Beyond Presence and Search: A Person-Level Analysis of the Meaning in Life Questionnaire

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Abstract

Researchers have long acknowledged the importance of a sense of meaning in life. However, this construct proves to be multi-faceted and idiosyncratic, prompting some psychologists to pursue easily administered questionnaires that trade depth for simplicity. The present paper focuses on one popular measure, the Meaning in Life Questionnaire (Steger et al., 2006), which assesses the extent to which people feel that their life has meaning (Presence) and feel motivated to pursue greater meaning (Search). Typically, research with the measure treats these as separable dimensions with different implications for well-being. The current paper presents a secondary analysis of survey data ($N = 345$) using latent profile analysis. Results suggest that quantitative studies of meaning might be enhanced by considering person- or profile-level analysis of these scores, which better accommodate individual patterns of response.

Keywords: meaning, personality, well-being, quantitative psychology

Classic and contemporary perspectives in psychology note the significance of meaning in life and its role in psychological well-being. A life devoid of meaning is often associated with existential frustrations, including feelings of alienation from the self and others, apathy, and anxiety (Maddi, 1967; Maslow, 1967). In fact, this relationship is so strong that key models of eudaimonic well-being include a sense of purpose in life as an integral element of well-being, rather than a separate variable (Ryff, 1989; Ryff & Keyes, 1995). Contemporary findings further suggest that purpose in life even offers physical benefits to the individual, such as buffering against the risk of mortality across adulthood (Hill & Turiano, 2014), promoting preventative healthcare (Kim, Strecher, & Ryff, 2014), and even delaying the onset of Alzheimer's disease (Boyle, Buchman, Barnes, & Bennett, 2010).

The recognition of meaning's importance for well-being has spurred the development of various approaches to quantify an individual's sense of meaning in life. Nonetheless, meaning in life is typically a highly idiosyncratic, nuanced evaluation that increases in complexity as people develop, and is often subtly woven into personal life narratives (e.g., Bauer, King, & Steger, 2019; King, Scollon, Ramsey, & Williams, 2000). Measuring meaning is no easy task.

This impetus to understand meaning effectively has since led to the development of various survey-based measures designed to capture key aspects of having a sense of meaning in life. Rather than attempting to arbitrate between them, the current paper focuses on one popular measure: the Meaning in Life Questionnaire (MLQ; Steger, Frazier, & Oishi, & Kaler, 2006), which has been cited over 2,500 times since its publication.

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Although the measure relies on dimensional variation in two subscales (reviewed below), we argue that the individualized nature of meaning may be better approximated from a more integrative and person-centered approach. The current study offers a first analysis of person- or profile-level patterns in this questionnaire to explore whether responses to the measure show meaningful patterns that might offer additional information beyond a standard variable-level analysis. We conclude by showing that, regardless of which person-centered model one employs, there is evidence that the strict linear relationships that have been observed between MLQ scores and well-being (e.g., Steger, Kashdan, Sullivan, & Lorentz, 2008) may be neglecting important variation in personality profiles.

Assessment of Meaning

In its earliest forms, psychologists approached personal meaning primarily through interview-based and qualitative methods, which assess the extent to which an individual perceives significance and purpose in their life. For instance, in Logotherapy (Frankl, 1963), therapeutic practice aids clients in discovering a sense of purpose in life by guiding them in gaining a clearer understanding of their current self and their aspired future self, as well as how they interpret disquieting life events. Before practitioners can assess a client's sense of meaning, they must first gain a comprehensive view of the client through extensive interaction. This involved process allows the therapist to understand the nuanced meanings that each individual forms to orient themselves.

Although there is considerable value in this rich idiographic approach to personal meaning, there have been attempts to develop more efficient (but less detailed) methods for broadly assessing the extent to which individuals find meaning in life. Questionnaire-based methods lack the depth and nuance of interview-based approaches, but provide a useful lens for those interested in studying meaning in life in a nomothetic way as a dimension of personality or in the context of an experimental design (e.g., the Purpose in Life Inventory; Crumbaugh & Maholick, 1964).

One such measure that has become prominent in recent years is the Meaning in Life Questionnaire (MLQ; Steger et al., 2006). This measure includes 10 items assessing two separate subscales that represent distinct dimensions of meaning. *Presence* refers to the extent to which individuals perceive their life as having purpose and significance. The other dimension, *Search*, measures individuals' motivation to seek greater meaning in their life. Importantly, these dimensions have demonstrated predictable effects on personal well-being. Those with greater Presence of meaning typically report more social connectedness, higher self-esteem, higher levels of optimism, more positive emotions, and greater life satisfaction (Steger & Kashdan, 2007; Steger, Oishi, & Kashdan, 2009). In contrast, individuals who desire greater meaning as reflected by higher Search scores tend show poorer well-being overall, characterized by feelings of anxiety and depression (Steger et al., 2006; Steger et al., 2009).

