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The Development and Validation of the Meaning Approach Scale: Traditional, Functionalistic and Critical-Intuitive Approaches to Meaning in Life

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ABSTRACT

Many Indo-European languages refer to meaning in life with three groups of terms (e.g. vocation/significance/Bezeichnung, meaning/purpose/Meinung, sense/Sinn). These etymologies seem to refer to traditional, functionalistic and critical-intuitive/phenomenological approaches to life. This study aimed to develop and validate a psychometric instrument measuring traditional, functionalistic and critical-intuitive/phenomenological approaches to meaning in life. Eight experts developed consensus definitions and generated items for the Meaning Approach Scale (MAS) in a Delphi-study. A Three-Step-Test-Interview with eight participants, Confirmatory Factor Analysis and Item Response Theory in an informal survey of 108 participants, reduced the initial 56-item MAS-56 to MAS-45, with sub-scales for traditional, functionalistic and critical-intuitive/phenomenological approaches. The MAS-45 was validated in a survey of 1281 participants in 49 countries, with reliability, factor structure and correlations with other questionnaires as hypothesized. Traditional and functionalistic approaches correlated with negative affects, low quality-of-life and life satisfaction, whereas critical-intuitive/phenomenological approaches correlated with positive affects, quality-of-life and life satisfaction. Functionalistic approaches were reported more frequently in Western countries and traditional and critical-intuitive approaches in less Western countries. This study indicates the MAS-45 to be valid and reliable, differentiating three approaches to life. Individuals benefit most from a critical-intuitive/phenomenological approach, which therapists may consider exploring with clients.

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Introduction

Researchers seem fascinated with meaning in life, with more than 100,000 scientific publications, as an informal scoping review suggests. Many researchers seem to ask, "*What* do people report as their meaning in life?" (Vos, Cooper, Hill, Neimeyer, Schneider & Wong, 2019) For example, a systematic literature review of 107 studies showed that most people answer this question by focusing on materialistic, hedonistic,

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self-oriented, social, larger or existential-philosophical types of meaning (Vos, 2022a). However, few researchers seem to ask, "*how* do people develop their sense of meaning in life?" Formulated in line with Merleau-Ponty (1948), researchers seem to focus on *what* the constructed result is and not on *how* the construction process evolved, like Edmund Husserl's differentiation between noema and noesis (2012). Martin Heidegger (1927) wrote that this forgetting of the "how" question is characteristic of the modern era, in which we seem obsessed with "what" questions referring to actualized meanings instead of the dynamic process of meaning discovery (Visser, 2013, 1989). This article aims to examine different approaches to how individuals experience meaning in life (Heidegger (1927) calls approaches "modes of being").

The starting point of this study was a systematic linguistic-etymological analysis based on the long research tradition of analyzing language to understand how individuals construct and share their life experiences (Inkpin, 2016; Norton, 2006; Ottenheimer & Pine, 2018). Vos (2017) systematically described all words for meaning in life, their original usage and transformation over time in Indo-European languages, as described by etymologists (Philippa, Debrandere & Quak, 2009; etymonline.com, en.wiktionary.org/meaning). Subsequently, via thematic analysis, Vos identified three main approaches to meaning in life across Indo-European languages: traditional, functionalistic and phenomenological/critical-intuitive approaches. Other authors have suggested similar distinctions in the approaches to life, although less conceptually elaborated and with less systematic empirical support (Berman, 2009; Leontiev, 1996; Metz, 2013). With these three approaches as a guide, further examples were found in historical publications (Vos, 2022a, 2017).

The traditional approach to meaning, associated with the words "vocation", "calling" and "significance", may be defined as following what other people or Higher Powers communicate, signify or expect about your meaning in life. This may include following a religion or religious calling or conforming to social expectations. The functionalistic approach, associated with the modern words "meaning", "purpose" and "goals", may be defined as determine your meaning in life, like a mathematical function: do behavior X, and you will get meaning Y. This approach of a mechanistic self-direction in life seems to include individuals rationally and consciously deciding their meaning in life, defining meaning as random, specific or large goals that they try to strive toward in the most linear-efficient and maximizing ways possible. The phenomenological or critical-intuitive approach to meaning in life, associated with the word "Sinn", may be defined as "listen critically to your intuition". On the one hand, a critically-intuitive individual accepts the meanings they intuitively perceive in their flow of experiences (e.g., perceiving what is meaningful *via* mindful, focused observing their daily life, or experiential exercises). On the other hand, a critically-intuitive individual uses their critical thinking skills to differentiate the more meaningful from the less meaningful (e.g. being aware of and critiquing inauthenticity and social-economic or political conformism). The resulting meanings from these three approaches may be called traditional, functionalistic and critically intuited/phenomenological meanings. See more details in Table 1 in the online material; full descriptions can be found in Vos (2017, 2022b).

Thus, this descriptive-linguistic analysis indicated that individuals had used three approaches to discuss meaning. However, how do these linguistic differences relate to

Table 1. Scores of experts on the definitions.

	Traditional approach	Functionalistic approach	Critical-intuitive/ phenomenological approach
Representativeness*	$M = 6.3$, SD = 0.3	$M = 5.4$, SD = 1.2	$M = 6.0$, SD = 0.5
Clarity*	$M = 5.9$, SD = 0.6	$M = 5.5$, SD = 1.0	$M = 5.7$, SD = 0.6
Relevance*	$M = 6.7$, SD = 0.2	$M = 5.9$, SD = 0.6	$M = 6.4$, SD = 0.4
Formulation of name*	$M = 6.1$, SD = 0.5	$M = 4.3$, SD = 1.8	$M = 5.6$, SD = 1.2

*Scale-ranges: 1, negative/disagreement-7, positive/agreement.

the actual experiences of individuals? Is this trichotomy merely an intellectual categorization or can it also be found in everyday experiences? Following a critical-realist epistemology (Bhaskar & Hartwig, 2016), we may argue that there is a bi-directional relationship between individual experiences and language. Individuals are born into a world with a pre-given language they may use to interpret and share their experiences. As the Sapir-Whorf hypothesis suggests, language may reflect how we perceive and approach our world (Hussein, 2012). Individuals may also actively construct their sense of meaning through language; for example, the words we have in our memory - developed in interaction with others - may shape how we experience and interact with our world (Norton, 2006). It may thus be hypothesized that the three linguistic approaches may reflect individual experiences.

Some phenomenologists of language, such as Heidegger, seemed to analyze language to identify universal structures in human understanding without further examining the applicability, trustworthiness, reliability and validity across individuals (Young, 2001). However, this is merely an etymological reconstruction, which risks historicity bias; for example, the etymology of popular terms in historical documents from an intellectual elite may not correlate with how ordinary people approached their daily life. Therefore, based on a critical-realist epistemology (Norton, 2006), we may want to examine further how our linguistic analysis coheres or corresponds with people's lived experiences. We may want to check that the three approaches to meaning are, for example, not merely the observations from one researcher (i.e., self-confirmation bias) but relate to how individuals across cultures describe their experiences of meaning in life.

