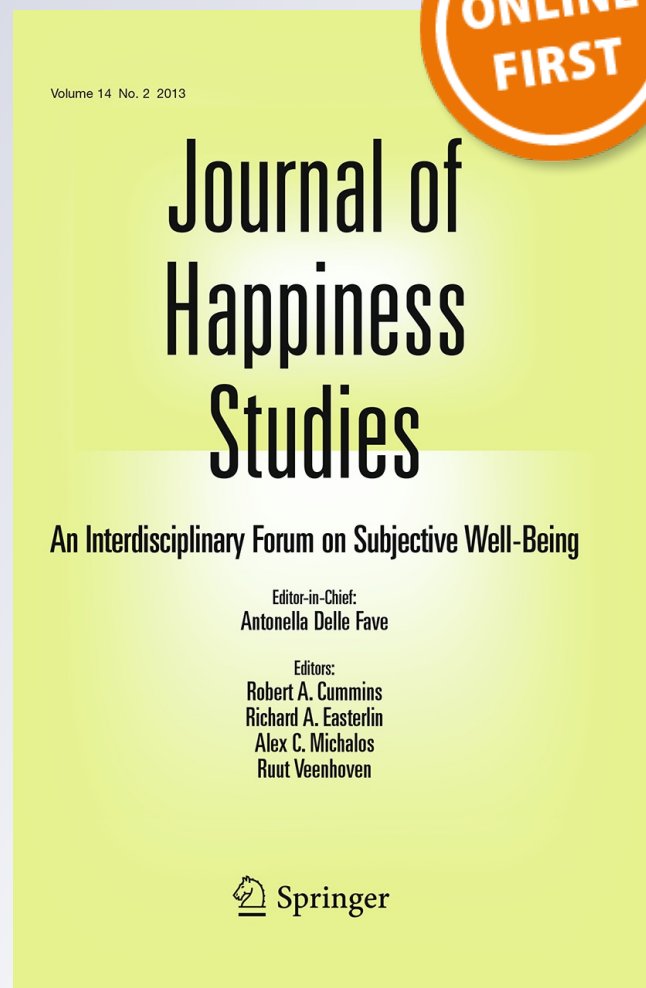# Measuring Search for Meaning: A Factor-Analytic Evaluation of the Seeking of Noetic Goals Test (SONG)

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Measuring Search for Meaning: A Factor-Analytic Evaluation of the Seeking of Noetic Goals Test (SONG)

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Abstract This study's primary purpose was to examine the factor structure of the 20-item Seeking of Noetic Goals (SONG) test via exploratory and confirmatory factor-analytic procedures. An additional objective was to report on the measure's incremental validity in comparison to the Search scale of the Meaning in Life Questionnaire (MLQ), an alternative measure of search for meaning. This study utilized data from three samples of American undergraduates ($N = 908$) from a medium-sized southern university. Factor analysis supported a two-factor model of the SONG, with patterns of correlation further suggesting the measure assesses distinct constructs. Multi-group confirmatory factor analysis indicated similar scale structure and item answering in terms of gender. Overall, the first factor yielded reliable scores that correlated significantly and in the expected direction with measures of well-being and psychological distress. The second factor did not yield reliable scores nor did it correlate significantly with many of the other measures administered. However, both factors were shown to significantly predict scores from measures of depression and general psychological distress after controlling for MLQ Search scale scores. We consider the data with respect to SONG scoring and interpretation, and discuss implications of these data for future research.

Keywords Logotherapy · Search for meaning · Factor analysis · Psychometrics · Seeking of Noetic Goals test · Meaning in Life Questionnaire · Positive psychology

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1 Introduction

The 20-item Seeking of Noetic Goals (SONG) test was developed by Crumbaugh (1977a, b) as a complement to the 20-item Purpose in Life test (PIL; Crumbaugh and Maholick 1964, 1969). Both measures were developed using the logotherapy paradigm, which emphasizes the importance of meaning in life and its relationship to well-being (Frankl 1959/1985, 2010; Melton and Schulenberg 2008; Schulenberg et al. 2008). The PIL was designed to measure the amount of meaning a person perceives (i.e., a life filled with purpose and goal-directedness), while the SONG was designed to measure the need/motivation to discover meaning. The term "noetic" refers to uniquely human resources, such as goals, purposes, creativity, love, humor, and what was described by Frankl as "the will to meaning" (Frankl 1959/1985, 2010; Guttmann 1996; Schulenberg et al. 2008). "The will to meaning" refers to the primary motivation of human beings to discover meaning and purpose in life, the absence of which is associated with "existential vacuum" (Crumbaugh 1977a, b; Frankl 1959/1985; Schulenberg et al. 2008). Awareness of such feelings of emptiness "can motivate people to respond to their circumstances, and … can guide them in an objective direction that they experience as full or satisfying" (Schulenberg et al. 2008, p. 449). Alternatively, if unaddressed, existential vacuum is predicted to be associated with a range of mental health problems, depression being one example (Schulenberg et al. 2008).

"Noetic" is a logotherapy term that translates to meaning, and both terms are often considered to be interchangeable (Schulenberg et al. 2008). Thus, while the PIL refers to the amount of meaning that one perceives, and is the most well-known of the logotherapy measures, the SONG refers to the perceived need to search for meaning, and it was this construct that the measure was purported to assess. Because noetic is not a well-known term outside the logotherapy literature, from this point forward we will refer to the Seeking of Noetic Goals test as the SONG, and references to noetic in this context will be phrased in terms of search for meaning.

Meaning is a concept of central importance to the human condition (Schulenberg et al. 2008; Wong 2012a, b). Meaning has been of interest to philosophers throughout the centuries, it has become a focal point for many theoretical paradigms in psychology and related mental health fields throughout the twentieth century, and it continues to serve as the core of the efforts of researchers and clinicians who strive to better understand its theoretical and empirical relevance, so much so that it has become an integral aspect of the influential and rapidly growing positive psychology movement (Baumeister et al. in press; King et al. 2006; Schulenberg et al. 2008; Seligman 2002; Wong 2012a). Meaning is positively related to happiness, well-being, life satisfaction, resilience, coping skills, hope, gratitude, health, self-esteem, and empowerment, and inversely related to depression, anxiety, posttraumatic stress, drug and alcohol use, materialism, experiential avoidance, and boredom proneness (Baumeister et al. in press; Duffy and Raque-Bogdan 2010; Kashdan and Breen 2007; Lyubomirsky 2008, 2013; Melton and Schulenberg 2008; Park et al. 2010a; Pöhlmann et al. 2006; Schulenberg et al. 2011b; Seligman 2011; Steger et al. 2009, 2010; Whittington and Scher 2010; Wong 2012a). People who perceive their lives as having meaning are more likely to be happier and healthier across a range of contexts. Indeed, "… the presence of meaning is an excellent marker of the good life" (Peterson and Park 2012, p. 292).

