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A Micro-Longitudinal Study of Coping, Stress, and Meaning in Life

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By

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Master's Thesis

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Zachary Z. Willett

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A Thesis
Presented to
The Faculty of
Western Washington University

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Abstract

This thesis investigates the potential for studying meaning-centered constructs on a daily basis and considers how meaning-centered measures may complement existing models for understanding the dynamics of daily stress, affect, and coping.

As part of a week-long protocol, participants (N = 138) provided daily reports (N = 917) of their coping behaviors, perceived meaning in life, affect, stress, and perceived coping competence. These data were collected via a combination of widely adopted (e.g., the MIL-Q, Brief COPE, and PANAS-SF) and ad hoc measures (including an original 6-item assessment of daily stress and 4-item measure of perceived coping competence).

Results of multi-level modeling indicated that the degree of day-to-day variability observed in participants' reported meaning-having and meaning-seeking were on-par with the levels of variability observed in participants' daily affect and coping behavior.
The results of a separate series of analyses suggested that meaning-having was as strong a predictor of same-day positive affect as stress or coping, and among the strongest predictors of both same-day negative affect and perceived coping competence.

As such, the existing literature on meaning-in-life, which is typically based on data collected via retrospective reporting alone, may benefit from greater integration of daily/momentary assessments.
Additionally, those already employing daily assessments in the study of coping dynamics may benefit from adding measures of meaning-having to their repertoire.

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A Micro-Longitudinal Study of Coping, Stress, and Meaning in Life

Much of the research in the field of coping is concerned with how the individual's response to stressors can affect their wellbeing. Likewise, the study of meaning in life is largely concerned with how the individual's subjective sense of meaning in life (or lack thereof) affects their wellbeing, often in the wake of a destabilizing or traumatic life event. In both fields of study, individual differences are considered, as are contextual characteristics such as the nature of a stressor (in the case of the coping literature) or the source of a subject's sense of meaning in life (in the case of the meaning literature). Most importantly, perhaps, both fields are interested in resultant wellbeing, and ask questions like: Why are some people better adjusted than others? Why are some of life's challenges so much more difficult to overcome than others? Why do some people seem to thrive under conditions that defeat others? Despite these commonalities, research has rarely attempted to study interactions between these two areas of study. Examples that examine the intersection of coping and meaning include: Edwards & Holden, 2001; Park et al., 2008; and Park, 2010. I attribute the relative lack of research in this area not to a lack of apparent potential, but rather to the relative isolation in which each field's theories and extant experimental literature have been built.

The coping literature stems from cognitivist and behaviorist traditions, referencing foundational theorists like Blascovich, Antonovsky, and Lazarus. Currently, the coping literature represents a significant arm of modern health-, social-, and clinical psychology, routinely investigating research questions like: What kinds of coping strategies are associated with the best outcomes? How might coping strategies that are advantageous for some people be less advantageous for others? Are some people more resilient than others, and if so—why? Lead by these kinds of questions, the research in this area suggests that coping is a multifaceted and

highly contextual pattern of thinking and behavior, and that coping dynamics are not only limited to recovery from stressful situations (i.e., the process of returning to a pre-stressor baseline), but also operate in protective and/or preventative ways—for instance, a higher sense of confidence in one's ability to cope with potential stressors may make situations less stressful.

In contrast, the literature on meaning in life stems from a tradition of existential psychology and psychoanalysis dating back to the middle of the 20th century. Meaning-centered literature typically addresses research questions like: What gives individuals a sense of meaning in their lives? How does having a greater sense of meaning in life change one's responses to suffering? How—if one's life lacks meaning—how one should go about finding some? Although this literature was once dominated by theoretical and clinical texts, the last three decades have seen a rapid growth in applied research, much of it originating from the fields of positive psychology (e.g., Steger et al., 2004; Wong, 2011), cultural and cross-cultural psychology (e.g., Fischer et al., 2020), and the study of emotions (King et al., 2006). These more recent avenues empirical research have borne well-validated psychometrics for the measurement of the phenomenological sense of meaning in one's own life. Examples include Crumbaugh and Maholick's Purpose in Life Test (PIL; 1964), Crumbaugh's Seeking of Noetic Goals test (SONG; 1977) Steger et al.'s, Meaning in Life Questionnaire (MIL-Q; 2006) and Wong's Personal Meaning Profile (PMP; 1998). A full review of available measures is beyond the scope of the present study, but interested readers can see Bronk (2014) for a review of popular measures. Melton and Schulenberg (2008) have produced reliability and validity estimates for many of these measures. Due in large part to the successful implementation of these well-validated measures, the study of meaning in life currently occupies footholds in the fields of

positive psychology, existential psychology, clinical psychology, and in the study of related concepts such as psychological resilience, trauma and posttraumatic growth.

As in the case of successful coping, the overwhelming majority of experimental and observational evidence suggests that meaning in life is associated with mental, physical, and social wellbeing. Further mirroring the findings of the coping literature, a strong sense of meaning in life appears to promote wellbeing via two pathways: both as a buffer against the deleterious effects of stressful life events, and as an adaptive mechanism in the post-stress healing process (as in the case of phenomena like posttraumatic growth). This means that meaning in life is not only positively associated with the primary outcome of coping research, but that both constructs operate via both responsive (i.e., return-to-baseline) and protective (i.e., buffering) pathways.

The Present Study

As noted initially, the development of these two fields' theoretical and empirical bodies of literature have been built in relative isolation of one another. The present project attempts to contribute to the growing body of research at the intersection of coping and meaning by exploring the concurrence of meaning-in-life dynamics and coping dynamics in a study of daily stress and emotional affect. To achieve this, I collected both coping data and meaning data concurrently, along with data on stress and self-assessments of coping competence. From the coping and meaning literatures, I selected the Brief COPE (Carver, 1997) and the Meaning in Life Questionnaire (MIL-Q; Steger et al., 2006), respectively. These measures were employed in a week-long study of participants' daily experiences aimed at evaluating two primary questions:

First, is the measurement of perceived meaning in life relevant to the study of coping and its emotional outcomes? In other words, should researchers consider deploying meaning-in-life

items alongside their coping measures? A reader already interested in coping behaviors and emotional outcomes may be encouraged to consider perceptions of meaning in life if 1) I can demonstrate that meaning in life is highly relevant to the theoretical understanding of coping and that aspects of meaning-having appear to function analogously to aspects of coping, and 2) that my analyses suggest that meaning in life (as measured via the MIL-Q) can contribute explanatory power in predicting emotional outcomes *above and beyond* the explanatory power already offered by coping (as measured via the Brief COPE).

Second is a methodological question concerning the study of meaning in life: Is the collection of daily self-reports—such as the present study's week-long period of daily self-reports on the events of each day—a viable means of capturing variation in meaning in life? After a literature review, I am only aware of eight published studies that included daily measurement of meaning in life (Morse et al., 2023; King et al., 2006; Choi, Catapano & Choi, 2017; Newman, Nezlek, & Thrash, 2016; Miao, Zheng, & Gan, 2017; Miao & Gan, 2017; Heintzelman & King, 2018; and Machell et al., 2015), of which none measured the meaning-seeking subscale of the MIL-Q (the importance of this will become apparent in upcoming sections). In contrast, daily measurement of other constructs such as mood, coping behaviors, and stress are comparatively common. I have also been unable to locate any recommendation to *avoid* the study of meaning in life via daily measurement (nor any recommendation to avoid measurement of the meaning-seeking subscale, specifically) in any published literature. Thus, I assume that some researchers have avoided the collection of daily measurements of meaning in life due to a reasonable but potentially unsubstantiated concern that their subjects' sense of meaning in life will not vary on a day-to-day basis to the extent that mood, coping, and stress has been shown to vary. The present study examines this potential concern by deploying the MIL-Q

alongside measures of mood, stress, and coping behaviors on a daily basis. This allows for the comparison of variability seen in reports of daily meaning in life to those of daily measures of affect, stress, and coping behaviors. Readers already interested in the study of meaning in life may be encouraged to collect daily measurements if 1) my daily meaning-in-life data exhibits an acceptable degree of day-to-day variability and 2) I can successfully advocate the value of daily measurement. Alternatively, readers already interested in daily measurement methodologies may be encouraged to include meaning-centered constructs in their future research if the degree of variability observed in my meaning-in-life data rises to a level they find acceptable.

For the convenience of the reader, the remainder of this introduction is divided into four sections.

Roadmap

I. To orient the present study's rationale, a summary of the coping literature is provided, focusing on mainstream models of stress and coping.

II. A summary of the literature on meaning in life is presented with particular attention paid to those areas which relate to the coping literature.

III. The potential for a synthesis between coping-centered and meaning-centered research is summarized. This potential is based on three major points: 1) theoretical equivalencies between each field's most common measures, 2) the Brief COPE's lack of designated (i.e., ad hoc) meaning in life measures and the validity concerns this introduces, and 3) how a synthesis of MIL-Q and Brief COPE items may address this potential blind spot.

Mainstream Models of Coping

The literature on stress and coping is broad and has informed various theoretical models. I will only summarize two models here: Lazarus and Folkman's transactional theory of stress and coping (TTSC; 1984) and Blascovich's threat versus challenge appraisal model (Blascovich & Tomaka, 1996). These two models were selected for their prominence in the fields of coping (Lazarus and Folkman) and health psychology (Blascovich & Tomaka), respectively.

Lazarus & Folkman's Multi-stage Model of Stress and Coping

Lazarus and Folkman (1984) defined coping as the behavioral, cognitive, and attitudinal measures taken to manage the internal and external demands of a stressor. Naturally, this definition of coping is compatible with Lazarus and Folkman's transactional theory of stress and coping (TTSC; 1984, 1987), a multi-stage model which Lazarus and Folkman use to describe the coping process. The TTSC model divides the coping process into four sequential stages outlined in Table 1 and summarized below.

Table 1

The Four Stages of the Transactional Theory of Stress and Coping

Lazarus & Folkman's Transactional Theory of Stress and Coping	
Baseline	Characteristics of the individual (pre-stressor) • Values, commitments, goals, general beliefs • Social, psychological, and instrumental resources
Appraisal	Appraisal of the anticipated stressor-induced hardship is made. • If the stressor is deemed manageable and/or low-stakes, emotional state is unaffected. • If the stressor is deemed unmanageable and/or high-stakes, negative emotions arise proportionate to the severity of appraisal
Coping Attempt	Coping attempts are made. Attempts can be: • Emotion- or problem-focused • Well-fit (i.e., contextually appropriate) or unfit (i.e., inappropriate) • Advantageous/effective or disadvantageous/ineffective
Outcome	The successfulness of coping attempts incites emotional response.

	• Successful attempts return the individual to pre-stressor emotional state (or better) • Unsuccessful attempts do not

Note: Adapted from Lazarus and Folkman, 1984

First, the TTSC model recognizes a baseline (i.e., pre-stressor) phase, wherein the individual's characteristics and prior life experiences are considered. These factors include personal values, commitments, goals, and general beliefs one holds about the world and one's place in it (e.g., self-esteem, sense of control/mastery, etc.). Likewise, the perceived availability of coping resources is a component of the individual's coping baseline. Coping resources include the perceived availability of supportive social networks, the amount of time one has at their disposal to deal with unexpected stressors, financial resources, etc. Altogether, these individual characteristics, life experiences, and coping resources make up the individuals' baseline coping capacity. Note: although individual baseline characteristics (one's values, commitments, goals, and general beliefs) certainly *could* include one's sense of meaning/purpose in life, no explicit mention of meaning/purpose in life appears in either the 1984 or 1987 papers that introduced the TTSC, and the inclusion of meaning-centered considerations in the conceptualization of baseline characteristics is not common in the literature based on these works.

According to the TTSC model, the individual's first response to a stressful event disrupting their pre-stressor homeostasis is an appraisal process. In this appraisal, the nature and seriousness of the stressor is weighed against the individuals' sense of their coping capacity. If the stressor is deemed to be relatively benign (i.e., low-stakes and/or non-threatening) or if the individual feels that they possess ample baseline coping resources to contend with the stressor, then the stressor will have little effect on the individuals' affective state. However, if the individual anticipates that the stressor will cause them great hardship (e.g., physical injury,

severe reputational damage, intense psychological discomfort, etc.) or that they lack the baseline coping resources necessary to contend with the stressor, the stressor will have a negative impact on the individual's affective state, the degree negative impact being proportional to the severity of the negative appraisal. Subsequent coping attempts are a response to these changes in affect, driven by the individual's natural desire to return to their pre-stressor affective state (i.e., return to equilibrium). These coping attempts are unsuccessful when they fail to compensate for the negative affect precipitated by negative appraisals or result in further negative affect. A successful coping attempt succeeds in compensating and returns the individual to a pre-stressor affective state.

Blascovich's Challenge Versus Threat Appraisals

Blascovich provides a popular alternative to Lazarus and Folkman's TTSC. In his biopsychosocial model of challenge and threat (BPS; Blascovich & Tomaka, 1996), Blascovich advanced a model wherein all stressors and stress responses fit along a "challenge-threat" continuum. According to this model, threatening stressors are those that threaten to overwhelm the individual's ability to cope, pose a risk of serious negative consequences, and induce a fear response in the individual. Individuals tend to respond to threatening stressors with avoidant cognitions and behaviors. Threat appraisals and their avoidant threat-oriented response patterns are generally seen as disadvantageous, maladaptive, and—if taken to an extreme degree—symptomatic of underlying pathology. In contrast, challenging stressors are those that are appraised as being manageable, low-risk, and do not induce a fear response. Individuals tend to respond to challenges with approach-oriented cognitions and behaviors. Thus, challenge appraisals and their accompanying approach-oriented or "challenge-oriented" response patterns are generally viewed as advantageous, adaptive, and a sign of greater mental wellbeing.

Readers will notice non-trivial similarities between Blascovich's BPS model and Lazarus and Folkman's TTSC (1984). Namely, both describe appraisal phases wherein the severity of the stressor is weighed against perceived availability of coping resources and end in the precipitation of coping attempts (although Blascovich's BPS does not enumerate a baseline phase as Lazarus and Folkmans' TTSC does, it does acknowledge the role of preexisting biological, psychological, and social factors in coping responses. It is reasonable, therefore, to suppose that the existence of the baseline phase *is* assumed under a BPS framework lens). Where the models differ, however, is in the role of affect: whether affective consequences of the stressor play a role in motivating coping behaviors or are entirely determined *by* coping.

Lazarus and Folkman's TTSC describes a cognitive appraisal phase with affective consequences. Thus, in a TTSC framework, appraisal is the cognitive experience which drives coping behaviors, the effectiveness of which in turn precipitate emotional outcomes—these emotional outcomes are the experience that the entire system attempts to regulate.

In contrast, Blascovich's posits that the appraisal phase is largely an *affective* one: stressors either inspire a sense of threat, or they do not. This emotional response (threatened, or not threatened) determines the coping behaviors that follow, i.e., whether they are threat-oriented and generally maladaptive or challenge-oriented and generally adaptive. Thus, in a BPS framework, appraisal is an *affective* experience, which—just as in the TTSC—precipitate behaviors, which in turn have their own affective outcomes.

A second point of differentiation between the two models is that Blascovich's BPS posits that the appraised nature of the stressor (i.e., whether it is perceived to be a challenge or a threat) partially determines the kind of coping strategy that will be employed, with challenges eliciting more adaptive approach-oriented coping strategies and threats eliciting (generally) less adaptive

avoidant ones. In Lazarus and Folkman's TTSC, the appraisal phase does not necessarily explain the coping strategies employed. High-stakes and/or overwhelming stressors are no more associated with emotion- than problem-focused coping strategies, nor whether the strategies employed are ultimately adaptive ones (e.g., planning) or as maladaptive one (e.g., rumination).

The range of possible coping strategies are as diverse as the people employing them, and numerous useful taxonomies emerged as researchers investigate how different kinds of coping strategies affect coping outcomes. For instance, Carver et al. (1989) provide emotion-focused and problem-focused categories (described below). This dichotomy is popular, and other analogous dichotomies exist elsewhere in the literature. These analogous dichotomizations include the division of coping strategies into approach versus avoidant styles, emotional versus practical styles, and internally-oriented versus externally-oriented styles.

Regardless of how coping styles are categorized, research consistently indicates that the efficacy of a coping strategy is at least partially explained by its *fitness* to the stressor (McCrae, 1984). This means that the efficacy of any given coping attempt is predicated, in part, on how well the coping strategy matches the nature of the stressor, the psychology of the individual, whether the stressor is within the individuals' power to control, the degree of competence the individual has with the strategy, and the baseline resources at the individual's disposal in each case. For example, studying may be an effective coping strategy when necessary prerequisites are met (e.g., when the student must have enough time in which to prepare), but ineffective when resource needs are not met (e.g., when there is *not* sufficient time). Likewise, studying may be an ineffective coping strategy for a student who—despite having a high degree of mastery over the material appearing on the exam—struggles with test-taking anxiety. In this case, an emotion-focused coping strategy like positive self-talk or social support-seeking may be more effective

than studying. Ultimately, the efficacy of a given coping attempt will be determined by a host of internal and external factors and is best evaluated on a case-by-case basis. Few generalizations can be made without adequate contextual information. Note: It is due in part to this dependance on context that I have elected to reject any pre-existing dichotomization of coping behaviors for the purposes of this study. This decision will be addressed in greater detail in upcoming sections.

The Brief COPE

The empirical literature on coping is diverse and multifocal, and a collection of measures have been developed to study coping variables. Among them, Carver et al.'s COPE Inventory (1989) has been widely adapted as a broad measure of coping. Based on the multi-stage TTSC model advanced by Lazarus and Folkman (1984), Carver et al.'s COPE Inventory featured 60 items and subscales covering 14 coping styles (e.g., planning, seeking social support, acceptance, denial, behavioral disengagement). Guided by factor analyses, Carver created a shortened version of the COPE Inventory intended to reduce participant burden without greatly sacrificing measurement validity. This abridged measure, named the Brief COPE (Carver, 1997), is 28 items long, and features two items per coping style (See Appendix A1 for a complete list of items). Researchers interested in approach-versus-avoidant or emotion-focuses-versus-problem-focused dichotomies—or those simply seeking to simplify the 14-strategy taxonomy—have grouped Carver's 14 coping strategies into subscales. For example, Dias et al. (2012) divided the Brief COPE's 14 coping strategies into three subscales: four coping strategies (e.g., planning) make up a problem-focused subscale, six strategies (e.g., venting) make up an emotion-focused subscale, and another four (e.g., denial) make up an avoidant subscale (Dias et al.'s three-subscale organization of the Brief COPE's 28 items is not used in this study—it is only provided as an example to illustrate how researchers commonly deploy Carver et al.'s measure).

While organization of coping strategies into subscales was not the original purpose of Carver's measure, grouping along additional dimensions remains a popular practice that allows researchers to use the Brief COPE as a measure in the study of a range of coping-related concepts.

Meaning in Life

Frankl

A review of the literature on subjective meaning in life would be incomplete without briefly summarizing the perspective of the field's initiator, Viktor Frankl. The Austrian-born psychiatrist was practicing neurology at the time of the Nazi regime's rise to power and was interned in a Jewish ghetto before transfer to Auschwitz-Birkenau and later Dachau death camps. During these years, Frankl repeatedly observed that those fellow prisoners who held onto a strong sense of meaning/purpose in their lives tended to fare better than those who had adopted a nihilistic stance. Frankl observed that a loss of one's sense of meaning in life quickly precipitated hopelessness, despondency, and death.

