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True Self in Threat Resilience: Using Essentialist Self-Views to Neutralize Personal Morality Threats

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Using Essentialist Self-Views to Neutralize Personal Morality Threats

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Biography

The author was born in Knoxville, Tennessee, on March 19, 1987. She graduated in 2005 from Webb School of Knoxville in Knoxville, Tennessee. She received her Bachelor of Arts degree in Psychology and Pre-Medical Studies from Hampshire College in Amherst, Massachusetts in 2009. In 2015, she received her Master of Arts degree in Psychological Science at DePaul University in Chicago, Illinois. Upon graduation from the Psychological Science doctoral program at DePaul University, she will be undertaking post-doctoral research and teaching at DePaul University.

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Abstract

Over the course of this dissertation, I introduce the idea of the true self construct as a personalized route to individual meaning and stability at a time in history when external direction regarding values and purpose is in decline. Setting aside the question of the ontological status of the true self, I emphasize that beliefs about and representations of the true self have distinctive psychological impact and cite research supporting this assertion. I then review evidence of the aptness of such true self-orientations in supporting well-being, fulfillment of basic psychological needs, and resilience against threat. Across two studies, I investigated the effectiveness of connecting with one's true self-orientations for defending against three levels of personal morality threat severity. Compelling support arose for well-being being positively related to participants' belief in having a true self. Evidence consistently suggested this to be the case across threat severity, but moderate evidence also supported the possibility that true self-orientations are ineffective against strong threat (Study 1). Participants highly preferred to engage with their true self-concepts across threat condition, and in doing so reported significantly higher subjective vitality than those who explored self-flexibility. Other well-being outcomes were unaffected by threat and connection to different self-conceptualizations (Study 2). I then consider theoretical implications and propose multiple pathways for fruitful future exploration. In particular, trait-level true self-orientations seem most effective for predicting well-being, and people may need additional guidance to effectively utilize their true self-orientations for active coping support.

Keywords: self-essentialism, true self, well-being, meaning, threat resilience

True Self as Resilience Anchor:

Using Essentialist Self-Views to Neutralize Personal Morality Threats

> Like most theories, the self theory is a conceptual tool for accomplishing a purpose. The most fundamental purpose of the self theory is to *optimize the pleasure/pain balance of the individual over the course of a lifetime*. Two other basic functions, not unrelated to the first, are to *facilitate the maintenance of self-esteem*, and to *organize the data of experience in a manner that can be coped with effectively* (emphasis in original; Epstein, 1973, p. 4).

Over the course of the past decade of research in psychology, interest has been growing for studying the 'true self' as a construct. Theorists have increasingly taken note of the prevalence with which lay narratives assert the usefulness of the true self and its inherence as the core self inside each person. As I will outline, the truth of the true self's existence is difficult to ascertain yet does not preclude *beliefs* about its existence and traits from being relevant for positive psychological functioning. In fact, a building literature suggests that these beliefs might be uniquely adaptive for navigating today's challenges.

Two trends have developed throughout human history to now converge and bring to bear certain pressures on a great number of people alive today. Modern life in thoroughly-developed Western countries, in part due to changes in shared traditions, professions, and religiosity in the 20th century, struggles to provide a consistent and compelling set of values by which to live and relate to others meaningfully (Baumeister, 1991; Baumeister & Vohs, 2002). In concordance with this change, from about the 11th century onwards there has been an increasing focus on the self as a site of moral and

societal tensions and a source of dynamic individuality (for review, see Baumeister, 1987). The result is that at the time of weakened direction supplied by modern Western societal structures, a centuries-long consideration of human life has elevated the self as a potential locus of gravity. Baumeister and Vohs (2002) argued that as a response to the "value-gap" left by modern life, a greater emphasis has been placed on the importance of the self and the pursuit of self-knowledge, placing the search for values squarely on the shoulders of each individual and framing it as their birthright for self-actualization. These authors illustrate the significance of this development:

> This is a remarkable change from the traditional moral system, which usually arrayed moral injunctions against anything that was self-serving. Indeed, the restraint of selfish pursuits is arguably the essential core of previous morality and the reason that morals emerged in the first place. Shifting the cultivation of self from the enemy of moral values to one of the staunchest bases of moral values is a fundamental and far-reaching realignment (Baumeister & Vohs, 2002, p. 612).