Study aims

In sum, linguistic, etymological and philosophical studies indicate that individuals may have had three different approaches to life throughout history. However, this trichotomy has not been systematically validated in empirical research yet, despite its importance for understanding historical evolution, cultural differences in meaning, and potential relevance for therapeutic practice. Therefore, the overall aim of this research project was to develop and validate a new psychometric instrument, the Meaning Approach Scale (MAS), to operationalize and explore traditional, functionalistic and critical-intuitive/phenomenological approaches in the experiences of individuals across cultures. As recommended by researchers on Delphi groups and questionnaire development (Beatty et al., 2019; DeVellis & Thorpe, 2021; Keeney, 2011; Mokkink, 2012), we developed the MAS *via* a sequential mixed-methods study design (Ivankova et al., 2006), consisting of five sub-studies:

Study 1. Developing consensus definitions of the three approaches in a Delphi study with experts on meaning in life. It is common to base questionnaires on a thematic analysis or theory (Ryff, 1989), but to prevent bias from the researcher who also did the linguistic analysis, this study used the frequently-used Delphi method to develop consensus definitions across experts in the field.

Study 2. Generating and assessing the suitability of items by experts. Whereas only one researcher and one co-researcher have generated the items in many questionnaires, it was decided to generate items for the Meaning Approach Scale (MAS) in more rigorous and unbiased ways by asking the experts to generate and evaluate items (DeVellis & Thorpe, 2021).

Study 3. Testing the acceptability of the MAS via the Three-Step-Test-Interview (Hak et al., 2004). Most questionnaire development studies skip this; however, to avoid researcher bias, we examined how laypeople interpret the questionnaire via a think aloud protocol while filling in the MAS, followed by an interview.

Study 4. Testing the feasibility of the MAS in a small informal feasibility study. This helped to explore the acceptability and identify organizational issues before a larger study was conducted. Unreliable and nondiscriminatory items were removed to develop a shorter scale.

Study 5. Testing the reliability and validity of the MAS in a formal international survey. This helped to examine the reliability, validity, factor structure and generalizability of the MAS and the discrimination of the items.

Together, these studies may indicate that the three approaches to meaning may not merely be found in historical languages but may also reflect the experiences of individuals across cultures. As with all questionnaires, these studies may not be interpreted as giving timeless, universal truths but as describing different approaches that individuals in contemporary cultures may have toward meaning in life (Scott, 2007). The MAS may be used to describe cultural differences and inspire conversations, for example, to foster self-insight in psychotherapy (Vos, 2017).

Methods

Study 1. Definition study

Our study design was inspired by a modified Delphi method (Hsu & Sandford, 2007; Keeney, 2011) in which two or more iterations of a questionnaire-in-development are administered to an expert panel. This first study regards the first iteration of open-ended questions to develop definitions of the three approaches, followed by the second study in which items are generated.

Before we can develop an operational definition, we need to define a construct within the current state of research. Whereas a theoretical definition can be a generic synthesis from the literature, an operational definition is closer to how the construct can be measured, including its components/sub-scales. Based on the etymological analysis, we developed the three definitions summarized in the introduction section and elaborated elsewhere (Vos, 2020, 2017).

A Delphi study often consists of a combination of Likert scales and open questions (Keeney, 2011). As an initial assessment of the content validity, a panel of experts

was invited to assess each definition of each approach. They rated each definition on 7-point Likert scales (1, completely disagree, –7, completely agree): "To what extent does this definition cover the concept?" (representativeness), "To what extent is this a good formulation (clarity; e.g., non-ambiguous, clear)?", "To what extent would you recommend including this approach in a questionnaire?" (relevance) (DeVellis & Thorpe, 2021). Additionally, they were asked to rate the name of each approach on a 1–7 Likert scale, from 1," total disagreement with formulation", to 7, "total agreement with formulation."

In line with Haynes and Shelton's (2018) recommendation, we also asked the experts open questions to "describe why you have given these ratings for each of the three approaches". We also asked them to make suggestions for improving the definitions with tracked changes in the document and share this with the other experts to build together an improved text.

We assumed that consensus was achieved when the mean ratings were 5.0 or larger, indicating that experts agreed more than disagreed with the definition. We also assumed consensus if the stability of answers was achieved in multiple iterations of the textual improvements of the definition (Linstone &Turoff, 2011).

No strict guidelines exist for the number of researchers in Delphi studies. It was decided to base the number of experts on the saturation of answers (Vos, 2022c). Eight research-active and clinically-active existential therapists from different countries (two Europe, two North America, two Latin/South America, two Australasia) were invited, *via* professional networking, to generate at least one item in English to operationalize each approach to meaning. The number of experts was based on data saturation: adding each new expert had to lead to substantially different formulations of the items. This was assessed by asking the other experts how different the formulations by the new expert were, on a rating scale of 1, no different formulation at all, to 7, totally different formulations; after the eighth expert it was decided that no extra experts were needed.

Study 2. Item-generation study

As typical in scale development (Beatty et al., 2019; DeVellis & Thorpe, 2021), after consensus about the definitions of each of the three approaches, the experts (including the researcher) generated items to operationalize each approach. This led to the initial MAS-267.

To examine the face validity of each item, the experts rated each of the 267 items on the same 7-point Likert scales for representativeness, clarity and relevance. An item was considered appropriate if the mean scores for its representativeness, clarity and relevance were 5 or larger (indicating the definition was more appropriate than inappropriate), and nobody had scored with a score of 2 or smaller (indicating inappropriateness). This led to the MAS-56 with 56 items. The 56-item questionnaire was sent again to the experts with the same questions to rate the appropriateness. To prevent researcher bias, we waited before carrying out further item-reduction until we had the opinions from 8 laypeople in the interview study (Study 3) and 108 laymen in the feasibility study (Study 4).

Study 3. Three-step-test-interview study

We used the Three-Step-Test-Interview to assess the feasibility of the MAS-56 (Hak et al., 2004), which is frequently used in questionnaire development. To prevent bias, we recruited volunteers from the general public *via* social media, who were not allowed to have an educational or professional background in psychology, philosophy or therapies/counselling/coaching. We asked the participants *via* a thinking-aloud protocol to say aloud what they were thinking while filling in the MAS. Subsequently, we asked them about their general experience of filling in difficult or ambiguous items and any suggestions (see details: Vos, 2022a). Finally, we asked participants to rate each item on a 1–7 Likert scale for clarity: "to what extent is this a good formulation, e.g., non-ambiguous and clear?" We assessed the MAS together with another questionnaire, the Meaning Sextet Questionnaire, MSQ (Vos, 2022a). Answers were analyzed with reflexive thematic analysis (Braun & Clarke, 2006).

