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A Psychometric Analysis of the Multidimensional Existential Meaning Scale in China

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ABSTRACT

Meaning is an essential dimension of human flourishing. The research in the psychology of meaning, spanning many decades, has developed several measures to define its structure. Over time, scholars have hypothesized that meaning is better understood as multidimensional, consisting of independent concepts. One of the most influential theories of meaning to date is the tripartite model, which hypothesizes that meaning includes three dimensions: Comprehension, Purpose, and Mattering. This model gave rise to the Multidimensional Existential Meaning Scale (MEMS). Other scholars have proposed that meaning represents one facet of a larger dimension of human psychology known as the *Numinous*. The purpose of this study was to assess the psychometric properties, including comparing a single vs. bifactor model of the MEMS in China and test if its factor structure is independent of the Numinous. The results in this study supported a unidimensional structure of meaning with three correlated sub-facets. Further, the findings provided strong evidence of convergent validity and internal consistency of MEMS and cross-cultural generalizability of the three facets to China. Lastly, the factor structure of the MEMS fit the hypothesized Numinous model of existential drives supporting the assertion that meaning is a structural quality of the Numinous.

Introduction

Meaning is an essential dimension of human flourishing[2]. It may come as little surprise, then, to note that social scientists have taken a strong interest in the topic of meaning and developed several measures and instruments to estimate its role in a variety of psycho-social-spiritual processes and outcomes. Despite this broad interest, however, there is a critical need to understand how meaning functions and how it can best be understood across cultures. While meaning may assume different characteristics or functions across cultural groups, the fact that meaning is a universal quality of the human species is not controversial. Thus, it is reasonable to think that researchers may expect to find that meaning is generalizable across cultures, and yet, also be less certain that what constitutes the essence of meaning to be universally understood (Baumeister[3]). Moreover, meaning is theorized to be an independent dimension of human psychology, not subsumed under other psychological drives or motivations including personality, which Frankl[4] referred to as the "noölogical dimension" (p. 67). Thus, any measure of meaning will need to demonstrate that it is not conflated with other psychological features already established as inherent to our species. This research study, therefore, delves into this interplay between the universal and the particular contents of meaning by translating the Multidimensional Existential Meaning Scale[1] into simplified Chinese and testing its scores' reliability and validity with a sample of Chinese nationals.

Evolving Methods for Measuring Meaning

Many widely used psychological measures of meaning conceptualize meaning in life as a unidimensional construct - that is, as a global presence or absence of meaning. Measures such as the Purpose in Life Test[5] (PIL) and the Meaning in Life Questionnaire[6] (MLQ) are frequently used and have strong psychometric support. However, these measures primarily assess whether individuals feel they have meaning or are searching for it, without attending to the source of where that meaning comes from or how it is experienced. They emphasize degree rather than quality or type of meaning, which may oversimplify the richness and complexity of how people actually experience meaning in their lives (Park[7]).

More recent critiques have pointed out that unidimensional approaches may fail to reflect the complexity of meaning-making. Park[7] highlighted that conceptualizing meaning as a monolithic construct has made it harder for research to reflect the diverse, culturally grounded ways that people make sense of their lives. In response to these limitations, some newer models attempt to offer more nuance. Wong's Personal Meaning Profile[8,9] (PMP) assessed seven domains of meaning such as achievement, relationship, and spirituality, offering a more differentiated view. Similarly, Schnell's Sources of Meaning and Meaning in Life Questionnaire[10] (SoMe) identified 26 sources of meaning grouped into higher-order categories. However, these tools tend to be multifaceted rather than structurally multidimensional - that is, they assess different content areas but still assume an underlying unified construct of meaning. This makes it difficult to distinguish whether different types of meaning originate from different psychological constructs and serve distinct psychological functions or merely reflect varied expressions of a single experience. One exception to this trend is George and Park's[11] tripartite model of meaning, which offers a helpful step forward by organizing meaning into three theoretically distinct components: comprehension, purpose, and mattering.

The Tripartite Model of Meaning

This study examined the George and Park[1] model of meaning. The George and Park[1] model of meaning in life proposed a tripartite framework consisting of Comprehension, Purpose, and Mattering. To operationalize this model, George and Park[1] created the Multidimensional Existential Meaning Scale (MEMS), which demonstrated strong psychometric properties and effectively differentiated these three components in empirical studies[1]. The model creates a distinction between the concepts of situational

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meaning - a person's individual interpretation and response to life events, and global meaning - a person's overarching beliefs, goals, and sense of purpose.

The George and Park[1] model has served as an influential framework for psychological research on meaning, particularly that which involves self-image, coping and resilience, and spirituality. Using the tripartite framework of meaning, Costin and Vignoles[12] investigated the relationship between meaning in life and mental representations of the self, finding that meaning in life was derived strongly from mental representations that provided a sense of purpose or existential mattering. Chang[13] found that Comprehension was predictive of life satisfaction, while Purpose was a positive predictor of positive affect and Mattering positively predicted participant's subjective happiness. Previous research (using the MLQ) has found that meaning in life is associated with an individual's coping strategies and responses to stressful and challenging life events[14,15]. Individuals anticipating future stress rated themselves higher on the pursuit of meaning in life, while study participants with lower reported levels of meaning in life exhibited increased rates of stress compared to their counterparts with higher meaning in life[14]. The tripartite model has shown a similar inverted relationship with overall psychological distress, with Purpose demonstrating the strongest prediction of dysphoria[16]. When exploring facets of spirituality, research has found that an individual's belief in free will was positively associated with all three of the model's meaning dimensions[17]. The MEMS has also been translated into several languages and evidenced cross-cultural validity and reliability, including simplified Chinese[18]. At the same time, some research has found that among the three factors, Mattering has at times shown the least fit within that tripartite framework, raising questions regarding how Mattering may contribute to this model of meaning[19].