While searching for one's personal set of values it seems natural to guess that they must lay somewhere within oneself, for who else could say what one's own values are? Thus, the individual is presented with a complex puzzle with no guide as valid as themselves, and no guide for how to listen to the knowledge they supposedly contain. A person could be forgiven for being confused by the questions of who they are and what they value, and indeed psychologists seeking to fully understand the self empirically have been similarly confounded. Since the beginning of psychology as a field, different definitions of the self and its contents have been forwarded, but from within these divisions an acknowledgement of the self as a useful tool—a loose theory for pragmatically

organizing self-related information and motivating behavior—has emerged (Epstein, 1973). If the self serves as our own theoretical frameworks for navigating life, it would seem that it might be up to the task of providing guidance that history has charged it with.

In light of the existential challenges faced by recent generations, research into the self-theory as a personalized tool that is available for resolving the value-gap meaning vacuum is a promising area for further investigation. How might the self-theory be applied to perform such a function? In recent years, psychologists have recognized that people report relying on their true selves—"who they really are deep down"—for self-worth, purpose, and guidance. If true, such beliefs, assumptions, and attributions organized around the true self appear to represent precisely the sorts of resources that can serve as personal headings against uncertain seas. I will here review evidence in support of this encouraging possibility prior to outlining a research plan designed to directly assess the true self as a conceptual pillar of psychological stability.

Structure of Review

I begin this exploration of beliefs and attributions surrounding the true self, as well as their functional implications, by first defining the true self as different from the self construct broadly. Following will be a thorough consideration of the major lines of research into people's thoughts about the true self, how their true self-concepts are defined and organized, and the extent to which valence is commonly attached to the true self. At this point I will unite these beliefs, conceptual organizations, and valence attributions under the umbrella term "true self-orientations" as I explore the evidence for their well-being relevance. Thus, moving forward from this foundation, I will examine empirical well-being outcome implications of true self-orientations before turning to the

question of how apt these orientations are for actively benefiting people. I conclude this review by proposing how particular true self-orientations might best perform such a role. I then proceed to outline three experimental studies to test this claim, in each case leveraging false feedback about participants' personal morality as a self-relevant stressor that they might cope with using true self-orientations.

The Self at the Core? Distinguishing the True Self from the Self

Due to its name, speaking about the true self implies a boundary between the self generally and its truest aspects, but this is misleading and is an inaccurate understanding of the relationship between the self and the true self as psychological constructs. To distinguish between the two, it is useful to consult the leading definitions psychology has developed for each. According to Swann and Bosson (2010), the primary definition of the self is as a "representation or set of representations about oneself, parallel to the representations people have of other individuals. […] It is the "me," or self-as-object, about which James (1890) wrote—the entire set of beliefs, evaluations, perceptions, and thoughts that people have about themselves" (p. 591). We can have a wide variety of these cognitions about ourselves, and like other cognitions they can be more or less active at a given time (Markus & Kunda, 1986; Markus & Wurf, 1987; McGuire et al., 1978), contain semantic and episodic self-related knowledge (Kelley et al., 2002; Klein & Loftus, 1993; Klein et al., 1992), and be malleable to serve our goals in the present situation (Swann et al., 2002).

By contrast, for those of us that believe we possess a true self, we seem to develop a concept of what our true self is like. This true self-concept comes to be complexly elaborated by the traits, qualities, ideals, and imagined potentials we think best describe

and are most central to who we think we are (Schlegel et al., 2009). As we will see, true self-concepts frequently apply a high degree of psychological essentialism to the true self. I emphasize that true self-concepts belong, for scientific purposes, only to those who engage in the belief that they have a true self. This is because to all but a subgroup of psychologists the true self is in reality a folk belief referred to as the veridical account of true selves (Rivera et al., 2019). Further, the true self is an unscientific concept as it is both up to each person's subjective definition and unverifiable (Strohminger et al., 2017). *Beliefs* about the true self are, by contrast, psychological realities compatible with and worthy of scientific study. The utility of this point is already being noted. Baumeister (2019) recently likened this non-veridical understanding of the true self to the idea of a unicorn:

> "Thus, people might have a true self-concept but they might still not have a true self. The unicorn is a standard example for which there exists a concept without a reality. Rivera et al. (2019) make a compelling case for the true self as like a unicorn, that is, a concept without a reality behind it. For them, the true self functions not as a representation of how one is but rather as a guide to how one wants to be." (p. 145).