Study 4. Feasibility study

To examine the feasibility of the MAS in a larger study and to reduce the number of items, we conducted an informal feasibility study (see instruments below). The convenience sample of participants was recruited *via* the author's personal social networks. Data analyses included the following, in line with the MSQ development study (Vos, 2022a):

Preliminary data analyses

For each item, mean, standard deviation, skewness, and kurtosis were calculated. It was decided not to discard any outliers because of the exploratory aims of this study. Missing values were examined for random/system-missing, and if missing less than 20% of a scale, missing items were imputed *via* multiple regression.

Structural validity analyses

To examine the factor structure, we first conducted explorative Principal Component Analyses (number of factors was based on: Eigenvalues > 1, scree-plot, factor-loadings larger than .30, and interpretability of factors after Varimax rotation). Second, Confirmatory Factor Analysis was conducted with Structural Equation Modeling in Mplus v7.4. Each sub-scale was modeled as a latent variable, with the items as indicators and estimations of the item loadings and factor covariances. No single/higher-order factor was assumed, but sub-scales were modeled as conceptually independent but empirically correlating variables. As the Likert scales were ordinal, mean-adjusted and variance-adjusted weighted least-squares estimations were used. Several standardized factor loadings and model-fit indices were calculated, which were interpreted as indicating good model fit if: Root-Mean-Square-Error-of-Approximation (RMSEA) < 0.06, $p(\chi 2) > 0.05$, $\chi 2/df < 2$, Comparative-Fit-Index (CFI) > 0.95) and Tucker-Lewis-Index (TLI) > 0.95. The model was modified if the inclusion of a parameter significantly improved the model $\chi 2$ statistic.

Reliability analyses

To examine the internal consistency, we calculated Cronbach's alpha for each sub-scale and split-half reliability with Spearman-Brown Coefficient for unequal lengths (Horst formula; Warrens, 2016) for each sub-scale. Reliability was interpreted as follows: <.50 unacceptable, .50–.60 poor, .60–.70 questionable, .70–.80 acceptable, .80–.90 good, > .90 excellent (Cronbach, 1951).

Item Response Theory (IRT)

We used Item Response Theory (IRT) to assess the items best suited for the final questionnaire. IRT describes the relationship between a latent trait and item responses. The probability of an individual's response to an item is determined by their value on the latent trait as well as by properties of the item. We assumed that the observed responses to the items are a logistic function of the latent trait (e.g., each MAS factor) and that the probability of responding with a higher response option increases as the level of the latent trait increases. We calculated each item's discrimination, which is the ability to differentiate between high scorers and low scorers in each domain. We conducted IRT separately for each sub-scale in Mplus-v.7.4 (Embretson & Reise, 2013; Van Der Linden, 2017). We calculated 3PL logistic models which also estimated other parameters (e.g., item order), but these models did not significantly improve the model fit, and are therefore not presented.

Item reduction

We reduced the number of items in the MAS-56 based on: expert scores on representativeness, relevance, clarity; laymen scores on clarity; improvement of Cronbach's alpha with/without item; fit of the structural model with/without item; discrimination in IRT. For a balanced instrument, we decided to have an equal number of 15 items for each sub-scale in the final MAS-45.

Study 5. International survey

We conducted an international survey study (entitled "World-wide Survey of Meaning in Life") to test the reliability, structural, cross-cultural, external and convergent/divergent concurrent validity of MAS-45. Participants were recruited *via* social media of the researchers and their academic organizations (Facebook, Twitter, LinkedIn, ResearchGate), public lectures, snowballing *via* emails, and research websites. The Ethics Committee of the Metanoia Institute in London provided ethical approval. Data analyses included the following:

1. **Preliminary analyses:** see feasibility study;
2. **Structural validity**: see feasibility study;
3. **Reliability**: see feasibility study;
4. **Construct/cross-cultural/predictive validity**: To examine the convergent validity of the MAS, we added other meaning questionnaires. We calculated Pearson's correlations (interpretation: $r < .30$ "weak", $r = .30–.50$ "moderate", $r > .50$ "strong") and

included significantly correlating variables ($p < .05$) in an overall model in Mplus7.4. The scales are described in Vos (2022b).

We hypothesized the traditional approach to correlate positively with the cultural values of conformity, security, spirituality and tradition in Schwartz-Value-Survey (SVS; Spini, 2003), and power-distance, collectivism, and uncertainty-avoidance in the Individual-Cultural-Values-Scale (ICVS; Yoo et al., 2011; cf. Vos, Menko, Oosterwijk, van Asperen, Stiggelbout, & Tibben, 2013). We had asked participants to tick the relevant box for any religions or worldviews that they identify themselves with, and we tested any possible correlations with the traditional approach. We hypothesized that the traditional approach correlated with being active in religion, and living in non-Western countries (Vos Sociodemographics and Living-Situation Questionnaire VSLSQ; Vos, 2021a). We expected the traditional approach to corrrelate negatively with authenticity in the Authenticity Scale (AS; Wood et al., 2008), Free Will in Free Will and Determinism Scale (FWDS; Vohs & Schooler, 2008), Self-acceptance, Mastery, Autonomy and Personal Growth in Scales of Positive Well-Being Scale (SPWB; Ryff & Keyes, 1995), experientiality and rationality in the Rational-Experiential Inventory (REI; Pacini & Epstein, 1999), and all subscales in the Five Facet Mindfulness Questionnaire (FFMQ-15; Baer, 2008).

The following instruments/sub-scales were expected to correlate positively with the functionalistic approach: Free Will in FWDS, Self-acceptance, Mastery and Autonomy in SPWB, Achievement, Power, Masculinity, Self-direction in SVS, Western countries, and Not Being Active in Religion (VSLSQ). Functionalism was expected to correlate negatively with: Authenticity, Fatalistic Determinism, Mindfulness (FFMQ), Conformity, Tradition (SVS), Power Distance, Collectivism, and Long-term Orientation (ICVS).

The following instruments/sub-scales were expected to correlate positively with the critical-intuitive approach: Authenticity (AS), Free will (FWDS), Self-acceptance, Mastery, Autonomy and Personal Growth (SPWB), Experientiality and Critical rationality (REI), all Mindfulness subscales (FFMQ), Self-direction (SVS), Long-term Orientation (ICVS) (VSLSQ), both Presence and Search for Meaning (Steger et al.,2006). We expected the critical-intuitive approach to correlate negatively with Fatalistic Determinism (FWDS), Conformity and Tradition (SVS), Masculinity and Uncertainty Avoidance (ICVS).

Previous studies suggested differences in how individuals experience meaning in life in countries with different economic systems: individuals in countries with economies that have more neoliberal characteristics are more likely to focus on materialistic/hedonistic/self-oriented types of meaning, and individuals in less-neoliberal countries are more likely to focus on social/larger types (Vos, 2020). "Dominantly neoliberal countries" seems to overlap with what sometimes also has been referred to as "Western countries". Therefore, we created a dummy variable with the options "Western" (value 0) and "Non-Western" (1), based on the categorization of "The Rich West and Western Europe" by the independent organization WorldPopulationReview.com. As the hypothesized functionalistic words for meaning in life seemed to have become popular in the last centuries in Indo-European languages in Western countries (see Introduction), we hypothesized that individuals in Western countries are more likely to be functionalistic. In contrast, individuals in other countries are more likely to have a traditional or critical-intuitive/phenomenological approach. As a common practice, this dummy variable was used as a ratio scale variable in statistical analyses.

