Leveraging the Experience Sampling Method to Study Meaning in Everyday Life

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Abstract. The science of meaning in life, dominated by retrospective trait assessments, has critically expanded our understanding of this important construct, but has limitations. The trait measurement approach does not allow a nuanced examination of feelings of meaning in life as they are experienced in everyday life, unfiltered by cognitive meaning making processes. In this chapter, we call for a broad integration of experience sampling methods (ESM) into the science of meaning in life to afford a better understanding of the ebbs and flows of this experience within person across situations. Research has identified within person variability in online feelings of meaning in life, highlighting the necessity of this approach. Initial integrations of the ESM into meaning in life research have provided a number of valuable contributions to our understanding of this construct, which we review in this chapter. Finally, we discuss distinctions between state and trait meaningfulness and the generative potential of integrating the ESM into the study of meaning in life.

Living a life of meaning and purpose is a foundational motivation that can drive decisions about how we allocate our time and where we focus our limited energy. Psychological research regarding meaning in life has quickly propelled our understanding of topics that have been enduring curiosities for centuries, providing information to answer questions like "What makes life meaningful?" Despite massive scientific advances, the dominant methods used to study meaning in life—trait and retrospective self-reports of meaning in life—can fail to capture a thorough description of meaning as it is experienced by real people in everyday life. The methods we use shape the questions we ask and thus the contours of our knowledge. It is critical to expand multi-method research in the study of meaning in life in order to ask and answer a more expansive array of questions about this important experience. Supplementing the existing body of work with an increasingly multi-method approach, including research using intensive longitudinal methodological designs such as experience sampling methodologies, can offer a more complete understanding of feelings of personal meaning as they are actually experienced in everyday life and contribute key insights about the nature of dynamic meaning in life processes.

Within the psychological literature, meaning in life is considered to be the subjective experience of (1) being *significant,* or mattering to others and making an impact, (2) having *purpose,* or engaging in goal-directed pursuits, and (3) maintaining *coherence,* or making sense of the world and one's experiences (King et al. 2006; Martela & Steger 2016; George & Park 2016). Meaning in life is an aspect of psychological well-being

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and shares moderate associations with other aspects of positive mental health including positive affect (King & Hicks, 2009) and lower depression (Mascaro & Rosen 2005).

1 Trait Reports of Meaning in Life

A large portion of the psychological science of meaning in life employs trait or retrospective self-reports to assess participants' levels of meaning in life. There are dozens of broad trait questionnaires designed to assess meaning in life with self-report and often face valid items (Brandstatter et al., 2012). These measures include the frequently used Meaning in Life Questionnaire (Steger et al., 2006) and the Purpose in Life Scale (Crumbaugh & Maholick, 1964). Additionally, a wave of multidimensional scales including the Multidimensional Existential Meaning Scale (George & Park, 2017) and the Multidimensional Meaning in Life Scale (Costin & Vignoles, 2020) have recently been developed to include subscales that directly assess the facets of significance, purpose, and coherence individually.

Most commonly, these trait measures of meaning in life are used to examine the correlations between levels of meaning in life and variables considered to be outcomes or sources of meaning. For instance, trait measures of meaning in life are related to a multitude of important life outcomes, such as physical health (Czekierda et al., 2017; Roepke et al., 2014), occupational adjustment (Littman-Ovadia & Steger, 2010), and social appeal (Stillman et al., 2011). Further, trait measures of meaning in life are predicted by social belonging (Heintzelman, 2017; Lambert et al., 2013), and religion (Steger & Frazier, 2005), and are responsive to experimental manipulations of positive affect (Ward & King, 2016), social exclusion (Zadro et al., 2004), and environmental coherence (Heintzelman et al., 2013). Undoubtedly, research using broad trait reports of meaning in life methods has dramatically advanced our understanding of this important construct. These measures have unlocked the mysterious black box of personal meaning and have transformed meaning in life into a psychological experience that can be described, predicted, and intervened upon.