After his liberation, Frankl founded a meaning-centered form of psychotherapy he called "Logotherapy" (from the Greek word *logos*, meaning reason/meaning). Frankl wished for psychoanalysis to progress beyond the treatment of the Freudian "will to pleasure" and Adlerian "will to power". Thus, the primary directive of logotherapy treat the "will to meaning." In other words, to draw patients' attention to the pursuit of meaning in their lives (or lack thereof). His writings outlined a meaning-based framework of understanding resiliency, existentialism, and psychopathology and have guided modern psychology's study of meaning in life. His most notable novel, a memoir and overview of logotherapy titled *Man's Search for Meaning* (1946), is

widely circulated. This text and related works have undoubtedly done much to popularize meaning in life as a construct among modern clinicians and researchers. Beyond popularizing the study of meaning in life, the extreme nature of the events which led Frankl to be interested in studying meaning in life also influences the literature's overwhelming focus on the contexts of death, near-death, bereavement, and trauma, rather than more "everyday" stresses.

Modern Literature

Following its recognition by 20th century clinicians including Frankl (e.g., 1946a; 1946b; 1969), and influential adopters like May (e.g., 1950; 1953; 1975), and Yalom (e.g., 2008), meaning in life saw increased examination within fields like social, health (White & Lehman, 2005; Bower et al., 2005), and positive psychology (Steger, Oishi, & Kesibir, 2011). Although some of these researchers' elect not to incorporate all of Frankl's assumptions about meaning in life in their operationalizations—choosing instead to emphasize meaning as it relates to areas such as life narrative and autobiographical memory (Gilbert & Ebert, 2002; Wilson et al., 2013) cognitive processes and adaptation (Winje, 1998; Walker & Winter, 2007), or existentialism (Janoff-Bulman, 1992)—all tend to stick closely to Frankl's broad definition of meaning as a purely subjective and phenomenological experience, i.e., unique to the individual. This means that any proposed definition of meaning will, necessarily, be somewhat autological. For example, Steger (in press) refers to the presence of meaning as "The extent to which people comprehend, make sense of, or see significance in their lives, accompanied by the degree to which they perceive themselves to have a purpose, mission, or over-arching aim in life."

Although individuals can derive a sense of meaning from virtually any area or activity in their lives, people commonly report finding a sense meaning when engaging in certain activities. Common examples include engaging in work, family life, socializing, spiritual/religious practice,

interpersonal relationships, creative expression, hobbies, and self-improvement (Frankl, 1946a; Grouden & Jose, 2014; Zhang et al., 2016). It is also common for individuals to report that their sense of meaning in life comes from a sense of a "life's mission" or calling, rather than their engaging in specific activities. Unsurprisingly, accessing a greater sense of meaning whether from everyday activities or from a broader self-concept can have positive consequences for baseline psychological health and resiliency (Bower et al., 2005, King, 2001). Furthermore, finding a meaningful life's purpose/mission in severe and potentially traumatic experiences has the potential to facilitate post-traumatic recovery as the shift in perception partially transforms a source of maladaptive stress into an adaptive and motivational pattern of cognition (Southwick, 2006).

Meaning-having versus Meaning-seeking

A common framework for understanding meaning within the empirical literature is through the dichotomy of meaning-having and meaning-seeking. Meaning-*having* is the conscious awareness of the sense of meaning/purpose to one's life. Meaning-having is positively associated with positive psychological outcomes like positive affect (Robak & Griffin, 2000; Reker, Peacock & Wong, 1987), greater self-esteem (Debats, 1996), posttraumatic growth (Tedeschi & Riffle, 2016; Steger & Dik, 2009) and psychological health (Kashdan & Steger, 2007: Steger, Oishi & Kashdan, 2009). Meaning-having is also negatively associated with disadvantageous post-stressor outcomes such as posttraumatic stress (Woo & Brown, 2013; Updegraff, Silver & Holman, 2008), survivor's guilt (Owens et al., 2009), substance abuse, and suicidal ideation (Southwick, 2006). Meaning-having has been measured via self-report Likert-type measures like the Purpose in Life test (PIL; Crumbaugh & Maholick, 1969), Life Purpose Questionnaire (LPQ; Hablas & Hurtzell, 1982), and Life Attitude Profile-Revised (Reker &

Peacock, 1981). Examples of meaning-having items include Likert-scale items "*I understand my life's meaning", "I have a good sense of what makes my life meaningful",* and *"I have discovered a satisfying life purpose."* (MIL-Q; Steger et al., 2006).

Meaning-*seeking* refers to the awareness of a lack of subjective meaning in one's life and the motivation/attempts to find meaning. In other words, whereas meaning-*having* represents the degree of meaning one feels that they have in their life, meaning-*seeking* represents the degree to which one is searching for meaning. In common parlance, people may be referring to meaning-seeking when they say they are "soul-searching", "figuring out what really matters to them", or "trying to find their true calling." Like meaning-having, meaning-seeking is also associated with better psychological outcomes such as life satisfaction (Steger, Oishi & Kesibir, 2011), and predicts greater posttraumatic growth and future wellbeing (Davis et al., 2000). The most notable psychometrics developed for the measurement of meaning-seeking is Crumbaugh's (1977) Seeking of Noetic Goals Test (SONG) which was developed as a complement to Crumbaugh and Maholick's (1969) Purpose in Life Test (PIL). Meaning-seeking can be measured via agreement with Likert-scale items such as "*I am looking for something that makes my life feel meaningful", "I am seeking a purpose or mission for my life",* and *"I am searching for meaning in my life"* (MIL-Q; Steger et al., 2006).

Multiple factor analyses studies (Reker & Cousins, 1979; Crumbaugh, 1977; Steger & Kashdan, 2007) have demonstrated that meaning-having and meaning-seeking are distinct, somewhat negatively associated constructs, and that respondents tend to report either relatively high meaning-having or relatively high meaning-seeking. This negative association between the factors is intuitive, as greater meaning-seeking should—in theory—precede gains in perceived

presence of meaning (i.e., as individuals seek meaning in life, successful attempts will precipitate higher levels of their meaning-having).

Studies of meaning-having and meaning-seeking suggest that 1) individuals with high reported meaning-having (and relatively lower meaning-seeking) tend to experience the best wellbeing outcomes, 2) that those with high meaning-seeking in the absence of high meaning-having experience less optimal outcomes, and 3) that those with low meaning-seeking *and* low meaning-having experience the least desirable outcomes. This suggests that while meaning-having may be the optimal end-state, meaning-seeking is still a beneficial intermediate step between lacking meaning, and possessing meaning.

The Meaning in Life Questionnaire (MIL-Q)

Just as Carver's Brief COPE (1989) provided the coping literature with a well-validated, broad-spectrum, and brief measure of the most studied dimensions of coping, Steger's (2006) Meaning in Life Questionnaire (MIL-Q) has been advanced as a brief but well-validated measure combining five meaning-having and five meaning-seeking items. Due in part to its brevity, the MIL-Q has enjoyed extensive use in areas like positive psychology, where it can be deployed alongside the field's standard measures, e.g., affect, satisfaction with life, etc. See Appendix A2 for the complete MIL-Q.

Potential for Synthesis

When considering the comparative vastness of the coping literature, it is natural to wonder whether the relatively less-explored meaning-centered concepts are not already subsumed by the existing coping constructs. In other words, it's worth questioning whether any explanatory power of meaning-centered factors, models, and measures to explain coping

processes remain after considering the analogous factors, models, and measures of the mainstream coping literature. Three plausible hypotheses exist:

1. First, that the explanatory power of meaning-centered dynamics to explain coping efficacy is entirely subsumed by conventional coping measures. In other words, that the use of meaning-centered measures in the prediction of coping dynamics would be entirely redundant. It would follow, then, that the measurement and inclusion of meaning-having and meaning-seeking factors (via tools like the MIL-Q) would fail to add a practically significant degree of predictive power beyond models which already make use of coping measures like the Brief COPE.

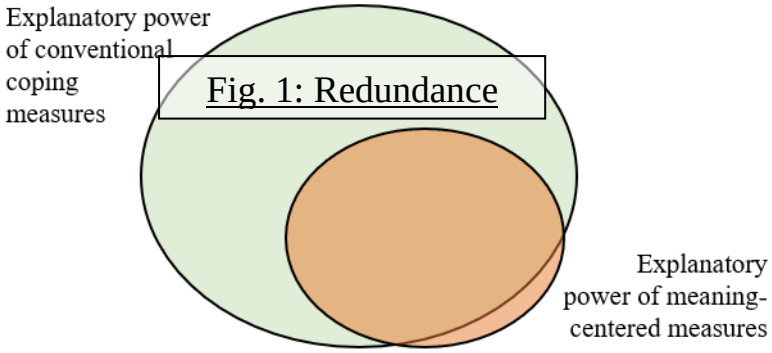

Fig. 1: Redundance

2. Secondly, it is possible that meaning-centered dynamics are only *partially* subsumed by conventional coping measures/theory, and that the measures combined would provide greater predictive power than the use of coping measures alone. In this case, although meaning-centered factors like meaning-seeking and meaning-having may have analogous factors in the coping literature, they are not fully redundant, and a synergy of the two approaches has superior explanatory power compared to either approach taken independently. It would follow, then, that measurement and inclusion of meaning-having and meaning-seeking factors would add predictive power to analyses based on conventional coping factors. Note: To be of real interest, any increase in explanatory

power must be large enough (i.e., *practically* significant) to justify lengthening survey measures through the inclusion of dedicated meaning measures.

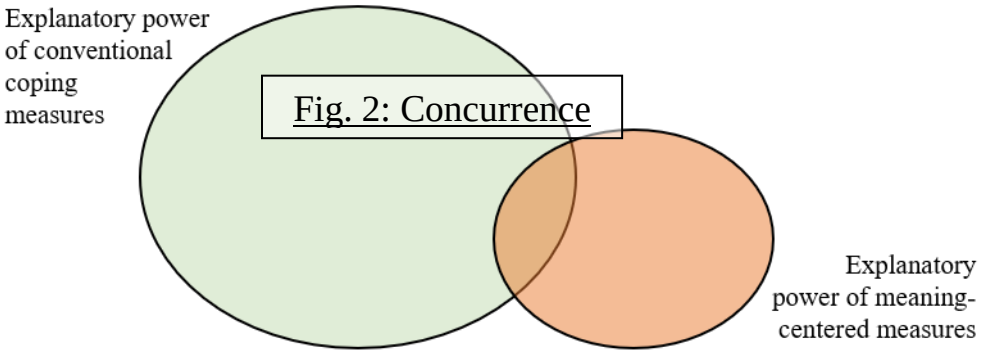

Fig. 2: Concurrence

3. Thirdly, it is possible that meaning-centered dynamics are fully independent of coping dynamics, and that their addition would provide little to no additional explanatory power. In this case, consideration of meaning-centered dynamics serves no utility in coping research due not to their redundance, but to their irrelevance.

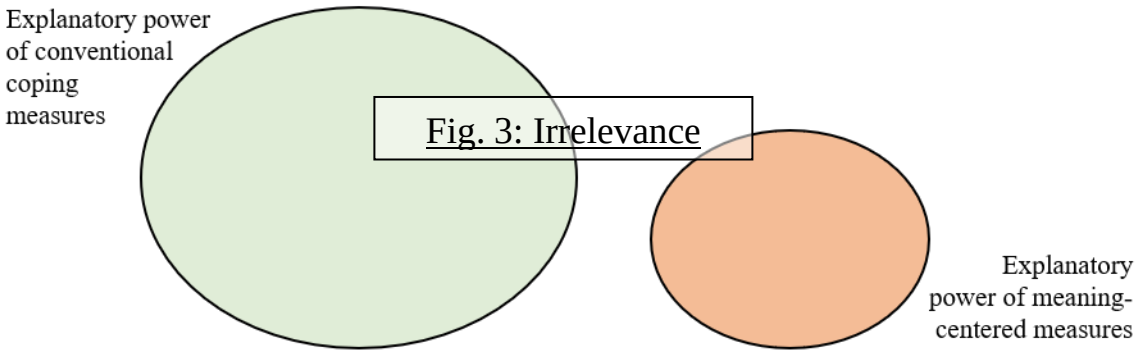

Fig. 3: Irrelevance

Given the preponderance of empirical evidence suggesting that meaning-centered dynamics are implicated in the very same outcome variables that the coping literature is concerned with (affect, psychopathology, posttraumatic growth, etc.) and that the literature suggests that perceived meaning in life is implicated in wellbeing both as a protective and restorative factor, I find the final hypothesis highly unlikely.

Evidence Against Irrelevance

The availability of previously outlined arguments which suggest that meaning-having/-seeking might function as neglected coping factors, the compatibility between the constructs and Lazarus and Folkman's definitions of coping, and meaning's well-established association with wellbeing all indicate that meaning-making and meaning-seeking may fall within the field's understanding of coping dynamics. As a final note, non-trivial similarities between models of the meaning-making process and models of the coping processes also support the hypothesis that meaning-making is going undetected by mainstream measures of coping like the Brief COPE.

A summarization of equivalencies between Janoff-Bulman's (1992) Shattered Assumptions model of meaning violation and meaning-making and Lazarus and Folkman's (1984) Multi-stage Model of Stress and Coping in is shown below in Table 2. Like the coping processes previously outlined and summarized in Table 1, Janoff-Bulman's model of meaning-violation and meaning-making describes a process involving sequential baseline, appraisal, response, and outcome phases. Just as in Lazarus and Folkman's TTSC model, Janoff-Bulman's Shattered Assumptions model describes a process in which adverse events trigger an emotional response proportionate to the acuteness of an appraisal phase (whose appraisals are based in part on baseline characteristics), after which a response phase moderates emotional outcomes.

Taken together, the degree of theoretical compatibility between the modern scientific understanding of meaning-making and coping strongly suggest that the two constructs are related or—at the least—are relevant to the study of each other.

Table 2

Parallels Between Models of Coping and Meaning-Making

	Conventional Coping	Meaning-centered
Baseline	The individual has baseline resources and threat appraisal disposition	The individual has a baseline sense of meaning in life and global meaning framework
Adverse Event	Internal and external demands arise from a stressor event	Adverse event causes loss of sense of meaning and/or violations of global meaning framework
Appraisal	The individual appraises their own abilities to meet the demands of the stressor. Negative appraisals (i.e., perceptions that the demands of the stressor exceed the individual's psychological resources) and appraisal of high stressor severity precipitate negative emotions	Degree of discrepancy between pre-event meaning and new meaning determines degree of emotional distress
Response	Coping processes are employed to regulate the emotional and/or consequences of the adverse event	Distress caused by discrepant meanings provokes meaning-making attempts wherein the sufferer tries to restore their sense of meaning in life.
Outcome	Coping processes enable the individual to return to pre-event emotional wellbeing (or better) if successful	Successful meaning-making attempts reduce emotional distress, leads to better long-term adjustment (e.g., PTG)

Evidence Against Redundance

The potential for cross-discipline equivalencies between coping and meaning literature has not gone entirely unnoticed by meaning researchers. Positive reframing (also referred to as cognitive reframing, positive reinterpretation or positive reappraisal) is among the array of coping strategies typically included in mainstream coping instruments such as the Brief COPE and refers to an emotion-focused coping attempt in which one reconstrues a stressor in more positive terms (Carver, Schreier & Weintraub, 1989). This is a response we might colloquially refer to as "finding the silver lining" in an otherwise negative situation. Similarities between this

kind of positive reframing and reports of meaning-seeking in samples effected by trauma, tragedy, and moral injury are unmistakable. No doubt prompted by these similarities, Park included responses to the Brief COPE's positive reframing subscale as a stand-in measure of attempted meaning-making in her 2010 review "Making Sense of the Meaning Literature". However, far from advocating for the use of measures like the Brief COPE's positive reframing subscale, the review draws attention to the various nuances of the constructs of meaning-making to include the differentiation between situational meaning (i.e., the sense one makes out of a particular situation) and global meaning (e.g., one's sense of place in the world). Given the inconsistencies that Park describes in the operationalizations of meaning-making in studies which used *dedicated* measures of meaning-making, it stands to reason that appropriating measures not originally intended for the study of meaning-making would be even less likely to adequately capture the breadth of these constructs.

Face validity concerns also pervade the use of measures such as the positive reframing subscale to study meaning. In the Brief COPE, positive reframing is measured via endorsement of two Likert-scale items: "*I've been trying to see it in a different light, to make it seem more positive*" and "*I've been looking for something good in what is happening*." While it is clear that these items have potential to capture aspects of the meaning-making processes, there is a clear face validity concern in expecting them to adequately capture the sorts of insights that are so often the focus of the meaning-in-life literature. Clinical research into meaning in life includes positive insights gleaned from negative experience, but these insights and negative experiences have generally been life-changing, traumatic, or existential in nature, e.g., a survivor of a near-death experience finding a life-affirming takeaway. It is unlikely that items designed to measure situational positive reframing could adequately capture the existential significance in meaning-

making. Furthermore, even *if* items like the positive reframing subscale were an adequate stand-in for measuring meaning-seeking, the Brief COPE lacks items with the construct validity to measure meaning-having (measured by MIL-Q items like "*I have a good sense of what makes my life meaningful*").

In short, the Brief COPE—one of the most frequently utilized measures of coping behavior—disregards two psychological factors that seem very likely to be associated with coping and wellbeing and does so despite their falling well within Lazarus and Folkman's (1984) definition of coping and/or psychological resources. Just as one's sense of self-esteem or one's perceived availability of social support are psychological resources which play a role in the appraisal of a stressor, so too might the strength of one's own sense of meaning in life (i.e., having meaning). By lacking items with adequate face/construct validity to capture meaning-*seeking*, the Brief COPE also overlooks clear attempts on the part of meaning-seekers to regulate their emotions by seeking out an adaptive emotional experience—attempts which meet Lazarus and Folkman's definition of a coping: Any behavioral, cognitive, or attitudinal measures taken to manage the internal and/or external demands of a situation which is perceived as stressful.

The Role of a Micro-longitudinal Study

While the empirical evidence against irrelevance is ample—coming in the form of the many estimates of association and concurrence between meaning and measures of wellbeing discussed previously—there is a scarcity of empirical work assessing whether meaning-in-life measures are redundant to the study of coping. This study aims to address this question. In statistical terms, the present study examines whether the addition of dedicated meaning-based measures (from the MIL-Q) increases the overall explanatory power of models above-and-beyond that of the Brief COPE alone. The irrelevance null hypothesis is supported if MIL-Q data

fails to predict emotional outcomes. The concurrence hypothesis is advanced if MIL-Q items *do* explain emotional outcomes and do so above-and-beyond Brief COPE data. And the redundance null hypothesis is supported if the explanatory power of the MIL-Q items is subsumed entirely (or almost entirely) by the Brief COPE data.