A consistent through line one can observe in the research published on the MEMS is that the three factors of meaning are hypothesized to represent separate, distinct dimensions of meaning, that these can all be related to a larger global dimension of meaning in life, and that there is evidence that the three factors of the MEMS can be recovered in different languages. At the same time, one can also observe that the three factors of the MEMS can be highly correlated with each other, suggestive of a larger, global dimension of meaning in which they may all represent. Though the seminal George and Park[1] paper did test this hypothesis and found evidence of a multidimensional structure using the Chi square goodness of fit test, the consistent strong correlations among these factors has persisted across studies. How to account for this pattern of relationships between Comprehension, Purpose, and Mattering deserves further reflection and reopens what theoretical view (multidimensional vs. unidimensional) of meaning can help illuminate these consistent effect sizes.

Ultimate Existential Drives

Meaning, as George and Park's tripartite model attests, is part of our existential reality. Since the time of Frankl[4,20], meaning researchers have hypothesized that human beings are unique among animal species in that they carry with them a drive toward meaning. At the same time, other scholars have argued that this drive toward meaning is contextualized, in the perspective of Tillich[21], within a larger frame of ultimacy (see [22]). Human beings possess not only innate capacity to satiate a desire for meaning, but also an awareness of their limitations or finitude, that their life in its current form will one day end in mortality, and simultaneously a sense of worthiness that their life is an integral part of the larger human tapestry of culture and community. Together, Tillich[21] referred to these three aspects of human psychology as our awareness of *ultimate existence*, or simply *ultimacy* or *the ultimate*.

Using Tillich's[21] framework, Piedmont and Wilkins[23] developed a psychological ontology of the human motivational structure that defines our ultimate existential drives comprising three facets: Infinitude, Meaning, and Worthiness. Infinitude represents our awareness that our mortal existence is temporary,

that no matter how rich or poor, our degree of privilege or marginalization, despite our best efforts in this life to remain healthy and well, we will one day enter into the universal experience of our life coming to an end. Yet, despite this obvious fact, our motivation for a continuity of being begs the question whether or not this is really the end. Does our life extend beyond our death in any significant sense? After all, while our life ends, clearly the rest of the cosmos lives on in some form. Or does what it means to be alive coterminate with the biological death of our body? Second, Meaning involves the motivation to find a sense of continuity and structure to our life that coheres and does not devolve into mere chaos. Seeing that life has intrinsic meaning, that patterns of our lives fit into a larger frame and story, gives us a sense of purpose and direction. When this structure is ruptured or breaks down, our lives are characterized by Frankl's notion of the noölogical crisis, that chaos triumphs and leaves a void of meaning in its wake. Finally, Worthiness encapsulates the human desire to view and find that one's life is an integral part of the greater tapestry of human culture and community; that one can look back on one's life and feel a sense that they have contributed more to the ongoing life process than they have taken away from it, and to accept oneself fully in spite of flaws, limitations, and failures. This ontological psychology (infinitude, meaning, and worthiness) is referred to by Piedmont[24] as the *Numinous*. Through a series of studies, this ontology of the Numinous has demonstrated evidence of reliability and validity across religious affiliations (including religious believers as well as atheists and agnostics), shown to be independent of the Five Factor Model of Personality, is as powerful a predictor of dysphoria as trait Neuroticism, and recoverable in simplified Chinese language when it is delivered in a cultural context foreign to English[25,26,27].

The Value of the Numinous to Understand Meaning

The Numinous adds interpretive value for the psychology of meaning. Historically speaking, since its major wave of appeal during and after the 1950s, the psychology of meaning has primarily focused on the degree to which individuals subjectively appraise whether their life has more or less meaning in it, i.e., meaning *in* life as opposed to the meaning *of* life[3]. While important for studying the correlates of meaning, and this model of meaning has helped to pioneer the empirical study of meaning in life as a subjective quality of human psychology, this approach does not differentiate the various types of meaning one may ascribe to or which characterizes life's meaning globally. In other words, it does not really distinguish the way types of meaning manifest quite differently from each other in reality. For instance, someone who gives of their life sacrificially for the wellbeing of others could view their life as full of meaning, but so too could another person who gives of their life to kill the largest number of people possible. Griffith[28] referred to this dissonance between these two cases as the *Nazi test* of meaning, that to equate the quality and quantity of meaning in these two cases does not make sense because meaning involves more than just having a subjective purpose and extends to include character virtues like benevolence. In contrast to viewing meaning in terms of subjective quantity, the Numinous as a psychological ontology, fits meaning into a broader framework that includes an infinite time spectrum orientation as well as the sense that one's life is of existential value. It helps to differentiate between, for instance, whether one experiences a lack of meaning vs. a lack of infinitude or worthiness.