We did not expect any of the approaches to correlate significantly with other socio-demographic aspects of the VSLSQ (Country, Region, Housing, Gender, Sexual orientation, Years of Education, Work type, Sense of Ethnic Belonging, Relationship status, Children number, Number of Life Changes in Last Year, Income in USD) nor on the Financial Well-Being Scale (CFPB, 2019). Regarding age, we expected that people would dominantly focus on traditional approaches in their younger years or old age, functionalist approaches in their midlife, and critical-intuitive approaches in later life. We also did not expect any correlations between approaches and types of meaning in life (Meaning Sextet Questionnaire, MSQ; Vos, 2022b), as they answer different questions ("how does someone approach meaning" versus "what is someone's meaning"), but we hypothesized that approaches and types might have a spurious correlation as research indicates that individuals in Western countries happen to have both a more functionalistic approach and focus more on materialistic, hedonistic and self-oriented types of meaning (Vos, 2020).

We added questionnaires to explore how different approaches predict well-being. The traditional and functionalistic approaches were expected to correlate negatively with Positive Affect and positively with Negative Affect in the Positive Affects Negative Affects Scale (PANAS; Thompson, 2007), correlate negatively with Total Quality Of Life in the SF-6D (Whitehurst et al., 2011) and with Overall Life Satisfaction in the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). The critical-intuitive approach was expected to correlate positively with Positive Affect (PANAS), Total Quality of Life (SF-6D) and Overall Life Satisfaction (SWLS) and correlate negatively with Negative Affect (PANAS).

6. Interpretability: After individuals filled in the questionnaire, we sent an automated report of the overall scores with an interpretation to the individual (Vos, 2022a). This interpretation was based on the general description of each approach. Participants were asked to rate to what extent they agreed with this interpretation on a scale ranging from 1, "totally agree", to 7, "totally disagree".

Findings

Study 1. Definition Delphi study

The experts rated the definitions of the traditional, functionalistic and critical-intuitive approaches as representative, clear and relevant, slightly varying around mean scores of 5.4 and larger, and no scores below 4.0 (see details in Table 1). Changes in spelling, grammar and formulations were made to the texts, but no substantial changes in the content; combined with the large agreement, this was considered an indication of consensus about the definitions for the three approaches.

Regarding the names of the scales: four experts gave medium or low scores for the term "functionalistic". When asked *via* open questions, they suggested the terms "mechanistic", "self-directed" and "goal-oriented", but the experts were not able to agree on a better term, and they decided to keep the term "functionalistic". Five experts agreed strongly with the term "critical-intuitive" but three others only moderately agreed, and in the open questions, they wrote that they preferred the term "phenomenological"; in the next iteration, the consensus was reached to use the term "critical-intuitive" and to use this where possible in conjunction with the term "phenomenological".

Study 2. Item generation

The experts initially generated 267 items, which were assessed for their face validity. Only 56 items had mean scores for representativeness, clarity and inclusion of 5 or larger and no scores lower than 2. These 56 items were shown again to the experts. Of these, eight items had scores lower than 3 for clarity and were therefore excluded in Study 4 (see Table 2).

Study 3. Three-step test interview

Eight individuals filled in the MAS-56 while thinking aloud and were interviewed. Five were women, three men, mean age was 31.3 years (SD = 10.6), four were higher educated, two were further educated, and two had another educational background. All participants described the general experience of filling in as positive, such as stimulating self-reflection or self-insight ($n = 6$) and as pleasurable or fun ($n = 4$). Three mentioned that the questionnaire was long and intensive, albeit acceptable. None described a negative emotional impact. Of the 56 items, six were rated as very unclear (mean scores < 3), and five as relatively unclear (mean scores 3 to 5). Suggestions for improvement were given for seven of these very/relatively unclear items, which were deleted in Study 4.

Study 4. Feasibility study

Preliminary data analyses

The feasibility study included 108 participants (see socio-demographics in Vos, 2022a, and online Table 2). Except for two individuals who had started filling in the questionnaire but filled in less than 50% of the questions, all other participants completed the questionnaire; there were no missing values in the MAS-56 as participants were forced to answer each question (Vos, 2022b). The scales in the MAS-56 had large variation and seemed skewed (traditional: $M = 3.3$, SD = 1.6, skew = .08, p(Shapiro-Wilk) = .04; functionalistic: $M = 3.4$, SD = 1.4, skew = .07, p(Shapiro-Wilk) = .01; critical-intuitive: $M = 3.1$, SD = 1.7, skew = .06, p(Shapiro-Wilk) = .02). When items were deleted in the MAS-45 in Step 5, the three scales had a near-normal distribution with good variation around the means (traditional: $M = 3.1$, SD = 1.4, skew = .02, p(Shapiro-Wilk) = .32; functionalistic: $M = 3.6$, SD = 1.2, skew = .04, p(Shapiro-Wilk) = .15; critical-intuitive: $M = 2.8$, SD = 1.6, skew = .03, p(Shapiro-Wilk) = .22).

Structural validity

Explorative Principal Component Analysis for the MAS-56 indicated five factors which were difficult to interpret, with a total variance explained of 56% and factor loadings between .18 and .95. Confirmative Factor Analysis showed a poor fit, and adjustments in the model did not improve the fit. The three approaches did not significantly differ from each other and had moderately large correlations (p(Cohen's d) > .05; $r = .25$–$.35$, $p < .05$). After deleting 11 problematic items (see step 5), the MAS-45 was created (see online Table 3). The three approaches became significantly correlated ($r = .16$, p

Table 2. Overview of findings.