While a single-shot correlational study may have been sufficient to address the question of meaning-in-life's relevance to coping dynamics, a repeated measure micro-longitudinal design was utilized in order to simultaneously investigate the day-to-day variability in reported meaning-having and meaning-seeking. The use of this micro-longitudinal design provided two additional advantages. First, it allowed for a multilevel modelling approach with daily self-reports nested within person-level data. This nested data-structure presents a logistical advantage whereby acceptable statistical power can be reached with a comparatively small sample size. Second, the repeated measures design will allow for examination of time-lagged effects in future (e.g., predicting next-day perceived coping competence from prior-day meaning-making). However, these time-lagged effects are outside the scope of the present study which focuses only on multilevel model comparisons investigating the relationships between person-level and day-level stress, coping, meaning and affect.

Predictor variables included participants' daily reports of stress, coping attempts, and meaning-making (both -having and -seeking), while daily reports of affect served as the principal outcome variable. For reasons described in the upcoming sections, a measure of respondents' own perceptions of the effectiveness of their coping attempts served as a supplementary outcome.

Affect as Outcome

First, I examined the explanatory power of Brief COPE and MIL-Q items in predicting same-day affect. Here, positive and negative affect are considered separately, common practice in both emotion and coping literature. The reasoning for treating affect as a dependent variable is clear: conventional models of coping like those offered by Blascovich or by Lazarus & Folkman consider the very function of coping behaviors to be the regulation of emotion, i.e., successful coping attempts return the individual to pre-stressor affective states (or better). Affect was measured with the PANAS short-form (PANAS-SF; Watson et al., 1988), a widely used 20-item Likert scale survey which asks respondents to rate the degree to which they felt each of 20 emotions (e.g., "Alert", "Ashamed", and "Ashamed"). The use of the PANAS-SF to measure emotional outcomes in *daily* measurement is also not unusual among studies using experience sampling (ESM), momentary assessment, daily diary studies, or other methods of collecting repeat reports.

If, as I hypothesized, meaning-having and/or meaning-seeking aids in affect regulation in a pattern analogous to coping, then reports of meaning-having and/or meaning-seeking should predict same-day affect above-and-beyond (that is to say, independently of) reported coping attempts. When possible, additional analyses were conducted with same-day stress included as a covariate. If the overall pattern of analyses suggests that meaning appears to occupy a similar role as coping within the observed relationships between stress, coping, and affect, I will consider the central thesis of this project supported, and evidence that researchers interested in coping concepts should consider the role of perceived meaning in life.

Perceived Coping Competency as Outcome

To supplement the analyses described above, I also elected to perform a second, complementary series of analyses. The already described analyses are based upon the assumption that better same-day affective outcomes signal successful coping attempts (per Lazarus & Folkman or Blascovich). Judging the role of meaning in life according to this line of reasoning alone could be quite precarious, however.

Firstly, these data would be purely correlational, and alternative explanations may account for the association. For example, if analyses revealed that participants who reported engaging in higher levels of social support-seeking also tended to report greater same-day happiness, one might straightforwardly interpret that support-seeking was an effective coping strategy within the sample (this interpretation would be consistent with Lazarus and Folkman's TTSC model). Consider, however, that these data were collected in a retrospective survey and are purely correlational. As such, alternative explanations for the association between social support-seeking and greater same-day happiness are impossible to dismiss. It could have been, for instance, that participants were less likely to engage in social support-seeking on days in which they were in particularly poor moods (i.e., a kind of minimum happiness threshold before participants engaged in support-seeking), or that social support-seeking was a more common response to stressors that did not significantly reduce participants happiness to begin with (i.e., that support-seeking was a more common and effective response to low-intensity stressors than higher-intensity stressors). Just as in this example, any association between meaning-having/-seeking and affect could be the result of meaning *driving* affect, or meaning being *driven* by affect. This temporal element may be of limited concern to researchers adhering to a strict TTSC framework of understanding or may be addressed where experimental manipulations are utilized.

In my case, where experimental manipulation was impossible, a complementary dependent variable helps to lend concurrent validity and a kind of "quasi manipulation-check" to my method. This second set of analyses used participants' same-day ratings of perceived coping competency measured via an original 4-item Likert scale survey which asked participants to rate their endorsement of statements like "I did a good job of coping with the stresses of my day".

The aim of the second series of analyses is to provide a degree of concurrent validity and give some indication as to the plausibility of alternative explanations for any relationship between coping, meaning, and affect. To use the previous example: if we learn that participants were happier on days on which they engaged in social support-seeking, it is difficult to determine the directionality of the association. If we were to learn that participants were happier *and* reported feeling that they had coped more effectively on those days, directionality becomes clearer—it seems more plausible that social support-seeking impacted mood rather than mood impacting support-seeking. The TTSC model claims that the efficacy of coping predicts affective outcomes. By measuring perceived coping efficacy, we can draw some indication as to whether this assumed directionality is represented in the sample's reports.

The central hypothesis of this study will be supported if the strength of association between meaning, perceptions of coping competency, and coping behaviors tend to portray an account of coping dynamics consistent with the TTSC. Should they fail to, the results of the primary analysis regarding affective outcomes are called into question, just as the results of an experiment—however favorable—would be called into question if a manipulation check was failed. Additionally, the hypothesized role of meaning as an aspect of the coping process is supported if the association between meaning measures and coping competency is significant,

particularly if it is as great or greater than that between coping strategies and perceived competency.

Measurement of participants' own ratings of coping competence is rare, but not entirely novel. Chesney et al. (2006) piloted a 26-item coping self-efficacy (CSE) scale and found that respondents' ratings of their self-efficacy in problem-focused and emotion-focused coping predicted lower psychological distress and greater well-being. In their article introducing the CSE, Chesney et al. measured coping self-efficacy and psychological outcomes in HIV-positive gay men assessed at 3-, 6-, and 12-month follow-up intervals. Like in the present study, the CSE is influenced by Lazarus and Folkman's research (Chesney et al., 2006; Folkman & Moskowitz, 2004; Lazarus & Folkman, 1984; Park & Folkman, 1997), and employed alongside an inventory of coping strategies (a modified 50-item version of Folkman and Lazarus' Ways of Coping instrument [Folkman et al., 1994]) like the Brief COPE. Notably, Chesney et al.'s CSE measures participants' *confidence* in engaging in coping strategies (i.e., prospectively/speculatively), not evaluations of how they had coped in specific real-world instances (i.e., retrospectively/non-speculatively), and was thus unsuitable for use in the daily-diary style method of this study. After reviewing the extant literature, I am not aware of any published studies that have measured coping self-efficacy on a daily or momentary basis. As indicated in this study's results, measure reliability of my original 4-item coping competency scale was satisfactory, suggesting that it may be suitable for future use.

Method

Sample

A total of 162 participants were recruited via two online participant recruitment services. 70 participants were recruited from Western Washington University's SONA system participant

recruitment system between late February and late May of 2022. This participant pool consisted entirely of undergraduate students enrolled in introductory-level psychology courses. Participants from the SONA cohort were compensated with research participation credit—a requirement of their introductory psychology courses—and the chance to win one of several $50 Amazon.com gift cards by raffle. As elaborated below, participant dropout or ejection accounted for an attrition rate of 12.86 % (N = 9), leaving 61 SONA participants in the final data analyses with an average of 6.64 daily reports (SD = 0.84) per participant.

An additional 92 participants were recruited from the Institute of Translational Health Science (ITHS), an online participant recruitment service operated by the University of Washington's School of Medicine. ITHS participants were rewarded with $10 payments at the completion of the study, and an additional $5 contingent on the completion of the maximum possible 7 daily reports, also awarded upon completion of the study. Participant dropout or ejection accounted for an attrition rate of 11.96 % (N = 11), leaving 81 ITHS participants with an average of 6.32 daily reports (SD = 0.64) per participant in the final data analyses, and a total of 142 total participants between the two recruitment pools (N = 917 daily reports, M = 6.57, SD = 0.86). Participant demographics are summarized in Table 3.

Table 3

Summary of Sample Demographics by Recruitment Method

	SONA		ITHS		Total	
N =	61		81		142	
Age						
Median Age	20.0 years		25.0 years		22.0 years	
Mean Age	20.9 years		27.7 years		24.8 years	
Std. Dev. Age	3.5 years		8.8 years		7.9 years	
Minimum Age	18 years		18 years		18 years	
Maximum Age	39 years		71 years		71 years	
M Number of Reports	6.48 days		6.74 days		6.57 days	
SD Number of Reports	1.06 days		0.64 days		0.86 days	
Gender						
Women	*N* = 38	62.9%	*N* = 49	59.0%	*N* = 88	61.5%
Non-binary	*N* = 7	11.3%	*N* = 6	7.4%	*N* = 13	9.1%
Men	*N* = 16	25.8%	*N* = 26	32.1%	*N* = 42	29.4%
Race						
Black	*N* = 4	6.5%	*N* = 18	21.7%	*N* = 22	15.2%
Latino/Hispanic	*N* = 6	9.7%	*N* = 3	3.6%	*N* = 9	6.2%
Native American	*N* = 2	3.2%	*N* = 1	1.2%	*N* = 3	2.1%
White	*N* = 54	87.1%	*N* = 40	50.6%	*N* = 94	44.8%
Asian	*N* = 7	11.3%	*N* = 22	26.5%	*N* = 29	20.0%
NHPI	*N* = 1	1.6%	*N* = 0	0%	*N* = 1	0.7%
Middle Eastern	*N* = 2	3.2%	*N* = 0	0%	*N* = 2	1.4%
Other	*N* = 1	1.6%	*N* = 1	1.2%	*N* = 2	1.4%

Note: Participants could a) elect not to endorse a gender identity and could b) select more than one race. As such, percentages may not total to 100%.

MIL-Q = Meaning in Life Questionnaire (Steger, 2006), PANAS-SF = Positive and Negative Affect Scale: Short Form (Watson, Clark, & Tellegen, 1988), DASS-21 = Depression, Anxiety and Stress Scale (Lovibond & Lovibond, 1995), CEC = COVID-19 Events Checklist (Kelton & Greenhoot, 2020). Those measures featured in the present study's analysis are marked with an asterisk.

All participants were at least 18 years old, residing within the United States, and willing to participate in recorded Zoom meetings with members of the research team. Residence within the U.S. was listed as a screening criterion in all recruitment literature and verified by examining the IP addresses and geolocation data associated with each survey response. Residence within the U.S. was included as a screening criterion in order to maintain a minimal level of consistency in pandemic/lockdown status across participants.

Design

Data collection spanned a 26-week period from mid-February to late August of 2022. Participants were recruited and completed their participation in one of three waves. The first wave ran from mid-February to mid-March and included the first 29 participants, all from the SONA participant pool. Wave 2 ran from late-April through May, and included 72 participants, 32 from SONA, 42 from ITHS. The third and final wave of participation ran from late-June to mid-August and included the final 41 participants, all from ITHS. Recruitment and participation followed this three-wave pattern to correspond to the academic quarter system followed by the study's SONA participants and research assistants. Each participant's involvement in the study was completely independent (i.e., no part of participant management or data collection was handled as a group). Rather, each participant was recruited, oriented, and ran the protocol of participation alone and on their own timeline.

Each individual's participation consisted of three phases: 1) A pre-test interview conducted by a member of the research team, 2) a period of daily diary reporting spanning the 5-7 consecutive days following the participant's pre-test interview, and 3) a post-test interview and debrief held no later than one week after the end of the participant's daily sampling period. This

protocol allowed for the total course of participation to last as few as 8 days, to as many as 15 days.

Phase 1: Pre-test Interview

Pretest interviews were conducted via one-on-one recorded Zoom meetings between an individual participant and a member of the research team. Pre-test interviews proceeded in the following manner: the member of the research team 1) provided the participant with an overview of the study and the expectations of participation, 2) administered the pre-test survey measure, and 3) addressed the necessary logistics for the distribution of the phase 2 daily surveys and scheduling phase 3 post-test debrief (e.g., preferred timing of reminder emails, negotiating time-zone differences, etc.).

Data collected from the pre-test survey serves multiple functions. First, they serve as baseline (i.e., "trait") measures of individual participant stress, coping, and meaning making. Secondly, pre-test data serves as a pre-study baseline measure of participants' stress, coping, and meaning making which, when compared to post-test items, allows for pre- to post-test repeat measure analyses.

Daily Diary Reports

Daily reports were also collected via online self-report surveys. Because the intention was for daily reports to capture the events of the day, participants were asked to respond during their evening hours (e.g., 6:00 p.m. to 12:00 a.m.). The member of the research team conducting the pre-test interview made manual adjustments to a participant's reporting window to accommodate unconventional sleeping and waking hours (e.g., shift workers), time zones, etc. Failure to submit at least five (of the possible seven) reports resulted in the participants' disqualification from attending the posttest session and from receiving payment (or, in the case

of the SONA student sample, from receipt of course credit), and removal of their data from the present study's final data analysis. In order to assist participants in the completion of daily reports and to maintain an acceptable compliance rate, automated reminder emails were sent to participants' email addresses at the beginning of their intended response window (i.e., if a participant indicated that 8:00PM to 12:00AM was a natural window of time for them to reflect on the events of the day, automated reminder emails were sent at 8:00PM each evening.). Participants were not *required* to submit their survey responses within their intended response window. Rather, members of the research team verified that each day's response was made in an appropriate time-frame. For instance, a report submitted at 2:00AM would be deemed perfectly acceptable for a participant who had indicated that they intended to respond between the hours of 8:00PM and 12:00AM. However, a 10:00AM response from the same participant would not be accepted and would not count towards the participants required number of reports.

Post-Test Interview

Similar to the pre-test interview, the post-test interview was conducted via a recorded Zoom meeting. Like the pre-test interview, this meeting served two purposes. Firstly, data was collected via an online survey measure. Secondly, the post-test interview doubled as the participant debrief session wherein research assistants collected qualitative feedback on study participation, provided information on the measures used and the logic of the study, assessed and respond to any ongoing mental health crises revealed throughout the course of participation, and thanked participants for their participation. Finally, the post-test interview provides an opportunity for the participant to opt into a psychoeducational discussion of their data (e.g., an executive summary of the extant literature on coping and meaning, how that participants' stress, coping, and meaning-related reports compare to clinical benchmarks, etc.).

Instruments

Stress, coping, meaning-having/seeking, and affect were measured via a combination pre-test, post-test, and daily report measures. As such, modifications to the language of existing measures were necessary to meet the context of some phases of the study. For instance, Carver's (1997) Brief COPE items were all worded as retrospective self-reports regarding an unspecified timeframe, e.g., "I've been getting emotional support from others." In order to suit the phase 1 pre-test and phase 2 daily response phases of the study, modifications were necessary, resulting in the items: "I tend to get emotional support from others" for measurement at phase 1 pre-test and "I got emotional support from others today" for use in phase 2 daily reports. All measures were administered via online Qualtrics surveys accessible by smartphone or computer, and all Likert-scale items were framed on a 1-7 Likert scale for participant convenience. See Tables 4 and 5 below for a summary of the measures used at each of the three phases of the present study, and any modifications made. See Table 6 for a summary of all constructs measured and their subscales.

Table 4

Summary of Measures Used at Each Phase

Measurement	Appendix #	Items	Time-frame	Modification	Example item
Pre-test Measures	**B**	**79**			
MIL-Q (Steger, 2006)	B1	10	Trait	Presented in original form	"My life has a clear sense of purpose."
Brief COPE (Carver et al., 1989)	B2	28	Trait	Extended from unspecified timeframe to trait	"I tend to get emotional support from others."
DASS-21 (Lovibond & Lovibond, 1995)	B3	21	Week-long	None	"Over the past week, I couldn't seem to experience any positive feeling at all."
PANAS-SF (Watson et al., 1988)	B4	20	Trait	None	"Over the past week, I have felt [Distressed]."
Daily Measures	**C**	**78**			
MIL-Q (Steger, 2006) *	C1	10	Day-long	Restricted from trait to day-long retrospective	"Today, my life felt like it had a clear sense of purpose."
Brief COPE (Carver et al., 1989) *	C2	28	Day-long	Restricted from unspecified time-frame to day-long retrospective	"I got emotional support from others today."
Stress*	C3	6	Day-long	Ad hoc day-long measure	"I felt stressed out throughout the day."
PANAS-SF (Watson & Clark, 1988) *	C4	20	Day-long	Restricted from week-long time-frame to day-long retrospective	"…over the course of the day, I felt [Distressed]."
Stress*	C5	14	Day-long	Ad hoc daily measure	"How overwhelming were the things stressing you out today?"
Post-test Measures		**51**			
MIL-Q (Steger, 2006)	D1	10	Week-long	Restricted from trait to week-long retrospective	"Throughout the week, my life felt like it had a clear sense of purpose."
CEC (Kelton & Greenhoot, 2020)	D2	27	Trait	Presented in original form	"As a result of COVID-19, I worry about having enough money to pay for my bills"

Table 5

Reliability Estimates for Measures Featured in Final Analysis

	Pre-test Measurement (*N* = 138)			**Daily Measurement** (*N* = 917)				**Post-test Measurement** (*N* = 138)		
	ω or *r* / α	*M*	*SD*	ω_{within}	$\omega_{btwn.}$	*M*	*SD*	ω or *r* / α	*M*	*SD*
MIL-Q	.658	4.85	0.92	.860	.940	3.82	1.06	.893	4.30	1.24
Meaning-having*	.883	4.43	1.39	**.752**	**.939**	**4.03**	**1.14**	.836	4.31	1.32
Meaning-seeking*	.875	5.27	1.21	**.864**	**.992**	**3.60**	**1.25**	.941	4.28	1.53
DASS-21	.932	3.39	1.28	-	-	-	-	-	-	-
Depression	.892	3.12	1.45	-	-	-	-	-	-	-
Anxiety	.845	3.15	1.49	-	-	-	-	-	-	-
Stress	.874	3.92	1.44	-	-	-	-	-	-	-
PANAS-SF	-	4.08	1.01	.493	.945	3.49	0.59	-	-	-
Positive Affect*	.858	4.50	1.03	**.870**	**.966**	**4.15**	**0.94**	-	-	-
Negative Affect*	.890	3.66	1.37	**.836**	**.949**	**2.83**	**0.99**	-	-	-
Stress*	-	-	-	**.919**	**.958**	**3.63**	**0.85**	.931	4.06	1.25
Volume	-	-	-	.889	.976	3.75	1.01	.894 / .944	4.32	1.48
Frequency	-	-	-	.865	.979	3.74	0.98	.828 / .904	4.26	1.38
Appraisal	-	-	-	.919	.958	3.39	0.78	.386 / .549	3.61	1.25
Coping Competence	-	-	-	**.887**	**.959**	**4.79**	**0.94**	.911	5.24	1.13
Brief COPE	-	-	-	-	-	-	-	-	-	-
Denial*	.689 / .816	2.01	1.27					-	-	-
Disengagement*	.476 / .645	2.65	1.26					-	-	-
Venting*	.574 / .729	4.17	1.61					-	-	-
Religion*	.716 / .832	2.76	1.81					-	-	-
"Engaged Factor"*	-	-	-	**.833**	**.937**	**4.35**	**1.21**	-	-	-
Active Coping	.645 / .784	5.04	1.34					-	-	-
Pos. Reframing	.704 / .826	4.63	1.51					-	-	-
Planning	.674 / 805	5.21	1.34					-	-	-
Acceptance	.268 / .423	5.19	1.14					-	-	-
Self-distraction	.263 / .417	5.38	1.29					-	-	-
"Social Factor"*	-	-	-	**.852**	**.970**	**3.78**	**1.74**	-	-	-
Emo Soc. Supp.	.688 / .814	4.93	1.63					-	-	-
Inst. Soc. Supp.	.738 / .850	4.97	1.57					-	-	-
"Disengaged Factor*	-	-	-	**.362**	**.904**	**2.58**	**1.20**	-	-	-
Self-blame	.722 / .839	5.08	1.51					-	-	-
Humor	.797 / .886	4.29	1.86					-	-	-
Substance Use	.935 / .966	2.32	1.63					-	-	-

Note: Bolded titles indicate subscales/composite scales. Asterisks mark the titles of measures used in the final analysis. Reliability estimates of measures used are bolded. Hyphens fill cells where estimation is impossible/irrelevant, or where measures were not distributed. McDonalds omegas were estimated for all measures with 3 or more items. In cases where measures featured only two items, Pearson's correlation and Cronbach's alpha were used. Certain cells intentionally left blank.