In the case of search for meaning, the motivation to discover meaning is often positively associated with forms of psychological distress, such as anxiety and depression, and inversely correlated with the perception of meaning (Crumbaugh 1977a, b; Duffy and Raque-Bogdan 2010; Park et al. 2010b; Schulenberg 2004; Schulenberg et al. 2011b;

Steger et al. 2009). In other words, if people are reporting greater perceived need to search for meaning, they are likely to report greater psychological distress and less perceived meaning at that point in time. Available studies are often correlational in nature, so that one must be careful regarding causal inferences. However, one interpretation is that in some cases, when an individual experiences psychological distress, the discovery of meaning may serve as a means of galvanizing internal resources toward the alleviation of symptoms. While such an interpretation is an oversimplification, as there are many complex variables at work, what does seem apparent is that there is substantial merit in understanding not only a person's perception of the amount of meaning that they perceive (presence of meaning), but also their perception as to how much they perceive the need to discover meaning (search for meaning). Understanding these two constructs was a primary reason why the PIL and the SONG were developed, and understanding these two constructs in conjunction with one another was a primary reason that the PIL and the SONG were designed to complement one another. For instance, one idea behind using these measures in combination with one another is to identify potential candidates for meaning-related therapies, as may be the case for people reporting little meaning but high motivation to discover meaning (Crumbaugh 1977a, b; Guttmann 1996). While the idea is an interesting one, as of the writing of this article there is not documented empirical support to suggest the use of the PIL and the SONG in this manner. However, there continues to be interest in studying these constructs in relation to one another—one example is evidenced by the work of Steger and colleagues.

Steger and colleagues developed the Meaning in Life Questionnaire (MLQ; Steger et al. 2006), and while this instrument is a relatively recent development in the field, the rapidly accumulating psychometric support and wide-spread use of the measure suggest that it has already achieved landmark status in the assessment of meaning (see Schulenberg et al. 2011b for a review). The MLQ measures presence of meaning (Presence) and search for meaning (Search) in a parsimonious (5 items/scale, 10 items total), psychometrically sound manner.

The MLQ is growing exponentially in popularity, yielding some interesting findings regarding the interaction of presence of meaning and search for meaning. As noted earlier, often an inverse, significant correlation is reported between presence of meaning and search for meaning, suggesting that the more meaning one perceives, the less motivation there is to discover additional meaning (high meaning with low search for meaning), and vice versa (low meaning with high search for meaning). However, theoretically speaking, other patterns of response should be expected. For instance, some people will report high perceived meaning and high search for meaning (life is meaningful and there is motivation to pursue additional meaning), and some people will report low meaning coupled with low motivation to search for meaning (life perceived as meaningless with little drive to discover meaning). Moreover, a number of new studies have found significant interaction effects between presence of meaning and search for meaning (see for example, Park et al. 2010b; Schulenberg et al. 2011b; Steger et al. 2009), which suggest the relationship is significantly more complex than previously thought, and which will ultimately warrant continued empirical inquiry to better understand the nature of the relationship.

1.1 Assessment of Meaning: The PIL, The SONG, and The Meaning in Life Questionnaire

While there is a need for psychometrically sound measures of presence of meaning and search for meaning, a potential danger to this literature is the increasing number of

measures used, which could result in a confused, muddled literature when one considers potential differences in how these measures were developed, and how the constructs were defined. In short, do available measures assess meaning in the same way? In what ways are they similar? In what ways are they different?

Many measures of meaning have been developed over the years, with Crumbaugh and Maholick's Purpose in Life test (PIL; 1964, 1969) considered by many to have lead the movement to assess meaning in a psychometrically sound manner (see McDonald et al. 2012; Melton and Schulenberg 2008 for recent reviews). There is an abundant literature on the psychometric properties of the PIL. The SONG (1977a, b) was developed by Crumbaugh subsequently, but there is much less research available as to its utility. These measures were designed to assess presence of meaning and search for meaning, respectively, in a general or global way, with each form comprised of 20 items. The MLQ, alternatively, also assesses presence of meaning and search for meaning in a general or global way, and does so with five items for each construct. If the psychometrics of the MLQ are solid, which they are, a legitimate question then becomes why not use the MLQ rather than the PIL and SONG to assess presence of meaning and search for meaning?

We address this question with a brief discussion of the 20-item PIL, which has come under criticism in recent years with respect to the measure's factor structure. Recent research has suggested a clear, replicable two-factor structure for the instrument, comprised of exciting life and meaningful life, considered to be related but separate aspects of meaning. The meaningful life factor has since evolved into the four-item Purpose in Life test-Short Form (PIL-SF), regarded as a more "pure" general measure of whether a person perceives life as having meaning (Schulenberg and Melton 2010; Schulenberg et al. 2011a). Moreover, in these studies, the PIL-SF appeared to be psychometrically sound and added a unique contribution to the prediction of psychological distress scores (in this case Outcome Questionnaire scores), with scores from two alternative measures of meaning (the Presence scale of the MLQ and the Life Purpose Questionnaire) being controlled for. The rationale for these analyses was to determine whether the PIL-SF has incremental validity in relation to these other measures of presence of meaning. More specifically, if the PIL-SF doesn't possess incremental validity, then questions could be raised as to its utility. On the basis of these studies, the authors concluded that there is support to assess for the presence of meaning using both the PIL-SF (four items) and the MLQ Presence scale (five items), as they appear to complement one another (i.e., while there is overlap, each appears to add a unique psychometric contribution).

As for search for meaning, for the SONG to have psychometric viability and utility, research data should support that the instrument itself is psychometrically sound. Moreover, data should demonstrate that the measure has incremental validity in relation to other, alternative measures of motivation to discover meaning, the Search scale of the MLQ being a prime example. Prior to discussing the purpose of our study in greater depth, we summarize the psychometric properties of the SONG.

1.2 SONG Development and Psychometric Support

Crumbaugh's (1977a, b) purpose in developing the SONG was to compose an attitudinal measure to assess a respondent's motivation to search for meaning. Statements were derived to assess search for meaning, with logotherapy as a guiding conceptual framework. In the original developmental research, the measure was administered to clinical and nonclinical groups, with Crumbaugh ultimately retaining the 20 items that correlated strongly with the total score and moderately with each other. Three clinical groups were

Table 1 Seeking of Noetic Goals (SONG) general item content	Item	General item content
	1	Ultimate life meaning (II)
	2	Uncertainty about future accomplishments
	3	Sustained interest in activities (I)
	4	Something missing in life (I)
	5	Restlessness (I)
	6	Future fulfillment in life (II)
	7	Future excitement (II)
	8	Seeking of new sense of self (I)
	9	Lack of meaning/purpose (I)
	10	Achievement orientation (II)
	11	Indecisive of ambitions (I)
	12	Bothered by uncertainty of life (I)
	13	Need for new life perspective (I)
	14	Lack of goal commitment/completion (I)
	15	Adventurous nature (II)
	16	Motivation to discover self
The interested reader is referred to Reker and Cousins (1979) and Fabry (1988) for a reprinting of SONG items. I = factor 1—existential vacuum, II = factor 2—will to meaning	17	Impermanence of life direction (I)
	18	Ultimate life direction (II)
	19	Unfulfilled duty (I)
	20	Motivation to accomplish the extraordinary (II)

assessed at intake (23 male adults from a Veterans Administration neuropsychiatric hospital, 30 outpatient adults receiving drug treatment, and 53 male inpatients receiving alcohol treatment) and three clinical groups were assessed at both intake and termination (209 males receiving alcohol treatment, 55 males receiving alcohol treatment coupled with logotherapy, and 25 males receiving logotherapy in an outpatient setting). Nonclinical groups were comprised of 19 male seminary students, 64 male and female college students, and 123 female private college students. The SONG was designed to be of utility across populations and settings.