While the true self may be by its nature insensitive to measurement and verification, belief in it is so common that a wide variety of narratives and explanatory conclusions have accumulated around the true self with not insignificant impact. Considering that each person who believes they have a true self can choose how to define it, the types of things people believe about true selves is remarkably consistent across cultures. For instance, the true self is judged as good among participants in Colombia, Russia, and

Singapore (De Freitas et al., 2018), and morally good traits are thought of as most core to a person among Hindu Indians and Buddhist Tibetans (Nichols et al., 2018). To ascertain whether a person can benefit from their orientation to the true self, it is first appropriate to further describe these commonalities in true self beliefs and conceptual organizations and review their associated outcomes for other psychological constructs.

Having the True Self in Mind: True Self-concept Accessibility

Research indicates that processing and reasoning about the true self is distinct from the self broadly. People make a distinction between their everyday qualities and their true nature in open-ended responses (Dulaney & Graupmann, 2021a). These everyday self qualities and the true self have been shown to differ in how quickly and accurately they're cognitively processed (Baldwin et al., 2014; Schlegel et al., 2011; Schlegel et al., 2009). Writing prompts designed to elicit feelings of nostalgia have been shown to only make participants' ideas about who they really are more accessible and not increase the accessibility about their everyday qualities (Baldwin et al., 2014).

The speed and accuracy with which a person can describe their true self is referred to as true self-concept accessibility and has been shown to relate to other psychological constructs differently than the accessibility of other self-conceptions. Specifically, true self-concept accessibility is related to higher meaning in life while actual self-concept accessibility is not (Schlegel et al., 2009) and compassion inductions have been shown to induce selflessness through decreased public self accessibility while true self-concept accessibility was unimpacted (DeLury et al., 2020). These patterns lend credence to the true self-concept as distinct. The perception of true self-knowledge availability, the metacognitive ease with which one can describe their true self, also

shares different relationships with other psychological constructs than does the subjectively-judged availability of knowledge about one's actual everyday self (Schlegel et al., 2011).

True Self as an Essence: Self-essentialism

The above reviews evidence that true self-concepts consist of traits and representations about a person's true self which are specific to the person that holds them, and that these true self-concepts differ from other self-conceptions a person might hold such as the everyday self. Despite these person-specific variations on what true self-concepts *contain*, true selves tend to be *reasoned about* in very consistent ways across people. True selves are widely portrayed in lay narratives to be stable in nature, inherent to each person, and informative for knowing who a person is and how they will act (Dulaney et al., 2019). This reasoning is strong in psychological essentialism throughout.

Psychological essentialism refers to the idea that members of observable categories in the world share an underlying essence that are the source of the categories' distinguishing qualities (Gelman, 2003; Keil, 1989; Medin & Ortony, 1989; Newman & Keil, 2008). Studies show that people readily infer essences underlying social categories (Rothbart & Taylor, 1992) and doing so is associated with believing stereotypes about these social groups (Haslam et al., 2000; Yzerbyt & Rocher, 2002). While it may seem unintuitive to consider each person their own essential category, findings suggest people do hold these beliefs about people in general (Bastian & Haslam, 2007; Bastian & Haslam, 2008; Haslam et al., 2006). Multiple studies have found compelling evidence that it is common for people to apply psychological essentialism when thinking about their own true self as well, a tendency known as self-essentialism (Christy et al., 2019;

Dulaney et al., 2019). Self-essentialism involves belief that one possesses an inherent unchanging true self that is deeply-seated, genetically-linked, and influential over behavior (Dulaney et al., 2019). American participants have been shown as significantly more likely to agree that the true self exists for each person to discover, a self-essentialist metaphor, than with a metaphor portraying the true self as something each person can create for themselves, which is consistent with a flexible and less veridical view of the true self (Schlegel et al., 2012). Further, while interdependent societies tend to take the more flexible view of the self in general (Ng & Hynie, 2014, Spencer-Rodgers & Peng, 2004; Spencer-Rodgers et al., 2004), there is indication that interdependent societies are just as likely to think about true selves in essentialist terms, with Japanese undergraduates reporting almost the same means and standard deviations on self-essentialism as United States samples (Dulaney et al., 2021).