While broad self-reports of trait meaning in life have accelerated our understanding of the meaning in life construct, there are limits to relying on these reports and the scope of research questions that can be addressed with the trait measurement approach. Assessing meaning in life exclusively with general retrospective trait reports constrains meaning in life as a stable construct within person, as this approach cannot capture fluctuations in meaning in life over time and across situations. If meaning in life is a feeling that adaptively responds to the conditions of the environment (Heintzelman & King, 2014), then there is great value, as well, in examining within person changes in meaning in life across contexts.

Furthermore, the trait measurement approach to studying meaning in life assumes that people can accurately recall their feelings surrounding particular experiences and that they can correctly identify the causes of their feelings. Retrospective reports of feelings, behaviors, or beliefs can be contaminated by many cognitive errors affecting memory, context, or current affect (Fisher & To, 2012; Schwarz et al., 2008). General meaning in life judgements are subject to social desirability biases (Heintzelman et al., 2015) and are also colored by the beliefs people have about this experience. Implicit

theories about how meaning *should* be or feel can impact a person's experiences and reports of meaning in life (Heintzelman et al., 2020). Further, lay beliefs about the sources of meaning in life can influence subjective meaning in life judgements (Li et al., 2021). Many aspects of good lives, including social relationships and happiness, are widely understood as sources of meaning in life (Lambert et al., 2010; Heintzelman et al., 2020). However, other correlates, such as mundane routines (Heintzelman & King, 2019; Mohideen & Heintzelman, 2022), income (Ward & King, 2016), right-wing authoritarianism (Womick et al., 2019), religious fundamentalism (Womick et al., 2021), and hate (Elnakouri et al., 2022), are more surprising sources of meaning in life which participants may not include in retrospective or general reports of meaning despite their relationships with meaning in life on average or within person. The reliance of meaning in life research on global and retrospective reports adds a layer of cognitive processing to meaning in life judgments that may sway these reports of meaning away from *actual experiences* of meaning as these events are filtered through construct beliefs.

2 The Experience Sampling Method for Studying Meaning in Life

The Experience Sampling Method (ESM) is a type of ecological momentary assessment in which participants complete repeated assessments at random (or semi-random) times multiple times a day over a number of days (Csikszentmihalyi & Hunter, 2003). In signal contingent ESM designs, surveys are sent to participants on their smartphones (or formerly, via a pager or palm pilot), prompting survey completion during a randomly sampled array of life experiences that can generalize to broader real-life occasions (Fisher & To, 2012). ESM surveys can include reports of personal factors like one's thoughts, feelings, or symptoms, as well as context information including location and social company, and real time context appraisals (Myin-Germeys et al., 2009).

The ESM has numerous strengths and overcomes several important limitations common to cross-sectional self-report methods (see Myin-Germeys et al., 2009 for review). First, ESM data represent in-the-moment experiences, reducing the impacts of assessment error (Stone et al., 2007) and recall biases (Shiffman et al., 2008) which plague retrospective or general reports. Furthermore, ESM data improves the ecological validity of survey research by situating measurements in real world contexts instead of the laboratory to capture processes within participants' natural life environments (Myin-Germeys et al., 2009). The ESM yields data that are most representative of participants' actual lived experiences. Additionally, the ESM approach allows for tests of contingencies between feelings and situations, permitting the linking of feelings states to "external coordinates" of various natural settings (Csikszentmihalyi & Larson, 2014; Hektner et al., 2007; Scollon et al., 2009).

Integrating the ESM into a multi-method science of meaning in life can shore up limitations to broad retrospective reports of meaning. By decreasing memory biases and reliance on implicit lay beliefs about meaning in life, the ESM can increase measurement precision and validity of meaning in life reports. In situating these reports in real-life contexts, the ESM further enhances the ecological validity of this research. In addition to its measurement advantages, using the ESM in meaning in life research can critically expand our conceptualizations of meaning in life processes to better align with real-life lived experiences of meaning within person, over time, and across situations.