Piedmont et al.[23] found that these three factors helped to explain psychological qualities people possess and problems people may develop. For instance, consistent to prior studies[25] that have found no association between meaning in life and psychological dysphoria, Meaning did not correlate significantly with psychological distress, including depression, anxiety, or stress, nor did it explain religious identity status (religious believers, atheist or agnostic). In contrast, Worthiness not only predicted distress, but in causal modeling studies, also demonstrated an independent effect on distress that

was on par with trait neuroticism whereas infinitude was significantly associated with religious identity[23]. Conceptualizing meaning from within the model of the Numinous can add interpretive breadth and depth to the nuances of how meaning in life is developed and how it can be related to broad values one holds and the significance one ascribes to their life.

The Current Study

This study is focused on testing the cross-cultural validity and reliability of the MEMS in simplified Chinese and to estimate its convergence with the putative tripartite model of meaning articulated by George and Park[1]. We believed this was important to do for three reasons. First, the MEMS represents a distinct innovation in the psychology of meaning, in that it has moved the field forward from defining meaning in unidimensional terms (present or absent), or whether meaning needs to be sought after, to a greater incorporation of psychological contents that comprise one's overall meaning style (Purpose, Comprehension, Mattering). As such, the MEMS poses an important question to be tested and replicated: Does the scale represent a multidimensional model (i.e., it contains multiple, independent dimensions) or is it a multifaceted, unidimensional scale? We will investigate this question using Structural Equation Modeling (SEM) techniques (including bi-factor analysis), the 3-factor model will be examined as well as the extent of overlap among those three factors. Are they independent of one another and represent different aspects of meaning? Or, do they all represent a single quality, but from different, correlated perspectives? Answering this question has important conceptual implications for the model underlying the MEMS. Second, while the scale has been shown to be useful in Western cultures, some examination of its cross-cultural validity is needed. Translating the scale into Chinese provides an opportunity to determine the extent to which a construct generalizes to other cultural contexts and can be considered universal.

Finally, the model underlying the MEMS has no ontological foundation to it. While it outlines directions for the expression of meaning, there is no specification of the origins of meaning-making or what the entire process of meaning-making represents psychologically as inherently distinct from other psychic systems we share in common with other humans. Piedmont[23,24] has developed a construct deemed to represent a sixth dimension of personality termed the Numinous, this dimension represents our ultimate existential engagement with life. It is an intrinsic motivational variable, defining of our humanity, that represents peoples' efforts at finding a sense of permanence in a finite life, meaning in a chaotic world, and a sense of worthiness that the lives being led have value. Meaning is a core component to the Numinous and as such any efforts at creating durable meaning structures ought to be related to it[22]. We hypothesize that to the extent to which the MEMS reflects this Numinous quality, there ought to be significant associations between the two constructs. Finding such overlap may help to expand the ontological foundation to meaning as reflected in the MEMS scale. We will also examine the relationship of the MEMS scales to ratings on Schwartz's Value Scale to outline those values that are most associated with the creation of personal meaning. If these scales are indeed independent of one another, will each scale evidence a different pattern of association with the various values?

Materials and Method

PARTICIPANTS

Participants consisted of 157 men and 218 women ages 18 to 70 (mean = 35.48, SD = 11.20). Most respondents came from the Jiangsu province (53%) of China, with 12.5% from Shanghai and 11.2% from Guangdong provinces. The remaining individuals represented another 19 of the 34 provinces of China. Most were married (54%) and 33% were single. The majority had a college degree (54.4%), 26% had a master's degree or higher degree, 15% had a junior college degree and the remaining percentage had a high school or secondary school education. Most were employed full-time (80%) with 6% being students, 5% being retired, 5% being part-time or

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self-employed, 3% were unemployed and 1% were homemakers. Concerning income, 82% earned between 5,000 and 20,000 yuan a month, with 13% making less and 5% making more.

MEASURES

Multidimensional Existential Meaning Scale (MEMS). Developed by George and Park[1] this 15-item scale is designed to capture multiple aspects of meaning, including Comprehension, the extent to which individuals experience a sense of Comprehension and understanding regarding their lives; Purpose, reflects the degree to which individuals experience their lives as being directed and motivated by valued life goals; and, Mattering, which reflects the extent to which individuals feel that their existence is of significance, importance, and value in the world. Items are responded to on a (1) strongly disagree to (5) strongly agree Likert-type scale. George and Park[1] demonstrated that responses to the scale have structural validity and that scores on the scales are sufficiently independent of each other to warrant their separate interpretations. This scale was translated into Simplified Chinese for the purposes of this study. Alpha reliabilities for scores on these scales are found in Table 1.

Table 1. *Descriptive Statistics, Gender Differences, and Alpha Reliabilities for the Multidimensional Existential Meaning Scales (MEMS).*

	Men (n = 157)		Women (n = 218)			
MEM Scale	*M*	*SD*	*M*	*SD*	*t*[A]	α
Comprehension	4.74	1.01	4.71	.89	0.31	.89
Purpose	4.99	1.12	4.97	.87	0.22	.92
Mattering	4.50	1.16	4.73	.95	-2.03*	.83
Total	4.74	1.01	4.80	.81	-0.59	.94

[A] The Levine's test for equality of variances was significant for all scales except Comprehension. As such, the *t*-value for unequal variances is presented for all scales.

* $p < .05$.