	"Experts" perspective			Laymen's perspective	Feasibility study		International survey study
Scale items	Clarity*	Representativeness*	Inclusion*	Clarity*	Standardized factor loadings	Discrimination	Standardized factor loadings
Items in MAS-56 (feasibility-study) and MAS-45 (survey-study)							
1!	4.8	6.0	4.9	4.7	0.85	3.7	0.91
2	5.4	6.1	5.6	5.3	0.65	2.8	0.71
3!	5.4	6.0	6.1	5.5	0.82	3.8	0.83
4	4.6	5.1	4.6	4.8	0.76	2.7	0.72
5!	5.7	5.6	5.5	6.1	0.92	3.6	0.88
6!	5.9	6.2	6.0	6.0	0.94	3.9	0.92
7	6.0	5.1	5.3	6.2	0.66	2.4	0.65
8	6.2	4.6	4.8	6.1	0.58	2.1	0.66
9!	5.4	5.7	5.7	6.0	0.81	3.4	0.88
10!	6.2	6.1	6.3	6.0	0.62	2.9	0.65
11	5.7	6.0	5.7	5.7	0.56	2.8	0.60
12	5.9	6.1	5.5	6.0	0.45	2.6	0.50
13!	6.2	6.2	6.0	6.1	0.72	3.2	0.68
14	5.6	5.8	5.6	6.0	0.51	2.4	0.45
15!	4.8	5.9	5.4	5.3	0.71	3.6	0.63
16	4.9	5.0	5.2	5.8	0.45	1.9	0.50
17!	6.0	6.0	5.9	6.3	0.65	3.3	0.72
18	5.3	5.4	5.5	5.7	0.76	3.6	0.81
19	5.6	5.9	5.5	6.0	0.51	2.8	0.60
20	5.7	6.2	5.9	5.4	0.46	1.8	0.42
21	5.5	5.9	5.5	5.7	0.49	2.1	0.44
22	5.7	5.9	5.6	5.9	0.45	1.9	0.46
23	5.0	4.8	5.1	5.4	0.46	1.9	0.55
24	6.0	5.9	6.1	5.7	0.53	2.8	0.60
25	5.3	4.9	5.1	5.4	0.44	1.8	0.59
26	5.4	5.9	5.6	5.5	0.52	2.4	0.44
27!	5.7	6.1	5.9	5.8	0.69	3.6	0.78
28!	6.0	6.1	6.0	5.9	0.67	3.2	0.79
29	6.1	5.7	5.9	6.2	0.49	2.5	0.56
30	4.9	5.6	5.4	5.3	0.47	2.1	0.44
31	5.6	4.9	5.3	5.4	0.46	2.1	0.49
32	5.3	4.9	5.2	5.5	0.44	1.8	0.49
33!	4.9	5.9	5.7	5.5	0.50	3.0	0.52
34!	5.2	5.5	5.4	5.3	0.88	3.4	0.90
35	4.8	5.1	5.2	5.4	0.66	2.3	0.77
36	5.9	5.5	5.6	5.9	0.52	2.4	0.55
37!	5.4	5.8	5.7	5.5	0.76	3.0	0.81
38	4.9	5.2	5.3	5.4	0.53	2.0	0.60
39!	6.0	5.7	5.9	5.9	0.77	3.0	0.85
40!	5.8	6.0	5.9	5.9	0.87	3.3	0.90
41	5.1	5.2	5.5	5.4	0.46	1.8	0.52
42	5.1	4.9	5.0	5.6	0.48	1.9	0.52
43	5.9	5.1	5.4	6.0	0.51	2.4	0.55
44	4.8	5.2	5.0	5.1	0.49	2.2	0.55
45	4.9	4.9	5.1	5.2	0.47	2.3	0.53
Items from the MAS-56 (feasibility-study) excluded from MAS-45							
46	4.6	4.9	4.8	4.3	0.38	1.7	
47	3.9	4.6	4.9	4.5	0.44	1.3	
48	3.5	4.4	4.5	3.9	0.43	1.2	
49	2.9	4.8	4.0	3.9	0.52	2.0	
50	2.6	4.9	4.2	3.5	0.41	1.5	
51	2.6	4.6	4.6	2.8	0.21	1.3	
52	2.6	4.3	4.8	2.2	0.22	0.9	
53	2.5	4.7	4.6	2.7	0.65	1.3	
54	2.3	4.4	4.4	2.6	0.25	0.8	
55	2.3	4.5	4.5	2.5	0.14	0.6	
56	2.0	4.2	4.0	1.9	0.23	1.2	

Item-numbers and item-order refer to MAS-45;!item with largest discrimination; *1–7Likert-scale: 1, disagree/negative-7, agree/positive; **sum-scores.

Table 3. Significant correlations between the meaning approach scale (MAS-45) and other questionnaires in the survey-study.

Other scales		Meaning Approach Scale		
Instrument	Sub-scale of instrument	Traditional approach	Functionalistic approach	Critical-intuitive/ phenomenological approach
Construct validity				
Authenticity-Scale		−0.39*	.28*	.63***
Free-Will-and-Determinism-Scale	Free will	−0.33*	.42*	.50**
	Fatalistic determinism	.35**	−0.32*	−0.37**
Scales of Positive Well-Being Scale	Self-acceptance	−0.43*	.20	.59**
	Mastery	.05	.51**	.45*
	Autonomy	−0.53**	.56**	.55**
	Personal growth	−0.09	.28	.41*
	Purpose	.36**	.37**	.57***
Rational-Experiential-Inventory	Experientiality	−0.41*	.25*	.59**
	Critical-rationality	−0.47**	.12	.52**
Five-Face t-Mindfulness-Questionnaire	Nonjudging	−0.55**	−0.09	.62**
	Describing	−0.30	.13	.64**
	Nonreacting	−0.40*	−0.19*	.51**
	Acting with awareness	−0.42*	−0.32*	.61**
	Observing	−0.45*	.17*	.53*
Predictive-validity				
Positive-Affect s-Negative-Affects-Scale	Positive Affect	−0.49***	−0.39**	.54***
	Negative Affect	.55***	.36**	−0.51***
Quality-of-life		−0.49**	−0.31*	.61***
Satisfaction-With-Life-Scale		−0.48**	−0.23*	.65***
Meaning-in-Life-Questionnaire	Presence-of-Meaning	.40***	.38**	.56***
	Search-for-Meaning	.20	.32***	.59***
Cross-cultural validity				
Schwartz-Value-Survey	Achievement	.22	.44**	.10
	Conformity	.63***	−0.45**	−0.62***
	Power	−0.23*	.42**	−0.23**
	Security	.45***	−0.15	−0.42***
	Self-direction	−0.52**	.63***	.51***
	Spirituality	.58***	−0.32*	.46***
	Tradition	.62***	−0.44***	−0.48***
Individual-Cultural-Values-Scale	Power distance	.57***	−0.32*	−34
	Collectivism	.53***	−0.59***	.32*
	Masculinity	.32*	.37**	−0.34**
	Uncertainty avoidance	.59***	−0.31*	−0.53***
	Long-term orientation	.61***	−0.51***	.52***
Vos-Sociodemographics-and-Living-Situation-Questionnaire	Western (0) versus non-western countries (1)	.48***	−0.63***	.31***
	Active in religion	.66***	−0.55***	.43*

Cells present Pearson's Correlations in the MAS-45 in the Feasibility-study/Survey-study;NS = Not Significant.
*$p < .05$.
**$p < .01$.
***$p < .001$.

< .05; Cohen's Cohen's d = .44, p < .001; traditional and critical-intuitive/phenomenological approaches: r = .09, p > .05; Cohen's d = .59, p < .01; functionalistic and critical-intuitive/phenomenological: r = .06, p < .05; Cohen's d = .61, p < .001). Explorative Principal Component Analysis indicated three factors that were interpreted in line with the hypothesized three scales of traditional, functionalistic and critical-intuitive approaches, with factor loadings ranging between .45 and .82, and a

total explained variance of 74%. Confirmative factor analysis of MAS-45 indicated good fit: RMSEA = 0.048 (90%CI = 0.043–0.053), $\chi 2$ (1035) = 1092 (p = .10), $\chi 2$/df = 1.05, CFI = 0.961, TLI = 0.961.