Such measures have also been invaluable for experimentally testing situational cues that may directly influence perceived meaning. For example, when presented with information in meaningful patterns, individuals reported greater meaning in life compared to those presented with randomness (Heintzelman, Trent, & King, 2013). Furthermore, disruption of the fluid thought processes that could foster coherence reduces individuals' perceived sense of meaning (King & Hicks, 2009). Interestingly, threats to meaning (e.g., exposure to absurdist art) heighten individuals' motivation to search for meaning (Proulx, Heine, & Vohs, 2010).

Limitations of a Variable-Centered Approach

Although research speaks to the value of this individual difference approach in the study of personal meaning, this literature does have some notable limitations. As a questionnaire, the measure engages in the trade-off noted above: It glosses over nuanced information about an individual's unique perspective on the world in favor of more cursory data about relative perceptions on two independent scales.

Although the Presence and Search scales correlate with positive and negative psychological outcomes in expected ways, some research suggests that the story is considerably more complex. For instance, it may be that relationships between Search and psychological symptoms like depression and anxiety are moderated by levels of Presence (Schulenberg, Strack, & Buchanan, 2011). Specifically, Search predicted deficits in well-being but only at somewhat low levels of Presence. Other work has demonstrated that for people who already have substantial meaning in life, search for greater meaning is associated with well-being, life satisfaction, more happiness, and less depression (Park, Park, & Peterson, 2010).

Theoretically, then, these findings suggest that Presence and Search should not be treated as completely independent. For one, the correlation between the two scales is non-zero. In the original work, two measurements of Presence and Search were correlated at -.24 and -.34 (Steger et al., 2006). Nevertheless, considering the moderate size of these associations, along with the research presented above, suggests that for others Presence and Search are rather independent constructs. Thus, predicting outcomes from each scale separately, assuming they capture independent components of meaning in life, is unwarranted.

Variable-Centered and Person-Centered Assessments

How can psychologists gain a clearer sense of the quantitative relations of MLQ scores? As noted above, the use of the MLQ typically proceeds in a variable-centered, rather than person-centered, approach. Variable-centered assessments, such as the MLQ, focus on individual traits, which are typically treated as separate and isolated constructs; to study correlates of Presence, for instance, one might collapse across individuals to see how those scores track some relevant outcome.

Person- or profile-level approaches, on the other hand, attempt to explore how personality operates as an integrated system (Muthén & Muthén, 2000). This approach considers subgroups or profiles of responses based on a parsimonious reduction of the observed data, thereby affording a more holistic assessment of the person (Asendorpf, 2015). Rather than testing the effects of individual variables in isolation or after controlling for shared variance (e.g., in regression analysis), the use of profile-level analysis compares these groups of profiles to see if these empirically-derived groups of respondents present with different characteristics.

Historically, many psychologists have posited that focusing solely on variable-centered approaches may result in researchers overlooking how various traits operate together within the individual (Allport, 1937; Block, 1971; Magnusson, 1988; Mervielde & Asendorpf, 2000; Stern, 1911). When considering a person-centered approach, one can offer a dynamic, holistic view of the individual by providing information on how isolated characteristics interact at the person level. Whole individuals, rather than isolated traits, interact with social environments (e.g., parents, teachers, employers), and major life events (e.g., losing a loved one) and role changes (e.g., becoming a parent) occur at the person-level (Donnellan & Robins, 2010). Thus, observing

traits from a person-centered approach can inform research on how personality develops over time (Laursen & Hoff, 2006).

Current Research

The current study takes a more holistic person-level approach to assessing meaning in life by modeling patterns of individuals' responses to MLQ's Search and Presence subscales. This study investigated these patterns through a latent profile analysis that allowed us to identify categories of individuals based on responses to the MLQ.

Given that meaning is a holistic feature of the whole individual, it is perhaps surprising that past research on the MLQ has relied entirely on variable-level methods that neglect person-level patterns of response. This variable-only approach may be sufficient if the high negative correlations between Presence and Search fully explain how individuals respond: for instance, if there are only two patterns of response to the measure (high Presence/low Search and high Search/low Presence). If this were the case, then controlling for the linear positive (vs. negative) relationships of Presence (vs. Search) in variable-centered analysis would be sufficient to fully capture how individuals responded to the questionnaire.

However, anything more complex than a purely hydraulic/linear set of profiles would imply that person-level analysis could offer greater insight into how individuals respond to the questionnaire. We predicted that we would find evidence for these more complex response patterns, suggesting a need for more nuanced person-level analysis of MLQ scores.

To provide an initial test of this person-level approach to analyzing MLQ data, we conducted secondary analyses of a large dataset collected for a study on attachment to God and well-being (Keefer & Brown, 2018). This had a few advantages: By utilizing this dataset, we had both a sufficiently large sample for latent profile analysis and relevant measures of interpersonal attachment and well-being. This allowed us to further identify whether unique profiles of response to the MLQ ultimately predicted differences in other aspects of well-being.