With regard to item content, examples of SONG items include "I hope for something exciting in the future" and "I have sensed a lack of a worthwhile job to do in life." The measure employs a Likert-type response format ranging from 1 (never) to 7 (constantly). Scores range from 20 to 140, with higher scores interpreted to suggest a greater perceived need to search for meaning. Table 1 presents general content description of the SONG's items. For comprehensive listings of the SONG items, the interested reader is referred to Reker and Cousins (1979) and Fabry (1988).[1]

Since the SONG's development, it has come under psychometric criticism, specifically with regard as to the nature of the instrument's development and available norms. Aside from the initial publications (1977a, b), there is little published information available as to how the measure was developed, and the SONG has been critiqued for lack of adequate

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[1] The SONG's copyright holder is Psychometric Affiliates. The first author and colleagues attempted to contact Psychometric Affiliates to request permission to print the items in their entirety; however, efforts to contact the company were unsuccessful. Similar to other studies where the measure is not available in its entirety, the general content of the item is briefly noted, and sample items are offered, as necessary context for the reader.

norms (Bailey-Richardson 1985; Moreland 1985). For instance, while means and standard deviations were provided, the normative sample was not adequately described in terms of demographic variables, and while a cutting score was specified, the meaning of the score was not clear or sufficiently justified (Bailey-Richardson 1985; Hutzell 1987; Moreland 1985).

With regard to reliability, the available data suggest that the SONG yields reliable scores. Internal consistency reliability coefficients for adults, college students, and high-school students (grades 9–12) tend to be in excess of 0.80 (Baczwaski 2011; Crumbaugh 1977a; Hutzell 1987; Reker and Cousins 1979; Schulenberg 2004; Sink et al. 1998). In the Sink et al. study, test–retest reliability coefficients ranging from 0.66 to 0.71 over an 8-week interval were reported for samples of high school students (approximate age 16).

With respect to validity, some studies report SONG correlations with other measures of meaning as a negative relationship and with measures of psychological distress as a positive relationship (see for example, Schulenberg 2004; Schulenberg and Melton 2010; Yarnell 1972). These findings are often interpreted to mean that meaning's presence is associated with lower motivation to discover additional meaning, and that psychological distress is related to a greater perceived need to discover meaning (Crumbaugh 1977a, b). Along these lines, among undergraduate students, the SONG has been found to correlate significantly and negatively with the PIL and the Life Purpose Questionnaire, two measures of presence of meaning (Hutzell 1987; Schulenberg 2004). Among patients in an alcohol treatment facility, the SONG was useful in identifying post-treatment levels of meaning and motivation to find meaning. Individuals receiving logotherapy reported higher levels of current meaning and less motivation to find meaning in their lives (Crumbaugh 1977a, b). This trend was not found with patients receiving treatment without logotherapy.

As for structural validity, while the SONG was designed to yield a single score, Reker and Cousins (1979) reported that the measure has four distinct factors (existential vacuum, goal seeking, search for adventure, and futuristic aspirations). Schulenberg and Gohm (2009) reported two meaningful and distinct factors, one that appears to focus on current existential confusion (possibly existential vacuum), and one that appears to focus on future-oriented determination to find meaning (possibly will to meaning). While these studies are helpful in better understanding the SONG's factor structure, these investigations are not without limitations. For instance, the former study did not report how items loaded onto their respective factors, and factor loadings were not reported (the primary goal of the study was to focus on a combined factor analysis of the PIL and the SONG). Both studies did not have a large enough sample to properly replicate the reported results ($N = 248$; $N = 341$, respectively). Ideally, a sample should be large enough where it could be randomly split into two subgroups, with exploratory factor-analytic data from one subsample being replicated in the second subsample using confirmatory factor-analytic procedures. To our knowledge there have been no published factor-analytic studies that support the original SONG's use as a one-factor measure. Factor-analytic studies that have been performed suggest more than one factor; however, these results are not compelling as they have not been replicated. A justifiable empirical question is whether the SONG is one-dimensional or whether there are psychometrically sound factors. Any model formulated should be replicable, parsimonious (one to two factors), straightforward to interpret (no items loading onto more than one factor), reliable, and with factors that offer distinct and useful psychometric contributions (Preacher and MacCallum 2003).

1.3 The Purpose of This Study

Given the importance of structural validity in demonstrating the psychometric viability of a measure (Steger 2006), and that factor-analytic investigations of measures of meaning are a particularly important area of empirical inquiry (Melton and Schulenberg 2008; Schulenberg et al. 2008), a primary goal of this study was to examine the factor structure of the SONG, and on the basis of these findings report reliability coefficients and correlations with other measures of well-being and psychological distress. In this way, a more complete understanding of the SONG's factor structure, as well as the structure's psychometric properties and potential utility, could be achieved. For this reason, additional analyses of factor structure and item functioning were conducted by gender. Regression analyses were then performed to examine the psychometric contributions of SONG scores in relation to the Search scale of the MLQ, specifically with regard to the prediction of scores from two measures of psychological distress.

Prior to proceeding with study methodology, we present additional rationale to address another potential question for this line of research. The SONG has been criticized over the years.[2] There are limited published data available on the development of the measure and its psychometric properties, suggestions as to the measure's appropriate use have been limited to research, and we have noted that there are questions as to the validity of SONG scores, as relates to factor structure, for instance. For these reasons, one may wonder why new research on the SONG should be conducted at all. Simply, the SONG warrants empirical attention because investigations or reviews that employ or refer to the measure appear to be growing, and it has garnered interest in clinical, training, and educational contexts, in the United States as well as internationally (e.g., Brunelli et al. 2012; Fjelland et al. 2008; Klinger 2012; McDonald et al. 2012). The measure is used in a range of contexts, and it has been, and continues to be, translated into other languages. Moreover, questions raised about the SONG's factor structure, coupled with subsequent answers, carry with them implications for how the measure is scored and interpreted, as well as its utility in research settings and potentially beyond. Similar to how the four-item PIL-SF appears to add a unique psychometric contribution in relation to the Presence scale of the MLQ (i.e., they appear to measure related but distinct aspects of perceived meaning), it is entirely possible that the SONG, or a distinct grouping of SONG items as supported by factor-analytic procedures, could add a unique psychometric contribution in relation to the Search scale of the MLQ, which would further clarify how the search for meaning construct is being defined and assessed by these measures.