3 Capturing Variations in Meaning in Life Within Person

The ESM approach is an appropriate strategy for capturing information about constructs that vary meaningfully within person over short periods of time (Fisher & To, 2012). Evidence is mounting suggesting that meaning in life is, in part, an ebb and flow feeling state that responds to changing conditions in the environment. In experimental studies, researchers have observed condition differences in meaning in life ratings—even on broad trait measures of meaning in life—following an array of laboratory manipulations inducing qualities including social belonging (Lambert et al., 2013), nostalgia (Sedikides et al., 2018), or repeating patterns (Heintzelman et al., 2013). Furthermore, across daily diary studies including once daily meaning in life measures, there is consistent and substantial within-person variance in meaning in life, for example, daily diary studies have produced the following within-person variance estimates: 54% (Machell et al., 2015a), 44% (Ward et al., 2022), and 31% (Jayawickreme et al., 2021).

Finally, direct evidence from a limited set of existing ESM studies including meaning in life measures supports the presence of momentary within-person variation in meaning in life. Within-person variability estimates for meaning in life measures in ESM studies have ranged from 18% (Heintzelman & King, 2019) to 27% and 32% (Mohideen & Heintzelman, 2022) emphasizing that experiences of meaning in life are not fully captured as a trait-level construct. An additional ESM study found that meaning in life fluctuates over the course of a day, depending on time of day, day of week, and daily activities and estimated that the division of meaning in life variance was 71.6% at the moment level, 20.8% at the person level, and 7.5% at the day level (Choi et al., 2017). As these studies demonstrate, feelings of meaning in life are dynamic and can fluctuate from moment to moment, though more research is needed to gain a more precise understanding of the degree of within person variation across different conditions. Importantly, ESM approaches allow us to observe these changes that are crucial to developing a comprehensive understanding of the landscape of meaningful experiences beyond trait reports of general meaningfulness.

4 What Predicts Meaning in Life Within Person?

By capturing within-person fluctuations of meaning in life across real life situations, the ESM allows for tests of the contingencies between stimulus conditions and feelings of meaning in life. Supplementing cross-sectional or experimental data with repeated measures examinations of correlates of meaning in life within person across episodes is critical to understanding the sources of meaning in life, as the ESM can capture patterns in experiences that may be hidden in mean level data (Scollon et al., 2009). The contemporaneous measurement of meaning in life and activity and environment information and appraisals enables the modeling of complex within-person relationships between state-level feelings and other psychological and behavioral factors.

A small pool of studies have leveraged the ESM to examine of sources of momentary feelings of meaning in life in this way. Kucinskas et al., (2018) examined the relationship between meaning and sacred activities by sending participants two surveys per day for two weeks. In 59,144 surveys, the 3,048 participants reported the highest levels

of meaning in life during religious or spiritual practices and traditional work hours (Kucinskas et al., 2018). In another large ESM study (Choi et al., 2017), 603 Korean participants were sent three ESM surveys per day for 14 to 28 days. In these 24,430 surveys, they indicated "How meaningful do you feel right now?" and selected the activities they were currently engaged in from a list of 35 activities. Meaning in life ratings were highest in moments during which participants were taking a trip, praying or worshipping, volunteering, exercising, dating, cooking, or taking a walk (Choi et al., 2017). Among this list of the activities garnering the highest levels of meaning in life are some that align with traditional notions of meaningfulness born from standard cross-sectional work including engaging in religious activities (Steger & Frazier, 2005) and volunteering (Klein, 2017). However, these findings also point to high meaningfulness during engagement in more mundane activities as well like exercising, cooking, and talking a walk, which are not well represented in meaning in life scholarship despite being common activities comprising major portions of people's daily lives.

Similarly, data from ESM surveys sent to participants six times per day for seven days showed that the degree to which participants' current activity was part of a routine positively related to concurrent feelings of meaning in life (Heintzelman & King, 2019). These findings were replicated in two additional studies (Mohideen & Heintzelman, 2022), which used a similar design, with participants completing three ESM surveys per day for seven days. In these studies, the degree to which a current behavior was a part of a routine positively predicted meaning in life regardless of whether the behavior was linked to other meaningful features of the activity like the degree to which it fostered relationships, goals, or prosociality (Mohideen & Heintzelman, 2022). In other words, engagement in even mundane routines predicted feelings of meaning in life. These studies demonstrate the value of the ESM approach in affording a clearer understanding of the circumstances related to the ebb and flow of feelings of meaning in life in real world contexts.