Method

A total of 394 American adults were recruited through ProlificAcademic for a small financial incentive (£1.25). ProlificAcademic has been shown in validation studies to include more diverse samples than comparable online platforms (e.g., MTurk) and to produce data that effectively replicate established laboratory effects (Peer, Brandimarte, Samat, & Acquisti, 2017). Of the full sample, 46 (12%) failed at least one attention check item (i.e., "Leave this item blank") and an additional 3 (< 1 %) failed to fully complete the MLQ. These individuals were thus excluded from analysis *a priori* (N_{Final} = 345; 238 women, 102 men, 2 other, 3 not reporting; M_{Age} = 34.97, SD_{Age} = 10.66; 90% White). Data were originally collected as part of a separate study (Keefer & Brown, 2018), so the analyses presented here are a secondary analysis of an independent research question.

Material and Procedure

Meaning in Life. This large survey included the Meaning in Life Questionnaire (MLQ; Steger et al., 2006). This 10-item scale includes 5 items assessing the extent to which people feel that their life has meaning (*Presence* of meaning; e.g., "My life has a clear sense of purpose", "I understand my life's meaning"). The remaining 5 items measure the extent to which an

individual is actively searching for a clearer sense of purpose or significance (*Search* for meaning; e.g., "I am seeking a purpose or mission for my life", "I am searching for meaning in my life"). Both subscales demonstrated acceptable reliability in the current sample (*Presence*: α = .86, M_{Grand} = 4.42, *SD* = 1.44; *Search*: α = .93, M_{Grand} = 4.44, *SD* = 1.53) and, as in past research, showed a moderate negative correlation (*r* = -.27, *p* < .001).

Basic Psychological Need Satisfaction. As our first measure of well-being, we included the Basic Psychological Need Scale (Deci & Ryan, 2000; Gagné, 2003). This scale measures the satisfaction of the three basic psychological needs identified in Self-Determination Theory and three essential aspects of psychological well-being (sense of mastery, autonomy, and social relatedness). The first subscale measures the extent to which people feel control over their own lives or *autonomy* (7 items; e.g., "I feel like I am free to decide for myself how to live my life", "I feel pressured in my life" [reverse-scored]). The second subscale assesses the extent to which people feel a sense of self-efficacy or *competence* (6 items; e.g., "People I know tell me I am good at what I do", "Most days I feel a sense of accomplishment from what I do"). Relatedness, the extent to which individuals feel socially connected and accepted is assessed with 8 items (e.g., "People in my life care about me", "There are not many people that I am close to" [reverse-scored]). All three subscales formed reliable composites (*autonomy*: α = .65, M_{Grand} = 4.78, *SD* = 1.00; *competence*: α = .74, M_{Grand} = 4.51, *SD* = 1.11; *relatedness*: α = .80, M_{Grand} = 4.86, *SD* = .97)

Interpersonal Attachment

Participants also completed the Experiences in Close Relationships – Relationship Structures (ECR-RS) measure (Fraley, Heffernan, Vicary, & Brumbaugh, 2011) to measure variation in attachment avoidance and anxiety. This measure includes four short questionnaires assessing attachment style across each of four important relationships: mother, father, romantic partner, and best friend. For each relationship, participants rate their agreement with 6 items assessing attachment avoidance (e.g., "I prefer not to show this person how I feel deep down"; "It helps to turn to this person in times of need" [reverse-scored]) and 3 items assessing attachment anxiety (e.g., "I'm afraid that this person may abandon me"; "I'm afraid that this person doesn't really care about me").

Reliable composites were formed for the avoidance subscales for mother (α = .90, M_{Grand} = 3.22, *SD* = 1.66), father (α = .89, M_{Grand} = 3.91, *SD* = 1.69), romantic partner (α = .90, M_{Grand} = 2.29, *SD* = 1.36), and best friend (α = .87, M_{Grand} = 2.74, *SD* = 1.30). The overall composite across these four dimensions showed somewhat weaker reliability, but following Fraley et al. (2011), an average was computed to reflect overall attachment *avoidance* in interpersonal relationships (α = .50, *M* = 3.04, *SD* = .96).

Attachment anxiety subscales were reliable across relationships for mother (α = .89, M_{Grand} = 1.99, *SD* = 1.39), father (α = .96, M_{Grand} = 2.31, *SD* = 1.70), romantic partner (α = .92, M_{Grand} = 2.95, *SD* = 1.82), and best friend (α = .87, M_{Grand} = 2.76, *SD* = 1.62). Averaging scores on these subscales formed a reliable composite *attachment anxiety* score (α = .63, M_{Grand} = 2.51, *SD* = 1.15).

Analysis

To analyze these data, we proceeded by first fitting a series of latent class models to the data in order to compare possible solutions. The goal of model comparison in this kind of analysis is to strike an adequate and empirically-informed balance between parsimony and appropriate fit to our observed data (Nylund, Asparouhov, & Muthén, 2007). After determining the preferred model(s) for our data, we then analyzed mean-level differences between these profiles to compare whether profiles meaningfully varied in well-being and other available metrics.[5]

Results

To estimate profiles within MLQ responses, we initially submitted raw scores for all items of the MLQ to a latent class analysis using the poLCA package in R (Linzer & Lewis, 2014). Given the sample size, we were able to estimate models up to five underlying profiles. The model summaries are presented in Table 1.

Table 1. *Summary of model fit statistics*.