2 Methods

2.1 Participants

The sample was comprised of 908 undergraduates from a medium-sized southern university. Data were combined from three separate data collections (*N*'s of 341, 269, and 298) where the predominant focus was to better understand meaning's and search for meaning's relationships to a range of well-being and psychological distress variables (see for example, Schulenberg 2004; Schulenberg and Gohm 2009; Schulenberg and Melton 2010; Schulenberg et al. 2011a). Data were combined from the separate data collections in

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[2] For additional critiques of the SONG, the reader is referred to Hutzell (1987) and Dyck (1987).

order to develop a large sample from which SONG psychometric data such as factor structure could be reported with confidence. Eight respondents did not report demographic information. Of those who did report their demographic information, 287 were men (31.6 %) and 613 (67.5 %) were women. With regard to racial/ethnic background, 698 were White (76.9 %) and 155 (17.1 %) were African American (18 identified as Hispanic American, 13 identified as Asian American, 1 identified as Native American, and 15 identified as Other). The mean age was 19.45, with a standard deviation of 1.98 (age range = 18–48).

2.2 Measures

Measures administered in addition to the SONG included the PIL and other indices of well-being, such as the MLQ (which includes scales for Presence of meaning and Search for meaning), and the Satisfaction with Life Scale. Measures of psychological distress administered included the Outcome Questionnaire and the Center for Epidemiologic Studies-Depression scale. Each of the aforementioned measures was not necessarily included in each of the studies, depending on the particular goals of those studies (measures were included in one, two, or all three collections of data). Each measure is briefly described below for context. The mean, standard deviation, coefficient α, and the combined number of participants on which the data are based are presented in Table 5. Higher SONG scores should be significantly associated with lower scores on the well-being measures (negatively correlated) and with higher scores on the indices of psychological distress (positively correlated). The measures were chosen for their psychometric properties, to represent an array of variables, and because they are often used in research studies related to meaning in life.

2.2.1 Purpose in Life Test (PIL)

The 20-item PIL (Crumbaugh and Maholick 1964, 1969) was designed to measure perceived meaning in life. Responses are given on a 7-point Likert-type format with different anchors reflecting the content of the item. A total score is calculated by summing individual items, with scores ranging from 20 to 140. Higher scores reflect greater perceived meaning.

2.2.2 PIL Test-Short Form (PIL-SF)

The four-item PIL-SF (Schulenberg et al. 2011a) is a measure of perceived meaning in life that was derived from the original 20-item PIL. Items are rated on a 7-point Likert-type scale with different response anchors based on the item. An example item is "In life I have … 1 (no goals or aims at all) to 7 (very clear goals and aims)." An overall score is calculated by summing the four items (total scores range from 4 to 28). Higher scores are reflective of greater reported perceived meaning.

2.2.3 Meaning in Life Questionnaire (MLQ)

The 10-item MLQ (Steger et al. 2006) employs a 7-point Likert-type response format, assessing Presence of meaning (five items) and Search for meaning (five items). Scores range from 5 to 35 for each scale. Higher scores suggest greater perceived meaning and perceived need to find meaning, respectively.

2.2.4 Satisfaction with Life Scale (SWLS)

The five-item Satisfaction with Life Scale (Diener et al. 1985) assesses perception of life satisfaction. A 7-point Likert-type response format is employed to yield a total score ranging from 5 to 35. Higher scores suggest greater perceived satisfaction with life.

2.2.5 Outcome Questionnaire (OQ-45.2)

The Outcome Questionnaire (Lambert et al. 1996) is comprised of 45 items (Likert-type response format) that assess a range of mental health concerns, such as depression, anxiety, and substance abuse; interpersonal relationship quality; and problems with family, work, and leisure. Higher scores suggest greater perceived psychological distress (i.e., mental health symptoms) and impairment in functioning.

2.2.6 Center for Epidemiologic Studies-Depression Scale (CES-D)

The 20-item Center for Epidemiologic Studies-Depression scale was developed to assess symptoms of depression (Radloff 1977). Items are scored on a 4-point Likert-type scale ranging from 1 to 4. High scores are reflective of depressed mood, such as feelings of hopelessness, loss of appetite, sleep disturbance, feelings of worthlessness, and feelings of rejection.

2.3 Procedures

Participants were recruited via an online system employed by the Department of Psychology at the university where data were collected. The individual studies were approved by the university's Institutional Review Board. Students received course credit or extra credit for their participation. Informed consent was obtained. Questionnaires were counterbalanced in the administration to account for possible order effects. Respondents typically completed the battery of questionnaires in approximately 30 to 40 minutes. Data were collected in each case as part of a larger, separate study of meaning in life, well-being, and psychological distress.

3 Results

3.1 Data Preparation

Data were collected at three different time points. Since the purpose of our study was to conduct a large-scale structural analysis of the SONG, the datasets were combined into one large sample ($N = 908$). Assumptions of multivariate statistics (linearity, normality, homogeneity) were analyzed and determined satisfactory. The dataset was then randomized and split into two equal subsamples (N's $= 454$ each). Each group was then screened for multivariate outliers on the SONG answers using Mahalanobis distance. The exploratory factor analysis (EFA) subsample contained 8 outliers, and the confirmatory factor analysis (CFA) subsample contained 10 outliers. Outliers were removed from all individual analyses.

3.2 Exploratory Factor Analysis

The first random subsample ($N = 446$) was analyzed with an EFA using the FACTOR program designed by Lorenzo-Seva and Ferrando (2006). All of the following EFA models were assessed with an oblique rotation (direct oblimin), maximum likelihood estimation, and a 0.30 cut off for factor loadings as recommended by Preacher and MacCallum (2003). The following fit indices were used to observe model adequacy: root mean square error of approximation (RMSEA; Steiger 1990), standardized root mean residual (SRMR; Jöreskog and Sörbom 1981), Tucker Lewis non-normed fit index NNFI (Bentler and Bonett 1980), and the comparative fit index (CFI; Bentler 1990). The RMSEA and SRMR are said to have good model fit at very low values (<0.06; Browne and Cudeck 1993; Bryant and Yarnold 1995; Thompson 2004), while the NNFI and CFI should have very high values (>0.90) for good model fit (Bryant and Yarnold 1995; Hair et al. 2006; Hoyle 2000; Thompson 2004).

A parallel analysis and scree plot examination indicated that a two-factor model would best fit the data, but one-factor and three-factor models are also presented for comparison. First, a 20-item, two-factor model was analyzed with good model fit as indicated in Table 2. However, two items [#s 2 (0.314, 0.358) and 16 (0.404, 0.347)] split loadings across both factors, which is undesirable for understanding factor structure and creating subscales. These two items were removed from further analyses, which examined one, two, and three-factor models of the remaining 18 items. Removing items 2 and 16 from the EFA did not change the overall fit indices for the two-factor model (as shown in Table 2), but did create a stable factor structure with all items loading onto one factor only. Table 3 includes the final factor loadings for the two-factor model. The one-factor model shows a significant degrade in fit indices for both the original 20-item and the shorter 18-item models, and while a three-factor model shows slight improvement in fit indices, factor loadings indicated the third factor was a unique variable loading (i.e., only one item loaded for this factor). Therefore, the reduced two-factor model was chosen as the best representation of the EFA subsample, and this factor structure was analyzed in the CFA subsample.