Numinous Motivation Inventory (NMI). Developed by Piedmont[30] this 22-item scale captures one's Numinous orientation, which represents the need to address ultimate existential issues centering around three questions: 1) is death the end? 2) does life carry any meaning? And, 3) am I a worthy individual? The NMI contains three facet scales that address each of these issues: Infinitude (e.g., "I believe that this life is only one stage in a larger, eternal process"); Meaning ("I am guided by my personal philosophy and/or faith"); and Worthiness ("I value myself"). Items are responded to on a 1 strongly disagree to 5 strongly agree Likert-type scale. Items are counterbalanced to control for acquiescence effects. The NMI has normative data that controls for age and gender. The NMI has been found to be a significant, unique predictor of psychological distress and characterological impairment in both theists and atheists[31], coping levels among physicians[26] and existential growth among college business majors[32]. This scale has also been translated and administered in Simplified Chinese; the factor structure was recovered and internal consistencies were supported[25]. Alpha reliabilities in the current study for responses to the NMI scales of Infinitude, Meaning, Worthiness, and Total Score were: α's = .79, .69, .92, and .85, respectively.

International Personality Item Pool Big 5 (IPIP-50). Developed by Goldberg[34] the IPIP-50 is a 50-item inventory of the FFM of personality. The scale measures each dimension of the FFM using 10 items, including (a) Emotional Stability (ES), (b) Extraversion€, (c) Openness (O), (d) Agreeableness (A), and (e) Conscientiousness (C). Participants read each statement and respond by indicating how it describes them from very inaccurate (1) to very

accurate (5). The IPIP-50 is in the public domain and responses have demonstrated comparable psychometric qualities to commercial inventories of the FFM[35,36]. Robertson, Jangha, Piedmont, and Sherman[37] collected normative data on the IPIP-50 from a US sample and demonstrated the robustness of these norms and factor structure cross-culturally. For this study, we used the Chinese translation of the scale[38] which was redacted to include Simplified Chinese. Alpha reliabilities for scores on the Emotional Stability, Extraversion, Openness, Agreeableness, and Conscientiousness scales were: α's = .89, .81, .78, .74, and .76 respectively.

The Short Schwartz's Value Survey (SSVS). This scale is a shortened version of the Schwartz's Value Survey, which only provides global ratings on the 10 broad values: Power, Achievement, Hedonism, Stimulation, Self-Direction, Universalism, Benevolence, Tradition, Conformity, and Security. This short version was developed by Lindeman and Verkasalo[39] who provide evidence of validity. Individuals rate each broad value on a (1) opposed to my principles to (9) of supreme importance. This measure was translated into Simplified Chinese for the purposes of this study.

PROCEDURE

This study was approved by the **[Redacted for Review]** Institutional Review Board (IRB). No personally identifiable information was collected from participants. Before beginning the survey, all participants consented to participation and agreed to the conditions of participation. Data for this study have been deposited at APA's Open Science Framework and can be accessed at: https://doi.org/10.17605/OSF.IO/H3GEK.

Translation Process. The NMI and MEMS both needed to be translated into simplified Chinese. A multistep process was implemented. Initially, one of the research team members (QW) translated the items for these scales into Chinese. These versions were then back-translated into English by two other, bilingual team members who were familiar with the psychological constructs (XC and EC). The first author (RLP) then examined these back-translated items with their original English. Items that were not clear or did not satisfactorily capture the constructs being assessed were identified, and, in discussion with the second author (QW), new translations were made. These changes were then sent to the other two bilingual team members for retranslation back into English. This process continued until the translations were deemed appropriate. At this point, these items were then sent to a third, external bilingual person who has a master's degree in linguistics for a final review. This person made some additional suggestions for modifying the items so that they were more economically expressed in ways that would be more easily understood by a general sample. These recommendations were then made and items again back-translated. At this point, the translated versions of the scale were deemed ready for administration.

Research Process. The data was collected anonymously through the user-friendly Chinese platform WenJuanXing (问卷星). This online survey platform, based in China, was chosen for its ease of use in creating, distributing, and analyzing surveys. The survey format was modified to ensure a smooth reading experience for our Chinese participants accessing the survey from their phones. All measures are included in the survey in a randomized order, ensuring that participants did not complete the measures in the same order.

The participants were recruited through opportunity sampling. The survey was distributed with a complimentary poster through known friends, families, group chats, companies, and social media Xiao Hong Shu (小红书). The poster contained the study's title, an overview, two sample questions of selected scales, and a QR code for the survey. Most data were collected through chat groups and social networks, with a few from social media.

All participants were asked to read and check the informed consent before proceeding, ensuring their full understanding and agreement. Before starting with the questions from the measures, the participants

were asked to complete demographic data. As the participants completed each measure, attention check questions were set to ensure participants were reading the questions carefully before answering, maintaining the integrity of the data.

Results

Table 1 provides descriptive statistics, separately by gender, and alpha reliabilities for the MEMS scales. As can be seen, only one gender difference is found for Mattering, with women scoring higher than men $t(294.52) = -2.03$, $p < .05$ (because Levine's test for equal variances indicated that there were significant differences in variances, *t*-values and their related *df* were based on the assumption of nonequivalent group variances). Alpha reliabilities for scores on all scales are quite acceptable.