The Morality of the True Self

A robust group of findings has now gathered to show that, in addition to widespread beliefs that the true self is a stable essence, people also consistently believe the true self is inherently morally good. People seem to view the ideal of "being yourself" as an ethical imperative that shapes their moral reasoning (Knobe, 2005). Further, when asked to qualitatively describe one aspect of themselves that they valued more than any other, a large portion of participants reported most valuing an aspect that was moral (38.2%), nearly as many as the number of participants who most valued an aspect involving their intelligence (41.1%) and each of these former aspect categories were vastly more endorsed than personality (17.6%) or physical traits (3.0%; De Freitas & Alvarez, 2019). In other words, people spontaneously and frequently endorse morality as

being the most important part of themselves. Paralleling these findings, having a highly-internalized sense of personal morals and directives has been shown to predict high schoolers' use of moral concepts as a way to describe themselves and their qualities as well as actual moral behavior (Aquino & Reed, 2002). People do not only consider their moral qualities as being of central significance to who they are, following a moral-therefore-central line of reasoning. Rather, evidence also demonstrates a central-therefore-moral sequence: In dominantly independent and interdependent cultures as well as in people who scored highly on holding negative views towards humanity in general, participants consistently assumed moral goodness about that which was most core to a person's identity (De Freitas et al., 2018).

People also seem to project their own moral assumptions when labelling the appearance of others' true selves. Participants rated vignette characters undergoing belief or behavior change to be changing in accordance with their true selves if the change was from morally bad to morally good, compared to when the changes proceeded in a good-to-bad pattern (Study 1, Newman, et al., 2014). Establishing that people use their own moral beliefs rather than simply using social norms to decide when true selves are being reflected, participants rated politically-enmeshed changes (e.g., unpatriotic to patriotic, denying global warming to supporting the environment) as revealing characters' true selves when these changes would be seen as following a bad-to-good pattern in alignment with participants' own political identifications (Study 2).

While the persistent belief in the true self as morally good appears to be a separate branch of beliefs than those that portray the true self as an essential entity, in fact the attributions of moral valence have been argued to have emerged precisely as a *result* of

our tendency to essentialize the true self (De Freitas et al., 2017a). Since the true self is a compatible target onto which essentialist frames can be projected, our moralization about the true self has developed to follow essentialist lines as well. For instance, mirroring psychological essentialism's assertion that essential qualities are interwoven with an entity's fundamental identity, changes to a person's moral qualities are seen as more disruptive to a person's identity than changes to personality, nonmoral, or immoral qualities (De Freitas et al., 2018; Strohminger & Nichols, 2014). Morality notions are so integral in true self beliefs that feedback about our own immorality seems to lead us to feel more alienated from and less aware of who we really are (Christy et al., 2016). That psychological essentialism underlies the belief that the true self is inherently moral is easy to understand considering that projecting permanent positive moral valence onto the true self is itself making a claim about something that is universal, unchanging, and inherent about true selves.

Now that the true self-concept has been defined, and essentialist and moral beliefs about true selves have been outlined and shown to be incredibly interlinked, it is possible to assess the aptness of these "true self-orientations" for performing supportive functions in service of happiness and meaning in life. Using this label will be useful for discussing evidence of benefits associated with the variety of representations and beliefs people hold regarding the true self.

Is it Beneficial to Believe in a True Self?

People seem to engage in seeing essences and goodness simultaneously in the true self in flexible, logically inconsistent ways that imply effortful attempts to maintain these beliefs. People view improvements made by a person as being truer to the person's core

self and are comparatively less willing to embrace examples of a person's decline as being true to their core (Molouki & Bartels, 2017). This parallels the tendency to see larger essentialized entities such as countries as maintaining their fundamental identity when making improvements as opposed to deteriorating (De Freitas et al., 2017b). Such acceptance of improvements, while matching the goodness assumption, violates the assumption of stability over time. People seem to apply the discovery metaphor to resolve this, in other words claiming that by improving a person is further discovering and realizing their true nature (Bench et al., 2015). It is a curiosity of essentialist thinking that an essence can be a causal agent in behavior while also being capable of being obscured, at times a mystery to its owner who can behave in ways that mismatch their true essence.

Considering that people so readily engage in motivated reasoning to maintain their true self-beliefs, one might ask what the root of this motivation is. That is, what is the function of these beliefs we so strongly and prevalently cling to? Despite the logical inconsistencies that underlay seeing a dynamic, situationally-sensitive person (Fleeson & Wilt, 2010) as having an unchanging and moral essence, a large body of evidence now reflects benefits associated with entertaining this theory and will now be reviewed.