An initial look at the items comprising the SONG factors suggests that factor 1 (items 3, 4, 5, 8, 9, 11, 12, 13, 14, 17, 19) may be measuring life direction and dissatisfaction with one's place in the world (whether a person is experiencing existential confusion; "I feel that some element which I can't quite define is missing from my life"), while factor 2 (1, 6, 7, 10, 15, 18, 20) may be measuring perspective regarding life achievement in the future (existential determination to discover meaning; "I think of achieving something new and different"). Factor 1 appears to be rooted more in the present, while factor 2 appears to be rooted more in the future. We tentatively labeled factor 1 "existential vacuum" and factor

Table 2 Fit indices for EFA models

EFA models	RMSEA	SRMR	NNFI	CFI
20 Items—1 factor model	0.090	0.094	0.720	0.750
20 Items—2 factor model	0.050	0.042	0.920	0.940
18 Items—1 factor model	0.090	0.096	0.730	0.760
18 Items—2 factor model	0.050	0.043	0.920	0.940
18 Items—3 factor model	0.030	0.032	0.960	0.970

Table 3 SONG factor loadings from the final 18-item 2-factor model

Item	Factor 1—existential vacuum	Factor 2—will to meaning
3	**0.427**	0.003
4	**0.710**	0.039
5	**0.459**	0.000
8	**0.574**	0.091
9	**0.650**	0.016
11	**0.608**	−0.083
12	**0.622**	0.015
13	**0.747**	−0.018
14	**0.428**	0.000
17	**0.652**	0.053
19	**0.647**	−0.088
1	−0.023	**0.541**
6	0.097	**0.440**
7	0.129	**0.456**
10	0.245	**0.415**
15	0.250	**0.319**
18	−0.218	**0.411**
20	−0.164	**0.769**

Factor loadings have been sorted by factor and item for easier identification

2 "will to meaning". These factors approximate those of Schulenberg and Gohm (2009) in their exploratory study, with some notable exceptions.[3]

3.3 Confirmatory Factor Analysis

The second random sample ($N = 444$) was investigated with several CFA models. The two-factor model outlined in the EFA section was tested against two comparison models: the Schulenberg and Gohm (2009) two-factor model and an overall one-factor model (both 18 and 20 items). All models were created in SPSS AMOS 18 using the following fit indices: χ^2, the ratio of χ^2 to degrees of freedom (χ^2/df; Bryant and Yarnold 1995; Hoelter 1983), CFI, the Tucker-Lewis Index (TLI; Tucker and Lewis 1973), and RMSEA. As stated above, RMSEA values should be very low to indicate good fit, and CFI and TLI values should be very high to indicate good fit. χ^2/df values were examined to counteract large χ^2 values that occur with larger sample sizes, and χ^2/df should be below 3 to indicate good fitting models (Bollen 1989; Bryant and Yarnold 1995). Table 4 includes all model fit indices.

The original 20-item factor analysis presented by Schulenberg and Gohm (2009) had moderate values for a two-factor model. Their paper indicated the same issues with split loading items, but they were left in the analysis to strengthen the psychometric properties of a subscale. That model has moderately low χ^2/df values and RMSEA values in the acceptable range, but also low range CFI and TLI values. When items 2 and 16 are eliminated, fit indices improve significantly. The χ^2 difference between models was

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[3] In the prior study, notable exceptions relate to items 2 (loading onto the first factor) and 16 (loading onto the second factor). In that study, items 16 and 18 also loaded onto both factors, but were assigned to factor 2 in large part to bolster the factor's psychometric properties.

Table 4 Fit indices for SONG CFA models and measurement invariance tests

CFA models	χ^2	df	χ^2/df	CFI	TLI	RMSEA	90 % CI
Schulenberg and Gohm (2009)	556.050	169	3.290	0.824	0.802	0.072	0.065–0.079
18 Item 2-factor model	357.067	134	2.665	0.881	0.864	0.061	0.054–0.069
20 Item 1-factor model	788.996	170	4.612	0.719	0.687	0.089	0.083–0.096
18 Item 1-factor model	637.107	135	4.719	0.727	0.691	0.091	0.084–0.098
Gender measurement invariance tests							
Females ($N = 304$; 68.5 %)	299.362	134	2.234	0.860	0.848	0.064	0.054–0.074
Males ($N = 136$, 30.6 %)	218.331	134	1.629	0.866	0.847	0.068	0.051–0.084
Configural invariance	517.934	268	1.933	0.866	0.847	0.046	0.040–0.052
Metric invariance	528.887	284	1.862	0.869	0.859	0.044	0.038–0.050
Scalar invariance	561.670	302	1.840	0.861	0.859	0.044	0.039–0.050
Strict factorial invariance	585.813	320	1.831	0.858	0.864	0.044	0.038–0.049

Percentages do not total 100 due to participant non-identification of gender. Terminology for MGCFA taken from Brown (2006)

198.98, indicating a significant improvement over the 20-item model, critical $\chi^2(35) = 49.80$, $p < .05$. Overall, other fit indices improved as well: the RMSEA and χ^2/df dropped into good and acceptable ranges, and the CFI and TLI values increased greatly. For comparison, the 18-item one-factor model generated a significant loss in fit, $\Delta\chi^2 = 280.04$ as did the 20-item one-factor model, $\Delta\chi^2 = 431.93$, critical $\chi^2(1) = 3.84$, $p < .05$. Other fit indices were correspondingly degraded.

3.4 Measurement Invariance Models for Gender

After discovery of moderate fit values for the two-factor model, two measurement invariance multigroup CFA models were examined for gender. Brown's (2006) guidelines for testing measurement invariance models were followed, and the corresponding models were assessed. First, each group was examined separately with the two-factor model to observe individual group fit for the same overall factor structure. Given that these models show adequate fit, the subsequent models are tested as nested models as multi-group CFAs. Configural invariance or equal form analyzes if nested groups share the same overall factor structure. Next, metric invariance is examined by constraining group factor loadings to be equal. Scalar invariance models have the added constraint of item intercepts across groups, and finally strict factorial invariance is programmed with equal error variance across groups. Models were found to be invariant if fit indices were acceptable and did not degrade from the previous model. ΔCFI were used to examine nested model fit due to large sample size influence on χ^2 (Cheung and Rensvold 2002). The decrease in CFI values should not exceed 0.01 from one model to the next. Partial invariance can occur when model fit is acceptable, but fit is degraded from the previous nested model. This pattern indicates specific influences (i.e., factor loadings, intercepts) on group differences in multi-group models. Following recommendations from Hofmans et al. (2009) and Cheung and Rensvold (1998, 1999), constraints are relaxed for each individual item to discover differential item functioning. Partial invariance is achieved if relaxing these items translates into non-degraded model fit. Model fits can be seen in Table 4.

The CFA subsample had 304 (68.5 %) females and 136 (30.6 %) males. Four participants did not provide this demographic information and were not included in these

analyses. Both female and male models indicated good fit with low χ^2/df and RMSEA values, along with fairly high CFI and TLI values. These indices were similar or better than the combined two-factor model, which suggested that a measurement invariance test was appropriate. Configural, metric, scalar and strict factorial invariance models were all analyzed to assess factor structure across gender. As shown in Table 4, these models were found to be fully invariant or that items performed the same for both males and females. The configural invariance model indicated the same factor structure for the SONG. The metric invariance model was not significantly degraded, ΔCFI $= +0.003$, indicating that factor loadings were equal. Scalar invariance was found as well, ΔCFI $= -0.008$, which showed that males and females have the same item intercepts or base ratings for SONG items. Finally, strict factorial invariance was examined and established, ΔCFI $= -0.003$, demonstrating equal error variance across gender for the SONG scales. These findings imply that the SONG factor structure was independent of gender, or that items function similarly for males and females, even if they may rate questions slightly differently.

