

**Separating Belief in Meaning of Life from the Personal Experience of Meaning in Life: Different Relations with Religiosity and Well-being**

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## **Abstract**

In this paper, we demonstrate that belief in the meaning of life (BMOL), the belief that life in general has meaning, and the psychological experience of meaning in one's own life (MIL) are distinct constructs. We show that BMOL is more strongly associated with religiosity and spirituality, while MIL is more associated with well-being. Since there is currently no scale to measure BMOL to test our hypothesis, we develop the Belief in the Meaning of Life Questionnaire (BiMoLQ) in Study 1 (N=315) and confirm its factor structure in Study 2 (N=285), establishing that BMOL and MIL are separate constructs and underlie different correlates with well-being, religiosity, and spirituality. In Study 3 (N=436), we manipulate the presence of meaning of life and meaning in life in fictional scenarios, showing distinct effects on BMOL and MIL evaluations. We conclude that future research should distinguish these constructs, as they reflect separate realities.

*Keywords:* meaning in life, meaning of life, religiosity, spirituality, well-being

## Introduction

What is the belief in the meaning of life about, and why do we claim it is a separate construct from the psychological experience of meaning in life? Questions about life's meaning are commonly viewed as aspects of a deep existential puzzle with profound significance (Frankl, 1992; Camus, 2013). While some dismiss the question as meaningless (Adams, 2010), others, like Tolstoy (1987) perceive it as having a vital importance. However, it is not clear how such questions should (or even could) be approached from a scientific point of view. One major obstacle is that it is not clear how these questions should be interpreted – a factor often cited as the reason empirical sciences have only recently turned their attention to the topic of life's meaning (King & Hicks, 2021). However, in trying to approach the question of life's meaning from an empirical angle, researchers seem to have shifted from large metaphysical questions about the meaning of life in general to a more specific inquiry into the personal experience of one's life as meaningful. While the first question focuses on whether life in general has meaning and exists for a purpose (i.e. whether there is a meaning *of* life), and approaches the topic from a global and cosmic point of view, the second question focuses on the sense of meaningfulness we can find in our own lives (i.e. on meaning *in* life) and approaches the topic from a more personal perspective.

Indeed, in the field of psychology, life's meaning has been investigated as a construct referring to the psychological states of individuals who assess and interpret their lives as meaningful, and is typically considered to involve a sense of purpose, coherence, and significance in one's life (Martela & Steger, 2016). Experiencing one's life as meaningful in this way has been shown to be fundamental for well-being and even health (Roepke et al., 2014), to predict longevity (Cohen et al., 2016) and life satisfaction stability (Thoma et al., 2024), and to be a key component of subjective well-being and flourishing (Seligman, 2011; Huppert & So, 2013). What psychologists have been mainly examining is thus whether individuals experience meaning *in* life. This is a psychological question investigating whether a person experiences a sense of significance, purpose and value in their own life. Casting aside

metaphysical interrogations, this question focuses on the meaning we can experience *in* our own individual and personal life.

However, by framing the question this way, psychologists seem to have shifted from the way the question of life's meaning is traditionally understood. Tolstoy and existential philosophers were typically interested in the question of meaning *of* life, which is about whether human life exists for a purpose. Meaning *of* life is often associated with questions like "is life on Earth here for a reason?" or "are we here for a purpose?" Such interrogations appear to be closely tied to religious, spiritual, and metaphysical themes, as intellectual interest in the topic of meaning *of* life emerged in the early 19<sup>th</sup> century in response to the modern scientific worldview challenging the previously held, relatively self-evident belief that everything, including human life, exists for a specific reason (Jessop, 2013; Martela, 2023).

Thus, we appear to have two separate questions about meaning: while meaning *of* life focuses on life in general, from a global and cosmic point of view, meaning *in* life focuses on the meaning we can find *in* our own individual and personal life. Many philosophers have argued that these two questions should be conceptually distinguished. Still, despite this recommendation, empirical investigations in life's meaning have generally failed to tease them apart, leaving the relationship between them ambiguous.

However, one could argue that, even the belief in a meaning *of* life in general and the experience of meaning *in* life are conceptually distinct, there are psychologically connected, to the extent that it would make sense to conflate them in one single construct when studying life's meaning at a psychological level. Indeed, for many 19<sup>th</sup> century writers, such as Carlyle, Schopenhauer, or Tolstoy, the loss of belief in cosmic meaning of life was associated with a deep personal crisis about the meaninglessness of their own life, suggesting a tight connection between finding meaning *in* one's life and believing in the meaning *of* life. More generally, people's interest for philosophical and metaphysical questions about the possible existence of a meaning *of* life is rarely a disinterested

inquiry but seems to be driven by questions about what to do of their own personal life. This thus raises the question: are belief in a meaning *of* life and the experience of meaning *in* life two separate psychological constructs with distinct properties and outcomes?

### **Philosophical arguments for a conceptual distinction between Meaning *of* Life and Meaning *in* life**

In the contemporary philosophical literature on life's meaning, it is indeed customary to distinguish between "What's the meaning of life?" and "What makes a given life meaningful?" as two different questions (Kauppinen, 2013). This distinction between meaning *of* life and meaning *in* life is widespread, even if some philosophers still argue for a tight connection between the two questions (e.g. Thomas, 2019).

Among the main advocates of this distinction is Susan Wolf (2010), who argues that while it seems that the answer to the question of the meaning *of* life will forever elude us, this does not prevent us from having a certain sense of what makes individual lives more or less meaningful. Indeed, despite our lack of knowledge regarding the meaning *of* life in general, we are quick to pass judgments about the meaningfulness (or lack thereof) of individual lives. This insight is corroborated by recent empirical studies showing that people indeed classify individual lives from the least to the most meaningful in consistent ways (Prinzing et al., 2022; Fuhrer & Cova, 2023) and that, when asked to define in their own words to define what it means for a live to be meaningful, they have a ready answer (AUTHOR, XXXX). This suggests that people consider themselves able to assess the meaningfulness of lives, even though they do not necessarily see themselves as having an answer to the question of meaning *of* life. One could thus conclude that the two questions are psychologically different.

Another argument is that finding out that human life in general has a meaning might fail to make our own personal life meaningful. To prove this point, philosopher Thomas Nagel (Nagel, 1971) ask us to imagine that we find out that the reason human beings is to serve as food for other being:

If we learned that we were being raised to provide food for other creatures fond of human flesh, who planned to turn us into cutlets before we got too stringy-even if we learned that the human race had been developed by animal breeders precisely for this purpose-that would still not give our lives meaning. (Nagel, 1971:721)

In such a case, finding that there is a meaning (i.e. a purpose) to human life in general would not make our lives more meaningful. In fact, in Nagel's particular case, it could contribute to make it even *less* meaningful. As Nagel points out, it seems that revelations about the general purpose of human life can only bring meaning to one's life if this purpose can be connected to things we care about and already give meaning to our lives. This constitutes one additional reason to treat both questions as distinct,

For these reasons (and others), many philosophers have been arguing that one can find meaning *in* one's life while accepting that there is no meaning *of* life in general. For example, Daniel Dennett argued that, even though there was no meaning *of* life because we are the random result of the blind mechanism of natural selection, we could still find meaning by dedicating our lives to things we care about and matter to us (Dennett, 1995). Similarly, Nietzsche argued that the death of God (that is: the realization that life has no transcendent purpose) should not lead us to nihilism, as we have the ability to create our own values and give our own life meaning (Nietzsche, 2000). Furthermore, Nietzsche took issue with the reactions of the likes of Tolstoi and Dostoievski, for which it seemed impossible to experience life as meaningful in the absence of God and a higher purpose for human life in general: for him, this kind of reaction was historically and sociologically conditioned, and the product of a Christian upbringing that consistently devalued all things outside of God. For Nietzsche, it was perfectly possible to imagine societies in which individuals would evaluate and experience their life's meaning independently of considerations about the existence of God or any higher purpose.

### **Can Meaning *of* Life and Meaning *in* life be distinguished at a psychological level?**

So, is this conceptual distinction between meaning *of* life and meaning *in* life relevant at the psychological level? A first argument against the idea that these two constructs are psychologically distinct is, as we have already seen, that worries about the absence of a meaning *of* life have often been historically accompanied by a deep psychological distress and a feeling that one's life is meaningless. In line with these historical considerations, some studies suggest that there is a link between believing in a meaning *of* life in general and finding meaning *in* one's life. Indeed, it seems that religious people generally find more meaning in their lives than non-religious people. For example, some studies found that Catholic nuns experience more meaning in their life than people who do not belong to a religious community (Crumbaugh et al., 1970), that perceiving the presence of the divine predicts feeling of meaningfulness (Kucinkas et al., 2018), and that atheists experience less meaning in their life than theist people (Nelson et al., 2021). Could it be that holding religious beliefs assist individuals in finding a purpose for their own lives through the belief in a meaning *of* life? If yes, this suggests that believing in a meaning *of* life in general can help individuals find a meaning *in* their own life. Thus, the anthropologist Becker (Becker, 2020) has argued that religion can help people make them feel significant and that their presence in the universe has a meaning, by fostering their connection to something sacred.