To examine the factor structure of the MEMS, an SEM analysis was conducted on the MEMS items to determine whether the three-factor structure of the scale could be recovered. Three factors were identified with the resulting items loading on their respective factors. Overall, fit for the model was obtained: χ^2 ($df = 87$; $N = 375$) = 370.90; RMSEA = .093; SRMR = .04, and CFI = .93. All items loaded significantly on their intended factors. Interestingly, the latent, disattenuated correlations among the factors were all very high (Φ for Comprehension and Mattering = .82, Φ for Comprehension and Purpose = .87, Φ for Mattering and Purpose = .79), indicating that they may not be independent of one another (See Figure 1). While the model does fit the data, the fact that there is a tremendous amount of overlap among the scales would suggest that a general factor model might actually be warranted. Hence the test to see if a general factor was present a Bifactor Model analysis was performed.

The results of the Bifactor Model analysis (one general factor with 3 facets) are χ^2 ($df = 75$; $N = 375$) = 140.73, $p < .0001$, RMSEA = 0.048 (0.036, 0.061), CFI = .966, TLI = .952, SRMR = .032. The Bifactor Model resulted in much better fit indices than found for the 3-factor model. In fact, all of the fit indices would be considered excellent. These results clearly suggest that the Bifactor Model fits the data very well, better than the original 3-factor model. That is, the general factor is capturing shared variance across the 15 items that the three specific factors were unable to do. In order to provide further evidence of a general factor we calculated Bifactor statistical indices recommended by Rodriguez, Reise, and Haviland[40,41].

Findings from this analysis provided support for a unidimensional model: In particular, the Percent of Uncontaminated Correlations (PUC) was .714 and the Explained Common Variance (ECV) for the general factor was .797, both of which exceeded the recommended threshold of .70[40]. The Average Absolute Relative Parameter Bias (ARPB) was .051, well below the typical cutoff of .10. Thus, these indices suggest the general factor accounts for most of the common variance among the items with minimal estimation bias. In addition, Omega for the general factor was .958, Omega hierarchical (OmegaH) was .895, and relative Omega was .934 all of which represents very high reliability of the general factor score. In addition, Construct Replicability (H) was .948 and Factor Determinacy (FD) was .959, both suggesting excellent replicability and accurate factor score estimation. Finally, looking at the item-level analyses, those items that aligned most strongly with the general factor, having an Item Explained Common Variance (IECV) of .80 or higher (Stucky & Edelen, 2015) were:

Comp1 (.994), Comp2 (.986), Comp4 (.819), Comp5, (.913), Purp2 (.826), Purp3 (.884), Purp5 (.929), Matt2 (.831), Matt3 (.801). Items with IECV lower than .80 were Comp3 (.587), Purp1 (.662), Purp4 (.774), Matt1 (.627), Matt4 (.780), and Matt5 (.554). The item that had the most parameter bias was Matt5 (.180) suggesting a re-examination of the item. All in all, these findings in the aggregate support the view that the data fits a unidimensional model that has a dominant general factor.

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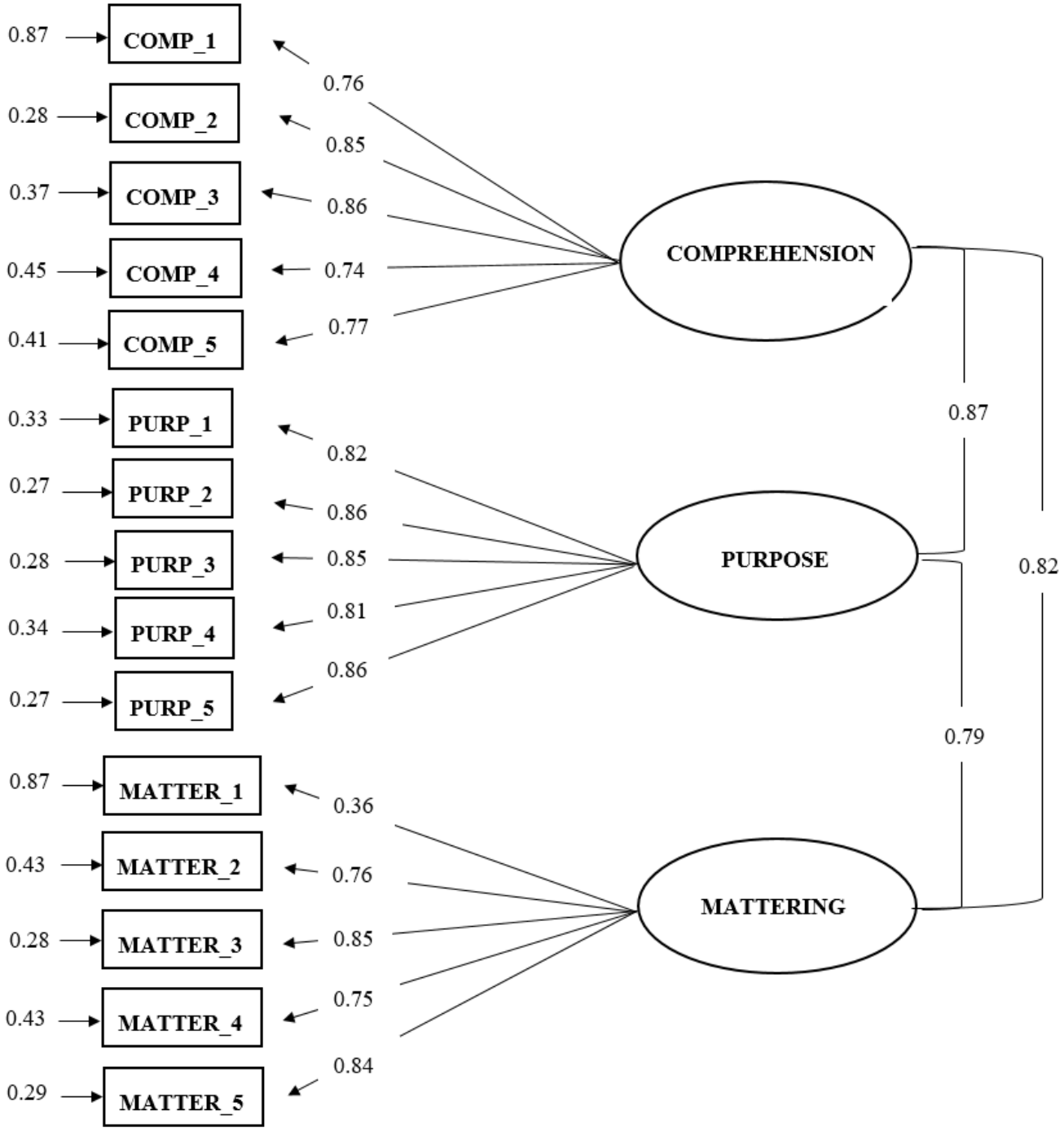