Number of Profiles	AIC	BIC	Likelihood Ratio	
Two	12016.11	12481.18	7761.47	
Three	11545.09	12244.62	7168.46	BIC-supported
Four	11348.51	12282.49	6849.88	
Five	11227.84	12396.28	6607.21	AIC-supported

Note. Solutions in LCA are probabilistic; exact values and profile scores may vary as a function of random fitting in maximum likelihood estimation.

       Data offered support for two different possible models based on BIC (Bayesian Information Criterion) and AIC (Akaike Information Criterion). The most appropriate model is the one that has the lowest score on each metric and, as indicated in the table, the five-profile model had the lowest AIC while the more parsimonious three-profile model had the lowest BIC. Given that both were arguably appropriate, we proceeded by summarizing both models.

Three-Profile Model

The three-profile model indicated somewhat uneven groups. Profile 1 represented a full 48.40% (*n* = 167) of the sample while Profile 2 represented 24.35% (*n* = 84), and Profile 3 only 27.25% (*n* = 94). Analysis of the estimated mean responses for each profile (Figure 1 for estimated item scores; Figure 2 for scores on the dimensions of the MLQ) indicated that most participants showed a pattern of response near the midpoint on both dimensions (note that Profile 1 scored between the other groups on every item). This subgroup contrasts sharply with Profile 2, a group that scored highest on all Presence items (lowest on the reverse-scored item) and low on all Search items. Finally, the smallest group by proportion showed consistently low scores on all Presence items and very high scores on all Search items. In short, most participants had some

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[5] Full data and model syntax are available at: https://osf.io/9juaq/

degree of meaning and a desire for more, and the remaining groups scored high on one dimension, but not the other.
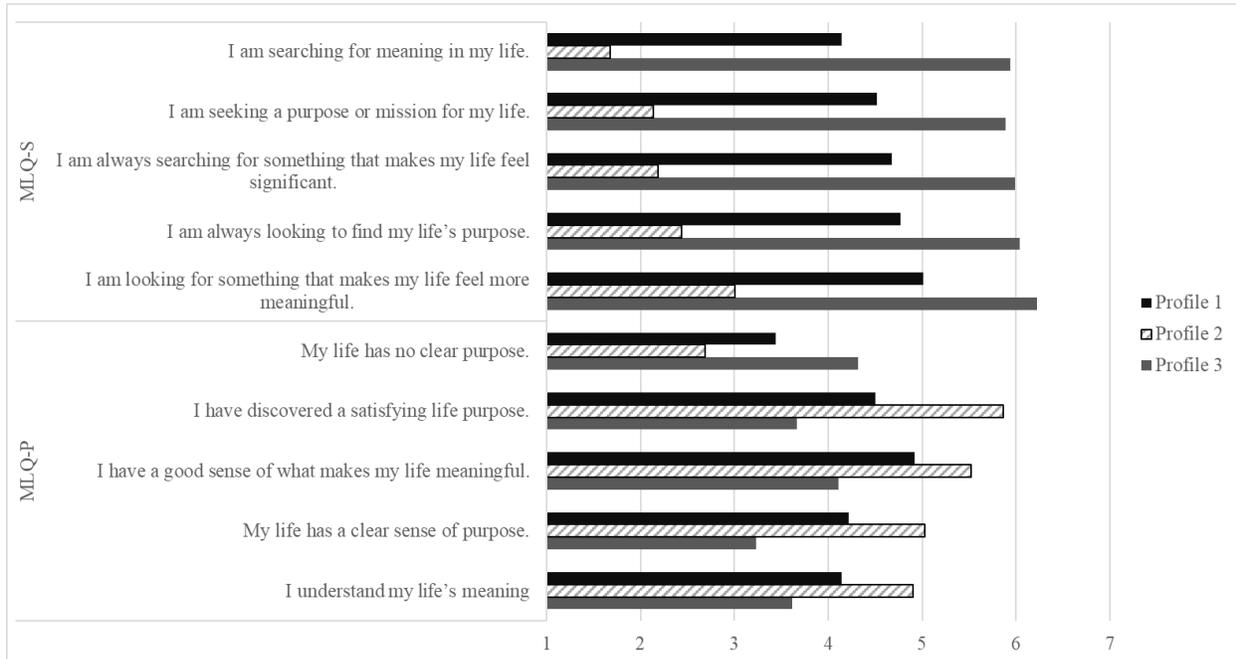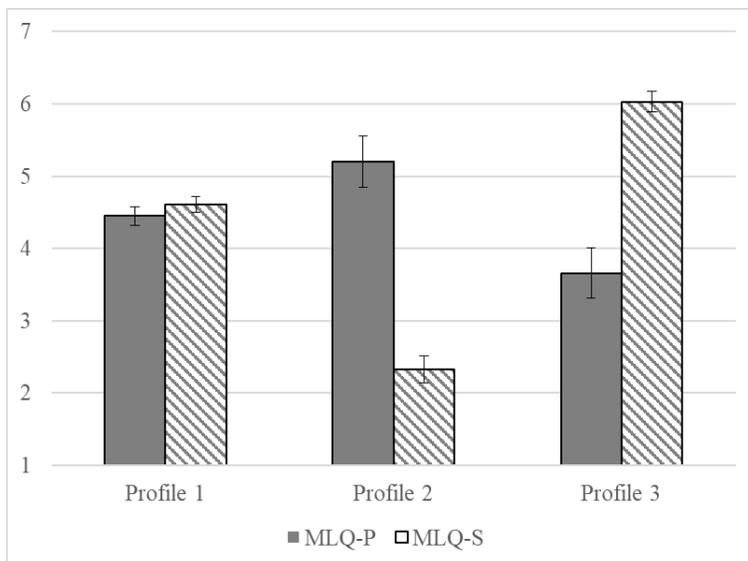