Nevertheless, despite the fact that there seems to be a connection between a belief in a meaning *of* life and the experience of meaning *in* life, it is not clear that believing in a meaning of life in general is necessary to find one's own life meaningful. Indeed, both theists and atheists tend to report that various sources such as interpersonal relationships make their lives feel meaningful (Nelson et al., 2021), allowing them to experience meaning *in* life independently from any belief in a meaning *of* life. Moreover, atheists do not seem to experience more crises of meaning than people who believe in God (Schnell & Keenan, 2011). Thus, even though philosophical questions about the meaning *of* life seems to be the historical foundation for current scientific research on the experience of meaning, it

is possible that the way it is conceptualized and operationalized today under the label “meaning *in* life” has little to do with interrogations about the meaning *of* life.

Indeed, though the distinction between meaning *of* life and meaning *in* life is also present at a conceptual level in psychological research (see e.g. King & Hicks, 2021), it does not seem to have drawn much theoretical interest and has sometimes been overlooked. So far, psychological research has focused mainly on investigating people’s attitudes towards meaning *in* life, and most of this research has overlooked the distinction between meaning *of* life and meaning *in* life, resulting in measurements that conflate the two. For example, in Abeyta & Routledge (2018)’s *Need for Meaning* scale, one item is “I seldom worry about the meaning of life.” In the same study, it is assumed that, if religion provides meaning to people (meaning *in* life), it is because it answers existential questions such as “Why am I here?” or “Is my existence consequential?”. Similarly, multidimensional measure of meaning in life contain items that seem to refer to the meaning *of* life, such as “Whether my life ever existed matters even in the grand scheme of the universe.” (Costin & Vignoles, 2020). And certain scales remain ambiguous about whether they are tapping into meaning *of* life or meaning *in* life (e.g., Oishi & Diener, 2014).

Of course, including items about the meaning *of* life in scales assessing the meaning *in* life might not be problematic, assuming that the two constructs are closely related or even identical. However, this is precisely what we don’t know. As we saw, many philosophers make a conceptual distinction between the two and certain psychologists have been reluctant to consider items about the meaning *of* life as relevant to the assessment of the meaning *in* life (Martela & Steger, 2023). Thus, this raises the question: to what extent are people’s attitudes towards the meaning *of* life (e.g. their belief that there is a meaning of life) relevant to their experience of meaning *in* life?

To answer this question, we would need to be able to assess people’s attitudes towards the meaning *of* life. One problem, however, is that most of the psychological research has focused exclusively on the question of meaning *in* life, devoting very little attention to the question of meaning



of life. A few psychologists have investigated the psychological correlates of “existential questions”, a broad construct that can be defined as a set of questions related to the ultimate issue of life, and include many different topics, such as issues about what happen after death, the nature of reality, and what is the meaning of life. Some of these studies have focused on “existential thinking”, defined as “the tendency to engage with ultimate concerns and the capacity to carry out a meaning-making process that locates oneself in relation to these existential issues” (Allan & Shearer, 2012:22). To measure this tendency, they have developed the Scale for Existential Thinking (SET), including items such as “Have you ever reflected on the nature of reality or the universe?” or “Do you discuss or ask questions to probe deeply into the meaning of life?”. Although few of the items refer to the meaning of life, the heterogeneity of the items included in this scale prevents the tool from truly assessing individuals’ specific attitudes towards the meaning *of* life. Furthermore, the scale assesses interest in this kind of questions, not how much meaning of life the person finds in their life. Other attempts have tried not to focus solely on an existential state of mind but to capture the existential beliefs of individuals. For instance, Narasimhan, Bhaskar and Prakhya (2010) took inspiration from Indian texts, such as Vedas, the Upanishads, and the Bhagavad Gita to measure different kind of existential beliefs. However, their scales contain no item mentioning the meaning of life, despite their paper emphasizing the importance for humans to consider that life itself has a meaning or a purpose. The kind of items they are using include “I believe in a Supernatural Power/God/Spirit” or “I believe in the law of action and reaction”. Accordingly, despite some interest in the topic, psychologists have failed to distinguish meaning *of* life from meaning *in* life in their assessment of life’s meaning, which means that we have not enough evidence to decide whether both constructs can be legitimately conflated.

### **Aims of the present research**

In this paper, our aim is thus to determine to which extent people’s belief in a meaning *of* life and their experience of meaning *in* life should be treated as separate constructs in psychological investigations of life’s meaning. Given that the distinction between meaning *of* life and meaning *in* life

is acknowledged at a conceptual level in philosophy, but that psychological studies have consistently failed to distinguish them at an empirical level, the aim of our studies is to assess whether meaning *of* life and meaning *in* life (i) appear as different factors in a factor analysis, and (ii) correlate with different psychological outcomes.

Our first hypothesis was that items assessing participants' belief in a meaning *of* life and items assessing participants' experience of a meaning *in* life should load on different factors in an exploratory factor analysis (Study 1) and that a confirmatory factor analysis should favor a two-factors models treating both constructs as distinct over a single-factor model conflating them (Study 2). As we mentioned, psychologists have already designed many items to assess participants' experience of meaning *in* life. However, we lack items designed specifically to assess participants' belief in a meaning *of* life. This is why a supplementary aim of Studies 1 and 2 was also to design and validate such items, under the form of the *Belief in Meaning of Life Questionnaire* (BiMoLQ).

*Hypothesis 1: Meaning in life and meaning of life will appear as distinct factors in a factor analysis*

As mentioned in the introduction, interrogations about the meaning *of* life are historically and conceptually related to metaphysical considerations and existential concerns at the cosmic level, as it bears on the purpose and significance of human life in general from the perspective of the whole universe. As such, we predict that, compared to meaning *in* life, it should be more strongly related to religiosity and spirituality. Indeed, most religions offer an understanding of the world, where human life exists for a purpose, having being created by God or other divine creature. As such, it is likely that religious individuals will exhibit stronger beliefs in meaning *of* life. On the contrary, as the experience of meaning *in* life is primarily directed at one's individual life, we expect it to have a weaker connection to religion and spirituality.

*Hypothesis 2: Meaning of life will be more strongly correlated with indicators of religiosity and spirituality than meaning in life.*

In contrast, the psychological experience of meaning *in* life relates to personal existential concerns, such as having a personal purpose and feeling that one's life has value. Previous research has shown that experiencing meaning in life is strongly associated with general well-being (King & Hicks, 2021). However, the association between meaning *of* life and well-being is likely to be much weaker, as there is not any straightforward connection between a cosmological belief and one's personal well-being. For example, a recent cross-European study found no correlation between religiosity and happiness and life satisfaction (Martela et al. 2023). Thus, we predict that meaning *in* life should be more strongly correlated with indicators of well-being than meaning *of* life.

*Hypothesis 3: Meaning in life is more strongly correlated with indicators of well-being and other psychological constructs than meaning of life.*

Overall, our aim to offer a first empirical examination of the psychological construct of meaning *of* life, by investigating to which extent it is separate from the already known construct of meaning *in* life, and to which extent each construct is differentially connected to distinct psychological outcomes, with meaning *of* life being more related to cosmic existential concerns (religiosity, spirituality) and meaning *in* life being more related to personal existential concerns (well-being).

#### **Data availability statement**

The second and third study of this paper have been preregistered. Preregistrations, as well as materials, data and analysis codes for all studies can be found on [OSF](#).

## Study 1. Exploratory Factor Analysis

### Method

#### Sample

We recruited 315 English-speaking participants (without country restrictions) through Prolific and paid £1.50 for their participation. 44 were excluded for failing an attention check, leaving 271 participants ( $N_{\text{man}}=132$ ,  $N_{\text{women}}=135$ ,  $N_{\text{nonbinary}}=4$ ,  $M_{\text{age}}=35$ ). The study took the form of an online survey, where participants were presented with statements and asked to rate their agreement with each of them (on a scale from -3: Strongly disagree to 3: Strongly agree).