Reliability

In the MAS-56, Cronbach's alpha (and split-half reliability) was poor for each scale: .52 (.60) for traditional approaches, .49 (.54) for functionalistic approaches, and .52 (.55) for critical-intuitive/phenomenological approaches. We calculated Cronbach's alpha if items were deleted; this revealed that the exclusion of 9 items would improve reliability (numbers 47–56 in Table 2). In the MAS-45, each of the scales had good reliability as measured with Cronbach's alpha (and split-half reliability): .88 (.86) for traditional approaches, .81 (.79) for functionalistic approaches, and .84 (.78) for critical-intuitive/phenomenological approaches.

Item response theory

Table 2 shows discrimination for the items, showing that discrimination for most items was good or acceptable. Ten items seemed problematic and in the table they are renumbered and given numbers 46–56.

Item reduction

Table 2 shows that 11 items were deleted from the MAS-56 based on converging indicators of poor quality of these items based on low expert ratings, lay people ratings, structural model fit and IR -discrimination. All remaining items in the MAS-45 had positive ratings by experts and laypeople, good structural model fit, reliability and IRT discrimination; this was interpreted as the scale being feasible for validation in the international survey study.

Study 5. International survey

Preliminary data analyses

The Worldwide Survey of Meaning in Life was filled in by 1871 individuals, from which 590 surveys were excluded as these were filled in for less than 50% of all questions. The analyzed dataset included the surveys from 1281 participants from 49 countries (see online Table 2). The sample seemed slightly biased, as more Europeans and Northern Americans participated than individuals from Africa and Southeast Asia. Furthermore, similar to other survey studies, compared to the average population of these countries, the participants have studied longer, have a larger income and are more likely to be a student or single.

There were no missing variables and values due to the forced answers. Similar to the MAS-45 in the feasibility study, all MAS-45 items were near-normally distributed without statistically significant skewness and with good dispersion (traditional: $M = 3.2$, SD = 1.3, skew = .02, p(Shapiro-Wilk) = .22; functionalistic: $M = 3.7$, $M = 1.1$, skew = .04, p(Shapiro-Wilk) = .26; critical-intuitive: $M = 2.9$, SD = 1.4, skew = .02, p(Shapiro-Wilk) = .21).

Structural validity

The three approaches were significantly different and had, at best, small correlations (traditional and functionalistic approaches: $r = .14$, $p < .05$; Cohen's $d = .52$, $p < .001$; traditional and critical-intuitive/phenomenological approaches: $r = .10$, $p > .05$; Cohen's $d = .55$, $p < .001$; functionalistic and critical-intuitive/phenomenological: $r = .09$, $p < .05$; Cohen's $d = .63$, $p < .001$). Confirmative factor analysis of MAS-45 indicated good fit: RMSEA = 0.044 (90% CI = 0.040–0.047), $\chi 2$ (1035) = 1081 ($p = .10$), $\chi 2/df$ = 1.04, CFI = 0.970, TLI = 0.966.

Reliability

Each scale had good reliability as measured with Cronbach's alpha (and split-half reliability): .88 (.84) for traditional approaches, .80 (.82) for functionalistic approaches, and .83 (.88) for critical-intuitive/phenomenological approaches.

Construct/cross-cultural/predictive validity

Table 3 shows an overview of the correlations, showing that 33 variables significantly correlated with the scales. The correlations of the construct validity tests were as hypothesized. Notable findings for cross-cultural and predictive validity included the following.

Traditional approaches. Correlated significantly with less positive affects (r = –0.49, $p < .001$), quality of life (r = –0.49, $p < .01$) and satisfaction with life (r = –0.48, $p < .01$), and with more negative affects ($r = .55$, $p < .001$); traditional approaches correlated with non-Western countries ($r = .48$, $p < .001$), with more collectivism ($r = .53$, $p < .001$), and larger power-distance ($r = .57$, $p < .001$).

Functionalistic approaches. Correlated significantly with less positive affects (r = –0.39, $p < .01$), quality of life (r = –0.31, $p < .05$) and satisfaction with life (r = –0.23, $p < .05$), and more negative affects ($r = .36$, $p < .01$). Functionalistic approaches correlated with Western countries ($r = .63$, $p < .001$) and with less collectivism, i.e. individualism (r = –0.59, $p < .001$).

Critical-intuitive/phenomenological approaches. Correlated significantly with larger positive affects ($r = .54$, $p < .001$), quality of life ($r = .61$, $p < .001$) and satisfaction with life ($r = .65$, $p < .001$), and smaller negative affects (r = –0.51, $p < .001$). Critical-intuitive/phenomenological approaches correlated with non-Western countries ($r = .31$, $p < .001$).

Types and approaches to meaning. The functionalistic approach correlated significantly with materialistic, hedonistic and self-oriented types of meaning (resp. $r = .43$, $p < .05$; R.55, $p < .01$; $r = .51$, $p < .01$), traditional approaches with social and larger types of meaning (resp. $r = .58$, $p < .01$;$r = .56$, $p < .01$) and critical-intuitive/phenomenological approaches with social and larger types of meaning (resp. $r = .48$, $p < .01$;$r = .45$, $p < .01$). However, all correlations between approaches and types of meaning became non-significant when corrected for Western/non-Western country.

Age. The scatterplots indicated that age did not correlate significantly with traditional and functionalistic approaches. Traditional approaches had a negative U-shaped relationship with age, indicating that people are more traditional in early and late life (traditionalism = 0.12×age-1.0age + 3.9; R^2 = .049; NB: rescaling: age × 0.1). Functionalist approaches had a positive U-shaped relationship, suggesting a dominant functionalistic approach in their midlife in 30s and 40s (functionalism = 0.11×age^2+1.5×age + 1.9; R^2 = .046; NB: rescaling: age × 0.1). Critical-intuitive approaches correlated positively with age, indicating that the older people become the more likely they are to have a critical-intuitive/phenomenological approach (r = .30, p = .04). However, the explained variance for these correlations/functions was relatively small to moderate; when Western/non-Western country was included as covariate in the analyses, more variance was explained but the interaction effects were small.

SEM model. We added the 33 significantly correlating variables (excluding age) as predictors of the three scales (using sum scores), with estimations of covariances. There was not a single/higher-order factor assumed. Mean-adjusted and variance-adjusted weighted least-squares were estimated to match the ordinal Likert scale. The initial model was improved by adding covariations between predictors; the final model indicated moderate fit: RMSEA = 0.056 (90%CI = 0.051–0.061), χ2 (666) = 724 (p = .06), χ2/df = 1.08, CFI = 0.95, TLI = 0.96.

Interpretability

The participants agreed "relatively much" to "very much" with the automated interpretations of their overall MAS scores (traditional approach: M = 5.9, SD = 0.6; functionalistic approach: M = 5.2, SD = 1.0; critical-intuitive/phenomenological approach: M = 5.8, SD = 0.6).