Figure 1. Estimated mean scores of each item by profile (three-profile model).

Note. Scale ranged from 1-7. Error bars represent 95% confidence intervals.

Figure 2. Estimated mean scores of each MLQ dimension by profile (three-profile model).

Differences Between Profiles. Did these profiles meaningfully differ? Demographically, there was a significant difference in age between the groups (see Table 2). In particular, Profile 2 (high Presence/low Search) were on average older than the other two groups, but Profiles 1 and 3 did not differ. With respect to gender, two participants identified as non-binary, and both were in the

Profile 2 category. There was no difference in the proportion of women and men in meaning profiles, $\chi^2 (2) = 1.99$, $p = .37$.

Table 2. *Group means and standard deviations for each profile (three-profile model).*

	Profile 1	Profile 2	Profile 3	
MLQ-Presence	4.45 (.85)[a]	5.20 (1.64)[b]	3.66 (1.72)[c]	$F(2, 342) = 29.23$, $p < .0001$, $\eta_p^2 = .15$
MLQ-Search	4.61 (.72)[a]	2.33 (.87)[b]	6.03 (.72)[c]	$F(2, 342) = 536.9$, $p < .001$, $\eta_p^2 = .76$
Age	34.04 (9.59)[a]	38.43 (11.09)[b]	33.57 (11.51)[a]	$F(2, 340) = 5.98$, $p = .003$, $\eta_p^2 = .03$
Autonomy	4.78 (.89)[a]	5.15 (1.11)[b]	4.36 (.98)[c]	$F(2, 342) = 14.98$, $p < .001$, $\eta_p^2 = .08$
Competence	4.53 (.92)[a]	4.95 (1.09)[b]	4.08 (1.28)[c]	$F(2, 342) = 14.75$, $p < .001$, $\eta_p^2 = .08$
Relatedness	4.93 (.80)[a]	5.03 (.93)[a]	4.56 (1.20)[b]	$F(2, 342) = 6.50$, $p = .002$, $\eta_p^2 = .04$
Attachment Anxiety	2.44 (1.08)[a]	2.21 (1.01)[a]	2.88 (1.27)[b]	$F(2, 342) = 8.40$, $p = .0003$, $\eta_p^2 = .05$
Attachment Avoidance	2.95 (.91)[a]	3.12 (.96)[a]	3.15 (1.03)[a]	$F(2, 342) = 1.75$, $p = .18$, $\eta_p^2 = .01$
n	167	84	94	$\chi^2 (2) = 35.70$, $p < .001$

The dataset included satisfaction of basic psychological needs for autonomy, competence, and relatedness as well as trait variation in attachment style. Comparison of profile groups revealed that Profile 2 individuals experienced significantly greater autonomy and competence compared to other groups. Profile 3 participants were significantly lower in basic need satisfaction than all other groups, fitting past research on the negative effects of Search. Similarly, Profile 3 reported greater uncertainty about their close relationships (attachment anxiety) compared to the other groups. No differences were observed in avoidance.

Notably, although Profiles 1 and 2 showed dramatic differences in levels of presence, they did not differ in attachment style or relatedness need satisfaction. This suggests that the benefits of Presence, contra past research on its positive effects, may be due to reaching some level of sufficient meaning in life, with diminishing returns for higher scores.