#### Design

**Belief in meaning of life (BMOL):** Participants were required to rate their agreement with 15 items designed to capture whether participants believed in the existence of a meaning *of* life or not. All items were original and based on the traditional philosophical characterization of the question as being about the existence of a purpose or reason for the existence of human life in general. For example: “In my opinion, human existence doesn’t have any purpose” or “Human life matters in the grand scheme of things”.

*Experience of meaning in life (MIL):* Participants were required to rate their agreement with 16 items designed to capture whether participants experienced their life as meaningful. Most items were drawn from previously existing measures of meaning *in* life (Costin & Vignoles, 2020; Steger et al., 2006). For example: “My life has a clear sense of purpose” or “I feel a lack of meaning in my life”.

*Belief in the importance of having an answer to the meaning of life (BIMOL):* Participants were required to rate their agreement with 15 original items designed to capture the extent to which participants considered important for there to be a meaning *of* life. For example: “I think it is important to have the answer of the meaning of life” or “Feeling that my life has significance from the point of view of the universe is important to me”.

*Belief in the importance of having a meaningful life (IML):* Participants were required to rate their agreement with 15 original items designed to capture the extent to which participants considered important for them to have a meaningful life. For example: “I want my life to feel meaningful” or “It is not important whether my life is meaningful or not”.

*Well-being:* To assess life satisfaction, we used Diener and colleagues (1985)’s *Satisfaction with Life Scale*, which is composed of 5 statements such as “If I could live my life over, I would change almost nothing”. Participants rated their agreement on scale from -3: Strongly disagree to 3: Strongly agree.

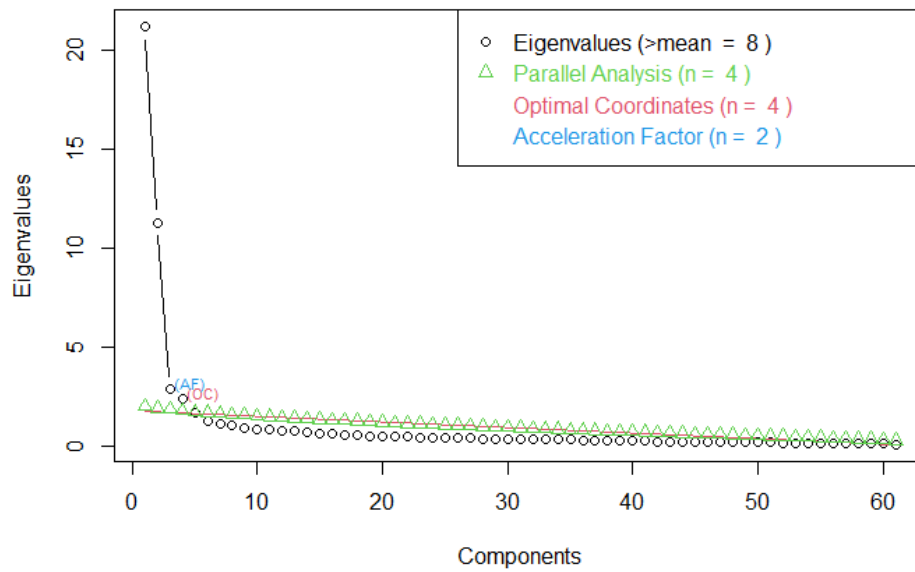
***Spirituality:*** For spirituality, we used *Sources of Spirituality Scale* (Davis et al. 2015), which is composed of five subscales assessing five distinct sources of spirituality: theistic spirituality (“I feel close to God”), transcendent spirituality (“I feel a bond with an indescribable force of being”), self-spirituality (“I feel completely genuine”), nature spirituality (“I feel close to Nature”), and human spirituality (“I feel connected to all of humanity”), for a total of 17 items. Participants rated the frequency with which they undergo each experience, on scale from “1: More than once a week” to “6: Never”.

*Religiosity:* To assess religiosity, we used Koenig and colleagues (2015)’s *Duke University Religion Index*, composed of 5 different questions (e.g. “How often do you spend time in private religious activities, such as prayer, meditation or Bible study?”).

## **Results**

### **Factor structure of our items.**

We ran an exploratory factor analysis on BMOL, MIL, BIMOL, and IML items. Parallel analysis and visual examination of the scree plot (see Figure 1) suggested a four-factor model. An exploratory factor analysis using maximum likelihood estimation and Oblimin rotation to the items gave the results presented in Table 1.



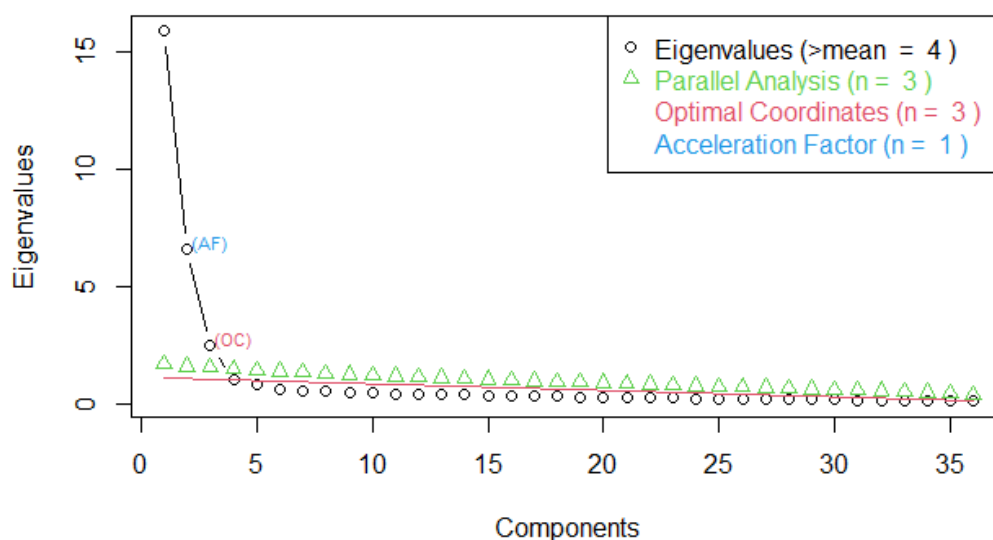
**Figure 1.** Scree plot and parallel analysis on BMOL, MIL, IML and BIMOL items (Study 1).

**Table 1.** Factors loadings for the two exploratory factor analyses (before and after exclusions) in Study 1.

Variable	First analysis				After exclusion		
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 1	Factor 2	Factor 3
MIL1	<b>0.8</b>	-0.1	0.1	0.2	<b>0.8</b>	0	0.1
MIL2	<b>0.8</b>	0	0.1	0.2	<b>0.8</b>	0.1	0.1
MIL3	<b>0.8</b>	-0.1	0	0.1	<b>0.8</b>	0	0
MIL4	<b>0.8</b>	0	-0.1	0.1	<b>0.8</b>	0.1	-0.1
MIL5	<b>0.7</b>	0.1	0	0	<b>0.8</b>	0.1	0
MIL6	<b>0.7</b>	0.2	0.1	-0.1	<b>0.7</b>	0.2	0.1
MIL7	<b>0.7</b>	0.2	0	0	<b>0.7</b>	0.2	0
MIL8	<b>0.7</b>	0.2	0	-0.3	-	-	-
MIL9	<b>0.8</b>	0.1	0.1	-0.2	<b>0.8</b>	0	0
MIL10	<b>0.8</b>	0.1	0	-0.1	<b>0.8</b>	0.1	0
MIL11	<b>0.8</b>	0.1	0	-0.2	<b>0.8</b>	0	0
MIL12	<b>0.8</b>	0	-0.1	0	<b>0.8</b>	0	-0.1
MIL13	<b>0.8</b>	0	0	0	<b>0.8</b>	0	0
MIL14	<b>0.8</b>	0	-0.2	0	<b>0.8</b>	0	-0.2
MIL15	<b>0.8</b>	0	-0.1	-0.1	<b>0.9</b>	0	-0.2
MIL16	<b>0.9</b>	-0.1	0.1	0.1	<b>0.9</b>	-0.1	0.1
BMOL1	0.2	<b>0.6</b>	0.1	-0.1	0.2	<b>0.6</b>	0.1
BMOL2	0.1	<b>0.8</b>	0	-0.1	0.1	<b>0.7</b>	0
BMOL3	0.2	<b>0.6</b>	-0.1	0.3	0.1	<b>0.7</b>	-0.1