Discussion

This study seems to indicate that people can experience traditional, functionalistic and critical-intuitive/phenomenological approaches to meaning in life. Functionalistic approaches were more likely found in Western countries, and traditional and critical-intuitive/phenomenological in less-Western countries. Traditional and functionalistic approaches were associated with worse well-being/quality of life, and critical-intuitive/phenomenological approaches with better well-being/quality of life.

As expected, traditional approaches correlated with conformism, tradition and religious involvement. The correlations indicated that traditional individuals did not strongly direct or master their meaning in life according to their free will, and they did not strongly use their personal experiences, mindfulness or critical reasoning as sources of meaning. Instead, they seemed to conform to larger social or religious powers, which seemed to go hand-in-hand with a larger sense of fatalism. Although this traditional approach gave some sense of meaning, a sense of security and certainty, it may have come at a cost for their authenticity and self-acceptance, possibly by denial of unconscious experiences and intuitions about life, which may explain the negative

impact on their psychological well-being (Vos, 2015). This traditional approach is more likely to be found in young and older people but less in midlife and non-Western collectivistic countries (Cohen et al., 2016). This aligns with other studies suggesting that some traditional approaches may be associated with worse well-being (Knoop & DelleFave, 2012).

Functionalistic approaches correlated with a strong free will, autonomy and self-direction, and were less likely to be based on religion or tradition. Paradoxically speaking, functionalism was also associated with inauthenticity, short-term focus, reactivity and acting without awareness, and a lack of critical-rationality, experientiality, and mindfulness. This paradoxical combination of self-direction without being in touch with one's authentic flow of experiencing may be interpreted as an external focus and reactivity in functionalistic meanings. Functionalistic individuals focused on achievements and large goals, and this seemed to give some sense of meaning, but this did not lead to a similarly large sense of life fulfillment as other approaches (this is possibly due to the association with materialistic, hedonistic and self-oriented types of meaning which seem to lead to lower fulfillment). There may be a sense of competition and enforcing one's will, as indicated by the correlation with cultural masculinity. Furthermore, the functionalistic items described how individuals strived in linear/efficient ways for specific but random/replaceable goals in life. Functionalistic approaches are more likely found in individuals between their 20s and 40s and Western countries.

These correlations may also be tentatively interpreted as going beyond the initial description and name of "functionalism", and future researchers may consider more comprehensive terms (e.g., "instrumental"). Regardless of the name, these findings are in line with studies by sociologists and philosophers who have argued how a mechanistic or instrumental approach started in the Enlightenment and Reformation ("the human machine") but seems to have become all-encompassing in modern Western societies, possibly accelerated by the Industrial Revolution and neoliberal economics, and creating a mental health crisis (Foucault, 2008; Fromm, 1976; Heidegger, 1954; Marcuse, 2013, Rose, 1990, Visser, 2013, Vos, 2020, Vos et al., 2019). It may, for example, have influenced the widely spread misinterpretation of Maslow's philosophy as a functionalistic pyramid of needs, even though there is little empirical evidence that individuals first need to fulfill their basic needs before they can realize their meaning potential (Kaufman, 2021; Vos, 2020).

The critical-intuitive/phenomenological approach correlated, as hypothesized, with an individual's attention to their own experiences, as well as using their critical rationality and being critical toward conformity, powers and traditions. The critical-intuitive/phenomenological approach was associated with all aspects of mindfulness: non-judgmental, describing, non-reacting, acting with awareness, observing, and acceptance of uncertainty. This approach seemed to involve a sense of authenticity, self-acceptance, autonomy and free will, which may lead to personal growth. In contrast with traditional and functionalistic approaches, critical-intuitive/phenomenological approaches were associated with less certainty, security and masculinity. It may be hypothesized that individuals with a strong critical-intuitive/phenomenological approach can hold life's uncertainties and paradoxes, simultaneously experiencing the presence of meaning while continuing their search for other meanings (Vos, 2015). Critical-intuitive/phenomenological approaches are also slightly more likely to be found

in older individuals in non-Western countries. Critical-intuitive/phenomenological approaches were associated with better well-being, which is in line with other studies showing that individuals are more satisfied with their decisions in life and experience better overall life satisfaction and well-being if they focus on their intuition, experiences and mindfulness (Csikszentmihalyi, 2013; Kim et al., 2022; Remmers et al., 2015, 2016; Schlegel et al., 2011; Zander-Schellenberg et al., 2019).

Whereas the MAS asks "how do individuals approach meaning in life?", the Meaning Sextet Questionnaire MSQ asks "what types of meanings do individuals experience?" (Vos, 2022a). The MAS describes how individuals develop their sense of meaning in life, whereas the MSQ describes the resulting types of meaning in life: materialistic, hedonistic, self-oriented, social, larger and/or existential-philosophical types of meaning. The functionalistic approach was associated with more materialistic, hedonistic and self-oriented types of meaning and less with social and larger types; however, these correlations disappeared when corrected for the Western countries in which both the functionalistic approach and these types of meaning were more likely to be observed. Similarly, traditional and critical-intuitive/phenomenological approaches to meaning correlated with social and larger types, which were explained again by the country. Thus, when corrected for these spurious relationships, the MAS and MSQ scales were not significantly correlated; this was expected as MAS and MSQ answer different questions. Consequently, one can approach each of the six universal types of meaning in life with each of the three approaches. For example, friendships can be an important social type of meaning for someone because their religion tells that they should be social (traditional approach), or they could impose their ideas of friendships onto others (functionalistic approach), or they may intuit that certain individuals are meaningful (critical-intuitive/phenomenological approach). However, it may also be argued that the separation between the MAS and the MSQ is artificial; consequently, the MAS did not include items about "relational values" which for example seem to be an important part of many traditions.

How do the three approaches fit with other concepts? Positive psychologists often refer to the difference between hedonistic and eudaimonic well-being (Ryan & Deci, 2001). It may be hypothesized that "hedonistic well-being" refers to a functionalistic approach combined with a dominant focus on materialistic, hedonistic and self-oriented types of meaning; this hedonistic combination may give some meaning, fulfillment and well-being in the short term but this may be more superficial and shorter-lasting than eudaimonic well-being. "Eudaimonic well-being" seems to refer to a critical-intuitive/phenomenological approach combined with a dominant focus on social and larger types of meaning. Thus, hedonistic and eudaimonic well-being concepts are generic terms for complex multi-dimensional phenomena (Ryff & Singer, 2008). Consequently, these concepts may not be sufficiently precise for researchers and therapists to interpret and work with, and instead they may want to use operationalized concepts and psychometric instruments, such as the MAS and MSQ.

Although the three approaches differed from each other (e.g., significant Cohen's d), they sometimes went hand-in-hand (e.g., small correlations). An individual may, for example, score high on critical-intuition and moderately high on functionalism. A dominantly critical-intuitive individual may score high on the functionalist item "people can make their own meaning in life", albeit that they may perceive this meaning-making

as an intuitive construction process. However, as the psychometric findings indicate, on average this item was particularly scored high by individuals who also scored high on other functionalistic items, and not by individuals who scored high on traditional or critical-intuitive items. An individual may also use a traditional approach in certain situations and a more functionalistic approach in others, but the questionnaire asked participants about their general agreement with each item.