Additional work has extended examinations of the relationships between meaning in life and happiness or pleasure using an ESM approach. In cross-sectional research, meaning in life most typically shares a moderate positive association (around $r = .60$ - .70) with measures of happiness or positive affect which has led to the conclusion that the two constructs are closely related but not entirely overlapping. Scholars have leveraged cross-sectional and experimental methods to disentangle meaning in life and happiness, to some success. Some research used partial correlation analyses to identify unique correlates of meaning in life controlling for happiness compared to correlates of happiness controlling for meaning in life (Baumeister et al., 2013). In this work meaning in life related to future and past orientation as well as giving, controlling for happiness, whereas happiness related to psychological needs satisfaction controlling for meaning in life (Baumeister et al., 2013).

Other work randomly assigned participants in a between-subjects design to describe experiences that made them feel either (1) happy, (2) meaningful, (3) happy, but not meaningful, or (4) meaningful, but not happy (Dwyer et al., 2017). They found that the experiences described in the first two conditions, experiences that made them happy or experiences that made them feel meaningful, without a reference to the other feeling,

were virtually indistinguishable from one another. However, they found substantial differences between experiences that provided either happiness or meaning, explicitly in the absence of the other. These authors concluded that happiness and meaning in life are, indeed, distinct experiences, but that they most typically occur together and aren't commonly distinguished in most everyday life experiences (Dwyer et al., 2017).

These findings suggest that the ESM approach may provide fruitful avenue for a further understanding of the relationship between feelings of meaning in life and happiness in these everyday life experiences. Intriguingly, ESM work found that happiness and meaning in life were much more strongly correlated at the person level (.75) compared to the moment level (.36) suggesting that happiness and meaning are more distinguishable at the momentary level (Choi et al., 2017). Clearly, there are differences in the conclusions resulting from between-subjects reports of uniquely meaningful vs. uniquely happy activities (Dwyer et al., 2017) and momentary reports of feelings meaning in life and happiness in the context of everyday activities. These differences highlight the need for further research assessing feelings of meaning in life as they are being experienced to understand these feelings independently of layers of cognitive processing that may augment broad trait retrospective reports of meaning in life.

Choi and colleagues (2017) further explored reports of meaning in life and happiness across naturally occurring experiences in their ESM study. They found that experiences of 20 of 36 activity categories were related to both meaning in life and happiness in the same direction, suggesting substantial overlaps between these feelings in everyday experiences. For instance, participants provided above average ratings of both meaning in life and happiness during many activities like dating, exercising, and socializing. Still, there were many and frequent activities during which participants gave above average ratings of meaning in life but below average ratings of happiness or vice versa; participants were experiencing meaning in life and happiness independently during real lived events. Namely, participants reported high meaning in life and low happiness while working or studying, and high happiness and low meaning in life while watching TV or playing a game. As the field continues to grapple with the construct divergence between meaning in life and happiness, the ESM may offer additional insights about the lived experiences of these feelings together and separately.

5 Accounting for Dynamic Meaning Processes

The perceived meaningfulness of one's experiences, or even one's life broadly, can shift widely over time as strategies are employed to process events cognitively and emotionally. *Meaning making* describes the processes involved in reducing a discrepancy between the appraised meaning of an event and a person's global beliefs and goals, and entails searching for comprehensibility or significance in experiences, and assimilating or accommodating experiences into global beliefs about the world and one's place in it (Park, 2010). Meaning-making attempts are common and engagement in meaning making strategies has even been described as a near-universal response to highly stressful events (Davis et al., 2019; Park, 2010). Importantly, meaning making efforts can result in shifts in one's sense of meaning in life (Janoff-Bulman & Frantz, 1997; Jim et al., 2006).

As meaning making processes are central to experiences of meaning in life, we must acknowledge that these processes shift initial experiences of meaning in life as they are viewed in hindsight. However, general and retrospective reports of meaning in life do not account for these changes in meaningfulness over time due to meaning making processes and so these reports may offer a restricted view of momentary feelings of meaning in life. ESM reports are necessary to measure feelings of meaning in life in real time to understand feelings of meaning in life decoupled from cognitive meaning making processes that can shift our perceptions of experiences over time.