<i>BMOL4</i>	0	<b>0.9</b>	-0.1	0.1	0	<b>0.9</b>	0
<i>BMOL5</i>	0	<b>0.9</b>	-0.1	0.1	0	<b>1</b>	-0.1
<i>BMOL6</i>	0	<b>0.9</b>	-0.1	0.1	0	<b>0.9</b>	0
<i>BMOL7</i>	0.1	<b>0.7</b>	0.1	-0.1	0.1	<b>0.7</b>	0.1
<i>BMOL8</i>	0	<b>0.7</b>	0	-0.2	0	<b>0.7</b>	0
<i>BMOL9</i>	0.1	<b>0.6</b>	0	0	-	-	-
<i>BMOL10</i>	0.2	<b>0.7</b>	0.1	-0.2	-	-	-
<i>BMOL11</i>	0	<b>0.9</b>	0.1	0	-0.1	<b>0.9</b>	0.1
<i>BMOL12</i>	0	<b>0.8</b>	0.1	-0.1	0	<b>0.8</b>	0.1
<i>BMOL13</i>	0.2	<b>0.5</b>	0.2	-0.3	-	-	-
<i>BMOL14</i>	0.2	<b>0.6</b>	0	0.2	0.1	<b>0.7</b>	0.1
<i>BMOL15</i>	0	<b>0.7</b>	-0.1	0.3	-0.1	<b>0.8</b>	0
<u>IML1</u>	-0.1	0.2	<b>0.5</b>	0	-	-	-
<u>IML2</u>	0.2	0	<b>0.4</b>	0	-	-	-
<u>IML3</u>	-0.2	0	<b>0.4</b>	0	-	-	-
<u>IML4</u>	0.2	0.1	<b>0.6</b>	0.1	-	-	-
<u>IML5</u>	0	0.2	<b>0.4</b>	-0.1	-	-	-
<u>IML6</u>	0	0.3	<b>0.3</b>	-0.1	-	-	-
<u>IML7</u>	0.1	0	<b>0.8</b>	0	0.1	0.1	<b>0.8</b>
<u>IML8</u>	-0.1	0	<b>0.7</b>	-0.1	-0.1	0.1	<b>0.6</b>
<u>IML9</u>	-0.4	0.1	<b>0.6</b>	0	-	-	-
<u>IML10</u>	-0.1	-0.1	<b>0.8</b>	-0.1	-0.1	0	<b>0.8</b>
<u>IML11</u>	0.1	-0.1	<b>0.8</b>	0.1	0.1	0	<b>0.8</b>
<u>IML12</u>	0	0	<b>0.7</b>	-0.1	0	0.1	<b>0.7</b>
<u>IML13</u>	0.1	-0.1	<b>0.8</b>	0	-	-	-
<u>IML14</u>	-0.1	0	<b>0.8</b>	-0.1	-0.1	0	<b>0.8</b>
<u>IML15</u>	0.1	0	<b>0.6</b>	0.2	-	-	-
BIMOL1	0	0.3	0.4	<b>0.4</b>	-	-	-
BIMOL2	0.1	0	<b>0.6</b>	0.3	0	0.1	<b>0.6</b>
BIMOL3	-0.2	0	<b>0.4</b>	0.2	-	-	-
BIMOL4	0.1	<b>0.4</b>	<b>0.4</b>	0.2	-	-	-
BIMOL5	0	0.1	0.3	<b>0.6</b>	-	-	-
BIMOL6	-0.1	0.3	<b>0.4</b>	0.3	-	-	-
BIMOL7	0.1	0.1	0.2	<b>0.4</b>	-	-	-
BIMOL8	0	0.3	0.3	<b>0.4</b>	-	-	-
BIMOL9	-0.1	0.3	0.5	0.2	-	-	-
BIMOL10	0	<b>0.4</b>	<b>0.4</b>	0.3	-	-	-
BIMOL11	0.1	0.2	0.2	<b>0.5</b>	-	-	-
BIMOL12	0	0	<b>0.7</b>	0.2	0	0.1	<b>0.7</b>
BIMOL13	-0.1	<b>0.5</b>	0.4	-0.1	-	-	-
BIMOL14	0	-0.1	<b>0.6</b>	-0.1	-	-	-
BIMOL15	0.1	<b>0.4</b>	<b>0.4</b>	0.3	-	-	-
<b>Variance explained</b>	<b>18%</b>	<b>16%</b>	<b>15%</b>	<b>4%</b>	<b>30%</b>	<b>22%</b>	<b>13%</b>

An examination of factor loadings suggest that the first factor capture the experience of meaning *in* life, the second the belief in a meaning *of* life, the third the importance given to meaning *in* life, and the fourth the importance given to meaning *of* life. However, not all items had high loadings, particularly for the fourth factor. We thus decided to remove items with poor loadings ( $<0.6$ ) and those that cross-loaded excessively ( $>0.3$  or  $<-0.3$  on at least two different items).



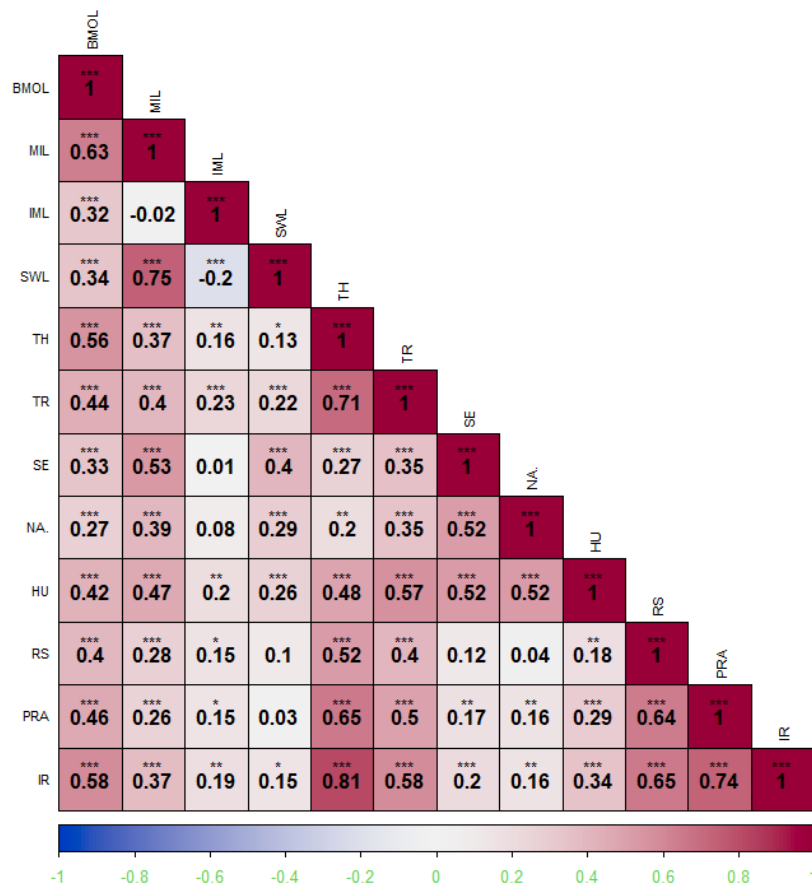
**Figure 2.** Scree plot and parallel analysis after exclusion (Study 1).

This trimming process was repeated until satisfactory loadings were obtained, resulting in the deletion of 36 items. A new parallel analysis and examination of the scree plot favored a three-factor model (see Figure 2.). An examination of the new factor loadings suggest that the first factor capture the experience of meaning *in* life, the second the belief in a meaning *of* life, and the third the importance given to finding meaning to one' life.

## Correlations

We computed average scores for BMOL, MIL, and IML, as well as for life satisfaction, religiosity, and spirituality scales. We then computed Pearson correlations between the different constructs. Results are presented in Figure 3.





**Figure 3. Correlations between the different variables of interest (Study 1).** BMOL: belief in meaning of life. MIL: meaning in life. IML: importance that one’s life has a meaning. SWL: satisfaction with life. TH: theistic spirituality. TR: transcendence spirituality. SE: self-spirituality. NA: nature spirituality. HU: human spirituality. RS: religiosity (attendance at religious service). PRA: religiosity (private religious activity). IR: intrinsic religiosity. \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ .

As expected, correlations between BMOL and religiosity and BMOL and spirituality (theistic and transcendence) were higher compared to correlations between MIL and religiosity and spirituality. Additionally, correlation between MIL and life satisfaction was higher than correlation between BMOL and life satisfaction. Using the {cocor} package for R (Diedenhofen, 2012), we performed a significance test for the difference between how religiosity, five sources of spirituality and life satisfaction correlate with MIL as compared how they correlate with BMOL. Results indicated that correlations were

significantly different for religiosity (attendance at religious service) ( $r_{MIL}=.28$  ,  $r_{BMOL}=.40$  ,  $p<.05$ ), religiosity (private religious activity) ( $r_{MIL}=.26$  ,  $r_{BMOL}=.46$  ,  $p<.001$ ), intrinsic religiosity ( $r_{MIL}=.37$  ,  $r_{BMOL}=.58$  ,  $p<.001$ ), theistic spirituality ( $r_{MIL}=.37$  ,  $r_{BMOL}=.56$  ,  $p<.001$ ), self-spirituality ( $r_{MIL}=.53$  ,  $r_{BMOL}=.33$  ,  $p<.001$ ), nature spirituality ( $r_{MIL}=.39$  ,  $r_{BMOL}=.27$  ,  $p<.05$ ), life satisfaction ( $r_{MIL}=.75$  ,  $r_{BMOL}=.34$  ,  $p<.001$ ), but not for transcendent spirituality ( $r_{MIL}=.40$  ,  $r_{BMOL}=.44$  ,  $p=.30$ ) and human spirituality ( $r_{MIL}=.47$  ,  $r_{BMOL}=.42$  ,  $p=.34$ )

Contrary to our expectations, correlations between MIL and two sources of spirituality (nature and self) were higher than their correlation with BMOL. Thus, there seems to be a difference with items measuring connection with God, and items measuring connections with worldly entities, such as oneself and nature. The former were more strongly related to BMOL, and the latter more related to BMIL. Our results thus suggest that participants were more likely to find a reason to believe in a meaning *of* life when they felt connected to a God *beyond* this world. Thus, in Study 2, we decided to focus on world-transcendent sources of spirituality.

## Discussion

The results of Study 1 suggest (i) that items assessing the experience of meaning *in* life and belief in a meaning *of* life load on separate factors, and (ii) that they have different correlates: belief in the meaning *of* life was more strongly associated with religiosity and theistic spirituality, while the experience of meaning *in* life was more closely linked to life satisfaction, self-spirituality, and nature spirituality. As such, our results suggest that belief in meaning *of* life and the experience of meaning *in* life are distinct constructs, the former being more oriented toward religious and world-transcendent matters, and the latter being more related to worldly and personal concerns.

However, these results only constitute a first step. We wanted to conduct a confirmatory factor analysis (CFA) and compare models with distinct factor structures to ascertain whether a two-factor model indeed offers the most optimal fit.

## Study 2. Confirmatory Factor Analysis

### Method

#### Sample

We conducted a Monte Carlo simulation using Mplus to evaluate the statistical power required for a confirmatory factor analysis (CFA) with two factors and five indicators per factor. Based on the results of Study 1, we assumed factor loadings of 0.7, a between-factor correlation of 0.6, and residual variances at 0.39. With a sample size of 150, the model showed a good fit. However, since we planned to run several correlations, which tend to stabilize around  $N=250$  (Schönbrodt & Perugini, 2013), and because we anticipated possible exclusions, we recruited 285 English-speaking participants from UK and US through Prolific Academic. Participants were paid £1.10 for their participation. After excluding participants who failed one or both attention checks, we were left with a total of 278 participants ( $N_{\text{women}}=138$ ,  $N_{\text{man}}=137$ ,  $N_{\text{nonbinary}}=3$ ,  $M_{\text{age}}=41.29$ ).

#### Design

*Belief in meaning of life and meaning in life:* Based on the results of our second exploratory factor analysis and to make the scales more practically useful, we decided to shorten both to include 5 items each with the best loadings.

Participants were presented with the 5 BMOL and 5 MIL items selected based on the results of Study 1 (all items displayed in Table 2) and asked to rate their agreement with them on a scale from -3: Strongly disagree to 3: Strongly agree.

*Well-being:* Participants were presented with the five item *Satisfaction with Life Scale* used in Study 1. Additionally, positive and negative affect were measured with the *Positive and Negative Affect Schedule* (PANAS) from Watson and colleagues (1988). Participants were presented with 20 positive or negative emotion labels (e.g. "Proud", "Afraid"). For each label, participants indicated how often they experienced the corresponding emotion over the last week, on a scale from 1: "Very slightly or not at all" to 5: "Extremely". Vitality was measured with three items from Ryan and Frederick (1997)'s

*Subjective Vitality Scale* (e.g. “I feel alive and vital”). Participants rated their agreement on a scale from 1: Not true at all to 5: Very true. Sense of prosocial impact was measured with the 4 items of Martela and Ryan (2016)’s *Beneficence Scale* (e.g. “I feel that my actions have a positive impact on the people around me”). Participants rated their agreement on a scale from 1: Not true at all to 5: Very true.

*Mattering*: For mattering, we used the *Perceived Societal Mattering*, *Perceived Close Others Mattering*, and *Perceived Cosmic Mattering* measures from Prinzing and colleagues (2023), which assess the extent to which individuals perceive their life as mattering to the people they consider close (4 items like “My life is important to those who know me”), to society (4 items like “My life matters to my society”), or to the universe (4 items like “My life is important in the context of the cosmos”). Participants rated their agreement on a scale from -3: Strongly disagree to 3: Strongly agree.

*Spirituality and Religiosity*: For religiosity and spirituality, we used the same scales as in Study 1, namely the “Theistic spirituality” and “Transcendent spirituality” subscales of the *Sources of Spirituality Scale* and the Duke University Religion Index (see Study 1).

*Existential thinking*: For existential thinking, we used the 11 questions of Allan and Shearer (2012)’s *Scale for Existential Thinking* (e.g. “Do you ever think about life’s Big Questions?”). Participants answered each question on a scale from 1: “No or rarely” to 5: “All the time”, with the possibility of answering “I don’t know”.

*Free will*: The “Personal Will” subscale of Rakos and colleagues’ *Free Will and Determinism Scale* (Rakos et al., 2008), composed of 8 statements such as “I am in charge of the decisions I make”. Participants rated their agreement on scale from -3: Strongly disagree to 3: Strongly agree.

## **Results**

### **Comparing models**

Our first hypothesis was that belief in the meaning of life (BMOL) and experience of meaning in life (MIL) would be two distinct constructs. More particularly, we predicted that a 2-factor model

would be a better fit of our data than a 1-factor model.<sup>1</sup> Using confirmatory factor analysis on the BMOL/MIL items, we found that the 2-factor model (Factor 1: 5 BMOL items, Factor 2: MIL items,  $\chi^2=116.395$ , CFI=0.961, RMSEA=0.093, SRMR=0.049) fit the data better than the 1-factor model (Factor 1: 5 BMOL + 5 MIL items,  $\chi^2=632.73$ , CFI=0.714, RMSEA=0.248, SRMR=0.129):  $p<.001$ . Factor loadings for the 2-factor model are presented in Table 2.

**Table 2.** Factor loadings for BMOL and MIL items in the 2-factor model (Study 2). (R) indicates items that were reverse-coded.