3.5 Correlational and Regression Analyses

Table 5 includes correlations of the individual SONG factors, the original SONG total scores, and the other measures administered. As predicted, SONG factor 1 (existential vacuum) is negatively correlated with measures of meaning and well-being, such as the PIL, PIL-SF, Satisfaction with Life Scale, and MLQ Presence scale. SONG factor 1 is positively correlated with measures of psychological distress, specifically indices of general distress (Outcome Questionnaire) and depression (Center for Epidemiologic Studies-Depression scale). SONG factor 1 scores correlate significantly and positively with the MLQ Search scale, a measure of search for meaning.

SONG factor 2 (will to meaning) was correlated positively with the PIL, PIL-SF, and the MLQ Presence and Search scales. These correlations, even though statistically significant, were much smaller than correlations between SONG factor 1 scores and the other measures administered. As shown in Table 5, the pattern of correlations between the

Table 5 Correlations between factor scores and other measures of meaning, descriptive data for measures administered

	Factor 1	Factor 2	Total	N	M	SD	a
SONG factor 1		0.224*	0.888*	908	35.27	10.11	.85
SONG factor 2	0.224*		0.629*	908	34.06	5.58	.67
SONG (20 item)	0.888*	0.629*		908	77.56	14.18	.81
PIL (20 item)	−0.574*	0.198*	−0.356*	908	108.68	14.35	.89
PIL-SF	−0.461*	0.221*	−0.263*	908	22.73	3.44	.83
MLQ Presence	−0.441*	0.174*	−0.266*	567	26.99	5.68	.89
MLQ Search	0.448*	0.183*	0.469*	567	23.55	7.38	.89
SWLS	−0.495*	0.085	−0.359*	269	26.25	5.71	.85
OQ-45.2	0.685*	−0.011	0.529*	908	53.10	22.05	.93
CES-D	0.592*	−0.066	0.438*	269	13.15	9.39	.89

PIL Purpose in Life test, *PIL-SF* Purpose in Life test-Short Form, *MLQ* Meaning in Life Questionnaire, *SWLS* Satisfaction with Life Scale, *OQ-45.2* Outcome Questionnaire, *CES-D* Center for Epidemiologic Studies-Depression scale

* Standard correlations are significant at $p < .01$

SONG factors and the other measures is dramatically different, suggesting that these factors are assessing different concepts. Moreover, while the SONG factors are correlated significantly at $r = 0.22$, $p < .01$, the correlation is small enough to be consistent with this interpretation. Means, standard deviations, and α coefficients for the SONG factor scores, and the 20-item original SONG form, are also presented in Table 5.

In order to better understand the potentially unique psychometric contributions of the SONG factor scores, two regression analyses were conducted. With respect to independent variables, in each case MLQ Search scores were added first into the equation, followed by SONG factor 1 (existential vacuum) scores, and finally SONG factor 2 (will to meaning) scores. The purpose of these regressions was to better assess the psychometric utility of the SONG factor scores to determine if they contribute significantly in the prediction of psychological distress, above and beyond another measure of search for meaning (MLQ Search scores). As for dependent variables, in the first case, general psychological distress scores were used (Outcome Questionnaire). In the second case, depression scores were used (Center for Epidemiologic Studies-Depression scale). Regression equations are presented in Table 6.

Hierarchical regression models with the MLQ Search scale predicting Outcome Questionnaire scores ($N = 567$) were significant in the first step, $F(1,564) = 57.93$, $p < .001$, $R^2 = 0.09$. The addition of SONG factor 1 scores was a significant change, $\Delta F(1,563) = 392.07$, $p < .001$, $\Delta R^2 = 0.37$, and an analysis of regression coefficients shows that the SONG factor 1 B value was a significant predictor of Outcome Questionnaire scores, while the MLQ Search scale no longer was useful at predicting Outcome Questionnaire scores (Table 6). Further, the addition of the SONG factor 2 scores in step 3 indicated a significant addition of variance, $\Delta F(1,562) = 43.46$, $p < .001$, $\Delta R^2 = 0.04$, albeit less variance than the previous step. Therefore, after controlling for MLQ Search scores, SONG factor 1 (existential vacuum) was a significant predictor of Outcome Questionnaire scores, and SONG factor 2 (will to meaning) also added significantly to the

Table 6 Hierarchical regression models showing additive effects of SONG factors

	B	SE B	B	p
OQ-45.2 analysis				
Step 1—MLQ search	0.86	0.11	0.31	<.001
Step 2—MLQ search	−0.08	0.10	−0.03	.42
Step 2—factor 1	1.49	0.08	0.70	<.001
Step 3—MLQ search	−0.01	0.10	0.00	.94
Step 3—factor 1	1.57	0.07	0.73	<.001
Step 3—factor 2	−0.98	0.15	−0.20	<.001
CES-D analysis				
Step 1—MLQ search	0.33	0.07	0.27	<.001
Step 2—MLQ search	−0.02	0.07	−0.02	.76
Step 2—factor 1	0.59	0.06	0.60	<.001
Step 3—MLQ search	0.01	0.07	0.01	.89
Step 3—factor 1	0.61	0.05	0.62	<.001
Step 3—factor 2	−0.41	0.11	−0.12	<.001

MLQ Meaning in Life Questionnaire, *OQ-45.2* Outcome Questionnaire, *CES-D* Center for Epidemiologic Studies-Depression scale

variance explained after controlling for both MLQ Search scores and SONG factor 1 scores. *B* values for SONG factors are both significant in the final step, with SONG factor 1 being positively related to Outcome Questionnaire scores, and SONG factor 2 scores being negatively related to Outcome Questionnaire scores.

Next, the same analysis was conducted predicting Center for Epidemiologic Studies-Depression scale scores ($N = 269$), with roughly the same results (Table 6). First, MLQ Search scores were a significant predictor of depression scores when entered into the first step of a hierarchical regression equation, $F(1,266) = 21.02, p < .001, R^2 = 0.07$. Second, the addition of SONG factor 1 (existential vacuum) scores increased the predictability of depression scores, $\Delta F(1,265) = 115.20, p < .001, \Delta R^2 = 0.28$, again showing that MLQ Search scores were no longer predictive of the dependent variable, while SONG factor 1 was a significant predictor. Finally, the addition of SONG factor 2 (will to meaning) was significant in the third step, $\Delta F(1,264) = 14.67, p < .001, \Delta R^2 = 0.03$. The final model showed that MLQ Search scores were not a significant predictor of depression scores, while both SONG factors were significant predictors with all other variables held constant.