Figure 1. Path Diagram of SEM Results for the MEMS Scale.

Note. Chi-Square =370.90, df = 87, *p* value=0.0000, RMSEA = 0.093, SRMR = .04, and CFI = .93

Scores on the MEMS scales were correlated with scores on the IPIP-50 and NMI scales and the results are presented in Table 2. There are two points of interest here. First, the MEMS scales correlate moderately with all the criterion scales, demonstrating little discriminant validity. The MEMS scales capture a wide range of personological qualities. Second, it was hypothesized that the MEMS scales would evidence their strongest associations with the NMI Meaning scale, and this was found for the Comprehension and Purpose scales (*r*'s = .42, and .47, *p*'s < .001, respectively). The Mattering scale was most strongly related to the NMI Worthiness scale ($r[373] = .38$, $p < .001$) suggesting that the content of this scale may be more related to issues of personal worth than meaning-making per se.

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Table 2. *Correlations Between the MEM Scales and the IPIP-50 Personality Domains and the NMI Scales.*

	MEM Scale			
Criterion Scale	**Comprehension**	**Purpose**	**Mattering**	**Total**
IPIP-ES	.29***	.13*	.26***	.25***
IPIP-E	.31***	.20***	.28***	.29***
IPIP-O	.28***	.32***	.32***	.34***
IPIP-A	.32***	.35***	.31***	.36***
IPIP-C	.35***	.29***	.27***	.33***
NMI-Infinitude	.18***	.30***	.34***	.30***
NMI-Meaning	.42***	.47***	.35***	.46***
NMI-Worthiness	.25***	.28***	.38***	.34***
NMI-Total Score	.35***	.44***	.48***	.47***

Note. ES = Emotional Stability; E = Extraversion; O = Openness; A = Agreeableness; C = Conscientiousness.
N= 375.
* $p < .05$. ** $p < .01$. *** $p < .001$, two-tailed.

In order to control for the overlap among these scales, four multiple regression analyses using forward entry were performed that regressed each of the MEM scales on the IPIP-50 and NMI scales and the results are presented in Table 3. As can be seen, the MEM scales are all strongly predicted by the personality and Numinous scales. The list of predictors is presented in the order in which they emerged from the analyses. As can be seen, for Comprehension, Purpose, and Total Score, the first predictor to emerge was the NMI Meaning scale, supporting the construct validity of these scales. Interestingly, for Mattering, the NMI scale of Worthiness emerged as the primary predictor, followed by Meaning. Thus, the Mattering scale may have a slightly different focus than the other two MEMS subscales. While the Numinous scales were most saliently related to the MEMS scales indicating good convergent validity, that all of the Big 5 scales also had varying relationships with the MEMS scales may be a problem with discriminant validity for the scale.

Table 3. *Results of a Forward-Entry, Multiple Regression Analysis Regressing Each of the MEM Scales on the IPIP-50 Personality Domains and the NMI Scales.*

MEM Scale	Adjusted R^2	Predictor (β)
Comprehension	.34***	Mean (.35) ES (.21) A (.13) E (.17) C (.15)
Purpose	.32***	Mean (.39) A (.14) ES (.11) Inf (.17) C (.13)
Mattering	.31***	Worth (.15) Mean (.26) ES (.24) Inf (.18) O (.16)
Total Score	.38***	Mean (.35) ES (.20) A (.09) Inf (.16) O (.10) C (.13) E (.11)

*** $p < .001$.
Note. Mean = NMI Meaning; Worth = NMI Worthiness; Inf = NMI Infinitude; ES = IPIP-50 Emotional Stability; E = IPIP-50 Extraversion; O = IPIP-50 Openness; A = IPIP-50 Agreeableness; C = IPIP-50 Conscientiousness. The listing of predictors reflects the order in which the variables emerged in the analysis.