Five-Profile Model

The alternative five-profile model again returned uneven, albeit substantive profile groups (Figure 3 for item means; Figure 4 for MLQ scores). Profile 1 ($n = 53$) represented individuals with moderate Presence and low Search. Profile 2 ($n = 118$) scored moderately in both dimensions and was the largest category. Profile 3 ($n = 43$) was a high Presence/low Search group, similar to that observed in the three-profile model. Profiles 4 ($n = 79$) and 5 ($n = 52$) expressed higher levels of Search and moderate/low levels of Presence respectively. As one can see, there was considerable diversity among the profiles, and even those with higher scores in one dimension showed variability in the other.
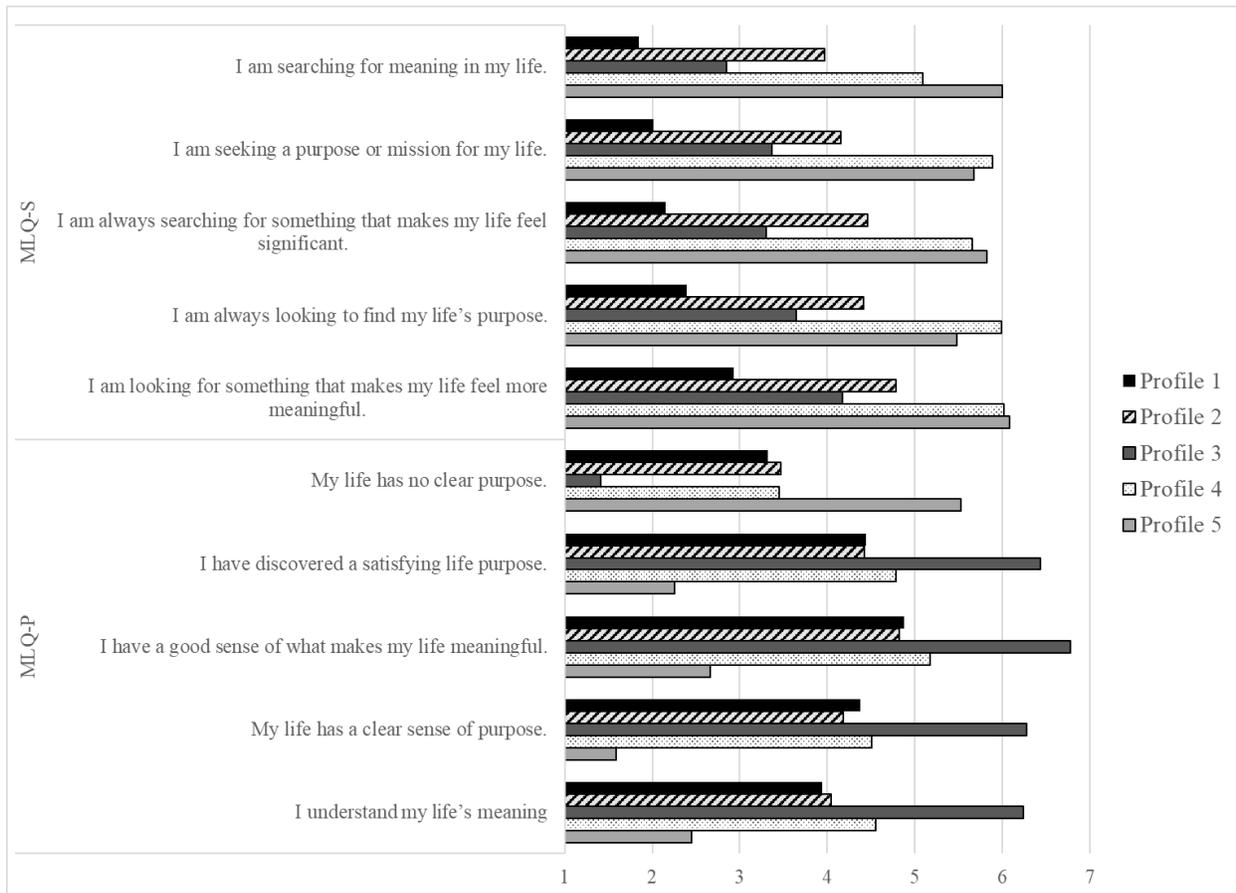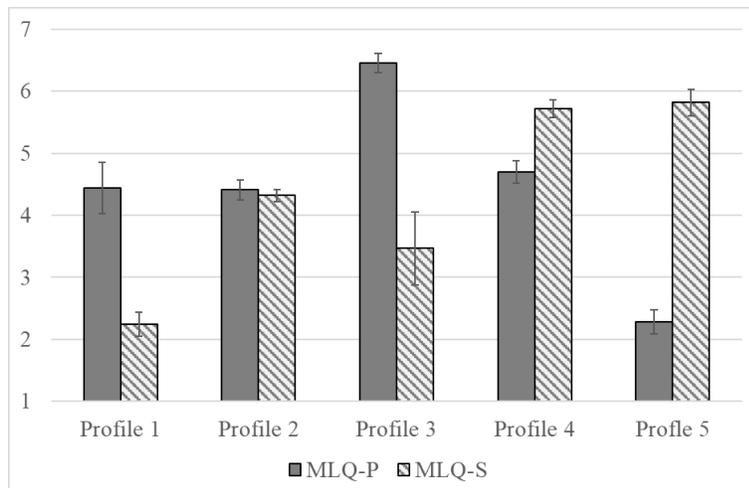

Figure 3. Estimated mean scores of each item by profile (five-profile model).

Note. Scale ranged from 1-7. Error Bars represent 95% confidence intervals.

Figure 4. Estimated mean scores of each MLQ dimension by profile (five-profile model).

Differences Between Profiles. As with the three-profile model, there were considerable differences between groups on overall MLQ scores. First, as expected, levels of Presence were dramatically different between meaning profiles (Table 3). Profile 3 individuals felt significantly more meaning than all others, while Profile 5 was the lowest. In contrast, Profile 2 was lower in Presence than Profile 4, and Profile 1 was equivalent to both (although the difference between Groups 1 and 4 was at $p = .12$). On Search, again stark differences were observed. The two high Search profiles (Profiles 4 and 5) were higher than all others. Profile 3 (high Presence/low Search) was the lowest.