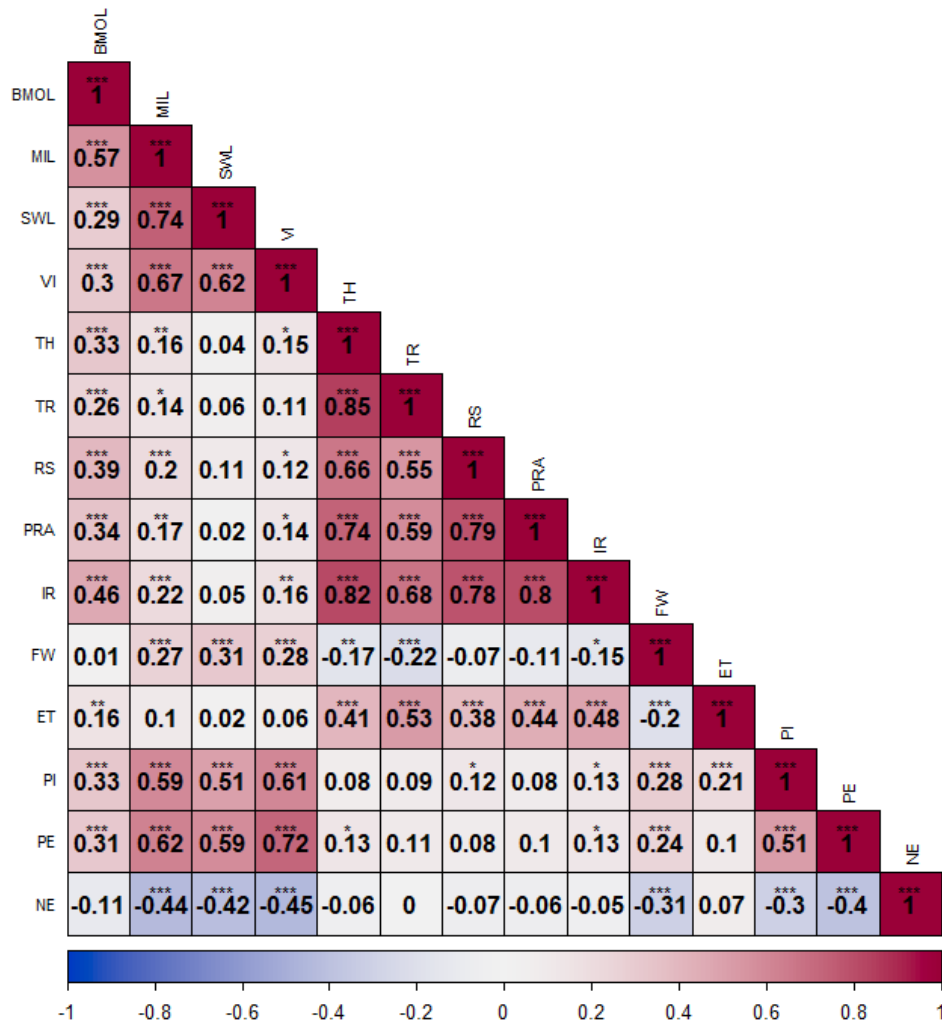
Item	Formulation	Factor 1	Factor 2
BMOL1	In my opinion, human existence doesn't have any purpose. (R)	-	<b>0.86</b>
BMOL2	All human beings exist for a purpose.	-	<b>0.88</b>
BMOL3	Human life matters in the grand scheme of things.	0.19	<b>0.57</b>
BMOL4	Life on earth is here for a reason.	-	<b>0.89</b>
BMOL5	There is no reason to why we exist. (R)	-	<b>0.80</b>
MIL1	My life has a clear sense of purpose.	<b>0.71</b>	0.18
MIL2	My life feels meaningful to me.	<b>0.80</b>	-
MIL3	I feel a lack of meaning in my life. (R)	<b>0.84</b>	-
MIL4	My life right now feels meaningless. (R)	<b>0.94</b>	-
MIL5	I feel a strong sense of meaning and purpose in my own life.	<b>0.8</b>	0.14

### Correlations between BMOL/MIL and other outcomes

We computed a composite score for BMOL and MIL ( $\alpha_{\text{BMOL}} = 0.91$ ,  $\alpha_{\text{MIL}} = 0.92$ ), then assessed their Pearson correlations with our other dependent variables. The results are presented in Figure 4.

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<sup>1</sup> In our preregistration, we also stated that a 2-factor model would be a better fit than 3-factor and 4-factor models. However, this was a mistake as there is no plausible 3- or 4-factor model.



**Figure 4. Correlations matrix.** **BMOL:** belief in meaning of life. **MIL:** meaning in life. **SWL:** satisfaction with life. **VI:** subjective vitality. **TH:** theistic spirituality. **TR:** transcendence spirituality. **RS:** religiosity (attendance at religious service). **PRA:** religiosity (private religious activity). **IR:** intrinsic religiosity. **FW:** personal free will. **ET:** existential thinking. **PI:** prosocial impact. **PE:** positive emotions. **NE:** negative emotions. \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ .

As in Study 1, we compared for each variable of interest its correlation with BMOL compared to its correlation with MIL. As expected, we found that BMOL was more strongly associated than MIL with attendance at religious service ( $r_{MIL}=.20$ ,  $r_{BMOL}=.39$ ,  $p < .001$ ), private religious activity ( $r_{MIL}=.17$ ,  $r_{BMOL}=.43$ ,  $p < .01$ ), intrinsic religiosity ( $r_{MIL}=.22$ ,  $r_{BMOL}=.46$ ,  $p < .001$ ), theistic spirituality ( $r_{MIL}=.16$ ,

$r_{\text{BMOL}}=.33$ ,  $p<.01$ ) and transcendent spirituality ( $r_{\text{MIL}}=.14$ ,  $r_{\text{BMOL}}=.26$ ,  $p<.05$ ). Contrary to what we predicted, there was no significant difference for existential thinking ( $r_{\text{MIL}}=.10$ ,  $r_{\text{BMOL}}=.16$ ,  $p=.30$ ) and belief in free will was more strongly correlated with MIL than with MOL ( $r_{\text{MIL}}=.27$ ,  $r_{\text{BMOL}}=.01$ ,  $p<.001$ ).

Also as expected, we found that MIL was more strongly associated than BMOL with life satisfaction ( $r_{\text{MIL}}=.74$ ,  $r_{\text{BMOL}}=.29$ ,  $p<.001$ ), subjective vitality ( $r_{\text{MIL}}=.67$ ,  $r_{\text{BMOL}}=.30$ ,  $p<.001$ ), prosocial impact ( $r_{\text{MIL}}=.59$ ,  $r_{\text{BMOL}}=.33$ ,  $p<.001$ ), positive emotions ( $r_{\text{MIL}}=.62$ ,  $r_{\text{BMOL}}=.31$ ,  $p<.001$ ), and negative emotions ( $r_{\text{MIL}}=-0.44$ ,  $r_{\text{BMOL}}=-0.11$ ,  $p<.001$ ).

## Discussion

This study allowed us to examine the psychometric properties of the new 5-items scale to assess participants' belief in the meaning of life. The scale showed good internal coherence ( $\alpha_{\text{BMOL}}=.91$ ), good divergent validity compared to MIL, and good convergent validity due to its correlations with religiosity and spirituality.

Overall, the results of Study 2 support our claim that belief in meaning *of* life and the experience of meaning *in* life constitute distinct constructs. A confirmatory factor analysis showed that a 2-factor model was a better fit of our data. Moreover, our results highlight the separate roles played by these two constructs. Specifically, belief in the meaning *of* life exhibits a stronger association with religiosity and spirituality, whereas the experience of meaning *in* life is linked to well-being. This is congruent with the distinction sketched in introduction: meaning *of* life is more closely related to metaphysical, religious, and spiritual themes, while meaning *in* life is associated with participants' evaluations of their personal lives.

Contrary to our predictions, we found no difference in correlations for existential thinking between MIL and BMOL. It might be that the tendency to ask existential questions is unrelated to the feeling of having found an answer to these questions: wondering about the meaning of life could either lead one to accept the existence of such a meaning or to reject it. Also contrary to our predictions, free

will was more strongly associated with MIL than BMOL. The absence of correlation with BMOL might be due to the fact that certain items of the “Personal Will” subscale are phrased in way that conceptualize free will as incompatible with the existence of a higher power (e.g. “My choices are limited because they fit into a larger plan” and “My decisions are influenced by a higher power”). Since BMOL tends to correlate with religious and spiritual beliefs, this way of conceptualizing free will might lead people who believe in a purpose of life in general to disagree. The positive correlation with MIL replicates previous findings in the literature (see Crescioni et al., 2016). One explanation for it is that most people do not interpret “free will” as a metaphysical ability to escape determinism, but as the more mundane ability to live one’s life as one intends, free from outside interferences (Monroe & Malle, 2010).

Although the results of the two studies supported our main hypotheses about the separateness of MIL and BMOL, we wanted to increase confidence in these findings by examining, in the next study, whether the participants are able to detect differences in vignettes designed to be high or low on BMOL and MIL.

### **Study 3. Validity of our measure of belief in meaning *of* life**

To explore to which extent our 5-item measures of BMOL and MIL succeed in capturing the distinction, we designed vignettes describing a fictional agent with or without meaning *in* their life and living in a world with or without meaning *of* life, and asked participants to imagine of this agent would fill these measures.

## **Method**

### **Sample**

We recruited 436 English-speaking participants through Prolific Academic, asking them to complete an online survey. Participants were paid £1 for their participation. After excluding



participants who failed our attention check, or at least one or our two comprehension checks, we were left with a total of 243 participants ( $N_{\text{women}}=109$ ,  $N_{\text{man}}=132$ ,  $N_{\text{nonbinary}}=2$ ,  $M_{\text{age}}=40.53$ ).

## Design

Participants were randomly presented with one of four vignettes describing the life of a fictional character (Brian) in a fictional world. Vignettes varied along two factors: whether the agent experienced meaning in his personal life (*Presence of Meaning in Life*, PMIL), and whether, in this world, human life in general had been created for a purpose (*Presence of Meaning of Life*, PMOL). Each factor had two levels, for a total of four combinations. Texts for the vignettes is presented in Table 3.