In addition to providing real time reports of feelings of meaning in life unfettered by meaning making processes which alter the recollection of these experiences later, ESM could also be leveraged to expand our understanding of these meaning making processes themselves. As a dynamic process leading to changes in meaning in life, and other outcomes over time, meaning making is necessarily studied with repeated measures designs. Some research has employed longitudinal data to examine meaning making processes, assessing meaning-making strategies and meaning in life only a few times with measurements timepoints spaced apart widely, for instance three measurements spaced nine years apart each (Fitzke et al., 2021) or two measurements spaced one year apart (Park et al., 2008). While these research designs provide useful insights regarding the resulting outcomes of meaning making processes, the ESM could offer more fine-grained information about shifts in meaning in life over the course of meaning making, rather than simply before and after snapshots, to foster a deeper understanding of these cognitive and emotional efforts as they unfold in real time.

6 Building on Daily Diary Studies of Meaning in Life

The daily dairy method is another technique, similar to the ESM, used to constrict the temporal specificity of meaning in life reports to a single day. In contrast to the ESM, the daily diary method involves surveying participants once, rather than multiple times, a day for several days. In each daily report, participants provide details of their activities and feelings during the past day, compared to ESM measures of constructs limited to the present moment. Daily diary methods have been used more frequently than the ESM in meaning in life research to further understand whose lives are meaningful (Dolan et al., 2017), the stability of meaning in life across time (Steger & Kashdan, 2013), and the relation between daily search for meaning & presence of meaning in life (Morse et al., 2021; Newman & Nezlek, 2019). Daily diary methods have demonstrated relationships between daily reports of meaning in life and daily reports of psychological constructs including psychological well-being (Hadden & Smith, 2019), curiosity (Kashdan & Steger, 2007), and gratitude (Nezlek et al., 2017), behaviors including the use of coping strategies (Ward et al., 2022), and experiences such as daily social and achievement events (Machell et al., 2015b).

The daily diary method has generated many important research insights in the study of meaning in life supporting the promise of integrating more temporally constrained methods into the study of meaning in life. Still, the daily diary method continues to rely on retrospection, albeit only for shorter timeframe than trait reports. Furthermore, daily reports, even when preceded by an experience reconstruction task to orient participants

to actual experiences in a specific day (Kahneman et al., 2004), are more influenced by expectations about situations than ESM reports (Lucas et al., 2021). Encouraged by the generativity of daily diary methods, we urge meaning in life researchers to include in their examinations of meaning in life, research integrating further temporal refinement, constraining measurements of feelings of meaning in life to those feelings in the present moment through an ESM measurement approach.

7 What are We Studying When We Measure Momentary Meaning in Life?

Our call to extend the use of momentary ESM reports of felt meaning in life in real life situations necessitates and fosters accompanying efforts to clarify the construct of meaning in life. Is the meaning in life construct measured with trait reports fundamentally different than that captured by momentary reports of feelings of meaning in life or do these measurements represent state-trait dynamics typical of other personality constructs (Fleeson & Jayawickreme, 2015)? Some efforts have been made to distinguish and integrate levels of analyses to understand the trait and state dynamics of meaning in life.

Predominantly, Park (2010) drew a distinction between *global meaning*, or general orienting systems of feelings, beliefs, and goals, and *situational meaning*, defined as meaning in the context of a given experience. Global meaning aligns with meaning in life as it is typically studied with trait reports, whereas situational meaning focuses on the appraised meaning of a particular event. This distinction serves well to understand how we make sense of events and has been generative in fostering research accounting for the dynamics of meaning processes, but this approach still may not capture *feelings* of meaning concurrent to these lived experiences. ESM reports of meaning in life ask participants to report on their personal feelings of meaning as they are happening, for example, "How meaningful does your life feel right now?" embedded in an observable context rather than their cognitive appraisal of the meaning of the event itself. The data generated by ESM reports of momentary feelings of meaning in life may serve to further extend models of meaning in life to include the unfiltered experiences of meaning in real time.