Being religious and being religiously active also correlated with all three approaches, albeit stronger with traditional approaches. Stereotypically speaking, an individual may, for example, follow a traditional approach by mindlessly conforming to the religious tradition in which they were raised. Or they may functionalistically create their religion, like a bricolage religion (Dezutter et al., 2006; Vos & De Boer, 2015). Alternatively, an individual may use a critical-intuitive/phenomenological approach to religion, such as experiential religiosity or quest religiosity (Hutsebaut, 1996). These different approaches to religion may have other mental health implications. For example, unpresented post hoc regression analyses of our data suggested that believing in a religion or being actively engaged in one's religion did not directly predict positive/negative well-being (measured as an aggregated factor of positive affects, negative affects, quality of life, and life satisfaction). However, being religiously active had a significant interaction effect with the traditional approach in predicting negative well-being ($r = .40$, $p < .01$); being religiously active also had a significant interaction effect in predicting positive well-being ($r = .52$, $p < .001$). Loosely interpreted, traditional religiosity seemed associated with negative well-being and critical intuitive religiosity with positive well-being. This finding appears to confirm previous studies showing the differential mental health impact of extrinsic/socially oriented/conformist religiosity and intrinsic/critical-intuitive religiosity (ibidem).

However, these statistical trends were not very strong and there was no very detailed information about the religions. It may also be argued that religion is more than merely its approach, as many religions also seem to underline social and larger types of meaning—such as the sense of belonging to a community and dedication to a larger purpose, which are associated with better well-being (Vos, 2022a). Thus, the complete picture of the relationship between religion and meaning should include, at least, both the approaches (i.e., *how* the religions approach life) and types of meaning (i.e., *what* types of meanings the religions recommend), but this study only focused on the approaches. Therefore future research should elaborate on the differential mental health effects of different approaches and different meanings in religion.

This study has several limitations. The three approaches were initially derived from hypothetical linguistic etymological interpretations (Vos, 2022a, 2017). In the survey, the participants had been asked with an open question to write the words they most frequently use for "meaning in life"; however, this question was optional and was therefore only filled in by 19%, and the findings were difficult to interpret, as many individuals seemed to misinterpret this question; therefore, these findings were not reported. Consequently, we cannot conclude whether the linguistic differences correlate with different approaches. This study was also limited because all participants were English-speaking.The questionnaire used the word "meaning", which may have different connotations to different individuals, as this word seemed to have been used historically in a dominantly traditional way and since the 1600s in a more functionalistic way. Future studies should confirm the relationship between approaches and

language usage, for example, *via* conversation/discourse analysis, and confirm the findings *via* translations of the MAS-45. Furthermore, the three approaches were relatively generically formulated, and it could be helpful to zoom into the specific daily life implications, such as the relationship between the general approach in life, moment-to-moment experiences, and daily-life decisions (Zander-Schellenberg et al., 2019). In addition, the study had some drop-out, possibly because the MAS-45 is a relatively long questionnaire. The item discriminations in Table 2 may be used to reduce the number of items further, although a smaller scale had poorer model fit and therefore all 45 items were included.

Seen from a phenomenological/hermeneutic perspective, it is important to critically reflect on the researchers' position (Vos, 2021a). For example, the backgrounds of the eight international experts may unconsciously have biased the MAS items' description, terms, and implicit values. All experts had, amongst others, been trained in some form of existential philosophy or psychology, which often seems to prefer the phenomenological approach over other approaches. It may be argued that the words these experts selected, such as "traditional" and "mechanistic", are value-loaded and that the term "critical intuition" may reflect the values in their specific philosophical/therapeutic field. The wording of some items may have implicitly biased the findings, such as the word "tradition" may have put off some liberal individuals from scoring high on the MAS items using this term. Thus, the implicit values in some items may have biased how participants perceived the items and how the items correlated with other questionnaires (Vos, Stiggelbout, Oosterwijk, Gomez-Garcia, Menko, Collee, Van Asperen, & Tibben, 2011). Was there an unconscious self-confirmation bias, for example, by describing the critical-intuitive approach more positively, which could have led to associations with better well-being? To minimize the risk of bias, we also conducted interviews and surveys, which indicated a broad variation and no skewness or kurtosis in the MAS items (after removal of the worst items in early research stages), and the correlations between the MAS and sociodemographic items were as expected. The overall findings, as shown in the tables, also indicated a variation in the strengths of correlations, with all approaches having at least some small correlations with each other and with well-being measures. In sum, we may hypothesize that there might be some bias in the theoretical and linguistic construction of the MAS, but the empirical findings do not clearly indicate bias. Future studies could include a more diverse team of experts, and examine in more detail how participants perceive the possible underlying values in the items, so that possibly more neutral items could be developed. Despite these limitations, this study seems to confirm for the first time with systematic empirical research that individuals may have three different approaches to life. Whereas linguists and philosophers had already suggested this trichotomy, this had not been operationalized before. This study seems to indicate that the MAS-45 is a reliable instrument, developed with experts and tested in different cross-cultural populations, with a validated structure and convergent/divergent concurrent validity as indicated by expected correlations with other scales. Some indicators were found for the predictive/criterion validity as the MAS-45 correlated with well-being/quality of life measures, although the one-shot non-experimental study design limited the findings. Since its development, as described in this article, the MAS-45 has been validated in several studies, e.g. during COVID-19 (Vos, 2021a).

What are possible clinical implications? Many psychotherapists and researchers have recommended using experiential and phenomenological skills in psychotherapy and meaning in life (see review in Vos, 2017). This recommendation seems supported by this study indicating that individuals with a critical-intuitive/phenomenological approach experience better well-being. A meta-analysis of 60 clinical trials on meaning-centered therapies also indicated that the more therapists stimulate their client's critical-intuition, the more effective is the therapy (Vos & Vitali, 2018). For example, a randomized controlled trial on meaning-centered therapy showed how cancer patients changed in their MAS-45 scores: they became less traditional and less functionalistic and more critical-intuitive/phenomenological during therapy, and these changes predicted improvements in their mental health (Vos, 2022c). However, more research is needed to understand the precise causal relationships and therapeutic mechanisms (Vos, 2022b).

Despite the limitations, and the need for further research and replication studies, these studies seem to indicate that the MAS-45 may be a valid instrument for use in surveys, clinical trials and client self-development. Individuals seem to benefit most from developing a critical-intuitive/phenomenological approach, and therapists may want to stimulate this approach in their clients. The best approach to stimulate well-being seems to be listening critically to what our intuition authentically tells us is meaningful for us instead of mindlessly conforming to what others or religions say or superficially directing our lives without taking the time to be mindful of what is happening inside ourselves and the world around us.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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