**Table 3.** Components of the vignettes for Study 3. The PMOL factor is manipulated by varying the first part of text, the PMIL factor by varying the second part of the text.

First part of vignette (PMOL)	<b>PMOL+</b> In a parallel universe, the K'tan, powerful deities, once ruled the cosmos, creating stars and shaping planets. As their strength waned, they realized the need for worshippers to maintain power. To do so, they decided to craft a life-filled planet. They began by creating plants and then made animals. However, these living forms lacked both intelligence and devotion. Finally, they created humans, solely for the purpose of worshipping the K'tan and securing the gods' enduring authority. The fact that the K'tan created humans for this sole purpose is well known to all members of society.	<b>PMOL-</b> In a parallel universe, life arose from natural forces – physics and biology – and evolved through cosmic and biological events, with molecules forming and primitive organisms emerging over eons. No deities orchestrated this; it was the universe's unfeeling laws at work. Survival, adaptation, and genetic variation drove the evolution of species. These random forces eventually led to the evolving of humans as one specific type of great ape. This evolutionary origin of human life is a well-known fact that everyone in the society knows.
Second part of vignette (PMIL)	<b>PMIL+</b> In this parallel universe, after countless millennia, there's Brian who lives in a village and has a deep love for his caring family, who feel the same way about him. He is a teacher and loves his job, and everyone in the village thinks he is a nice person, especially his students who admire him greatly for his outstanding teaching abilities.	<b>PMIL-</b> In this parallel universe, after countless millennia, there's Brian, a man who lives in a village. He lives alone but is considered as a nice person. Brian works for a telemarketing company, a job he considers uninteresting and pointless.

Before reading the vignettes, the participants had to fill three scales: the 5-items BMOL and the 5-items MIL measures, as well as the *Satisfaction with Life Scale*. The reason we had participants fill the scales from their own perspective first was to make clear that they had to take Brian's

perspective the second time. After reading the vignette, participants were asked to answer the same list of questions a second time, but *from Brian's perspective*. The instruction was the following: "Let's imagine you are in Brian's place. Brian has to fill out this questionnaire. Considering what you have read, how would he answer?" This second list of items also included two comprehension checks that the participants also had to answer from Brian's point of view ("Humans are random products of evolution", "Humans were created by deities for their own purpose").

Finally, participants were asked to answer the *Duke University Religion Index*, the "Theistic spirituality" and "Transcendent spirituality" subscales of the *Sources of Spirituality Scale*) (see Study 1).

## Results

### Vignettes' impact

Our first hypothesis was that the manipulation of our two factors (PMIL and PMOL) would have an impact on participants' BMOL and MIL judgments from Brian's perspective. Each scales showed great internal coherence ( $\alpha_{\text{BMOL}} = 0.93$ ,  $\alpha_{\text{MIL}} = 0.94$ ). Two ANOVAs showed that our manipulation was indeed successful (see Table 4). And pairwise t-test with Bonferroni correction showed that PMIL influenced more participants' BMOL and MIL judgments from Brian's perspective, and so did PMOL (see Figures 5 and 6, as well as the supplementary material for the detail of the pairwise t-tests).

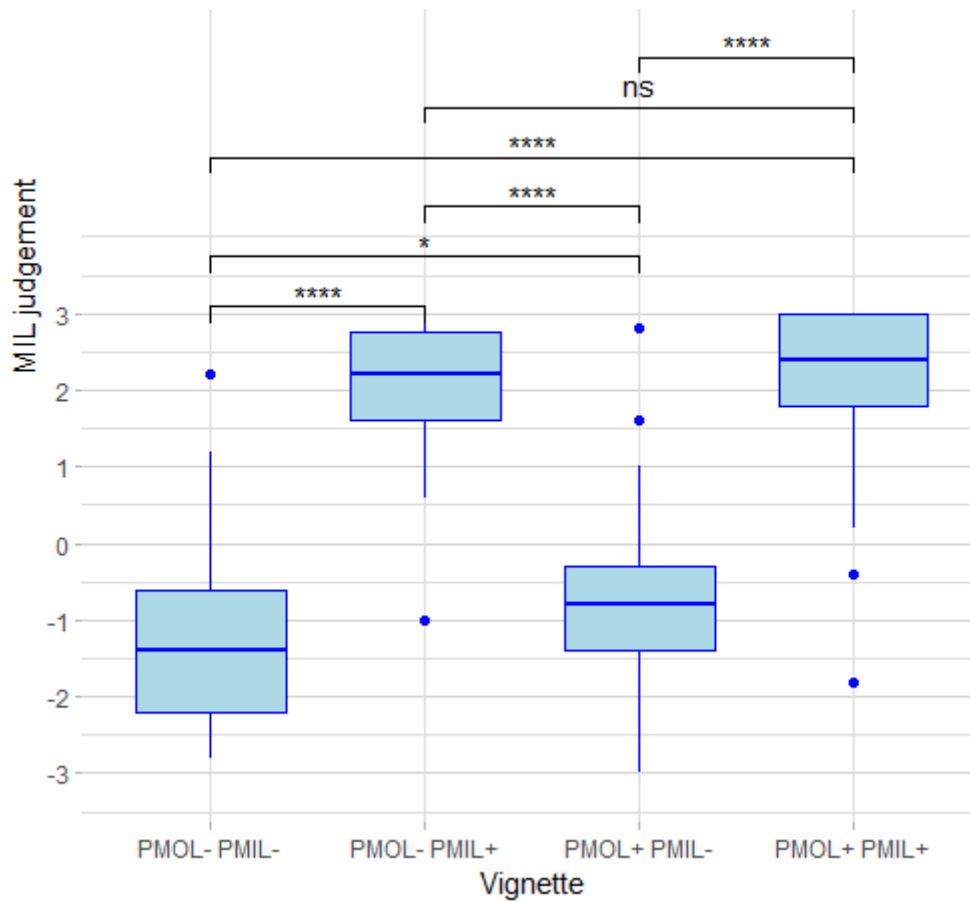
**Table 4.** Results of ANOVAs with PMOL and PMIL factors as independent variables and (a) MIL judgments or (b) BMOL judgments from Brian's perspective as dependent variable.

*(a) Effect of condition on MIL judgments from Brian's perspective.*

Factor	DF	Mean Sq	F	$\eta^2$	<i>p</i>
PMOL	1	16.1	15.87	0.02	< 0.001
PMIL	1	592.1	583.61	<b>0.70</b>	< 0.001
Interaction	1	2.8	2.77	0.003	0.09

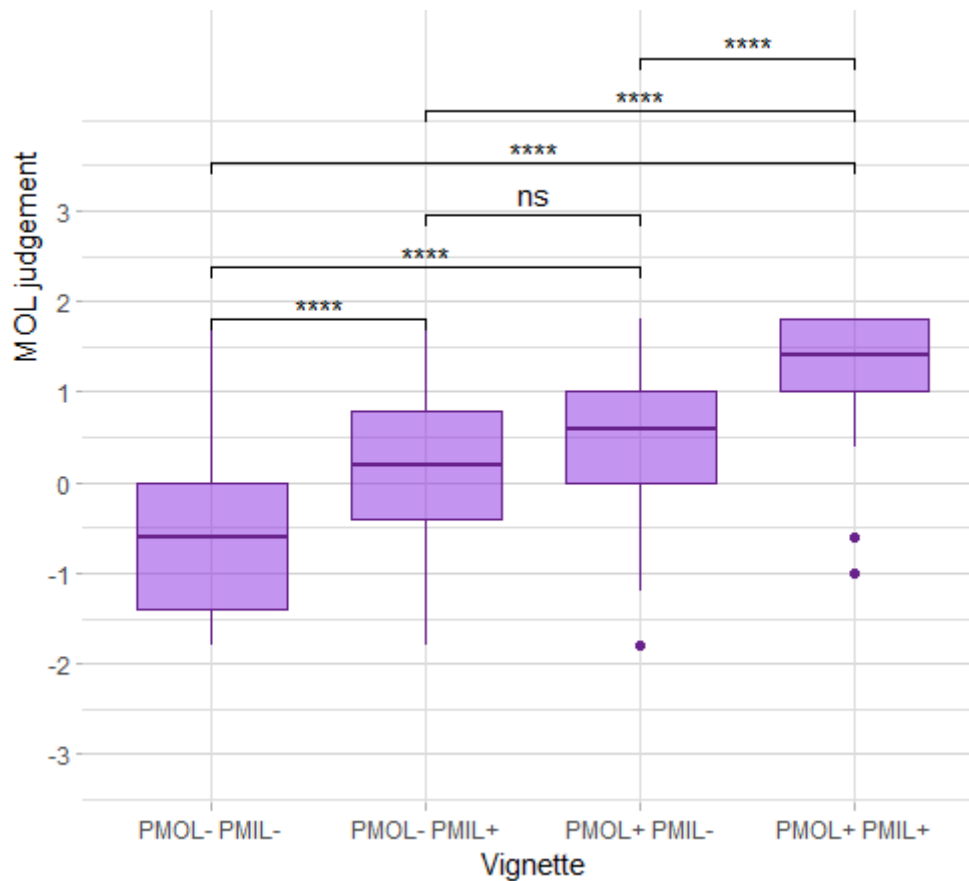
(b) Effect of the condition on BMOL judgments from Brian's perspective