4 Discussion

4.1 Two-Factor Model of the SONG: Existential Vacuum and Will to Meaning

The primary goal of this study was to conduct a rigorous factor-analysis of the SONG to examine and document data regarding its structural validity. EFA showed two factors. An initial examination of items that comprise the factors suggest that SONG factor 1 (items 3–5, 8–9, 11–14, 17, 19) may be assessing dissatisfaction with one's place in the world. Item content relates to indecisiveness regarding ambitions, lack of goal commitment/completion, whether there is sustained interest in activities, and feelings of restlessness. Items comprising this factor focus on the perception that something critical is missing from one's life and the need for direction (e.g., "I feel the lack of—and a need to find—a real meaning and purpose in my life"). These items tend to be present oriented ("I feel that some element which I can't quite define is missing from my life"), and yield reliable scores by conventional interpretive standards (DeVellis 2011; Haynes et al. 2011; Nunnally and Bernstein 1994). These items were labeled "existential vacuum."

From the logotherapy perspective, existential vacuum is the perception that one's life lacks meaning and purpose. It is often conceptualized as feelings of emptiness, boredom, or apathy, which can motivate individuals to pursue new directions that are more consistent with their personal values hierarchies. The basic idea being that if people are aware of their values, and values are prioritized such that the most emphasis in life is placed on the most important values, and goals pursued and decisions made are congruent with personal values hierarchies, then as people progress toward their goals they are more likely to perceive life as meaningful (Crumbaugh 1988; Hutzell 1990; Schulenberg et al. 2008). Are people pursuing goals with persistence? Are people pursuing goals because they truly value them, or are they pursuing them because they are valued by loved ones or society? Items that comprise the existential vacuum factor appear to be related to such questions ("I seem to change my main objective in life"). For those people who perceive their lives as having little meaning, there exists the potentiality for their lives to become meaningful. The critically important aspect in this regard is a given person's *perception*, that is, their subjective interpretation of values, thoughts, and experiences.

As for SONG factor 2 (items 1, 6–7, 10, 15, 18, 20), items may be assessing existential attitudes concerning future life achievement ("I think of achieving something new and different", "I have felt a determination to achieve something far beyond the ordinary"). Items comprising this factor tend to be future oriented ("I feel that the greatest fulfillment of my life lies yet in the future"), largely relating to ultimate life meaning and direction, future fulfillment, future excitement, achievement orientation, and adventurous nature. The item content seems consistent with the concept of "will to meaning," and was named accordingly, although in this case the factor's reliability is considered unacceptable to minimally acceptable by conventional interpretive standards (DeVellis 2011; Haynes et al. 2011; Nunnally and Bernstein 1994).

From the logotherapy perspective, the will to meaning is the primary motivational drive (Crumbaugh 1988; Frankl 1959/1985, 2010; Guttmann 1996; Schulenberg et al. 2008). Each person "needs to find a personal identity, a meaning for existence, a place in life, a worthwhile cause" (Crumbaugh 1988, p. ix). If we do not have a sense that our lives have meaning, we do not have a sense of our identity or our place in life, and our will to meaning is frustrated, which theoretically results in existential vacuum (Crumbaugh 1988; Frankl 1959/1985, 2010; Guttmann 1996; Schulenberg et al. 2008).

Beyond the "existential vacuum" and "will to meaning" two-factor model of the SONG, the EFA found that two items referring to uncertainty about future accomplishments (item 2) and motivation to discover self (item 16) did not sufficiently load onto either factor. CFA supported the two-factor model derived through EFA procedures, and measurement invariance showed that the model is consistent for males and females. With respect to the 20-item SONG in general, total scores are reliable (coefficient $\alpha = 0.81$) and items tap a range of content with a focus on the present and future.

4.2 SONG Correlational and Regression Analyses

As for associations with other measures, SONG factor 1 (existential vacuum) significantly and negatively correlated with indices of perceived meaning and life satisfaction. Lower scores on the SONG existential vacuum factor are associated with higher scores on the Presence scale of the MLQ and the Satisfaction with Life Scale. In addition, SONG factor 1 scores significantly and positively correlated with indices of general distress and depression, as expected. In other words, higher SONG existential vacuum scores are associated with greater reports of psychological distress, as assessed by the Outcome Questionnaire and the Center for Epidemiologic Studies-Depression scale. The total, 20-item SONG score showed similar results but with weaker (albeit still significant) correlations.

In contrast, SONG factor 2 (will to meaning) was uncorrelated with many of the other measures administered, and in the cases where it was significantly associated with other measures the correlations were small. Moreover, statistical significance in these cases was also likely influenced by the large size of the sample. The strongest correlation was with the PIL-SF, which is comprised of four items from the original 20-item PIL. These four items assess whether one perceives the presence of goals/life purpose and whether life is perceived as meaningful. However, while the correlation was statistically significant, the relationship was of a comparatively small magnitude ($r = 0.22$, $p < .01$).

The distinctly different pattern of correlations between the SONG factors and the other measures administered, as well as the statistically significant (but small) correlation between the two SONG factors, is consistent with the idea that the SONG is comprised of two distinct factors. Of the two SONG factors, factor 1 (existential vacuum) is

psychometrically more closely related to the MLQ Search scale ($r = 0.45$, $p < .01$) in comparison to SONG factor 2's (will to meaning) relationship with this same measure ($r = 0.18$, $p < .01$). Moreover, SONG factor 1's correlations with other measures (as well as the correlations of the SONG total scores to other measures) are consistent with the available literature on the search for meaning construct. The correlational patterns between the SONG factor 1 scores and the other measures administered in this study generally is interpreted to mean that perceived motivation to discover meaning (i.e., existential distress associated with the perceived need for a new direction in life) is associated with greater reports of psychological distress and low perceived presence of meaning. The correlational pattern between SONG factor 2 scores and the other measures administered is difficult to explain. While a review of the items suggests the factor may be measuring will to meaning, psychometrically it is unrelated or minimally related to the other measures administered, which was not anticipated.

To better understand the potential psychometric properties of the SONG factor scores, two separate hierarchical regressions were performed with Outcome Questionnaire (general psychological distress) and Center for Epidemiologic Studies-Depression scale scores as dependent variables. With regard for independent variables, MLQ Search scores were entered first into the equation as predictors, followed by SONG factor 1 (existential vacuum) and factor 2 (will to meaning) scores in each case. The purpose of the sequencing of these independent variables was to assess whether the SONG factors added something to the prediction of scores, above and beyond an alternative measure of search for meaning. In both cases SONG factors 1 and 2 significantly added to the predictive utility of MLQ Search scores; however, the additional variance accounted for by SONG factor 2 was small in each case.

These regression data, taken together with the other data presented, offers support for the potential psychometric utility of SONG's factor 1 (existential vacuum), with significantly less support for SONG's factor 2 (will to meaning). While the SONG total score is also reliable, given the evidence for the two-factor structure, that the two factors assess distinct constructs, and that factor 1 has significantly greater psychometric utility than factor 2, caution should be taken when interpreting this measure as a one-dimensional instrument or when working with the items that comprise factor 2. Considering the measure in total, it is apparent that the SONG would benefit from revisions. While the items that comprise factor 1 are potentially useful as a psychometric shorthand for the original SONG (correlated significantly at 0.89), offering unique contributions when compared to another measure of search for meaning, the items comprising factor 2 complicate interpretation, are of questionable reliability, and would benefit from refinement in order to better encapsulate will to meaning.