Another distinction made in the science of meaning in life is between *constructed* and *detected* meaning (King & Hicks, 2009). Much of the extant work in a field reliant on trait measures of meaning in life focuses (whether intentionally or by default) on constructed meaning, assessing resulting appraisals of situations or one's life following natural meaning making processes. This perspective has dominated scholarship in this area and meaning is commonly classified as an appraisal that people "construct and impose on the world" (Heine et al., 2006). A predominant focus on constructed meaning, however, has resulted in a science of meaning that misses out on those times in which meaning does not result from active efforts, but is inherently present and is simply detected or noticed (Heintzelman & King, 2013a).

Making sense of the world, or coherence, is a central component of meaning in life. Importantly, and adaptively, people can rapidly discriminate sense from nonsense. Prior to being able to explicitly identify a fourth common associate shared by three unrelated words, participants can accurately identify whether or not the triad of words shares such

an associate word (Topolinski & Strack, 2009). This unconscious extraction of meaning in a semantic coherence task points to the human capacity to automatically detect coherence in the world. Building on this evidence, we argued elsewhere that humans can detect the abundance of sense in the world with minimal conscious cognitive effort and that the resulting "feeling of rightness" (James, 1893) is a feeling of meaningfulness (Heintzelman & King, 2013b). Indeed, cognitive strategies differ across levels of meaning in life. When meaning in life is low, individuals engage in cognitive effort to make meaning in its absence (construction), however, when meaning in life is already high, people engage in more intuitive processing (detection; Heintzelman & King, 2016).

The mounting calls to examine meaning in life detection (King, 2012), in addition to its construction, requires the use of a tool that can assess momentary feelings of meaning in life across experiences and the ESM is well-suited for this task. Importantly, examinations of feelings of meaning in life as they occur in everyday life, prior to filtering through meaning making processes could extend meaning in life research beyond a focus on meaning as a result of effortful construction, and can serve to build a more expansive science of meaning in life including experiences of meaning detection.

Where do state feelings of meaning in life fit in the psychological construct of meaning in life? According to the functional *meaning-as-information* approach, state feelings of meaning in life are the key to the adaptive function of meaning, positioning state meaning as central to this human experience (Heintzelman & King, 2014). Drawing on the feelings-as-information approach (Schwarz & Clore, 1983), the meaning-as-information perspective posits that feelings of meaning in life serve to provide individuals with information about their environments, specifically about the degree to which their environments make sense. This information is then used to promote adaptive interactions with those environments in the best fitting manner. In linking the person to the environment, this approach highlights *why* meaning in life is associated with a host of adaptive life outcomes such as longer lives (Krause, 2009), better health (Roepke et al., 2014), and stronger social bonds (Stavrova & Luhmann, 2016). For feelings of meaning to be adaptively informative, they must be responsive to changes in the environment—they must have a state quality. The potential centrality of state meaning in life for understanding the adaptive role these feelings play in our lives positions ESM research assessing feelings of meaning in life in and across moments as essential for a construct-encompassing science of personal meaning.

Existing ESM research focusing on meaning in life plainly illuminates the value of including these state measures of meaning in life into this literature. In their ESM examination of meaning in life, Kucinskas and colleagues (2018) examined the relationships between a variety of activities and the person-level means in meaning in life across all episodes (representing trait meaning in life) as well as the within person deviations in meaning in life (representing state meaning in life). They identify activities associated with above average meaning in life on both trait and state metrics including praying, talking, and childcare, and activities associated with below average meaning in life on both metrics which include resting, TV, and video games. Intriguingly, they also identify activities that produce opposing relationships with trait meaning compared to with state meaning. For example, participants who engage in the activity of listening to the news tend to report higher levels of meaning in life on average across activities (i.e., they have

higher trait meaning in life), but report lower meaning in life while listening to the news compared to while engaging in other activities (i.e., they have lower state meaning in life during this activity; Kucinskas et al., 2018). The opposing relationships between activities and state and trait meaning in life highlights the need for the inclusion of both trait and state measures of meaning in life to fully understand the dynamics of meaning processes and the sources of meaning in life.