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Finally, scores on the MEMS were correlated with the single item ratings on the Schwartz Value Scales and these results are presented in Table 4. Interestingly, the values of Security and Achievement appear to have no associations with the MEMS scales. For Comprehension, ratings on Universalism, Benevolence, and Tradition all had the highest associations (all *r*'s = .30, *p*'s < .001). The Purpose, Mattering, and Total Scores all had their highest associations with Universalism (*r*'s = .41, .30, and .37, *p*'s < .001, respectively). These findings suggest that Comprehension involves an enmeshment within larger cultural values while the other scales are more focused on finding a universal sense of connection that may transcend specific cultural prerogatives.

Table 4. *Correlations between the MEM Scales and Ratings on the Schwartz's Value Scale Short Form.*

Schwartz Rating	Comprehension	Purpose	Mattering	Total Score
Power	.26***	.34***	.17***	.28***
Achievement	-.03	-.06	-.03	-.04
Hedonism	.17***	.21***	.21***	.22***
Stimulation	.21***	.29***	.23***	.27***
Self-Direction	.22***	.34***	.24***	.30***
Universalism	.30***	.41***	.30***	.37***
Benevolence	.30***	.26***	.23***	.29***
Tradition	.30***	.19***	.19***	.25***
Conformity	.25***	.29***	.23***	.28***
Security	.04	.07	.06	.06

*** $p < .001$.

$N = 373$.

Discussion

This study explored the validity and reliability of the MEMS translated into simplified Chinese and its overlap with the Numinous. Ultimately we found that the factor structure of the MEMS, once translated, supported a multifaceted, unidimensional measure. This study supports a unidimensional, multiple sub-facet model of the MEMS and provides strong evidence of internal consistency, with alpha coefficients for each scale and total score in the .80s and .90s. We also found support for the conceptual value of contextualizing the MEMS within the context of the Numinous, viewing meaning as an aspect of an ontological quality of our psychology distinct from other psychological structures we possess.

Comprehension and Purpose vs. Mattering

Once translated into simplified Chinese, it appears that the MEMS accentuates different ways people engage with ultimate existential drives in China; Comprehension and Purpose appear to be the primary meaning constructs whereas Mattering tends to focus more on how people view their sense of self in ultimate terms. This seems to be a logical connection at any rate. After all, Comprehension, defined as a genuine sense that life fits together into a pattern is something of a prerequisite to also view that one's life also has a purpose or teleology. Separately, the degree to which a person passes a value judgment on their sense of self (i.e., their sense of Worthiness) appears to venture into a different but related area. In other words, one may affirm life's meaning and purpose yet not affirm their place in it. This helps clarify why, for some people at least, they may sense that their life is full of meaning but lack a sense that their life really matters. Based on our findings that Mattering and Worthiness are so closely related, rather than viewing such experiences as a crisis of meaning, it may be more accurate to

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say that such individuals are experiencing a crisis of Mattering or Worthiness, that their life has turned out to be a catastrophic failure despite their best efforts and despite the meaning and purpose they see in their life. Viewed from the perspective of the Numinous model, the value of the MEMS is that it seems to capture Frankl's notion of the noölogical crisis, the despair that arises from a sense that one no longer has meaning and purpose. This evidence would support previous studies using SEM which have found that Mattering was ill-fitting into the MEMS when compared with the relative fit of Comprehension and Purpose into George and Park's[11] tripartite model (see [33,19]).

Meaning Crisis or a Worthiness Crisis?

The results of our study may help to illuminate why the patterns of association between meaning and psychological functioning do not always have a singular valence. Why may this be the case? Of course, this could mean that other factors are mediating the effect of meaning on psychological functioning. For instance, prior research has found that meaning can be mediated by hope and forgiveness[42]. Interestingly enough, prior work on the Numinous has shown that Meaning was not significantly associated with psychological dysphoria, instead Worthiness was the factor that has shown the strongest relationship to distress metrics. A way to interpret this relationship, would be to say, that meaning as a sense of Comprehension and purposeful direction in life can either flourish or collapse, but psychological distress would depend upon whether there is a simultaneous breakdown in how one views their worth. Thus, if worthiness is not in jeopardy, what may be going on in one's life does not devolve into a meaning crisis, but rather an adaptive moment in which meaning may be created or altered to better fit life circumstances. Future research will need to examine these potential mediation effects of Worthiness.

Meaning and Values

The MEMS factors did correlate with a broad array of values individuals hold. This is a strength of the scale and can be taken as evidence of convergent validity. However, one issue with the patterns of correlations we observed in this study is that they tend to be roughly equivalent in predictors of, at times, conflictual values (e.g., Power vs. Benevolence). This suggests that subscales of the MEMS are identifying values broadly speaking but not necessarily distinguishing between the various types of values people hold based on the meaning they ascribe to. This makes sense when the MEMS is conceptualized as a unidimensional model of meaning. Inspecting the items on the MEMS Comprehension and Purpose scales both focus on global meaning as opposed to specific processes that may underlie meaning-making (e.g., Comprehension item, "I know what my life is about"; Purpose item, "My direction in life is motivating for me"). In other words, the items of these two subscales could be endorsed to equal degree regardless of the type of Comprehension or Purpose the individual has in mind. Thus, the question of how meaning-making is a co-variate with different weightings people place on their values, or how they may hierarchically arrange such values, is not as well distinguished in the scores on the Comprehension and Purpose scales.

