and internal consistency. For this sample, there appeared to be a serious restriction of range, and a likely failure to discriminate between people scoring at the upper end of the scale. This may be an artifact of the particular sample; indeed, high education has been associated with positive life regard, but there is some evidence of this problem in other samples (see Debats, *et al.*, 1993). There are several potential solutions to this problem. Using a 5-point Likert scale may increase variability and reduce restriction of range. The current 3-point scale may yield more response stability but may reduce sensitivity to change and discriminative power. Another solution to the restriction of range is eliminating or replacing items that nearly everyone endorses, since these do not help discriminate between levels of positive life regard. Validation studies with more diverse samples will further help identify more and less discriminating items.

The 2-factor structure was not supported by this study. Research should be directed at clarifying the factor structure (if any) of the Life Regard Index-Revised with targeted populations. Conceptually, Framework and Fulfillment are clearly distinct constructs. Unfortunately, the subscales are highly correlated and correspond to the 2-factor solution only partially for this sample. It is also disconcerting that some of the items identified as problematic in past studies loaded most highly on the predicted factors in this study and vice versa. This may reflect differences in the English and Dutch versions, particular characteristics of the samples used in this and other studies,

or other variables. That the ratio of subjects to items was 91:28 is also a likely source of instability. Replication with 350 subjects is needed. Many factor-analytic studies taken together will allow identification of items that contribute to the theorized factors. Until that time, we recommend using the full scale as a general measure of positive life regard and not the theorized factors for samples similar to that used in this study.

Generally, the Life Regard Index-Revised appears to have adequate concurrent and discriminative validities. The high correlations with other measures of meaning and purpose, including spiritual meaning, are encouraging. The finding that divorced people reported less positive life regard is interesting and somewhat expected given that they have lost a potential source of meaning. That men report less positive life regard than women is an intriguing finding begging further study. It would be interesting to examine sex differences with respect to sources, breadth, and depth of personal meaning. Lack of significant association between the Life Regard Index-Revised and ratings of the importance of religion, yet the presence of significant associations with ratings of the importance of spirituality is very interesting. Unfortunately, we do not know what respondents mean by these terms, so speculation as to the meaning of this result seems unwarranted. Failure to observe a significant positive correlation between years of education and scores on the Index, as observed elsewhere (e.g., Debats, *et al.*, 1993), may be associated with the extremely skewed distribution of education in this sample. A sample with education more closely representing that of the general population might yield different results.

The significant positive correlation between the Life Regard Index-Revised and Marlowe-Crowne Social Desirability Scale is an interesting finding with several possible interpretations. Crowne and Marlowe (1960) designed their scale to measure the need of respondents to obtain approval by answering items in a socially and culturally desirable manner. It is arguable that positive life regard is itself socially desirable. One could view the scores on the Life Regard Index-Revised to be biased in the direction of high meaning to the extent to which a person seeks approval through socially desirable responses. In other words, the Marlowe-Crowne Social Desirability Scale measures a characteristic of the responder, the need to identify with socially desirable responses, and that characteristic may be taken into account in the interpretation of responses to other measures. In this interpretation, an effort is made to partition scores of positive life regard into actual life regard and positive social presentation components.

Another possible explanation for the association is that both measures contain items related to possible sources of meaning. Of course, this is the explicit purpose of the Life Regard Index-Revised. Many sources of meaning in life are socially based. For example, people may derive a sense of

meaning and purpose in life from "being a good person" or "helping others." Almost half of the items in the Marlowe-Crowne Social Desirability Scale ask about what may be termed "interpersonal virtues," such as altruism, charity, empathy, forgiveness, courteousness, kindness, and tolerance. If a person derives meaning from the enactment of these virtues, it may be more likely that she endorses these items to produce higher scores on both scales. Given this underlying similarity of the measures, it is difficult to disentangle the components of social desirability and positive life regard. Viewed in this way, the significant correlation between the measures seems to be evidence for the concurrent validity of the Life Regard Index-Revised.

Personal meaning has generally been regarded as a personality construct, although this assumption has not been subjected to disconfirmatory efforts, such as interventions with personal meaning as the primary dependent variable. That personal meaning can be changed through psychosocial interventions is a testable hypothesis dependent on inventories sensitive to intra-individual change. Tests both sensitive to interpersonal differences and intra-individual change generally have items with good discriminative power and adequate "room to move" within the range of the scale. Certainly, the people scoring 84 of 84 on the Life Regard Index-Revised could experience more meaning in life, but the scale lacks sensitivity to measure such a change.

Overall, the English version of the Life Regard Index-Revised appears to be a reliable if somewhat insensitive measure of personal meaning, especially for high-meaning samples. Although capable of gross distinctions, it lacks the range to maximize the observation of interpersonal differences. This study had several limitations, including the small sample and unrepresentative sample characteristics, such as being highly educated and disproportionately female. These limitations certainly may hinder generalizability of the findings. More studies with different sample characteristics will clarify the robustness of the strengths and limitations observed here. Comparisons of 3-point and 5-point versions should be undertaken. Also, the scale should be integrated into clinical and intervention studies to assess the scale's sensitivity to intrapersonal change. Validation studies and clinical trials might also consider adding means other than self-report questionnaires to establish concurrent and discriminative validities. If personal meaning is to be taken seriously as an important topic in psychology and health-related research, much more effort is needed to establish adequate measures.

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