4.3 Limitations and Research Directions

As for study limitations, while the combined sample was large enough to perform the statistical analyses, there is a lack of diversity within the three individual samples. The combined sample, as a result, was comprised largely of young, White women attending a medium-sized university located in the southern United States. While these data are consistent with the college population from which they were drawn, future research should include clinical populations, as well as expand the sample diversity in terms of age, geography, and race/ethnicity, when studying and reporting on the measure's factor structure and related psychometric properties.

While the study does have some limitations, the data overall are compelling. There are concerns regarding the SONG's psychometric properties. We advise caution in using the 20-item form with respect to scoring and interpreting as a single construct. However, the present data offer strong initial support in terms of the psychometric viability of SONG factor 1 (existential vacuum), and we recommend continued research with these items in order to better understand the validity of these scores, as well as the potential applicability in different contexts, in both research and applied settings. The items that comprise SONG factor 2 (will to meaning) would benefit from additional developmental work.

4.4 Study Implications

Meaning continues to be regarded as an essential aspect of the human condition as it is a framework for organizing our experiences (Frankl 1959/1985; Schulenberg et al. 2008; Steger 2012; Wong 2012a, b). People are significant. They have existential weight. They matter (Wong in press). A sense of meaning is essential to physical and emotional well-being. Meaning continues to be defined in different ways, may be discovered through a variety of means, and may be assessed via an array of measures and modalities (Frankl 1959/1985; Peterson and Park 2012; Wong 2012a, b). On one hand, it is encouraging that meaning-related research is growing exponentially given renewed interest in such concepts associated with positive psychology. On the other hand, given the range of definitions, measures, and modalities employed, there is some danger of the literature growing rapidly in such a way as to be convoluted, despite attempts to clarify and understand. For instance, what is the meaning of meaning? If an individual scores high or low on a measure of meaning, what is the implication? Taking two recent examples of measures of meaning, the five-item MLQ Presence scale and the four-item PIL-SF, an examination of the items of the former instrument suggest that it measures meaning in a general, or global way. Specifically, whether life's meaning is perceived, understood, and satisfying. The PIL-SF possesses some overlap in terms of understanding meaning in a general way, and also inquires about one's goals. Wong (in press) critiqued the MLQ Presence scale on the basis that it assesses the construct in a vague fashion, without considering necessary context such as the source of the perception of meaning. The same comment may be extended to the PIL-SF.

Both measures work well together and contribute to our understanding of meaning by assessing a person's perceived presence of meaning; however they do little to illuminate the source of the perception of meaning. Is meaning derived from a sense of family, from a sense of calling to one's occupation, from a sense of spirituality? Are these areas valued equally or differentially? The answers to such questions depend on the cultural and environmental context, as well as individual factors (e.g., Baumeister et al. in press; Delle Fave et al. 2013; Schulenberg 2003; Schulenberg et al. 2008). High or low scores on general measures of meaning, while useful for understanding perception of meaning, are not suggestive of the origins of the individual's perception of meaning. A group of people scoring similarly on such quantitative measures of meaning may do so for markedly different reasons. Future research should focus on assessing meaning in a more comprehensive fashion, including not only the general perception of meaning, but the sources of meaning as well. Meaning is likely to be derived from many areas, with potential individual variability in how meaning is defined and what areas are considered to be most essential (see, for example, Delle Fave et al. 2013). Assessing a person's hierarchy of values is critically important in understanding the perception of meaning and how meaning

relates to well-being, and is consistent with existing research and theoretical conceptualizations in logotherapy and positive psychology.

With respect to search for meaning, similarly, what is the meaning of search for meaning? The Search scale of the MLQ, as well as the two factors of the SONG, assesses search for meaning in a general way (e.g., searching for something significant or meaningful in life). There is little light shed as to the kind of search for meaning that is being measured. What is a given person searching for? This comment was originally applied to the MLQ Search scale (Wong in press), but it is also applicable to the SONG's factors. People may score similarly on these measures for markedly different reasons. Not everyone who is searching for meaning will be searching for the same reason or toward the same end, as search for meaning is based on a range of factors, such as each individual's personal values hierarchy.

A lack of contextual specificity regarding meaning and search for meaning in many studies may partially explain different findings reported across studies as to their interrelationship. Earlier in this paper we noted that search for meaning is often associated with a perceived lack of meaning (i.e., meaninglessness is associated with a need to discover meaning) or various forms of psychological distress. While similar findings have been reported in many studies, these findings are not uniform (Steger 2013; Wong in press). The relationship between presence of meaning and search for meaning, and their relationship to other variables, is more intricate than previously thought, as evidenced by a growing number of new studies. For example, Park et al. (2010b) noted that search for meaning is positively associated with well-being in those instances where respondents perceive *significant* life meaning (higher life satisfaction, greater happiness, less depression), and Steger et al. (2009) reported in their study of smoking cessation patients that those people with higher Search scores on the MLQ tended to describe greater degrees of anxiety and poorer health, although those with higher Search scores who also had higher Presence scores on this same measure did not demonstrate this association.

What are we to make of such findings? One possibility warranting further study is the idea that people who perceive life as meaningful will continue to experience a drive to search for deeper levels of meaning (Wong in press). Alternatively, "people without the presence of meaning may be struggling with their existential frustration in finding a life goal or purpose; their search for meaning, therefore, may be negatively related to well-being" (Wong in press, p. 4). While it was beyond the scope of the current study, as our focus was primarily on the factor structure of the SONG, future investigations should seek to study in greater depth the complexities between meaning, search for meaning, and related constructs in a more rigorous and systematic fashion (Schulenberg et al. 2011a; Steger et al. 2008a, b). Findings from such studies are potentially informative for future research and intervention efforts.

With respect to the assessment of presence of meaning and search for meaning, we have noted the significance of the MLQ in terms of development, support, and use. We have also noted research support suggesting that the PIL-SF adds psychometrically to the Presence scale of the MLQ when administered together (i.e., they complement one another in assessing presence of meaning). Similarly, the items comprising factor 1 (existential vacuum) of the SONG could be a useful complement to study protocols employing the Search scale of the MLQ. Studies involving such measurement tools have implications for how the search for meaning construct is conceptualized, defined, refined, and assessed. Researchers are in the process of "bootstrapping" scientific knowledge (Cronbach and Meehl 1955; Haynes et al. 2011) in the area of search for meaning, where "[b]ootstrapping as a strategy for refining constructs and their measurement refers to an ongoing process of

building a knowledge base by developing hypotheses, testing them, using those results to both improve the hypotheses and improve the ability to measure the target constructs" (Haynes et al. 2011, p. 65). Indeed, research in the area of search for meaning has made marked progress in the past 50 years. There are psychometrically sound measures available for consideration, and research on the assessment of meaning and search for meaning continues to grow dramatically, inspired by new interest from positive psychology and logotherapy researchers and clinicians embodying a multidisciplinary, scientific perspective. However, while great strides have been made, researchers and practitioners continue to work to understand these constructs as much remains unknown. As such, the search continues.

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