Table 6

All Constructs Measured and their Subscales

Pre-test Measures	Daily Measures	Post-test Measures
Meaning in Life (10) Meaning-having (5) Meaning-seeking (5)	**Meaning in Life (10)** Meaning-having (5) Meaning-seeking (5)	**Meaning in Life (10)** Meaning-having (5) Meaning-seeking (5)
Coping Attempts (28) Self-distraction (2) Active coping (2) Denial (2) Substance use (2) Emo. support (2) Inst. support (2) Behavioral disengagement (2) Venting (2) Pos. reframing (2) Planning (2) Humor (2) Acceptance (2) Religion (2) Self-blame (2)	**Coping Attempts (28)** Self-distraction (2) Active coping (2) Denial (2) Substance use (2) Emo. support (2) Inst. support (2) Behavioral disengagement (2) Venting (2) Pos. reframing (2) Planning (2) Humor (2) Acceptance (2) Religion (2) Self-blame (2)	**Perceived Meaningfulness of Week (8)** Meaning-having (4) Meaning-seeking (4)
Emotional Wellbeing (21) Depression (7) Anxiety (7) Stress (7)	**Stress (6)** Volume (2) Frequency (2) Appraisal (2)	**Perceived Coping Competence (4)**
Affect (20) Positive affect (10) Negative affect (10)	**Affect (20)** Positive affect (10) Negative affect (10)	**Effect of COVID-19 on Life** (27)
	Perceived Meaningfulness of Day (8) Meaning-having (4) Meaning-seeking (4)	
	Perceived Coping Competence (4)	

Pre-test Measures

Pre-test measures consisted of the MIL-Q (ω = .658, *M* = 4.85, *SD* = 0.92)**,** Brief COPE, DAAS-21 (ω = .932, *M* = 3.39, *SD* = 1.28), PANAS-SF (ω = .890, *M* = 4.42, *SD* = 1.01) the former two measures modified to capture trait (rather than retrospective) self-reports. For example, the Brief COPE's "I've been taking action to try to make the situation better" is modified to read "I tend to take actions to try and make the situation better". No participant demographic information was collected during phase 1 pre-test save for geolocation, which is collected to ensure that the research team could account for participant time-zone in setting response windows. Collection of demographic information was forestalled until phase 3 post-test to a) minimize the likelihood that priming/salience effects would affect subsequent phase 2 daily responses, and b) to avoid front-loading participant burden. For a complete listing of pre-test measures, see Appendix B.

Daily Measures

Daily measures included the 10-item MIL-Q (ICC = .567, ω_{within} = .860, $\omega_{between}$ = .940, *M* = 3.82, *SD* = 1.06), 28-item Brief COPE (ω_{within} = .602, $\omega_{between}$ = .847, *M* = 3.32, *SD* = 0.69), and Watson, Clark, and Tellegen's PANAS-SF (ICC = .505, ω_{within} = .911, $\omega_{between}$ = .890, *M* = 4.66, *SD* = 0.77), a measure of positive and negative affect. As previously discussed, MIL-Q items create both an overall meaning-making composite but are interpreted as meaning-having (ICC = .579, ω_{within} = .752, $\omega_{between}$ = .939, *M* = 4.03, *SD* = 1.14) and meaning-seeking (ICC = .537, ω_{within} = 8.64, $\omega_{between}$ = .992, *M* = 3.60, *SD* = 1.25) subscales throughout the course of this paper. Similarly, Brief COPE items capture coping attempts across 14 discrete coping behaviors and PANAS-SF items form positive (ICC = .444, ω_{within} = .870, $\omega_{between}$ = .966, *M* = 4.15, *SD* = 0.94) and negative affect (ICC = .526 ω_{within} = .836, $\omega_{between}$ = .949, *M* = 2.83, *SD* = 0.99)

subscales. As noted, the wording of Brief COPE, MIL-Q and PANAS-SF items were modified to match the tense and time-frame of the daily report phase. For instance, the Brief COPE's item "I've been taking action to try to make the situation better" was modified to read "Today, I tried to take actions to try and make the situation better", and the MIL-Q's item "My life has a clear sense of purpose." was modified to read "My life had a clear sense of purpose today". For a complete list of modified MIL-Q, Brief COPE, and PANAS-SF items, see Appendices C1, C2, and C4, respectively.

As elaborated upon below, in addition to the existing scales, an original 6-item measure of daily stress (ICC = .241, ω_{within} = .919, $\omega_{between}$ = .958, *M* = 3.63, *SD* = 0.85), a 4-item measure of participants' perceptions of the competency of their daily coping attempts (ICC = .317, ω_{within} = .887, $\omega_{between}$ = .959, *M* = 4.79, *SD* = 0.94), and two free response items in which participants were asked to identify 1) the day's most meaning-inducing event(s), and 2) the event(s) of the day that prompted the greatest time/effort spent coping were included. In the upcoming analyses, the original stress measure was used as a covariate, and the original coping competency measure was used as a dependent variable. Use of the free response measures are beyond the scope of this project.

Daily stress was measured via 6 original items. Two items pertain to "volume" of stress, (e.g., "How stressful was today on a scale from 1 [*Not stressful at all*] to 7 [*Extremely stressful*]), two to "frequency" of stress (e.g., "How much of the day was stressful for you on a scale from 1 [*Hardly any of the day*] to 7 [*Pretty much the whole day*]?") and two to stress appraisals (e.g., "How overwhelming were the things stressing you out today on a scale from 1 [not overwhelming at all] to 7 [completely overwhelming]?"). Responses to stress items may be

interpreted along the three separate subscales described but are treated as a composite 6-item scale for the purposes of this study.

Similarly, perceived coping competency was measured via four original items, scored together to approximate respondents' perceived coping competency. Participants were prompted to rate their agreement to statements like "I did a good job of coping with the stresses of my day" or "I found ways to solve—or at least improve—the challenges that caused me to feel bad/stressed out today" on a scale of 1 [*Completely untrue*] to 7 [*Completely true*].
See Appendix C4 for a complete list of all original items.

Post-test Measures

Post-test measures include the MIL-Q (ω = .893, *M* = 4.30, *SD* = 1.24), which was modified to restrict the timeframe to the week-long period of study participation. The original stress (ω = .931, *M* = 4.06, *SD* = 1.25) and perceived coping competency (ω = .911, *M* = 4.06, *SD* = 1.13) measures were also measured at post-test. The Brief COPE and PANAS-SF were not deployed at the posttest measurement in an effort to reduce participant burden.

Participant demographics were also collected at post-test. Demographics include age, gender, race/ethnicity, perceived socioeconomic status, level of education, extraversion/introversion, neuroticism, and degree of personal impact of the COVID-19 pandemic as measured by Kelton and Greenhoot's (2020) COVID-19 Event Checklist (CEC). The CEC asks participants to report whether they have experienced specific personal, social, and financial stressors because of the COVID-19 pandemic and lockdown (e.g., "As a result of COVID-19, I worry about having enough money to pay for my bills"). See Appendix D1 for a complete list of CEC items. Ultimately, CEC responses were deemed beyond the scope of this project's data analysis. This, and absence of compelling differences in CEC responses across

SONA and ITHS samples, and between first, second, and third wave data collection led to our decision to forego including CEC data in this project's final data analyses. For interested readers, frequency of CEC events reported by participants is listed in Table 18.

The original Likert-scale item and free response items seen in daily measures were also presented at post-test, with timeframes extended to relate to the entire week-long duration of the study rather than the day-long timeframes seen in daily measurement. Whereas daily measures included the original item "Today, I spent the most time/effort coping with _____", the post-test included the item "Over the last 5 days, I spent the most time/effort coping with _____." For a complete listing of modified MIL-Q items, see Appendix D2.

Test of Research Questions

I wanted to examine whether repeated daily measurement of participants' meaning in life would yield a level of day-to-day variability sufficient to encourage future use of the methodology. Unlike in the study of stress and affect, daily measurement is rarely utilized in the study of meaning in life, potentially because researchers assume that meaning in life is too stable for daily measurement to capture day-to-day nuances in participants' everyday lives. This research question is addressed in the discussion section and supported by descriptive statistics and the findings of the second research question.

Additionally, I wanted to examine whether MIL-Q might address elements of the coping process not already captured by the Brief COPE. To achieve this, I utilized multi-level models wherein predictor variables derived from the MIL-Q and Brief COPE were used to predict same-day affect (via the PANAS-SF) and same-day perceived coping competency (via the previously described ad hoc measure). Finally—where I was able—stress was considered as a third predictor. To accomplish these analyses via multi-level modelling, gradual model-building and

significant data reduction were necessary. This process of model-building is discussed in detail in the upcoming section *Multi-level Design.*

Data Analyses

Participant Attrition

Of the 162 participants who completed a phase 1 pre-test interview, 17 failed to provide the minimum number of phase 2 daily responses and were ejected from the study before reaching the phase 3 posttest interview. An additional participant from the SONA recruitment pool was ejected for failing attention checks on 3 of the 5 responses they provided. Of the 18 ejected during phase 2 daily reports, 7 were recruited from the SONA sample pool, and 11 from ITHS. No difference in the rate of phase 2 attrition was found between sample recruitment pools, $\chi^2(1, N = 162) = .008$, $p = .928$.

Of the 144 participants who completed phase 2 daily reporting, 1 participant from each recruitment pool failed to attend a phase 3 posttest interview in the two-week time-frame allotted. All data originating from this participant was excluded from data analyses.

Of the 142 participants who completed phase 3 posttest interviews, the data of 2 participants (1 from each recruitment pool) were excluded from the final data analysis because the location data associated with phase 3 posttest reports appeared to originate from outside of the U.S.

Data Cleaning

The data cleaning protocol led to further exclusion of data from final data analysis. The 140 participants whose phase 2 daily responses were retained generated 992 phase 2 daily responses, (an average of 6.75 reports) and 142 phase 3 responses to be cleaned.

Phase 2 daily responses were excluded for any combination of two or more of the following reasons:

1. The participant indicated that they had not answered all questions on the survey honestly.
2. The participant initiated a daily survey but left some or much of the uncompleted.
3. The participant failed an attention check item concealed within the items of the daily survey.
4. The participant completed the survey in such a short period of time that good-faith responses were improbable/impossible. A *z*-score in time-to-complete of -3.29 was used as a benchmark for this criterion. This score corresponds closely with the rate at which members of the research team could complete a daily survey without reading prompts.
5. The participant who provided the response could not be identified due to user error.

Thirty-four of the 992 phase 2 daily responses were excluded due to meeting one or more of the criteria listed above. The relative frequency at which each criterion was met is not examined, as the causes of exclusion of individual phase 2 daily responses were not of sufficient interest for the purposes of this study. The criterion which most frequently contributed to the exclusion of responses were failed attention checks and honesty checks (sometimes both). Data cleaning resulted in a final dataset of $N = 138$ participants for whom two or more daily reports were retained.

Multi-level Design

To capitalize upon the nonindependence of observations provided by each participant, a two-level model was used in the analyses of the research questions. Level 1 variables included day-level data (i.e., *daily* measures of stress, meaning-making, coping, and affect), collected via measures pertaining to the events of each day's events (e.g., "Today, I was searching for something that makes my life feel significant.").

By contrast, Level 2 variables were derived from person-level data. Person-level data include individual differences in trait measures (e.g., responses to pre-test items like "I am always searching for something that makes my life feel significant") and personal demographics (e.g., gender identity, geographic location, etc.). Additionally, person-level data were computed by taking the mean of each participants' responses to daily measures (e.g., a given participant's average response to the daily measure "I was searching for something that makes my life feel significant today"). These person-level means provide an average of daily reports each participant provided over the course of the week and were used in exploratory factor analyses described below.

Given the limited number of daily reports gathered per participant and the potential for inclusion of as many as 20 predictor variables, I had initially hoped that more complex models could be analyzed via the use of Bayesian multi-level modeling (Bayesian MLM) with Markov chain Monte Carlo (MCMC) sampling. Bayesian MLM with MCMC sampling involves sampling from a probability distribution shaped (in part) by the characteristics of the observed data. This approach generally allows for analysis of larger models than would otherwise be possible, thereby compensating for the relatively low number of reports collected from each participant (M = 6.75 reports per person). Initial attempts to perform analyses of complete

models (i.e., models where all random effects were included) via these methods failed to converge consistently. It became evident that model simplification would be necessary, and that pursuing maximalist models would result in the specification of different regression equations for every outcome variable. Determining that the modest degree of additional complexity that Bayesian MLM with MCMC may have allowed was not worth the added complexity in analysis and interpretation, I elected against reducing maximalist Bayesian MLM models until each reached convergence and instead attempted to specify a single regression model which would converge using non-Bayesian MLM for each dependent variable. Significant reductions in the number of predictors had to be made to reach a model parsimonious enough to converge in regression analysis. While making these reductions, an effort was made to preserve the completeness of the data of most theoretical interest. For example, the inclusion of separate meaning-having and meaning-seeking subscales was non-negotiable, whereas collapsing the Brief COPE's 14 coping strategies into several factors was acceptable. This data reduction process is outlined below.

Data Reduction Strategies

Meaning. Given meaning's role as the study's principal independent variable, and the relatively low cost of analyzing its data at its maximum resolution (a maximum of two predictors: -having and -seeking), no reductions were made. As discussed previously, there are strong theoretical justifications for considering meaning-having and -seeking separately.

Stress. As previously mentioned, the original 6-item stress scale created for the purpose of serving as a dependent variable in this study was intended to be interpretable as either a 6-item scale or as three 2-item subscales. As the nuances of stress were not of primary concern in this

study—and given a lackluster reliability estimate for one of the three 2-item subscales (r = .386)—the complete 6-item measure for stress is used in the final analysis.

Brief COPE. The Brief COPE features 28 items in total, organized into fourteen 2-item subscales. Although accounting of all 14 subscales individually might have offered insight into interactions between specific coping strategies, life meaning, and measured outcomes, the precise nature of the coping strategies employed by each participant was not of primary interest in the present study. As such, a lion's share of the data reduction necessary to reach model convergence was taken from the Brief COPE data.

Factor Analysis of Brief COPE Data

Due to the limited number of daily reports per participant, convergence of any models featuring each of the 14 Brief COPE subscales would have been impossible. As such, Brief COPE data had to be reduced to fewer than 14 predictors. This process of reduction necessarily sacrifices degrees of fidelity to the raw data, so my preference was to conduct it in a data-driven, rather than theory-driven, manner.

Rather than factoring the Brief COPE data into any preconceived subscales (e.g., Dias et al.'s 3-factor model), I elected to conduct an exploratory factor analysis (EFA) to reveal underlying structures in the data. Utilizing a pre-existing factorization such as Dias et al.'s would have been a viable option had I had a strong inclination towards a particular pre-existing factorization. As I did not, a factor structure uncovered via EFA provided what I believe to be the best balance between necessary simplification and integrity with my dataset. A three-factor model emerged and was selected based on its parsimony, stability, comprehensiveness, and comprehensibility. This 3-factor structure includes 10 of the 14 Brief COPE subscales, leaving the remaining four to be included in the final analysis separately. In short, the Brief COPE data

were reduced from being treated as 14 predictors, to 7. See Table 7 for the details of the factor structure used in the final analysis.

The three factors have been named “engaged”, “disengaged”, and “social”. These names were assigned for convenience, based upon seemingly shared characteristics among each factor’s constituent coping strategies. The names themselves were not intended to carry value judgements as to the adaptiveness (or maladaptiveness) of the constituent coping strategies, nor to make reference to any preexisting taxonomy of coping.

Table 7

Factor-loadings of Brief COPE Data Used in Analysis

Subscale	*M*	*SD*	ω	Factor	Loading
Active Coping	4.31	1.62	.781	“Engaged”	.724
Positive Reframing	4.08	1.67	.798	“Engaged”	.543
Planning	4.39	1.68	.834	“Engaged”	.858
Acceptance	4.52	1.44	.620	“Engaged”	.567
Self-Distraction	4.38	1.65	.702	“Engaged”	.360
Emotional Support-seeking	3.99	1.86	.885	“Social”	.985
Instrumental Support-seeking	3.59	1.89	.873	“Social”	.747
Self-blame	3.29	1.76	.750	“Disengaged”	.668
Humor	2.82	1.79	.878	“Disengaged”	.579
Substance Use	1.63	1.35	.930	“Disengaged”	.501
Behavioral Disengagement	2.23	1.41	.757	-	-
Religion	2.22	1.83	.900	-	-
Venting	3.18	1.70	.807	-	-
Denial	1.73	1.21	.818	-	-

“Factor-less” Subscales

Note that the four coping strategies which did not fall into any of the EFA’s factors (behavioral disengagement, religion, venting, and denial) share some similarities. Firstly, three of the four strategies (behavioral disengagement, venting, and denial) are generally characterized as avoidant methods of coping. This trend may have been more compelling had substance use—a

classically “avoidant” coping strategy by any standard—loaded into the “Disengaged” factor alongside self-blame and humor.

The second commonality shared by all four coping strategies which did not nest with any of the three factors was strong positive skew. In all four cases (behavioral disengagement, religion, venting, and denial), respondents tended to report that they had engaged in the coping strategy infrequently, if at all. In three of the four “factor-less” coping subscales, a substantial majority (as much as 75%) of participants reported *never* having engaged in the coping strategy at any point in their reporting. There are caveats to this pattern as well, however. First, venting (which fell outside of the three-factor structure) was positively skewed, though not to the extreme degree seen in the other three factor-less coping strategies. Only 16% of respondents reported never engaging in venting, a proportion consistent with reports of engagement in the 10 coping strategies which *did* nest within factors in EFA. Second, substance use nested within the “Disengaged” factor despite extreme positive skew (76% of respondents never reported engaging in substance use as a means of coping with the day’s stress across their week of reporting).