Factor	DF	Mean Sq	F	$\eta^2$	P value
PMOL	1	74.29	106.55	<b>0.26</b>	< 0.001
PMIL	1	41.72	59.84	0.14	< 0.001
Interaction	1	0.03	2.77	0.003	0.85



**Figure 5.** Participants' MIL judgments from Brian's perspective across conditions (Study 3). \*:  $p < .05$

\*\*:  $p < .01$ , \*\*\*:  $p < .001$ , \*\*\*\*:  $p < .0001$



**Figure 6.** Participants' BMOL judgments from Brian's perspective across conditions (Study 3). \*:  $p < .05$

\*\*:  $p < .01$ , \*\*\*:  $p < .001$ , \*\*\*\*:  $p < .0001$

### Validity of the BMOL measure

As a test for the validity of our BMOL measure, we hypothesized that participants' BMOL judgments from Brian's perspective would be more sensitive to variations in the PMOL than BMIL judgments. We ran an ANOVA on participants' judgments from Brian's perspective with PMOL and type of judgments (BMOL vs. MIL) as factors. The results presented in Table 5 show a significant interaction effect: the impact of PMOL on BMOL judgments was significantly higher than its impact on MIL judgments.

**Table 5.** Results of ANOVAs with BMOL and type of judgments (BMOL vs. MIL) as factors and participants' judgments from Brian's perspective as dependent variable.

Factor	DF	Mean Sq	F value	$\eta^2$	P value
PMOL	1	79.79	25.78	0.07	< 0.001
Type of judgment (BMOL vs. MIL)	1	1.63	1.31	0.001	0.25
Interaction	1	10.60	8.52	0.01	< 0.01

### Exploratory analysis

Finally, we conducted an unregistered exploratory analysis. We wondered whether BMOL or MIL experiences better predicted Brian's overall satisfaction with life. We thus ran a linear regression using participants' MIL and BMOL judgments from Brian's perspective as predictors, and their judgments of satisfaction with life from Brian's perspective as dependent variable. Table 6 shows that MIL scores were a better predictor of Brian's satisfaction with life than BMOL scores.

**Table 6.** Result of a linear regression with MIL and BMOL judgments from Brian's perspective as predictors, and judgments of satisfaction with life as dependent variable.

Predictor	B	$\beta$	SE	<i>T</i>	<i>p</i>
BMOL	-.07	-.04	.05	-6.44	.16
MIL	.94	.91	.03	-1.39	<.001
Interaction	.07	.09	.02	29.38	<.01
$R^2=.84$					

## Discussion

Using vignettes, we manipulated the presence of meaning *of* life and the presence of meaning *in* life. As hypothesized, our measure of BMOL was more sensitive to variation in presence of meaning *of* life than experience of meaning *in* life (Table 5), more sensitive to the presence of meaning *of* life than MIL scores (Table 6) and average BMOL scores were higher in PMOL+ universes (Figure 6). Thus, our results provide additional reasons to consider that, like philosophers and psychologists, most of our participants treated meaning *of* life and meaning *in* life as two different constructs. BMOL and MIL measures exhibited very different pattern of answers across conditions. Participants did not hesitate to attribute meaning *in* life in cases in which there was no presence of meaning *of* life (see the PMOL-/PMIL+ condition in Figure 5).

Still, the PMIL had an impact on BMOL judgments, and BMOL scores were above the midpoint in the PMOL-/PMIL+ condition, in which there was no goal given to human existence by a God or a superior entity. This might suggest that, for a subset of participants, the meaning of life does not have to come from a purpose some creator would have given to humanity, but can be derived from the very same things that can give meaning to individual lives.

## Conclusion

We began this paper by pointing to a conceptual distinction often made in contemporary philosophy between the question of meaning of life (“Is there a purpose to human life in general?”) and the question of meaning in life. Our main objective was to provide empirical evidence that the belief in meaning *of* life and the experience of meaning *in* life are two separate psychological constructs. Thus, we designed in Study 1 a measure of belief in the meaning of life (BMOL) that we refined and validated in Studies 2 and 3, while comparing it to a measure of meaning in life (MIL). The results of Studies 1 and 2 suggest that BMOL items and MIL items load on different factors with minimal cross-loadings and that treating them as different constructs is a better fit of the data than treating them as a single dimension. The results of Study 3 also provides experimental evidence that

participants evaluating fictional scenarios follow different patterns when attributing meaning *of* life and meaning *in* life to fictional agents.

Besides the main hypothesis focusing on the empirical separateness of meaning of life and meaning in life, we explored the further hypotheses that meaning of life would be more strongly related to religiosity and spirituality, and meaning in life more strongly related to well-being. The results of the studies together provide support for both hypotheses. While belief in a meaning *of* life was mainly associated to religiosity, and theistic and transcendent spirituality, the experience of meaning *in* life was more associated to personal and earthly outcomes such as life satisfaction, vitality, more positive emotions and less negative emotions, the feeling of being able to make one's own decisions and a general sense of prosocial impact. Thus, it seems that the experience of meaning *in* life is more important than belief in a meaning *of* life for proper functioning and well-being and is relatively independent from spirituality and religious beliefs, as it is more connected to one's prosocial impact and well-being.

Of course, such conclusions should be qualified in view of the fact that scale validation is an ongoing process. Thus, further studies utilizing our measure of BMOL and assessing its relation with other constructs within the nomological network will be necessary, along with assessment of the test-retest validity of the scale and generalizability of the distinction to other cultures. However, we believe that the scale is currently reliable enough to be used in further studies. One fascinating topic of investigation for such further research might be the exact nature of the relationship between meaning *of* life and meaning *in* life. Though our results suggest these are two distinct constructs, our results also suggest that they are related ( $r=.63$  in Study 1,  $r=.57$  in Study 2). But how exactly are they related?

As we mentioned in the introduction, an intuitive explanation might be that believing in a meaning *of* life helps finding meaning *in* one's life. However, this explanation still raises further questions: how exactly does a belief in a meaning *of* life help to find meaning *in* one's life? Prinzing and colleagues (2023) suggest that believing in a higher purpose fosters the feeling that one's life

matters in the grand scheme of the universe, which in turn fosters the experience of meaning *in* life (as “significance” is a crucial dimension of this experience). Furthermore, there are many potential sources for there to be a meaning of life. Some of them might be more conducive of meaning in life (e.g., “God created humans to serve the earth”) than others (e.g. “God created humans to see them suffer”).

However, the results of Study 3 open the possibility that the causal pathway might also flow in the opposite direction. Indeed, the results of Study 3 suggest that indicating to participants the presence of a meaning *of* life had only a minimal effect on their perception of meaning *in* life, while indicating them the presence of a meaning *in* life had a greater impact in their perception of a meaning *of* life. Participants’ answers to the PMOL low-/PMIL+ condition suggest that presence of a meaning *in* life is enough for participants to find a meaning *of* life, even in the absence of higher, cosmic purposes. One possibility might be that finding meaning *in* own’s life is enough for participants to conclude that their existence is not in vain, even in absence of a greater plan. Another possibility might be that the self-transcendent emotions that come with the experience of meaning in life, such as gratitude or elevation, lead people to conclude that there must some greater purpose or entity to thank for it (Van Cappellen et al., 2013).

Overall, the distinction between meaning of life and meaning in life allows future research to separate these constructs, and to explore various questions about how they relate to each other. Thus, the present study opens the field of empirically studying people’s beliefs in meaning of life.



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### Appendix: The Belief in Meaning of Life Questionnaire (BiMoLQ)

To what extent do you agree with the following statements? from -3: Strongly disagree to 3: Strongly agree.
1. In my opinion, human existence doesn't have any purpose. (R)
2. All human beings exist for a purpose.
3. Human life matters in the grand scheme of things.
4. Life on earth is here for a reason.
5. There is no reason to why we exist. (R)

(R) = items reverse-coded.