There were also notable differences in other personality variables. There was again evidence of differences in age: Those in Profile 1 (moderate Presence/low Search) tended to be older on average than other groups. Comparing these results to those of the three-profile model, the data suggest that older participants tended to be lowest in Search, although not necessarily highest in Presence. In support of this view, note that Profile 3 (high Presence/low Search) had the same average age as the other profiles.

The five profiles showed marked variation in need satisfaction as well. Profile 3 (high Presence/low Search) showed the highest levels of psychological need satisfaction across all three domains. In contrast, Profile 5 (low Presence/high Search) showed the poorest levels of need satisfaction overall (even lower than moderate Presence/high Search individuals in Profile 4). These results further demonstrate that absolute levels of Presence and Search may be less important to well-being than relative levels (within-profile), and we return to these considerations below.

Finally, looking at differences in attachment style, we found that only Profile 5 (low Presence/high Search) showed greater attachment anxiety on average. Avoidance varied considerably between groups, with those in Profile 3 scoring lowest, Profile 5 the highest, and the other three groups in between.

Table 3. *Group means and standard deviations for each profile (five-profile model).*

	Profile 1	Profile 2	Profile 3	Profile 4	Profile 5	
MLQ-Presence	4.44 $(1.56)^{ac}$	4.41 $(.84)^a$	6.46 $(.52)^b$	4.70 $(.81)^c$	2.28 $(.73)^d$	$F_{(4, 340)} = 120$, $p <.0001$, $\eta_p^2 = .585$
MLQ-Search	2.24 $(.71)^a$	4.32 $(.57)^b$	3.47 $(1.94)^c$	5.72 $(.61)^d$	5.82 $(.79)^d$	$F_{(4, 340)} = 158.20$ $p < .001$, $\eta_p^2 = .65$
Age	40.25 $(10.88)^a$	34.96 $(10.04)^b$	34.70 $(10.29)^b$	32.43 $(10.08)^b$	33.85 $(11.53)^b$	$F_{(4, 338)} = 4.98 = 65$ $p = .001$, $\eta_p^2 = .05$
Autonomy	4.97 $(1.12)^a$	4.83 $(.87)^{ac}$	5.61 $(.85)^b$	4.59 $(.85)^c$	3.91 $(.83)^d$	$F_{(4, 340)} = 22.78$ $p < .001$, $\eta_p^2 = .21$
Competence	4.63 $(1.03)^a$	4.62 $(.92)^a$	5.57 $(1.02)^b$	4.44 $(.87)^a$	3.36 $(.96)^c$	$F_{(4, 340)} = 33.30$ $p < .001$, $\eta_p^2 = .28$
Relatedness	4.83 $(.81)^a$	4.93 $(.80)^a$	5.53 $(.94)^b$	4.97 $(.86)^a$	3.94 $(1.04)^c$	$F_{(4, 340)} = 21.57$ $p < .001$, $\eta_p^2 = .10$
Attachment Anxiety	2.25 $(.92)^a$	2.32 $(1.00)^a$	2.39 $(1.41)^a$	2.60 $(1.13)^a$	3.10 $(1.23)^b$	$F_{(4, 340)} = 5.51$ $p < .001$, $\eta_p^2 = .06$
Attachment Avoidance	3.32 $(.94)^a$	2.98 $(.90)^{bd}$	2.54 $(.93)^{cd}$	2.85 $(.85)^d$	3.63 $(.94)^{ae}$	$F_{(4, 340)} = 10.98$ $p < .001$, $\eta_p^2 = .11$
n	53	118	43	79	52	$\chi^2_{(4)} = 53.94$, $p < .001$

Note. Means with different superscripts differ at $p < .05$

Although not represented in the Table, several effects were directionally notable but outside our α threshold of .05. Profile 2 had marginally higher autonomy than Profile 4 ($p = .067$). The comparison of avoidance between Profile 1 and Profile 5 was marginal ($p = .079$), as was the difference between Profile 3 and Profile 4 ($p = .073$). We describe these effects as they may be of interest, but future research would be necessary to confirm both 1) whether profiles are replicable in new samples and 2) whether these non-significant comparisons represent meaningful differences between profile groups.

Discussion

The current study provides the first person-centered statistical investigation of the Meaning in Life Questionnaire. Although past research with the measure finds that Presence and Search are negatively correlated, these data show that there is considerable variation in that relationship across profiles. Some individuals exhibit a hydraulic relationship (i.e., high in one dimension, low in the other), whereas other empirically-derived profiles showed some nuance in these relationships. For example, the lowest Search profiles in the five-profile model were not, in fact, the highest Presence.

These results suggest that the relationships between Presence and Search may be more complex than they appear in a variable-centered approach. By assessing the correlates of each variable in isolation or, at most, in a multiple regression framework (e.g., Steger et al., 2009),

past analyses have treated the subscales as two independent and inversely-related dimensions. Our analyses show that the assumption of a merely hydraulic inverse relationship between Presence and Search does not fully account for how individuals respond to the measure, especially at the level of the full five-profile model.