With the information given, it is impossible to determine the source of these positive skews. For example, my participant pools could have reportedly engaged in these coping strategies less frequently than expected due to some form of sampling bias: Some (or all) of the eight underlying Brief COPE items may have suffered from validity issues not detected in the other 16 (e.g., greater social desirability bias related to these four coping strategies). Even if the source of skewedness in my data were posited, it would be difficult to tell whether they reflect idiosyncrasies in my own sample, or reflect trend we would see in the population at large. I would note, however, that multiple publications (including one which collected data during COVID-19; Hanfstingl et al., 2021) on the psychometrics of Brief COPE data describe

pronounced skews on a per-strategy basis consistent with my own data (Hanfstingl et al., 2021; Hegarty & Buchanan, 2021).

In summary, data from the Brief COPE's 14 subscales was successfully reduced to seven predictors via EFA. Though the exact mechanisms by which these data fell into the 3-factor structure used in the following analyses is not readily apparent, a necessary level of model simplification was achieved.

Random effects.

In addition to limiting the number of predictors included, the total number of random slopes (i.e., the number of predictor variables whose slopes were allowed to vary by participant) had to be carefully considered in order to reach a model which would converge under MLM. As such, random slopes were only included where preliminary analysis strongly indicated a high-enough level of between-person variability. This compromise was made after more maximalist models (i.e., models where more random slopes were included) failed to converge.

Again, I favored a data-driven approach to determine which random slopes should be included. The decision to include random effects was evaluated on a per-predictor, per-outcome basis. That is, the effect of each predictor was tested for each of the three outcome variables (positive affect, negative affect, and perceived coping competence) for a total of 30 effects. For each of the 30 predictor-outcome pairs, a model comparison was conducted, comparing the predictive power of a random-slope model with its fixed-effect counterpart. If the random-slope better explained the observed dependent variable, the random effect was included in the final model predicting subsequent analysis for the same dependent variable. A Bayes factor of 10.0 was used as an arbitrary cutoff in determining sufficient evidence for inclusion of the random effect (see Table 8 for the Bayes factors of each predictor variable per outcome variable). As

shown in Table 8, the lowest Bayes factor for a predictor variable which cleared this threshold was *BF* = 49.73 (for meaning-seeking) and the greatest Bayes factor of a predictor whose random slope was *not* included was *BF* = 6.66 (the "Social" factor of the Brief COPE data).

Table 8

Model Comparison Bayes Factors Favoring Random Effects

	Outcome Measures		
Predictors	Pos. Affect	Neg. Affect	Coping Comp.
Meaning-having	0.053	5.05	0.079
Meaning-seeking	5,660*	2.36	49.73*
"Engagement"	11,800*	2.52e+09*	1,620*
"Social"	6.66	5.59	0.857
"Disengagement"	0.021	3.51e+08*	0.049
Denial	0.003	5.15	0.012
Beh. Disengagement	0.491	.428	0.024
Venting	0.101	188,000*	25,300*
Religion	0.002	0.002	0.016

Note: Random slopes included in final analysis are marked with asterisks. Bayes Factors represent a ratio of two likelihoods—in this case, the likelihood that varying-slope models explain the sample data more accurately than fixed-slope models. As such, higher Bayes factor indicates greater likelihood that the varying-slope model outperforms its fixed-slope counterpart. The Bayes factor of 6.66 seen for models of Pos. Affect predicting "Social" factor data indicates that the random-slopes model is 6.66 times more likely to be the more accurate model than its fixed-slopes counterpart.

After conducting univariate model comparisons, 2-3 random effects were included in the final analysis for each dependent variable. Importantly, the combination of random effects varied by outcome. For instance, model comparison suggested that the effect of meaning-seeking on positive affect varied by person (*BF* > 5,000) but offered little indication that the same was true of negative affect (*BF* = 2.36). As such, the random effect of meaning-seeking was included in the final model predicting positive affect, but not negative affect. As a result of this process,

three multivariate models were finalized, one for each outcome variable. Each model features 9 predictor variables (meaning-having and -seeking, each of the three Brief COPE factors identified via EFA, and the four remaining COPE subscales) including 2-3 random slopes.

Results

The following analyses are separated into two major categories: estimation of within-person variability, and estimation of the explanatory power of predictors on a per-outcome basis. When interpreting the results of the latter, I will present estimates of effect sizes alongside those of statistical significance. This is because meeting the standard for statistical significance does not guarantee that an association is also *practically* significant and only addressing the question of statistical significance (or lack thereof) of predictors has the potential to provide an incomplete understanding of the results. The association between a predictor and an outcome could reach the standard for statistical significance ($p < .05$) but exhibit an expected magnitude so slight that the associated effects are inconsequential (i.e., statistically—but not practically—significant). Because discussing the magnitude of the observed associations via Likert Scale point-values would be unhelpful (as Likert Scale anchoring is inconsistent across the literature and a point of personal preference among researchers), I have elected to used standard deviations as a more universal unit of measurement for discussing effect sizes (e.g., a 1-*SD* increase in a predictor variable may be associated with a 0.5 *SD* increase in a given outcome variable). At times, I also discuss the strength of predictors in terms of their ranking among the predictive ability of the other predictor variables in the same model. Given the comparative nature of the study (namely, the question of whether meaning-centered predictors can explain affective

outcomes above-and-beyond Brief COPE data), rankings are a simple method of contrasting the explanatory power of different predictors.

Estimating Within-Person Variability

Intraclass correlation coefficients were computed to provide an estimate of the level of within-person (i.e., day-to-day, rather than person-to-person) variability captured in the MIL-Q data. Intraclass correlation coefficients (ICCs) are calculated from the ratio of between-group and within-group variability, resulting in a value between zero and 1.0. Here, an ICC was computed for each variable of interest, and each ICC expresses the expected correlation among daily reports for the same person for a given variable. When a variable's ICC is closer to 1.0, the variance between participants explains much more of the total variance. This also means that there was a low level of variability in their reports day-to-day (i.e., each person's daily reports were more uniform). When ICCs are closer to zero, there is little variance between participants and much of the total variability in daily reports come from participants' reports varying more freely day-to-day.

ICC estimates for meaning-having and meaning-seeking were .579 and .537, respectively, and the ICC estimate for the complete 10-item MIL-Q was .567. These figures indicate that a little more than half of the total variability across the 917 days of MIL-Q reports captured can be explained by the clustering of the data among the 138 participants. This leaves approximately 42% of the total variability in daily reports of meaning-having and 46% of variability in reports of meaning-seeking explained by within-person (i.e., day-to-day) variability.

For comparison, ICC estimates for the positive and negative subscales of the PANAS-SF were .444 and .526, respectively, and the ICC of the complete 20-item PANAS-SF was .505.

These estimates indicate that approximately half of the total variability of daily reports of affect were explained by between-person factors (i.e., clustering). For the 6-item original daily stress measure, an ICC estimate of .241 suggests that approximately one quarter of the total variability in daily reports of stress was explained by between-person factors. As such, of the three constructs, the total variability in daily reports of stress were the most dictated by day-to-day variances within persons. See Table 9 for the ICCs of other variables included in the study.

Table 9

Intraclass Correlation Coefficients of Each Predictor and Outcome Variable

Variable	**ICC**	***M***	***SD***
MIL-Q	.567	3.82	1.06
Meaning-Having	.579	4.03	1.14
Meaning-Seeking	.537	3.60	1.25
PANAS-SF	.505	3.49	0.59
Positive Affect	.444	4.15	0.94
Negative Affect	.526	2.83	0.99
Stress	.241		
Perc. Coping Competence	.317		
Self-distraction	.422	4.43	1.19
Denial	.577	1.74	1.01
Substance Use	.578	1.66	1.10
Disengagement	.375	2.20	0.97
Emo Soc. Supp.	.429	3.99	1.34
Venting	.408	3.21	1.22
Self-blame	.501	3.31	1.35
Humor	.576	2.85	1.44
Acceptance	.371	4.53	1.00
Religion	.837	2.21	1.73
Active	.348	4.31	1.09
Instrumental Soc. Supp.	.395	3.6	1.31
Pos. Reframing	.486	4.08	1.26
Planning	.415	4.41	1.19

Note: Means and standard deviations are sample-wide, i.e., they represent the mean and standard deviation values of the total samples' 917 reports.

Predicting Affect

Negative Affect

As described, a hierarchical linear model was specified wherein negative affect (NA; derived from the negative emotions subscale of the PANAS-SF) was predicted via a combination of fixed and random effects. Fixed effects in this model included the role of meaning-having, meaning-seeking, each of the three factors derived from EFA ("engagement", "social", and "disengagement"), and each of the four remaining Brief COPE subscales which did not fall into the factor loadings (behavioral disengagement, religion, venting, and denial). Inclusion of random effects was limited to "Engagement", "Disengagement", and venting. All other level 1 effects were estimated as non-varying across level 2 units (i.e., participants).

Analysis suggested that negative affect was significantly associated with 5 of the 9 predictors: meaning-having was negatively associated ($\beta = -0.084$; $t(750.56) = -2.41$, $p = .016$), indicating that on days in which participants reported relatively greater levels of meaning-having, they also tended to also report (nominally) lower negative affect. Meanwhile, COPE factor "Disengagement" was positively associated with NA ($\beta = 0.23$; $t(112.78) = 4.10$, $p < .001$), as was behavioral disengagement ($\beta = 0.171$; $t(745.04) = 6.20$, $p < .001$), venting ($\beta = 0.135$; $t(112.57) = 5.35$, $p < .001$), and denial ($\beta = 0.170$; $t(773.61) = 4.65$, $p < .001$). In the case of these four positively associated predictors, analyses suggest that on days when participants reported engaging in relatively higher levels of each coping strategy (e.g., engaged in more behavioral disengagement than on other days) they also tended to report relatively higher levels of negative affect than they had on other days. See Table 10 for a summary of these findings, random effects, and exact parameter estimates of non-significant predictors.

Neither meaning-having nor meaning-seeking predicted a *consequential* degree of negative affect. Although meaning-having had a statistically significant relationship with negative affect, the magnitude of the association was not practically significant. For each +1 *SD* increase in meaning-having, the expected decrease in reported negative affect is only eight hundredths of a point (scored on Likert scales ranging from 1 and 7). In comparison, the strongest predictor of negative affect (COPE factor "Disengagement") offered a substantive effect size. Each 1-point increase in reported "Disengagement" coping was associated with about a 0.25-point increase in same-day negative affect for every—about a 0.25 *SD* increase.

In terms its predictive ability among the nine predictors in the model, meaning-having was a middling predictor of negative affect, exhibiting a level of explanatory power outperformed by one of the three COPE factors ("Disengagement") and three of the four individual coping strategies, ultimately ranking fifth of the nine predictors and weakest among the five statistically significant predictors.

Table 10

Results of MLM Predicting Negative Affect

Fixed Effects:	Estimate	*SE*	*t*-value	*df*	*p*-value
(Intercept)	2.83	0.08	33.72	139.16	< .001
Meaning-having	**-0.08**	0.04	-2.41	750.56	**.016**
Meaning-seeking	0.01	0.03	0.40	761.97	.689
COPE Factor "Engagement"	0.03	0.04	0.80	135.44	.424
COPE Factor "Social"	-0.01	0.02	-0.59	754.65	.556
COPE Factor "Disengagement"	**0.23**	0.06	4.10	122.78	**< .001**
Behavioral Disengagement	**0.17**	0.03	6.19	745.04	**< .001**
Religion	-0.05	0.03	-1.45	755.90	.147
Venting	**0.14**	0.03	5.35	112.57	**< .001**
Denial	**0.17**	0.04	4.65	773.61	**< .001**

Slope estimates of statistically significant predictors are bolded.

Random Effects:	Std. Dev.
(Intercept)	0.95
"Engagement"	0.17
"Disengagement"	0.38
Venting	0.12
Residual	0.64

Group	# of groups	ICC
Person-level	138	.688

Positive Affect

The model predicting positive affect (PA; derived from the positive emotions subscale of the PANAS-SF) featured the same nine predictors. Based on Bayesian model comparison, random slopes in the model predicting positive affect were limited to meaning-seeking and Brief COPE factor "Engagement".

These analysis indicate that positive affect was associated (positively) with meaning-having ($\beta = 0.395$; $t(763.93) = 10.76$, $p < .001$), meaning-seeking ($\beta = 0.090$; $t(133.50) = 2.66$, $p < .001$), COPE factor "Engagement" ($\beta = 0.186$; $t(133.29) = 4.54$, $p < .001$), and religion ($\beta = 0.072$; $t(770.08) = 2.00$, $p = .046$), and negatively associated with behavioral disengagement ($\beta = -0.143$; $t(775.58) = -4.99$, $p < .001$), and venting ($\beta = -0.071$; $t(779.43) = -3.19$, $p = .001$). No other associations rose to a level of statistical significance. See Table 11 for further information.

Here, we see that the strength of association between meaning-having and positive affect was significant, with participants tending to report greater levels of positive affect on days in which they also reported higher levels of meaning-having. Although a statistically significant predictor, the strength of association between meaning-*seeking* and positive affect was only slight, corresponding to a practically insignificant effect. The "Engagement" factor (the factor which includes active coping, positive reframing, planning, acceptance, and self-distraction)

appears to predict greater positive affect, indicating that on days in which participants engaged in higher levels of the factor's constituent coping strategies, they also experienced relatively higher levels of positive affect. Finally, behavioral disengagement is associated with *less* positive affect, indicating that on days where participants reported engaging in relatively higher levels of behavioral disengagement, they tended to also report relatively *less* same-day positive affect.

Of the nine predictor variables included in this model, meaning-having was the strongest predictor of positive affect and strongest of the seven statistically significant predictors. Every 1-point increase in reported meaning-having was associated with a corresponding 0.39-point increase for that person's same-day positive affect. This 1-point increase in reported meaning-having corresponds to approximately a +1 *SD* shift, and the associated 0.39-point change in positive affect represents a little more than a +1/3 *SD* increase in mean positive affect across all participants.

Table 11

Results of MLM Predicting Positive Affect

Fixed Effects:	Estimate	*SE*	*t*-value	*df*	*p*-value
(Intercept)	**4.15**	0.08	51.76	139.00	**< .001**
Meaning-having	**0.39**	0.04	10.76	763.93	**< .001**
Meaning-seeking	**0.09**	0.03	2.66	133.50	**.009**
COPE Factor "Engagement"	**0.19**	0.04	4.54	113.28	**< .001**
COPE Factor "Social"	0.02	0.02	0.98	772.72	.327
COPE Factor "Disengagement"	0.04	0.04	0.90	773.07	.369
Behavioral Disengagement	**-0.14**	0.03	-4.99	775.58	**< .001**
Religion	**0.07**	0.04	1.99	770.08	**.046**
Venting	**-0.07**	0.02	-3.19	779.43	**.001**
Denial	0.04	0.04	1.14	786.25	.254

Slope estimates of statistically significant predictors are bolded.

Random Effects:	Std. Dev.
(Intercept)	0.90
Meaning-seeking	0.15
"Engagement"	0.18
Residual	0.70

Group	# of groups	ICC
Person-level	138	.625

Predicting Perceived Coping Competence

A hierarchical linear model was also specified wherein perceived coping competency (PCC; derived from the original 4-item perceived coping competency measure) was predicted with the same nine fixed effects as in the models predicting affect (meaning-having, meaning-seeking, each of the three Brief COPE factors, and all four "factor-less" coping strategies). Based on prior model comparison, the random slopes of meaning-seeking, venting, and COPE factor "Engagement" were included.

In these analyses, perceived coping competence was positively associated with meaning-having ($\beta = 0.345$; $t(769.50) = 7.37$, $p < .001$) and COPE factor "Engagement" ($\beta = 0.359$; $t(120.54) = 6.27$, $p < .001$) such that participants tended to report greater levels of perceived coping competence on days in which they also reported higher (for them) levels of meaning-having or "Engagement"-style coping. Perceived coping competence was negatively associated with behavioral disengagement ($\beta = -0.220$; $t(778.89) = -6.04$, $p < .001$), venting ($\beta = -0.086$; $t(122.38) = -2.58$, $p = .011$), and denial ($\beta = -0.104$; $t(771.51) = -2.24$, $p = .026$), such that participants tended to endorse lesser levels of coping competence on days in which they also reported engaging in greater levels of these coping styles. See Table 12 for specific estimates.

Meaning-having ranked near-second in its ability to predict same-day perceived coping competence, outperformed narrowly by the Brief COPE factor "Engagement". The magnitude of

this association was such that every 1-point increase in either predictor (on a 1-7 Likert Scale, used for all measures of this study) predicted about a 1/3-point increase in same-day perceived coping competence (an increase of about 0.33 *SD* of perceived coping competence). Behavioral disengagement was also a significant predictor of perceived coping competence, with participants tending to report lower levels of coping competence on days in which they also reported higher (for them) levels of behavioral disengagement (about a ¼ *SD* decrease in perceived coping competence per 1-point increase in behavioral disengagement). Other statistically significant predictors were associated with effects of marginal magnitude (e.g., expected changes in same-day perceived coping competence less than 0.1 *SD* per 1-point increase in the predictor).

Table 12

Results of MLM Predicting Perceived Coping Competence

Fixed Effects:	Estimate	*SE*	*t*-value	*df*	*p*-value
(Intercept)	4.79	0.08	59.83	138.98	< .001
Meaning-having	**0.35**	0.05	7.37	769.50	**< .001**
Meaning-seeking	-0.02	0.04	-0.44	132.17	.663
COPE Factor "Engagement"	**0.36**	0.06	6.26	120.54	**< .001**
COPE Factor "Social"	0.05	0.03	1.67	750.47	.095
COPE Factor "Disengagement"	-0.10	0.05	-1.81	773.90	.070
Behavioral Disengagement	**-0.22**	0.04	-6.04	778.89	**< .001**
Religion	0.05	0.05	1.20	761.12	.229
Venting	**-0.09**	0.03	-2.58	122.38	**.011**
Denial	**-0.10**	0.05	-2.24	771.51	**.026**

Slope estimates of statistically significant predictors are bolded.

Random Effects:	Std. Dev.
(Intercept)	0.88
Meaning-seeking	0.16
Venting	0.17
"Engagement"	0.33
Residual	0.86

Group	# of groups	ICC
Person-level	138	.512

In summary, meaning-having and COPE factor "Engagement" were strong predictors of perceived coping competency, with greater levels of meaning-having and "Engagement" coping associated with higher same-day ratings of coping competency. Behavioral disengagement, venting, and denial carry statistically significant negative associations, with behavioral disengagement providing the only consequential effect size of the three predictors. See Table 13 for each predictors' slope and explanatory rank for each outcome variable.

Table 13

Summary of Slope Coefficients for Predictor-Dependent Variable Pairing

	Neg. Affect		**Pos. Affect**		**Coping Competence**		**Overall**
Predictor	β	Rank	β	Rank	β	Rank	Avg. Rank
Meaning-having	**-0.08**	4	**0.39**	1	**0.35**	2	2.33
Meaning-seeking	0.01	9	**0.09**	4	-0.02	9	7.33
COPE Factor "Engagement"	0.03	7	**0.19**	2	**0.36**	1	3.33
COPE Factor "Social"	-0.01	8	0.02	9	0.05	5	7.33
COPE Factor "Disengagement"	**0.23**	1	0.04	8	-0.10	5	4.67
Behavioral Disengagement	**0.17**	2	**-0.14**	3	**-0.22**	3	2.67
Religion	-0.05	6	**0.07**	5	0.05	7	6.00
Venting	**0.14**	4	**-0.07**	6	**-0.09**	6	5.33
Denial	**0.17**	3	0.04	7	**-0.10**	4	4.67

Note: Slope coefficient estimates of statistically significant predictors are bolded.