8 Future Research Directions

Meaning in life has been shown to be, in part, a transitory feeling state that varies within person across time, motivating the need to include momentary reports of meaning in life into the science of meaning in order to more completely understand the dynamics of this consequential experience. The ESM affords the examination of momentary feelings of meaning in life in real time embedded in naturally occurring settings in participants' real lives. In doing so, data resulting from the ESM can address the information gap regarding momentary experiences of meaning in the extant literature. Still, there remains limited research leveraging ESM as a tool to understand meaning in life, leaving countless avenues for expanding knowledge about meaning in life processes through an expanded integration of the ESM into this area of scholarship.

Among the many generative directions afforded by the ESM approach, data from the ESM can clarify the extent to which meaning in life varies within person across short spans of time. Meaning in life volatility within person across situations can be used in three central ways to expand our understanding of dynamic meaning in life processes. First, as the range of these variability estimates from the few existing ESM studies is still quite wide, more data is needed to narrow the confidence band around these estimates. Building a larger pool of samples examining the average variability of meaning in life in short timeframes will allow for a more precise understanding of the degree of variability or stability in feelings of meaning in life within person across situations.

Second, additional research can address the outcomes associated with meaning in life volatility. The variability of meaning in life reports across episodes can be calculated and treated as a predictor variable to examine relationships between this degree of volatility and constructs including trait meaning in life, additional well-being variables, and other consequential outcomes across life domains such as health, relationship thriving, and work performance. We predict that these studies will show non-linear relationships, with moderate variability in meaning in life across situations positively relating to valued outcomes as a person's feelings must be responsive to environmental changes to be adaptive, but with high levels of variability in meaning in life across situations representing either personal or environmental stability and negatively relating to thriving across life domains. An analogue of this work can be found in other areas of affective science. For instance, researchers have used the ESM to assess affective stability and instability to better understand psychopathology (Ebner-Priemer et al., 2009).

Finally, the estimates of a person's volatility in momentary reports of meaning in life across situations afforded by ESM research can be treated as an outcome variable in research examining the antecedents of meaning in life variability across situations. The ESM approach could clarify our understanding of the sensitivity of feelings of meaning

in life to changes in situations. Furthermore, work examining personality predictors of the sensitivity of feelings of meaning in life across situations could offer a clearer understanding of meaning in life dynamics and aid in predictions of feelings of meaning in given situations. This work can also address whether volatility is more situationally predicted and a result of occupying less stable environments or personal in swinging widely even across similar contexts.

Beyond using ESM data to examine the stability and volatility of meaning in life reports within person, this type of data can also be used to advance our understanding of the sources of meaning in life as they arise in everyday life. Existing ESM work has identified sources of meaning that are not captured in lay assumptions about this experience, namely engaging in mundane routine activities (Mohideen & Heintzelman, 2022), demonstrating the utility of this approach for expanding our understanding of lived experiences of meaning in life beyond existing assumptions about the valued aspects of meaningful lives. Future ESM research can assess a wide range of situational features of participants' natural environments and experiences to draw more inclusive understanding of the antecedents of feelings of meaningfulness. We anticipate that these efforts will advance our understanding of the distinctions between sources of meaning in life and happiness as well.

Lastly, ESM reports of meaning in life could also contribute critical insights to construct refinement and particularly to debates about the dynamics of trait and state meaning in life. There are a host of research questions regarding the very nature of meaning in life that could be addressed with ESM data. For example, are momentary feelings of meaning in life more or less predictive of important outcome variables than trait reports of meaning in life? On one hand, in connecting the person with the environment, momentary feelings of meaning would seem to be more tied to beneficial outcomes. Alternately, it may be that trait reports of meaning in life are more predictive of adaptive outcomes because they represent the likelihood that people more often occupy environments that make sense or have the key ability to successfully engage meaning making strategies to cope with even meaningless situations in time. The ESM is a tool equipped to address questions like these empirically to advance our understanding of what meaning in life is and, importantly, what meaning in life does.

Momentary feelings of meaning in life are an important part of the dynamic experience of meaning. The current science of meaning in life, limited by a focus on broad trait reports as the primary mode of measurement, is missing opportunities to build a more robust knowledge of meaning in life that can come from investigating these momentary feelings. The shared scholarly pursuit of ever more sophisticated understandings of experiences of meaning in life can benefit dramatically from the integration of ESM techniques to provide essential information about feelings of meaning in life captured in real time in naturally occurring lived contexts.

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