Meaning's Conflation with Personality

We found that the MEMS has significant correlations with each of the five factors of personality. This would suggest that personality traits will play a significant role in scores on the MEMS. This conceptual overlay with personality has not, to date and to our knowledge, been tested. George and Park[1] did not claim that the MEMS is distinct from personality and, from that vantage point, it may not pose a significant problem to the construct validity of the measure. At the same time, the MEMS as being empirically conflated with personality dimensions does suggest that it assumes that meaning will depend to a significant degree on *a priori* traits we carry (and may not be found in people with certain types of personality styles, like low levels of Agreeableness and Conscientiousness), and not as focused on meaning as an independent dimension of our psychology. How meaning, then, is a distinct

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psychological quality of individual differences needs a clearer model to contextualize it and how it fits within our psyche[43].

Study Strengths and Limitations

This study is the second to translate the MEMS into simplified Chinese (the first being Zhou et al.[18]). However, it is the first to test the relationship of the three factors of the MEMS to the factors of the Numinous motivations and personality, and to therefore draw together the distinctions between Meaning and Worthiness as two psychological motivations related to meaning. It is also the first effort to test the unidimensional nature of the MEMS and to find evidence of the unidimensional, multiple sub-facet structure of the measure. At the same time, these strengths need to be understood in the light of important limitations to this study. This study utilized a convenience sampling method to recruit participants, and how this may have biased responses, and therefore limiting the generalizability of the results to the population, is unknown. Moreover, while the sample size was sufficient to investigate our research questions and accompanying statistical procedures, this sample was far too small to be considered representative of the entire Chinese population. There are also other, purported multidimensional measures of meaning developed in simplified Chinese which were not included in this study[18]. Thus, how other multidimensional measures of meaning in China may also reflect a similar unidimensional structure to the one we found here is unknown.

Implications for Future Research

There are four important directions for future research which this study could open up. First, if the MEMS is a multifaceted, unidimensional measure, and if this is replicated in other languages and cultural milieus, has important implications for understanding the psychological role of meaning represented by this instrument. The authors of the MEMS will need to more clearly document what their scale brings to the area over and above the already existing plethora of unidimensional meaning scales. Second, the overlap of scores on the MEMS with the Big 5 personality domains raises questions about the ontological nature of meaning and its psychological source. Frankl[43] has argued that meaning-making represents its own, unique psychological structure that is independent of other psychic systems in addition to claiming that our capacity to find or create meaning in our lives is a uniquely human quality. Overlap with the Big 5 domains (which represent qualities that are validly assessed across different species) seems to undermine both of Frankl's assumptions with regard to the MEMS.

Third, understanding the underlying nature of meaning is an important endeavor and has the potential for unlocking insights into its origin and expression. The recent movement in the field to create multidimensional measures of meaning represents such an effort. Is meaning multidimensional or not? The MEMS scale was developed to capture the multidimensionality of the meaning construct across three domains. Our results indicated that the MEMS is not a multidimensional measure, and if replicated in future studies, reaffirms the value of older scales that represent meaning as a singular quality. Future research ought to pursue two directions. First, dimensional evaluations of the other multi-factor scales need to be undertaken. Are they, too, capturing a unidimensional construct? Second, even if meaning is multifaceted, some evaluation of the interpretive and empirical value of these different content scales needs to be undertaken. For example, by breaking meaning into the content areas of purpose, comprehension, and mattering, do we gain any predictive value over just considering meaning as an overall variable?

Fourth, future research may find it useful to include measures of the Numinous that can create better measurement tools as well as assess the utility of existing measures as independent qualities of our psyche. Consistent to Frankl's[20] theory, the Numinous is a distinct dimension of personality that is considered to be uniquely human. Such a perspective can give direction to any validity study. The findings from this study offer additional support for the Numinous

Model's approach to understanding meaning. In this model, the Numinous represents ultimate existential strivings and is a multifaceted, unidimensional construct where meaning is one of its facets. Rather than attempting to break meaning into various content areas (e.g., inspirational, social, etc.), the Numinous identifies the underlying factors that define meaning creation, what we refer to as the *processes* of creating meaning. One model does exist to this effect. The Logoplex[44,22,33,23] outlines the three different elements to meaning-making (size of self, focus of self, and psychological time perspective) that combine to create different types of meaning. The model outlines four broad typological categories for meaning-making that reflect very different psychological patterns as well as having different behavioral implications. We suggest that future research ought to include such process-oriented perspectives that examine the creation of meaning rather than trying to enumerate the ways meaning making is expressed.

Conclusion

In conclusion, this study represents an important step forward to investigating the cross-cultural generalizability of the Multidimensional Existential Meaning Scale (MEMS) to a Chinese context, reinforcing the hypothesis that meaning-making is a universal human capacity. Findings demonstrated that the simplified Chinese version of the MEMS is best understood as a unidimensional construct with three interrelated sub-facets: Comprehension, Purpose, and Mattering. Contextualizing the MEMS within the Numinous framework supported the theory that meaning is an aspect of human psychology rooted in existential drives and provides a pathway for developing future research in the area of meaning-making. Additionally, the relationship between personality traits and the MEMS suggested a need for more theoretical and empirical work to distill how such predisposing features of personality will influence meaning. Ultimately, the study bridges the gap between Western and Eastern ideas of meaning, for both the common and culturally specific ways people see their lives. Future cross-cultural research will be essential to the theoretical foundations of meaning in psychology.

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Conflict of Interest Statement:

Dr. Piedmont received royalties from the Numinous Motivation Inventory.

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