Covariance by Same-day Stress

In the next set of analyses, I introduced same-day reports of stress (gathered via the original 6-item stress scale) as a covariate and repeated the analyses for each of the three predictors. The motivation to include stress as a covariate was twofold. First, its inclusion informs us as to the level of stress the sample experienced, and the degree to which same-day stress predicts each of the outcome variables. Second, subjecting the predictors to a covaried model provides an additional degree of context: Stress will undoubtedly function as a strong predictor of same-day affect, so should the previously discussed association between meaning-having and positive affect collapse under a covaried model, one might begin to suspect that the association had been confounded by stress or the result of an untested mediation/moderation.

Predicting Negative Affect with Covariance by Same-day Stress

Analyses indicated that stress was the single strongest predictor of same-day negative affect ($\beta = 0.325$; $t(758.301) = 15.247$, $p < .001$) with participants tending to report greater levels of negative affect on those days when they reported greater amounts of stress.

Meaning-having (which was a statistically significant predictor when stress was not included as a covariate) was no longer a statistically significant predictor of negative affect, ($\beta = -0.025$; $t(739.166) = -0.797$, $p = .425$). The effect of the "Disengagement" factor ($\beta = 0.152$; $t(122.716) = 3.164$, $p = .002$), behavioral disengagement ($\beta = 0.118$; $t(744.32) = 4.802$, $p < .001$), venting ($\beta = 0.070$; $t(110.509) = 3.276$, $p = .001$), and denial ($\beta = 0.107$; $t(771.977) = 3.295$, $p = .001$), remained statistically significant, albeit with diminished effect size estimates compared to their non-covaried counterparts. The directionality of each effect remained consistent with the prior non-covaried model, with greater reported use of "Disengagement" strategies, behavioral

disengagement, venting, and denial associated with greater same-day negative emotion. See Table 14 for exact estimates and parameters.

Table 14

Results of MLM Predicting Negative Affect with Covariance by Same-day Stress

Fixed Effects:	Estimate	*SE*	*t*-value	*df*	*p*-value
(Intercept)	2.83	0.08	33.72	139.01	< .001
Stress	**0.33**	0.02	15.25	758.30	**< .001**
Meaning-having	-0.03	0.03	-0.80	739.17	.425
Meaning-seeking	0.01	0.03	0.42	764.11	.674
COPE Factor "Engagement"	0.02	0.03	0.45	134.20	.651
COPE Factor "Social"	-0.00	0.02	-0.01	745.18	.989
COPE Factor "Disengagement"	**0.15**	0.05	3.16	122.72	**.002**
Behavioral Disengagement	**0.12**	0.02	4.80	744.32	**< .001**
Religion	-0.02	0.03	-0.81	767.29	.417
Venting	**0.07**	0.02	3.28	110.51	**.001**
Denial	**0.11**	0.03	3.30	771.98	**.001**

Slope estimates of statistically significant predictors are bolded.

Random Effects:	Std. Dev.
(Intercept)	0.96
"Engagement"	0.10
"Disengagement"	0.30
Venting	0.07
Residual	0.58

Group	# of groups	ICC
Person-level	138	.734

Predicting Positive Affect with Covariance by Same-day Stress

Analyses indicated that meaning-having was the single strongest predictor of same-day negative affect after covarying by stress ($\beta = 0.361$; $t(762.44) = 9.995$, $p < .001$) with participants tending to report greater positive affect on those days when they reported greater levels of meaning-having. Most of the predictors which were statistically significant in the non-covaried model retained their significance without losing consequential levels of predictive ability. The

exceptions to this trend were the effects of religious coping (β = 0.057, $t(768.93) = 1.605$, $p = .109$) and venting (β = -0.042, $t(777.50) = -1.877$, $p = .061$), which failed to reach statistical significance in the covaried model despite having done so in the previous non-covaried model. Interestingly, the covaried model indicated that denial was a statistically significant predictor of same-day positive affect (β = 0.076, $t(789.12) = 2.110$, $p = .035$) despite failing be in the previous non-covaried model. The relationship between denial and positive affect was a positive one (with greater levels of engagement in denial associated with greater levels of same-day positive affect), though the magnitude of this effect was only nominal.

With the exception of denial, the directionality of each effect remained consistent with the findings of the previous non-covaried model. Those who reported greater levels of meaning-having, meaning-seeking, "Engagement" coping, and denial tended to report greater levels of same-day positive emotion, while stress and behavioral disengagement predicted lower same-day positive emotion. See Table 15 for exact estimates and parameters.

Table 15

Results of MLM Predicting Positive Affect with Covariance by Same-day Stress

Fixed Effects:	Estimate	*SE*	*t*-value	*df*	*p*-value
(Intercept)	4.152	0.08	51.762	136.983	< .001
Stress	**-0.149**	0.03	-6.062	781.543	**< .001**
Meaning-having	**0.361**	0.04	9.955	762.442	**< .001**
Meaning-seeking	**0.091**	0.03	2.778	132.739	**.006**
COPE Factor "Engagement"	**0.203**	0.04	4.961	116.049	**< .001**
COPE Factor "Social"	0.020	0.02	0.855	769.226	.393
COPE Factor "Disengagement"	0.069	0.04	1.652	770.741	.099
Behavioral Disengagement	**-0.111**	0.03	-3.912	780.495	**< .001**
Religion	0.057	0.04	1.605	768.932	.109
Venting	-0.042	0.02	-1.877	777.498	.061
Denial	**0.076**	0.04	2.110	789.117	**.035**

Slope estimates of statistically significant predictors are bolded.

Random Effects:	Std. Dev.
(Intercept)	.90
Meaning-seeking	.15
"Engagement"	.19
Residual	.68

Group	# of groups	ICC
Person-level	138	.638

Predicting Perceived Coping Competence with Covariance by Same-day Stress

The analyses of the covaried model indicated that the Brief COPE factor "Engagement" was the strongest predictor of same-day coping competence (β = 0.394; $t(116.58) = 7.680$, $p < .001$), with participants tending to endorse higher levels of coping competence on days in which they also reported engaging in higher levels of "Engagement"-style coping strategies. Stress (β = -0.284; $t(778.32) = -9.308$, $p < .001$) and meaning-having (β = 0.284; $t(769.91) = 6.304$, $p < .001$) remained strong predictors and performed nearly equivalently, with participants tending to endorse lower levels of coping competence on days in which they also reported higher levels of stress, and higher levels of coping competence on days in which they reported higher levels of meaning-having. Behavioral disengagement (not to be confused with the "Disengagement" factor) also retained its statistical significance and modest effect size (β = -0.167; $t(761.11) = -4.744$,$p < .001$). Under the covaried model, the significance of venting (β = -0.030; $t(127.18) = -0.946$, $p = .346$) and denial (β = -0.046; $t(772.92) = -1.026$, $p = .305$) were lost. The directionality of all effects remained unchanged. See Table 16 for exact estimates.

Table 16

Results of MLM Perceived Coping Competence with Covariance by Same-day Stress

Fixed Effects:	Estimate	*SE*	*t*-value	*df*	*p*-value
(Intercept)	4.793	0.08	59.830	138.990	< .001
Stress	**-0.284**	0.03	-9.308	778.319	**< .001**
Meaning-having	**0.284**	0.05	6.304	769.907	**< .001**
Meaning-seeking	-0.015	0.04	-0.378	129.983	.706
COPE Factor "Engagement"	**0.394**	0.05	7.680	116.577	**< .001**
COPE Factor "Social"	0.042	0.03	1.456	757.446	.146
COPE Factor "Disengagement"	-0.039	0.05	-0.740	760.112	.460
Behavioral Disengagement	**-0.167**	0.04	-4.744	774.464	**< .001**
Religion	0.026	0.04	0.593	765.960	.554
Venting	-0.030	0.03	-0.946	127.181	.346
Denial	-0.046	0.05	-1.026	772.917	.305

Slope estimates of statistically significant predictors are bolded.

Random Effects:	Std. Dev.
(Intercept)	.88
Meaning-seeking	.14
"Engagement"	.13
Venting	.25
Residual	.25

Group	# of groups	ICC
Person-level	138	.532

In summary, same-day stress tended to be among the strongest predictors of affect and perceived coping competence, subsuming large portions of the explanatory power of less explanatory predictors. Despite this, most associations that demonstrated statistical and practical significance in non-covaried models retained their predictive ability in the covaried ones. As a general rule, the directionality of statistically significant associations were not changed as a result of the inclusion of the covariance via same-day stress. See Table 17 for a summary of each predictors' explanatory power per dependent variable (expressed via β-weight), rank among the ten predictors included in the covaried models, average explanatory rank across the three dependent variables, and change in average rank between covaried and non-covaried models.

Table 17

Summary of Slope Coefficients for Covaried Predictor-Dependent Variable Pairing

	Neg. Affect		**Pos. Affect**		**Coping Competence**		**Overall**	
Predictor	β	Rank	β	Rank	β	Rank	Avg. Rank	Rank Change
Stress	**0.33**	1	**-0.149**	3	**-0.284**	2	2	-
Meaning-having	-0.03	6	**0.361**	1	**0.284**	3	3.33	+1.00
Meaning-seeking	0.01	9	**0.091**	5	-0.015	10	8	+0.67
COPE Factor "Engagement"	0.02	8	**0.203**	2	**0.394**	1	3	-0.33
COPE Factor "Social"	-0.00	10	0.020	10	0.042	6	8.67	+1.33
COPE Factor "Disengagement"	0.15	2	0.069	7	-0.039	7	5.33	+0.33
Behavioral Disengagement	**0.12**	3	**-0.111**	4	**-0.167**	4	3.67	+0.67
Religion	-0.03	7	0.057	8	0.026	9	8	+1.00
Venting	**0.07**	5	-0.042	9	-0.030	8	8	+2.00
Denial	**0.11**	4	**0.076**	6	-0.046	5	5	+0.33

Note: Slope coefficient estimates of statistically significant predictors are bolded. "Rank change" indicates the change in the average explanatory rank of each predictor between non-covaried and covaried models.

Discussion

To address the merits and deficits of this thesis as comprehensively as possible, the following discussion is divided into four sections: In the first and second, I will address my interpretations of the study's findings as they pertain to each of the two primary research questions outlined in the introduction. In the third, I address potential confounds to the study, and in the fourth I address miscellaneous ramifications such as the reliability of the novel measures used.

Evidence for Synergy

My first research question was whether the study would yield evidence to suggest that meaning-in-life measures could capture coping dynamics not already captured by conventional coping measures like the Brief COPE. In the introduction, I outlined a theoretical basis for believing that meaning-in-life dynamics fit mainstream definitions of coping (i.e., Lazarus & Folkman, 1984; and Blascovich & Tomaka, 1996), and how there may be meaning-centered blind spots in the Brief COPE (i.e., face validity concerns and studies by Park [2010] and Carver, Schreier & Weintraub [1989]). I hypothesized that MIL-Q data would contribute its own predictive power beyond that of Brief COPE data in explaining relationships between coping and affect. My rationale surrounding the similarities between meaning-centered constructs and the operational definitions of coping strategies provided the theoretical basis for the inclusion of meaning-having and meaning-seeking in the study of coping dynamics. The discovery that these meaning-centered constructs possessed power to predict affective outcomes above-and-beyond Brief COPE data provides an empirical basis to support this explanation.

Interpreting Links Between Meaning and Affect

My data indicated that meaning-having was the strongest predictor of same-day positive affect of all variables studied. Meaning-seeking, meanwhile, was a middling predictor of positive affect, with explanatory power on par with many of the Brief COPE predictors. These associations were observed in a multi-level regression where predictor variables "competed" for mutually exclusive shares of the overall model's effect. This means that meaning-having and meaning-seeking provided unique predictive power in explaining same-day positive affective not provided by the Brief COPE data. This was the case regardless of whether the analytic models included stress as a predictor, further demonstrating the robustness of this findings. Had the explanatory power of meaning-having or meaning-seeking collapsed under the introduction of same-day stress as a covariate, it would have been necessary to examine whether the associations seen in non-covaried models were merely the result of a confounded relationship or untested moderation/mediation).

In each of the covaried models, same-day stress was among the top three predictors. Unsurprisingly, greater stress was associated with less desirable affective outcomes and lower perceived coping competence. Despite stress subsuming a large portion of the models' explanatory power, meaning-having and meaning-seeking continued to explain statistically significant and—in the case of meaning-having—relatively large shares of the variability in the study's outcomes above and beyond the ability of Brief COPE predictors. When considering stress, meaning-having remained one of the strongest predictors, ranked third and second among the 10 predictors in explaining positive affect and perceived coping competence, respectively.

This is a clear indication that data collected via the MIL-Q provided additional power to explain affective outcomes not already captured by the Brief COPE.

Interpreting Links Between Meaning and Perceived Coping Competence

As described in the introduction, the inclusion of perceived coping competence as a secondary dependent variable not only lends the possibility of observing concurrent validity, but also serves as a kind of quasi-manipulation that can indicate the directionality of associations: Recall how the wording of coping competence items like "When the day's challenges made me feel bad/stressed out, I found ways to make myself feel better" can be read as suggestive of a causal association in a way that MIL-Q items cannot. As expected, several of the Brief COPE predictors that were statistically significant predictor of affect were also significant predictors of perceived coping competence. This suggests that (particularly in the cases of COPE factor "Engagement", Behavioral disengagement, venting, and denial) the order of effects described in Lazarus and Folkman's TTSC were observed—that is, coping behaviors drive affect, and not the other way around. This consistency can also be seen in the practically significant associations between meaning-having and both affect and coping competence, suggesting that my participants reported meaning-making processes consistent with the order of events described in Janoff-Bulman's Shattered Assumptions model (and the TTSC).

When explaining same-day perceived coping competence, meaning-having was a significant predictor, ranking near-second in terms of effect size and outperforming all predictors but COPE factor "engagement". Both meaning-having and "engagement" coping were positively associated with same-day perceived coping competence. Participants tended to report higher ratings of their coping competence on days in which they also reported higher levels of meaning-seeking.

Covariance by same-day stress from coping competency revealed a similar pattern of results as seen in models predicting affect. Practically significant predictors remained statistically and practically significant while some marginally significant predictors lost statistical significance. Stress itself was among the top three predictors, explaining a relatively large proportion of daily perceived coping competence. Although diminished slightly in effect size, meaning-having continued to be a statistically significant predictor of same-day perceived coping competence, explaining as much variability as stress did. The explanatory power of the Brief COPE factor "Engagement" remained intact, whereas the statistical significance of venting and denial were lost in the covaried model.

Implications: Evidence for Synergy

Taken in total, I can conclude that meaning-having and meaning-seeking appear to provide unique explanatory power when employed alongside coping measures in exploring dynamics around coping, stress, and affect. This is especially true of meaning-having, and when predicting positive affect. The fact that respondents' level of daily meaning-having proved to be one of the strongest predictors of same-day perceived coping competency should lend credence to the notion that meaning-having is a form of coping which should be considered alongside others like positive reframing.

I believe that these findings support the primary hypothesis of this thesis. So long as researchers conclude—as I have—that meaning-having and meaning-seeking fall within the mainstream definitions of coping dynamics as proposed in works like Lazarus and Folkman (1984) and Blascovich and Tomaka (1996), meaning is a theoretically relevant and empirically consequential construct to consider when studying stress, coping, and affective outcomes.

Replication of these findings is necessary, as this project is the first that I am aware of to employ meaning in life measures alongside Brief COPE data.

On a theoretical level, the fact that meaning-having appeared to be a strong predictor of participants' perceived coping competence offers a strong argument for the face-validity and concurrent validity of my hypothesis that perceived meaning in life is closely implicated in the coping process. The fact that meaning-in-life outperformed all but one Brief COPE predictor in explaining perceived coping competence points to the robustness of this association, as same-day meaning-having was more strongly associated with perceived coping competence than doubtlessly important coping behaviors like social support-seeking, or the "disengagement" factor based on coping strategies like self-blame and substance use.

The way meaning-having outperformed all but one aspect of the Brief COPE data as a predictor of same-day perceived coping competency is also a strong indicator that meaning-having is implicated in the coping process as understood via models like Lazarus and Folkman's (1984) or Blascovich and Tomaka's (1996). One possibility is that meaning-having is a psychological state which either a) facilitates the feeling of having effectively coped with the day's stressors or b) is facilitated *by* the feeling of having effectively coped with them. Put in simpler terms: one might feel like they did a better job of coping throughout the day *because* the day felt meaningful, or one might find meaning through effectively coping with the day's challenges. Either explanation could nest neatly within Lazarus and Folkman's definition of a psychological resource, casting the ability to find meaning as a protective trait alongside constructs like self-esteem, an internalized locus of control, etc.

Alternatively, meaning-having may have functioned in a more active role—a pattern of cognitions and behavior that participants engaged in just as they would have engaged in other

recognized strategies like positive reframing, acceptance, or humor. In this way, meaning-having might have been a cognitive process which was *done,* rather than a state of mind which was *had*. If the positive association between meaning-having and desirable affective outcomes operated via this mechanism, meaning-having would fall within the familiar definition of a coping strategy (akin to positive reframing, humor, etc.). Differentiation between meaning-having's role as an active coping strategy versus passive coping resource was beyond the scope of this project but is a direction for future research which may be enabled by analytic techniques such as time-lagged analysis, exploration of moderation and/or mediation, and comparison between pre-test, daily, and retrospective post-test data.

Evidence for Daily Meaning-in-Life Dynamics

My second research question was whether the study would yield evidence to indicate that a daily-diary protocol is a viable means of studying meaning-in-life dynamics. More broadly, the study explored whether a self-report measure could capture meaning in life "happening" on a day-to-day basis in the everyday lives of a relatively normal sample. In my introduction, I speculated that lack of literature utilizing momentary/daily measures of perceived meaning in life could be driven in-part by an understandable skepticism that constructs like meaning-having and meaning-seeking really vary day-to-day. I hypothesized that they did, and that daily measurement would detect a consequential degree of day-to-day variability in respondent's perceived meaning in life. My data suggest that nearly half of the total variability in respondents' daily reports of meaning-having and meaning-seeking could be explained by day-to-day variances among participants' daily reports. Most notably, this is a degree of daily variability that is on par with the estimates of variability in constructs like substance use, denial, and negative affect in the same participants' days of reporting.

Ultimately, it is up to the individual researcher to determine whether this degree of daily variability in meaning-in-life justifies the use of daily measurements. However, it is telling that this degree of daily variability in respondents' reports of meaning in life is nearly as great as that of daily affect. Given the growing popularity of daily (or even momentary) measurement of affect (e.g., Lawley et al., 2019), I would argue that the study of daily meaning in life is similarly justified. At the extreme end, note that although my data on religious coping produced the highest ICC of all the data I collected (a degree of between-person consistency that suggest that over 80% of variability in daily religious coping was explained by person-level factors) numerous studies of daily religiosity still exist (e.g., Whitehead & Bergeman, 2020; Hammer & Cragun, 2019; Suryadi et al., 2020). Far from lacking it, my data clearly suggests that meaning in life data exhibits a promising level of daily variability for study via methods like a daily diary paradigm, day reconstruction (Kahneman et al., 2004), or experience sampling (Larson & Csikszentmihalyi, 1983). Given this level of promise, it would be remiss not to address some of the potential benefits that daily study of meaning in life might bring to the field.