More importantly, a person-level analysis of profiles allowed our data to speak to more complex relationships between MLQ dimensions and well-being. For example, in the three-profile model, although Profile 2 showed significantly higher levels of Presence than Profile 1, they were equivalent in levels of relatedness. It may be that Presence generally promotes social well-being, but perhaps has diminishing returns after a sufficient level is met.

These patterns are more striking in the five-profile model: Although Profiles 4 and 5 had equivalent levels of Search on average, Profile 4 (with higher levels of Presence) showed dramatically better need satisfaction overall. In general, this group showed equivalent levels of need satisfaction to those in Profiles 1 and 2, both with dramatically lower levels of Search and equivalent levels of Presence.

The fact that profiles with different levels of Presence and Search demonstrated equivalent well-being adds new insight to past research demonstrating that the satisfaction of basic needs corresponds with greater meaning in life (e.g., Martela, Ryan, & Steger, 2018). While the general association between meaning and need satisfaction can be estimated by a simple linear relationship, considering the whole individual allows us to see that the associations are not as simple as the more reductive variable-centered approach would suggest.

The patterns of profiles provide supplementary evidence that individuals tend to find their lives meaningful in general. Heintzelman and King (2014) find that, across large samples, individuals tend to rate their life as highly meaningful (i.e., significantly above the scale midpoint). Generally, our findings show that most profiles of response to the MLQ had high Presence as well (e.g., the midpoint [4] falls outside the 95% CI for Profiles 1-4 of the five-profile model). Despite having numerically high perceived Presence, however, many of these groups showed differences in basic need satisfaction. While purely correlational analyses of the MLQ would suggest that more Presence would be expected to predict better well-being, profiles of response indicate that these effects may not be univocal.

In short, these data show that the general tendency to focus solely on the individual *variables* of the Meaning in Life Questionnaire overlooks this variation by profile, which suggests more complex relations between Presence/Search scores and well-being. Our findings suggest that future researchers would benefit from a greater emphasis on person- or profile-level analysis.

Limitations and Future Directions

The current study faces a few notable limitations. First, this paper presents secondary analysis of a wholly online sample. Not only would future replication efforts be worthwhile, but more representative samples may help to provide greater convergence on the profile structure of MLQ responses. This sample was primarily young, almost entirely White, and gender disproportionate, not to mention from an American context that may think about meaning in culturally-specific ways.

This also speaks to another limitation of the current finding—the relatively modest sample size. Although the current sample size is more than sufficient for detecting simple correlations, the use of Latent Class Analysis means that sample size quickly becomes a limitation. For instance, we could not model a larger than five-profile model given the sample

size constraints. It may be that the MLQ has a more complex profile structure, although at some point a large set of profiles may be impractically large or suggest so much idiosyncrasy in responses that clusters are not sensible.

Another important direction for future work is considering other measures of perceived meaning. The MLQ may be quite popular, but other measures certainly exist. For instance, specific measures to address different levels of meaning in the clinical context could be useful (Park, 2010; Park & Folkman, 1997). Individuals must, in part, make meaning about *specific* concrete events (e.g., trauma) but they also maintain a distinct sense of their existence's *global* meaning (or lack thereof). The two are of course related: Trauma can threaten a sense of global meaning until sense is made of the experience, but person-level analysis may indicate different profiles of meaning making at both levels.

Finally, future research would benefit from considering richer measures of meaning in life. Despite the MLQ's popularity in recent years, its simple two-factor structure neglects nuance in both the Presence and Search subscales. For example, the more comprehensive Sources of Meaning measure (SoMe; Schnell, 2009) and the Personal Meaning Profile (McDonald, Wong, & Gingras, 2012) offer greater insight into *how* individuals achieve meaning in life. These scales offer considerably more information about the individual beyond assessing the mere presence of meaning. Additionally, the two-factor theory of search for meaning represented by the Search for Meaning Scale (Wong, 2018) suggests that the MLQ Search dimension critically fails to distinguish positive, growth-oriented motives for significance from the more stereotypically negative motive to find (any) meaning to one's experience. Research utilizing the MLQ presumes that search is a marker of poorer mental health, but this focus neglects healthy striving for meaning. Future person- or profile-level analysis of these more comprehensive meaning measures stands to provide valuable insight into how, when, and in what domains different groups of individuals seek and find purpose in life.

Conclusion

The current paper presents novel analysis that speaks to the value of a person-level approach to studying one quantitative measure of meaning in life. This is a modest contribution that should be seen as complementary to other research using the MLQ to study meaning in life.

Meaning in life is ultimately complex, multifaceted, and idiosyncratic; accordingly, methods for research in this area must employ broad, multi-method approaches that ultimately build to a more complete understanding. Much of the research in personality psychology has relied solely on quantitative, variable-centered methods that, while informative, overlook qualitative experiences of meaning and quantitative patterns of response at the person-level. We encourage future researchers to consider how each of these approaches might compensate for deficits in the other.

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