Potential Implications of Daily Study of Meaning

Various methods of collecting daily/momentary data are increasingly common in the study of emotion/affect, stress, cognitions, and other related psychological states. Some of the most common of these methods include the Experience Sampling Method (ESM; Larson & Csikszentmihalyi, 1983) the Day Reconstruction Method (DRM; Kahneman et al., 2004), and daily diary protocols, all of which remain uncommon in the study of perceive meaning in life.

The utility of daily measurement is not only in gleaning observations of day-level trends, however. Rather, daily observation can offer a perspective on a construct that may reveal nuanced contradictions not detectable through retrospective reporting alone. This is because

daily reports have the potential to draw heavily from episodic knowledge—relatively accurate recollections of current or recent experiences—whereas retrospective reports draw from semantic knowledge—reconstructed memories of events more likely to be biased by generalizations, norms, and beliefs (Robinson & Clore, 2002). Because of this discrepancy, aggregated summaries of momentary measures can vary—sometimes quite dramatically—from responses to their retrospective counterparts. Essentially, there can be a difference between what respondents will report having experienced over a period, and what they would have reported experiencing at the time. Herein lies a potential blind-spot in the largely retrospective study of meaning in life. Without the collection of daily/momentary data, the field is largely unaware of the experiences of meaning that people undergo on a daily/momentary basis. Not only this, the lack of context that can be offered by comparing daily/momentary data to retrospective data can leave researchers open to potential confounds and misinterpretation of more nuanced findings. I will illustrate this risk by way of example:

Studying perceived life satisfaction, Oishi (2002) observed that the widely documented (e.g., Tov & Diener, 2007) cultural gap in reported life satisfaction between European Americans and Japanese respondents was not statistically significant when measured momentarily. In his study, Oishi's European-American and Asian-American samples reported their level of life satisfaction ("How good or bad was today?") over a 7-day period via a daily diary protocol. Next, the same samples reported their life satisfaction in the retrospective, responding to the question "How good or bad was the week?" Note here that both self-response paradigms (daily and retrospective) asked participants to reflect on the same 7-day period of their lives. As expected, cultural differences in the week-long retrospective were significant, with Japanese respondents tending to report lower satisfaction than their American counterparts. However,

differences in the two groups' mean daily reports (i.e., the average of each participant's daily life satisfaction ratings across their 7 days of reporting) were not. In other words, although the American respondents had *recalled* their weeks as having been more satisfying, the two samples had reported experiencing nearly identical levels of life satisfaction across the week over a day-by-day basis. Oishi posits that culturally-bound biases in recall/reporting were stronger when respondents were reporting from their semantic, versus their episodic, knowledge. Indeed, the time-frame of the experiences in question (e.g., episodic versus retrospective) are among factors which are believed to accentuate the apparent intercultural variability in the subjective experience of emotion (e.g., Scollon, Koh & Au, 2011). By approaching the construct from both retrospective and momentary lenses, the understanding of perceived life satisfaction is more multi-faceted and researchers more apt to avoid confusion by taking appropriate care in their operationalizations. The difference between asking "Do European-Americans and Asians report having experienced different levels of life satisfaction (in the retrospect)?" and "Do European-American and Asians experience different levels of life satisfaction at any given moment or on any given day?" may seem pedantic until one considers findings like Oishi's. It is not difficult to imagine how failing to observe these subtleties when operationalizing one's research questions could lead to misunderstanding and disappointment. The importance of such subtleties is why the dearth of momentary assessment in the study of meaning in life is of concern, because differences between results gleaned via momentary and retrospective reporting are not limited to life-satisfaction.

In the study of affective outcomes like intensity of emotional experience and recollection of emotional states, both have been shown to differ based on whether data was collected on a momentary or retrospective basis (Wirtz et al., 2003; Wirtz et al., 2009). It stands to reason that

if aspects of wellbeing like life satisfaction and emotionality are sensitive to whether data were collected momentarily or retrospectively, meaning-centered constructs may be as well. There may be interactions analogous to those described by Oishi within the study of perceived meaning in life that we are yet unaware of due to the nearly exclusive use of retrospective measures in the extant literature on perceived meaning in life. These blind-spots may be as analogous as cultural variance in meaning-making which seem to disappear upon momentary assessment, or in as-yet unconsidered contexts involving other characteristics of participant samples. Because of these risks, the dearth of momentary/daily assessment of meaning in life not only limits the field's understanding of acute (i.e., short-term) trends in perceived meaning (which may yet be of marginal interest to the field), but it also limits our understanding of the construct at large.

To my knowledge, no study prior to this has attempted to collect both repeat daily and retrospective measures of meaning-having and meaning-seeking in a manner that would allow for comparison between aggregated daily measurements and a single retrospective report the way that Oishi did. Doing so may be a first step in exploring whether the meaning literature is blind to discrepancies between how people *recall* experiencing meaning, and how they experience meaning *in vivo*. Although detailed comparison between aggregated daily measurements and retrospective reports are beyond the scope of this thesis, paired-samples *t*-tests of my data revealed that there were significant difference in participants' mean daily reports of meaning-having and participants' retrospective reports of the perceived meaningfulness of the week in total such that participants reported greater meaning-having in the retrospect than *in vivo*. The same also was true of meaning-seeking, where a similar paired samples *t*-test indicated that aggregated daily meaning-seeking reports were significantly lower than week-long retrospectives. See Table 19 for the results of these *t*-tests.

These preliminary findings are only the most basic indication that differences between daily and retrospective reporting may be present or that (to follow Oishi's thinking) there may be differences in respondents' immediate and retrospective judgements. If these biases happened to vary across grouping characteristics as they did in Oishi's case, more precise operationalizations would be necessary to avoid misinterpretation. This would be of interest in any research comparing treatment groups, for instance, an area of concern for the clinical applications of meaning-in-life research. Whereas Oishi found interactions between measurement paradigm, perceived life satisfaction, and culture, analogous interactions may exist between measurement paradigm, perceived meaning in life, and individual characteristics such as treatment group, patient culture, gender, or level of exposure to trauma.

In Summary: Evidence for Daily Study

I believe that the prospect of using momentary reporting methodologies for the study of perceived meaning in life remains promising and deserves greater consideration by meaning researchers. Of course, further study is necessary to verify that these trends are generalizable. Comparisons of the degree of within-person variability of reported meaning among my relatively "normal control" sample and samples more typical of the literature (i.e., populations facing some sort of existential stressor) would be welcome also. Daily methods of studying meaning in life not only have the potential to provide insight into daily experiences, but also to protect the field from misunderstandings which could arise from reliance on retrospective reports alone.

Potential Confounds

Data collection for this study was conducted between mid-February and mid-August of 2022. In other words, participants responded near the height of the COVID-19 pandemic and resultant lockdown(s). Although the effect of the pandemic and local responses varied across the

nation (residence within the U.S. being a requirement to participate in the current study), metadata associated with Qualtrics responses indicated that the vast majority of participants resided within Washington State during their participation in the study. At the time that data collection began, state-wide and local restrictions were widespread, and the governor's office did not announce an end to the state's COVID emergency order until several months after data collection ended. Therefore, pandemic restrictions undoubtedly affected the lives of my study's participants.

Pandemic/Lockdown and Stress

It is likely that the study's sample experienced levels of daily stress which differed from (most likely exceeding) what they would have reported if data had been collected pre-pandemic/pre-quarantine. Testing this assumption with the data on-hand is impossible and investigating it beyond the scope of the present study. Nevertheless, this history effect is plausible enough to warrant the question: Would analysis of daily stress data systematically greater than a "baseline" level in the target population raise major threats to the validity or generalizability of the study's findings? I maintain that it would not. This is for a few reasons:

First, the present study makes no attempt to quantify a "normal" (i.e., pre-pandemic) level of daily stress, nor make any inference about the level of stress our sample might have faced in a pre- or post-pandemic era. Because the multilevel analyses used in the analysis of these data involve mean-centered predictors, within-person *changes* in stress levels are what is of interest, not the reported level of stress itself. That is, when considering the increase in negative affect associated with a 1-unit increase in same-day stress, the unit in question is a 1-point increase (on a 1-7 Likert Scale) above the participants *average* stress level across their week of reporting. As such, the predictor in this association is really the degree of deviation of each day's

stress report from the participant's own mean level of stress. Thus, whether this sample's mean level of stress lies somewhat higher (or lower) than any other hypothetical sample's is not particularly relevant to the results of multilevel analysis.

Secondly, the present study makes no attempt to catalogue or otherwise describe the source of stress in people's daily lives under "normal" conditions either. One might safely assume that certain sources of stress will be over-represented in data collected during the pandemic compared to a pre- or post-pandemic baseline—namely an increased fear of infection/death of oneself or others, lockdown-related disruptions to social and personal routines (e.g., social distancing), and financial hardship (Park et al., 2020). Given that the present study is not focused on the nature of the stressors themselves, any overrepresentation of stressors related to the pandemic is of minimal theoretical importance.

Indeed, in comparison with much of the extant empirical meaning-making literature—which very often samples from populations undergoing extreme life stressors like terminal diagnoses (Breitbart et al., 2015), natural disasters, terrorist attacks (Updegraff et al., 2008), traumatic bereavement (Davis et al., 2007), and combat (Owens, et al., 2009; Steger, et al., 2015)—the present study's sample is comparatively generalizable to its target populations despite the presence of the pandemic at the time of data collection.

Pandemic/Lockdown and Coping

In all likelihood, the pandemic and lockdown also impacted the coping resources available to participants. For instance, those who had been working from home during lockdown may have faced fewer social stressors at work but may have also lacked the in-person social support present in other years. Again, these assumptions could not be tested in this project, but are validated by the literature (e.g., Park et al., 2020). Like considerations around reports of

stress, this over- or under-representation of certain coping strategies is not a great concern, as the relationships between stress, meaning, and coping are not examined on a per-strategy basis (in fact, most of the individual coping strategies were factorized in the previously describe EFA). The context of the pandemic era *should* be taken into consideration when reviewing any per-strategy or per-factor statistics, but no such observations are made in this study.

Pandemic/Lockdown and Meaning

I suspect that the increased salience of death/mortality, frustration of goal-seeking, major disruption to life plans, loneliness/isolation, and boredom associated with the pandemic and lockdown could all have led to greater awareness of meaning/meaninglessness, thereby precipitating more extreme meaning-having and meaning-seeking responses in the COVID-era data collection. Once again, this assumption is untestable due to a lack of pre-COVID data and is therefore purely speculative. The COVID-era timing of data collection *may* have been a more "meaningful" one, but my sample still comes closer to capturing the daily life of the general population than the extreme circumstances which samples in the meaning literature tend to be drawn from (e.g., the recently bereaved, recent recipients of terminal diagnoses, etc.). Again, because measurement of "baseline" frequency or ubiquity of meaning-having and meaning-making experiences in the general population are not of interest in the present study, this potential history effect is not of major concern. Any global increase in meaning-centered experiences is unlikely to have great effect on the strength of relationships between meaning-centered constructs and the study's outcome variables.

Salience & Observer Effects on Meaning

The greatest potential non-COVID confounds of this study are salience and observer effects. Participation in a repeated-measure experience sampling paradigm will have invariably

affected participant responses through such mechanisms as social desirability biases, observer effects, recall errors, and memory biases. Given the ubiquity of these potential issues and the scope required to address them, they are not covered in any depth in the present study. That said, the daily diary-style experience sampling paradigm is less susceptible to these biases than alternative (i.e., more retrospective) self-report methods (Robinson & Clore 2002; Willett et al., 2022). This is due primarily to the daily diary experience sampling method's ability to extract nested within- and between-person data and limit recall/memory biases by asking participants to report on recent events (e.g., "How stressed would you say you were *today*?") as opposed to longer-scale retrospective (or prospective) sampling paradigms (e.g., "How stressed out are you *in general*?").

Despite the advantages of the method, one potential bias requires special attention. Responding to repeated experience sampling measures of the study likely increased the salience of stress, coping, and meaning in life, for the duration of participation, thereby altering participants' attention, cognitions, and behaviors. This may be most important when considering meaning-related constructs which may have been unfamiliar, esoteric, or seldom-considered by participants prior to their involvement in the study. The study repeatedly prompted participants to evaluate their meaning in life, likely provoking an increased salience of meaning—which may, in turn, have precipitated meaning-making attempts that would not have occurred otherwise. In debrief sessions, a large minority of participants also observed an increase of awareness of meaning-centered thinking as a result of their participation.

Because the use of a control group or counterbalancing was unfeasible, there is a possibility that participation may have caused systematic over-representation of meaning-seeking attempts or recognition of meaning-having, though there is no way of determining whether these

"extra" attempts were generally successful (resulting in inflated meaning-having and -seeking scores above what would be expected of non-participants), unsuccessful (deflating scores), or average in their success-rate (resulting in little change). Although cursory analyses revealed no evidence that the sample's ratings of meaning-having or meaning-seeking changed throughout their week of reporting (i.e., that reported levels of meaning-having rose or fell between Day 1 and Day 7), we cannot be sure that reports of meaning were not biased as a result of participation in more complex ways.

Fortunately, just as the expected increase in the salience of meaning in life associated with the COVID-era timing of the present study is not a major risk to the present study's area of study, the potential for participation-induced salience of meaning in life does not threaten the principal research questions. This is because the present study is not interested in estimating a population mean of meaning-making or estimating averages in meaning-making over periods of time longer than our micro-longitudinal design. Again, our comparatively low-burden self-report measures are unlikely to have posed as high a risk of systematic over-representation of meaning-making/having in participant reports than those studies which rely on clinically traumatized samples undergoing intensive interventions like group therapy, auto-bibliotherapy, etc. (Arefpour et al., 2022; Dilmaghani et al, 2022; Kim & Choi, 2021; Heidary et al., 2023).

Representativeness of the Sample

As is unfortunately all too common, my data are collected from a sample which is not accurately representative of the population of study (all American adults). Approximately half of my sample were recruited from underclassmen enrolled in lower-division psychology courses at a mid-sized university in the Pacific Northwest, and the other half via a health sciences recruitment portal operated by a large research university in the Pacific Northwest. The

demographics of each participant pool and the total sample population can be seen in Table 3. Most notably, my sample exhibits an overrepresentation of young people (with an average age of 22), participants who identified as women (61.5%), and Asians (20%). Latinos are conspicuously underrepresented, comprising only 6.2% of my sample, as compared to the approximately 19 percent of the nation who identify as Latino. Thanks in large part to the use of a second recruitment pathway, my sample population is relatively representative with respect to Black, Native American, Middle Eastern, Native Hawaiian and Pacific Islander, and gender non-binary respondents.

In Summary: Confounds

In summary, I expect that environmental factors including the COVID-19 pandemic, lockdown, and study participation may have biased reports, but not in ways that are of major consequence to the present study's principal research questions, nor to the degrees that are already common among the extant literature on coping or meaning. Because this study is principally concerned with the strength of association between these experiences rather than any baseline levels/frequency of them, potential biases in reported levels of coping, stress, affect, and meaning range from tolerable to methodologically advantageous. Many of these biases pervade similar self-report research and may have been somewhat curtailed by my use of a daily diary experience sampling method.

Other Points of Interest

Modest Effect Sizes

We can see that in certain cases, the associations between meaning-centered predictors and outcomes were statistically significant but marginal in their effect size. This was also true of many of the statistically significant associations between the outcomes and Brief COPE

predictors, however, and the effect sizes of relationships between meaning-centered predictors on the study's outcomes are generally of equal or greater magnitude than those of Brief COPE predictors. It is possible that the *daily* effects of meaning-having/-seeking on affective outcomes are more modest in magnitude than would be expected of data collected via longer-term or the "bigger picture" global retrospective measures more commonly seen in the meaning literature (e.g., "My life feels full of purpose", versus the daily "Today, my life felt full of purpose"). This explanation is purely speculative, however, as my interpretation is limited by the infrequency with which repeated daily measurements have been used to measure meaning-having in the past. Data in which both daily and retrospective measurements were collected from the same participant cohort could best indicate whether this is the case, but—as stated previously—the present study is the first that I am aware of to attempt this. The necessary data are available to me, and parsing these methodological questions is worthy of a future study.

In the absence of other data to compare to, the more parsimonious explanation for the modest strength of association between some predictors and outcomes is that they faithfully reflect the sample's experiences. Among the participants, engagement in behaviors like meaning-seeking and social coping may simply have been weakly related to affect and perceived coping competency. It is possible that both behaviors proved less effective for my sample than the literature would lead one to expect.

An Original 6-item Measure of Daily Stress

Featured in my analysis of daily data were data collected via an original 6-item measure of daily stress. Originally, I considered utilizing existing measures such as the anxiety and stress subscales of the DASS-21 (Lovibond & Lovibond, 1995), but elected to author my own shorter measure to manage the participant burden of a daily survey which already included 72 other

items. This 6-item stress scale was originally intended to be scored across three 2-item subscales, measuring stress volume, frequency, and appraisal. These subscales addressed these three facets of stress via items that asked participants to reflect on "how frequently throughout the day" they felt stress, "how stressed out" they were, and "how overwhelming" the stressors had been.

Because of the multi-level nature of my data, reliability estimates were calculated via McDonald's omega, which can be interpreted in a similar manner as the more familiar Cronbach's alpha. Reliability estimates indicated that the complete 6-item measure possessed a high degree of reliability, both for within- and between-person agreement ($\omega = .919$ for within-person agreement, and $\omega = .958$ for between-person agreement). Despite being only 6 items long, the reliability of this measure was the highest of all those employed in the present study, narrowly exceeding that of the PANAS-21 (which featured a within-person reliability estimate of $\omega = .911$ and between-person reliability of $\omega = .945$) and the MIL-Q ($\omega = .860/.940$). Subscale reliability for the 6-item stress measure was mixed, however. Although the 2-item volume and frequency measures displayed high degrees of reliability, the 2-item appraisal subscale did not ($\omega = .562/.511$).

Reliability estimates of each measure included in the present study's final data analysis are listed in Table 5, including per-subscale estimates. For those who may be interested, the complete 6-item stress scale is shown in Appendix C3. As far as I am aware, this 6-item scale is among the shortest measures of daily stress. I would note also that the items of my 6-item scale are written in a manner that minimizes context-dependence (e.g., "How well did you feel you could manage the stress of the day?"). This may allow for wider applicability than the more context-dependent items of the most comparable measure of daily stress, the 10-item Brief Daily Stressors Screening Tool (BDSST; Scholten et al., 2020), which prompts respondents to consider

their levels of stress within 10 pre-determined areas of life including social obligations, health problems, and dissatisfactions with housing.

An Original 6-item Measure of Perceived Coping Competence

Also featured in this study was an original measure of perceived coping competence. This measure was also created ad hoc due to the lack of suitable options for daily measurement at the time of this study. This was a 4-item measure deployed at the daily and posttest stages of my data collection. In its daily form, the measure featured items like "I did a good job of coping with the stresses of my day", with respondents endorsing their agreement on a 1-7 Likert scale.

Reliability estimates for the perceived coping competence measure also indicated a high degree of agreement, both on a within-person ($\omega = .887$) and between-person ($\omega = .959$) level. To my knowledge, this is the first measure of daily coping competence/self-efficacy intended for daily observation and would be significantly shorter in length than any adaptation of popular pre-existing measures of retrospective coping competence like the 26-item coping self-efficacy scale (CSE; Chesney et al., 2006). Those preferring an existing short measure of trait coping self-efficacy may consider the 10-item General Self-Efficacy Scale (GSE-6; Jerusalem & Schwarzer, 1979). Once again, I feel that the items of my own coping competency measure are less context-dependent than those of the GSE-6. On the other hand, some applications may call for the more comprehensive body of responses that context-specific items of the GSE-6 might elicit (e.g., "If someone opposes me, I can find the means and ways to get what I want"). All items of the original 6-item coping competency measure are listed as they appeared to respondents in their daily and posttest forms in Appendix C5 and D2, respectively.

Conclusion

In summary, I find both hypotheses which motivated the present thesis to be supported. In the first case, I believe that this study offers reasonable evidence that meaning-centered dynamics (particularly meaning-having) may operate analogously to coping. As such, dedicated meaning-centered items may be a worthwhile addition to measures of coping behaviors such as the Brief COPE. More broadly, researchers already interested in coping dynamics may be encouraged to consider the case that meaning-having and/or meaning-seeking meet a mainstream understanding of what coping *is* and may have their place in a more complete taxonomy of coping strategies.

With regards to the second hypothesis, I believe this study offers strong evidence that meaning-centered constructs can be studied on a daily basis, and that meaning-having and meaning-seeking both exhibit degrees of day-to-day variability on-par with commonly studied constructs like affect and coping behavior. Throughout the course of this thesis, I have twice cited an understandable skepticism which may deter researchers from daily study: that an observable degree of meaning in life might not be "happening" in the day-to-day lives of an ordinary sample. Or that, if meaning was "happening", that it is too stable to warrant repeated daily assessment. I hope my data offer some measure of assurance that this is not the case, and that the study of daily data may be worthwhile.

From these findings, I hope that those already involved in the study of perceived meaning in life might be encouraged to consider employing daily or momentary assessments to complement the retrospective measures that currently inform our understanding of meaning-centered dynamics. An increased diversity of methodologies would not only illuminate daily or momentary processes in meaning-making which have gone largely unstudied, but also bring a

more comprehensive understanding of how perceived meaning in life might interact with elements of our lives and personalities.

Those who study affect may likewise wish to consider the role that meaning in life plays in affective states (particularly positive affect) if they are not already. Those studying affect on a daily level may be especially interested to find that under certain circumstances, meaning-having may be as strong a predictor of same-day positive affect as stress and coping.

Finally, I would hope that those already accustomed to employing daily and/or retrospective assessments might be encouraged to consider adding meaning-having and meaning-seeking to their repertoire of variables to study wellbeing.

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Appendices

Appendix A1 – The Brief COPE (Carver, 1997)

1. I've been turning to work or other activities to take my mind off things.
2. I've been concentrating my efforts on doing something about the situation I'm in.
3. I've been saying to myself "this isn't real."
4. I've been using alcohol or other drugs to make myself feel better.
5. I've been getting emotional support from others.
6. I've been giving up trying to deal with it.
7. I've been taking action to try to make the situation better.
8. I've been refusing to believe that it has happened.
9. I've been saying things to let my unpleasant feelings escape.
10. I've been getting help and advice from other people.
11. I've been using alcohol or other drugs to help me get through it.
12. I've been trying to see it in a different light, to make it seem more positive.
13. I've been criticizing myself.
14. I've been trying to come up with a strategy about what to do.
15. I've been getting comfort and understanding from someone.
16. I've been giving up the attempt to cope.
17. I've been looking for something good in what is happening.
18. I've been making jokes about it.
19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.
20. I've been accepting the reality of the fact that it has happened.

21. I've been expressing my negative feelings.
22. I've been trying to find comfort in my religion or spiritual beliefs.
23. I've been trying to get advice or help from other people about what to do.
24. I've been learning to live with it.
25. I've been thinking hard about what steps to take.
26. I've been blaming myself for things that happened.
27. I've been praying or meditating.
28. I've been making fun of the situation.

Key:

- Self-distraction, items 1 and 19
- Active coping, items 2 and 7
- Denial, items 3 and 8
- Substance use, items 4 and 11
- Use of emotional support, items 5 and 15
- Use of instrumental support, items 10 and 23
- Behavioral disengagement, items 6 and 16
- Venting, items 9 and 21
- Positive reframing, items 12 and 17
- Planning, items 14 and 25
- Humor, items 18 and 28
- Acceptance, items 20 and 24
- Religion, items 22 and 27
- Self-blame, items 13 and 26

Appendix A2 – MIL-Q (Steger, 2006)

Please take a moment to think about what makes your life and existence feel important and significant to you. Please respond to the following statements as truthfully and accurately as you can, and also please remember that these are very subjective questions and that there are no right or wrong answers. Please answer according to the scale below:

Absolutely Untrue	Mostly Untrue	Somewhat Untrue	Can't Say True or False	Somewhat True	Mostly True	Absolutely True
1	2	3	4	5	6	7

1. I understand my life's meaning.
2. I am looking for something that makes my life feel meaningful.
3. I am always looking to find my life's purpose.
4. My life has a clear sense of purpose.
5. I have a good sense of what makes my life meaningful.
6. I have discovered a satisfying life purpose.
7. I am always searching for something that makes my life feel significant.
8. I am seeking a purpose or mission for my life.
9. My life has no clear purpose.
10. I am searching for meaning in my life.

To Score:

- Presence subscale score = subtract the rating for item #9 from 8, then add to the ratings for items 1, 4, 5, and 6. Scores range between 5 and 35.
- Search subscale score = add together the ratings for items 2, 3, 7, 8, and 10. Scores range between 5 and 35.

Appendix B – Pre-test Measures

Appendix B1 – Unmodified (i.e., Same as Appendix A2) MIL-Q

1. I understand my life's meaning.
2. I am looking for something that makes my life feel meaningful.
3. I am always looking to find my life's purpose.
4. My life has a clear sense of purpose.
5. I have a good sense of what makes my life meaningful.
6. I have discovered a satisfying life purpose.
7. I am always searching for something that makes my life feel significant.
8. I am seeking a purpose or mission for my life.
9. My life has no clear purpose.
10. I am searching for meaning in my life.

Appendix B2 – Modified (Unspecified Timeframe) Brief COPE

1. I tend to turn to work or other activities to take my mind off things.
2. I tend to concentrate my efforts on doing something about the situation I'm in.
3. I tend say to myself "this isn't real.".
4. I tend to use alcohol or other drugs to make myself feel better.
5. I tend to get emotional support from others.
6. I tend to give up trying to deal with it.
7. I tend to take action to try to make the situation better.
8. I tend to refuse to believe that it has happened.
9. I tend to say things to let my unpleasant feelings escape (e.g., "venting").

10. I tend to get help and advice from other people.

11. I tend to use alcohol or other drugs to help me get through it.

12. I tend to try to see it in a different light, to make it seem more positive (i.e., “find the silver lining”).

13. I tend to criticize myself.

14. I tend to try to come up with a strategy about what to do.

15. I tend to seek comfort and understanding from someone.

16. I tend to give up the attempt to cope.

17. I tend to look for something good in what is happening.

18. I tend to make jokes about it.

19. I tend to do something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.

20. I tend to accept the reality of the fact that it has happened.

21. I tend to express my negative feelings.

22. I tend to try to find comfort in my religion or spiritual beliefs.

23. I tend to try to get advice or help from other people about what to do.

24. I try to learn to live with it.

25. I try to think hard about what steps to take.

26. I tend to blame myself for things that happened.

27. I pray or meditate.

28. I make fun of the situation.

Appendix B3 – DASS21

Please read each statement and circle a number between 1 (*Did not apply to me at all*) to 7 (*Applied to me very much or most of the time*) which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

1. I found it hard to wind down.
2. I was aware of dryness of my mouth.
3. I couldn't seem to experience any positive feeling at all.
4. I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)
5. I found it difficult to work up the initiative to do things.
6. I tended to over-react to situations.
7. I experienced trembling (e.g., in the hands)
8. I felt that I was using a lot of nervous energy.
9. I was worried about situations in which I might panic and make a fool of myself.
10. I felt that I had nothing to look forward to
11. I found myself getting agitated.
12. I found it difficult to relax.
13. I felt down-hearted and blue.
14. I was intolerant of anything that kept me from getting on with what I was doing.
15. I felt I was close to panic.
16. I was unable to become enthusiastic about anything.
17. I felt I wasn't worth much as a person.
18. I felt that I was rather touchy.
19. I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)
20. I felt scared without any good reason.
21. I felt that life was meaningless.

Appendix B4 – Unmodified PANAS-SF

Indicate the extent you have felt this way over the past week on a scale of 1 (*Very slightly or not at all*) to 7 (*Extremely*).

1. Interested
2. Distressed
3. Excited
4. Upset
5. Strong
6. Guilty
7. Scared
8. Hostile
9. Enthusiastic
10. Proud
11. Irritable
12. Alert
13. Ashamed
14. Inspired
15. Nervous
16. Determined
17. Attentive
18. Jittery
19. Active
20. Afraid

Scoring:

Positive Affect Score*: Add the scores on items 1, 3, 5, 9, 10, 12, 14, 16, 17, and 19.*

Negative Affect Score*: Add the scores on items 2, 4, 6, 7, 8, 11, 13, 15, 18, and 20.*

Lower scores represent lower levels of negative affect.

Appendix C - Daily Measures

Appendix C1 – Modified (Daily) MIL-Q

1. Throughout the day, I felt like I understood my life's meaning.
2. I looked for something that makes my life feel meaningful today.
3. Today, I was looking to find my life's purpose.
4. Today, my life felt like it had a clear sense of purpose.
5. I felt like I had a good sense of what makes my life meaningful.
6. I felt like I came closer to discovering a satisfying life purpose today.
7. I was searching for something that makes my life feel significant.
8. I was seeking a purpose or mission for my life.
9. At times throughout the day, I felt like my life has no clear purpose.
10. I searched for meaning in my life.

Appendix C2 – Modified (Daily) Brief COPE

1. Throughout the day, I turned to work or other activities to take my mind off of what was bothering me.
2. Throughout the day, I concentrated my efforts on doing something about the situation I'm in.
3. Throughout the day, I've been saying to myself "this isn't real.".
4. Throughout the day, I used alcohol or other drugs to make myself feel better.
5. I got emotional support from others today.
6. I've been giving up trying to deal with it today.
7. Throughout the day, I took action to try to make the situation better.
8. Throughout the day, I've been refusing to believe that it has happened.
9. Throughout the day, I've been saying things to let my unpleasant feelings escape (e.g., "venting").

10. I got help and advice from other people today.

11. I used alcohol or other drugs to help me get through the day.

12. Throughout the day, I've tried to see things in a different light, to make things seem more positive.

13. I've been criticizing myself today.

14. Throughout the day, I tried to come up with a strategy about what to do.

15. I've received comfort and understanding from someone today.

16. Today, I gave up trying to cope.

17. I've been looking for something good in the challenges of the day (i.e., "looking for the silver lining".

18. I made jokes about the things that were stressing me out today.

19. I've been doing something to think about what was bothering me less, such as going out, watching TV, reading, daydreaming, sleeping, or shopping.

20. Throughout the day, I've been accepting the reality of the fact that the stressful events have happened.

21. I've been expressing my negative feelings today.

22. I tried to find comfort in my religion or spiritual beliefs.

23. I've been trying to get advice or help from other people about what to do.

24. I was learning to live with the stressors today.

25. I thought about what steps to take.

26. I've been blaming myself for things that happened.

27. I've been praying or meditating.

28. I made fun of the situation.

Appendix C3 – Original (Daily) Stress Measures

Volume

1. How stressful was the day?
2. How stressed out were you today?

Frequency

3. How often did you feel stressed out throughout the day?
4. How much of the day was stressful for you?

Appraisal

5. How well did you feel you could manage the stress of the day?
6. How overwhelming were the things stressing you out today?

Appendix C4 – Modified (Daily) PANAS-SF

Indicate the extent you have felt this way over the course of the day a scale of 1 (*Very slightly or not at all*) to 7 (*Extremely*).

21. Interested
22. Distressed
23. Excited
24. Upset
25. Strong
26. Guilty
27. Scared
28. Hostile
29. Enthusiastic
30. Proud
31. Irritable
32. Alert
33. Ashamed
34. Inspired
35. Nervous
36. Determined
37. Attentive
38. Jittery
39. Active
40. Afraid

Scoring:

Positive Affect Score*: Add the scores on items 1, 3, 5, 9, 10, 12, 14, 16, 17, and 19.*

Negative Affect Score*: Add the scores on items 2, 4, 6, 7, 8, 11, 13, 15, 18, and 20.*

Lower scores represent lower levels of negative affect.

Appendix C5 – Original (Daily) Measures

Meaning items:

1. My experiences today helped me appreciate the meaning/purpose/greater mission in my life."
2. "My experiences today made me questions whether my life has a clear meaning/purpose/greater mission."
3. "My experiences today have led me to (or will lead me to) search for meaning/purpose/greater mission in my life."
4. "My experiences today have/might lead me to reevaluate where my life's meaning/purpose/greater mission comes from."
5. "The stressful challenges in my day were easier to deal with because of a sense of meaning/purpose/greater mission in life."
6. "The stressful challenges in my day were harder to deal with because I don't have a sense of meaning/purpose/greater mission in life to fall back on."
7. "Dealing with the stressful challenges in my day was easier because doing so fed my sense of meaning/purpose/greater mission in life."
8. "The stressful challenges in my day were even harder to deal with because they made my life feel meaningless."

Coping items:

1. "I did a good job of coping with the stresses of my day."
2. "I coped with the stress of my day in an effective manner."
3. "When the day's challenges made me feel bad/stressed out, I found ways to make myself feel better."
4. "I found ways to solve—or at least improve—the challenges that caused me to feel bad/stressed out today.

Free response items:

1. "Today, I spent the most time/effort coping with _____."
2. "Today, my sense of meaning/purpose/life's mission was most affected by_____."

Appendix D – Post-test Measures

Appendix D1– COVID Event Checklist (*Kelton & Greenhoot, 2020)*

1. I am no longer able to do things that I did before COVID-19
2. I have had to change where I am living/staying
3. I had to self-quarantine for 14 days
4. I have not been able to see my friends
5. I have not been able to see my family
6. I am isolated completely alone where I live (e.g., I live alone)
7. I am having more disagreements and arguments than usual with the people I live with
8. I miss seeing my friends and family
9. My living arrangement is unsafe (if yes, please specify why) _____
10. I have lost my job
11. Someone in my family has lost their job
12. I worry about having enough money for basic necessities like groceries
13. I worry about having enough money to pay for my bills
14. I worry about if my friends and family will have enough money
15. I am considered high-risk for COVID-19. If yes, please specify why _____
16. A close friend or family member is considered high-risk for COVID-19
17. I have been diagnosed with COVID-19
18. A close friend or family member has been diagnosed with COVID-19
19. A close friend or family member has gotten ill from COVID-19
20. A close friend or family member has died from COVID-19
21. I worry that I will get sick from COVID-19

22. I worry close friends or family members will get sick from COVID-19

23. I have been struggling with my own mental health

24. A close friend or family member has struggled with their mental health

25. My work hours have decreased

26. My work hours have increased

27. My work has become more stressful

Appendix D2 – Original Items

Meaning items

1. Throughout the week, I felt like I understood my life's meaning.

2. I looked for something that makes my life feel meaningful this week.

3. Throughout the week, I looked to find my life's purpose.

4. Last week, my life felt like it had a clear sense of purpose.

5. I felt like I had a good sense of what makes my life meaningful.

6. I felt like I discovered a satisfying life purpose last week.

7. I was searching for something that makes my life feel significant.

8. I was seeking a purpose or mission for my life.

9. Last week, I felt like my life has no clear purpose.

10. I searched for meaning in my life.

Coping items:

1. "I did a good job of coping with the stresses of the week."
2. "I coped with the stress of the week in an effective manner."

3. "When the week's challenges made me feel bad/stressed out, I found ways to make myself feel better."
4. "I found ways to solve—or at least improve—the challenges that caused me to feel bad/stressed out this week.

Free response items:

1. "This week, I spent the most time/effort coping with _____."
2. "This week, my sense of meaning/purpose/life's mission was most affected by_____."

Appendix D3 – Modified (Week-long) MIL-Q

1. Throughout the week, I felt like I understood my life's meaning.
2. I looked for something that makes my life feel meaningful this week.
3. This week, I was looking to find my life's purpose.
4. This week, my life felt like it had a clear sense of purpose.
5. This week, I felt like I had a good sense of what makes my life meaningful.
6. I felt like I came closer to discovering a satisfying life purpose this week.
7. I was searching for something that makes my life feel significant.
8. I was seeking a purpose or mission for my life.
9. At times throughout the week, I felt like my life has no clear purpose.
10. I searched for meaning in my life.

Table 18

Frequency of Responses to Covid Events Checklist

	Item Wording	"*Yes*"	"*No*"
1.	I am no longer able to do the things that I did before COVID-19	115	23
2.	I have had to change where I am living/staying	74	64
3.	I had to self-quarantine for 14 days	67	71
4.	I have not been able to see my friends	118	20
5.	I have not been able to see my family	88	50
6.	I am isolated completely alone where I live (e.g., I live alone)	41	97
7.	I am having more disagreements and arguments than usual with the people I live with	86	52
8.	I miss seeing my friends and family	125	13
9.	My living arrangement is unsafe	40	98
10.	I have lost my job	32	106
11.	Someone in my family has lost their job	54	84
12.	I worry about having enough money for basic necessities like groceries	94	44
13.	I worry about having enough money to pay for my bills	99	39
14.	I worry about if my friends or family will have enough money	104	34
15.	I am considered high-risk for COVID-19	32	106
16.	A close friend or family member is considered high-risk for COVID-19	94	44
17.	I have been diagnosed with COVID-19	55	83
18.	A close friend or family member has been diagnosed with COVID-19	106	32
19.	A close friend or family member has gotten ill from COVID-19	105	33
20.	A close friend or family member has died from COVID-19	27	111
21.	I worry that I will get sick from COVID-19	123	15
22.	I worry that close friends or family members will get sick from COVID-19	121	17
23.	I have been struggling with my own mental health	124	14
24.	A close friend or family member has struggled with their mental health	118	20
25.	My work hours have decreased	51	87
26.	My work hours have increased	55	83
27.	My work has become more stressful	98	40

Note: Participants responded to prompts which asked them to first select whether the event applied to them (i.e., "yes" or "no").

Table 19

Paired Samples t-tests Comparing Mean Daily Reports to Week-long Retrospective

Pair	*M*	*SD*	*t*	*df*	*p*
Daily Meaning-having – Retro. Meaning-having	-0.27	0.72	-4.344	136	< .001
Daily Meaning-seeking – Retro. Meaning-seeking	-0.71	1.29	-6.450	136	< .001