True Self-orientations and Subjective Well-being

Significant bivariate correlations have emerged between self-essentialism and variables commonly used to capture subjective well-being (SWB). Such a link was hinted at by the finding of a medium-sized positive correlation between endorsement of a single item "The true self is real" and meaning in life (Schlegel et al., 2012). As a first endeavor to assess this connection using a complete measure of self-essentialism, Dulaney et al. (2019) found self-essentialism to have medium-sized positive correlations with

satisfaction in life, meaning in life, and happiness in a student sample and small- to medium-sized positive correlations with these variables in a sample of Amazon's Mechanical Turk (MTurk) workers. An extension and replication study again found a medium-sized positive correlation between self-essentialism and satisfaction with life (Dulaney & Graupmann, 2021b). A cross-cultural extension of this work showed that for Japanese undergraduates, self-essentialism also correlated moderately positively with satisfaction with life, meaning in life, and self-esteem (Dulaney et al., 2021). While the true self is highly-esteemed cross-culturally (Kim et al., 2018b as cited in Rivera et al., 2019; Schlegel at al., 2013a), such findings of parallel well-being patterns between self-essentialism and well-being for participants in the United States and Japan is striking considering their different cultural heritages. Specifically, Westerners are traditionally inclined to view the self as stable and distinct from the environment (De Freitas et al., 2017a; Newman et al., 2014), while traditions in Japan and many East Asian countries take a dialectical view, depicting the self as full of contrasts and permeable to social and environmental influences (Peng & Nisbett, 1999; Spencer-Rodgers et al., 2009). It has further been proposed that taking an essential view of the self can incur well-being costs due to its inflexibility in self-beliefs (Boyraz et al., 2019), a contrasting view suggesting a limit to true self-orientations' adaptiveness that I will return to in a later section.

True Self-orientations and Fulfillment of Basic Psychological Needs

Having one's fundamental psychological needs fulfilled is thought to be highly important and central for a person's well-being (Deci & Ryan, 2000; Williams, 1997, 2001), with cross-cultural support (Church et al., 2012). In keeping with self-essentialism's connection with well-being discussed above, self-essentialism has also

been shown to have a small positive correlation with meaning need fulfillment, a medium-sized positive correlation with belonging need fulfilment, a medium-sized positive correlation with control need fulfillment, and a medium-sized positive correlation with self-esteem need fulfillment (Dulaney & Graupmann, 2021b). The findings of self-essentialism being positively correlated with fulfillment of meaning in life needs parallel the evidence that it is positively associated with scores on meaning in life questionnaires (Dulaney et al., 2019; Dulaney et al., 2021; Schlegel et al., 2012) in particular.

Meaning in life implications have additionally emerged for true self-orientations in research examining true self-concept accessibility. Higher true self-concept accessibility has been demonstrated to repeatedly predict higher meaning in life scores (Schlegel et al., 2009), and subjective reports of how easily available true self-knowledge is have also been related to higher meaning in life when controlling for mood and self-esteem (Schlegel et al., 2011). Relatedly, when assessing goal motivations, Zhang et al. (2018) found that even failed attempts to achieve a goal can be experienced as full of meaning if the goal in question is self-concordant. The implications of this emerging link between true self-orientations and meaning in life will be discussed in further detail in a following section. Prior to this, let us turn to consider the aptness of true self-orientations for serving well-being more directly.

Digging Deep: How Might True Self-orientations Provide Strength and Resilience?

In response to this converging evidence linking strong and accessible beliefs in a true self with psychological flourishing, one might wonder whether the true self as a construct might play an active role in promoting and defending psychological health.

Keeping in mind that the true self is most likely to be "evidence-insensitive" (Strohminger et al., 2017), empirically probing the true self's supportive fitness must instead focus on asking whether true self-orientations can provide strength. In pursuing these questions, it is useful to first review what we know about how people regard the true self in everyday life given the subjective and personal nature of the true self. The connected literatures for research on authenticity and the self-concept have also revealed relevant patterns that will be informative to consider before focusing directly on possible active functions of true self-orientations.

Indications Found Within Lay-beliefs

Lay narratives hold the true self to be a valuable guide in times of trial and uncertainty by virtue of its unchanging nature. In such an essentialist vein of reasoning, possessing a stable core allows a person to remain intact, steady, and on-course in life's tumultuous ocean. Participants repeatedly volunteer such narratives, reporting their belief that they look inside themselves for strength and guidance (Dulaney & Graupmann, 2021a).

Cross-cultural examinations have revealed the international prevalence of belief in the true self as this kind of support resource, referring to said beliefs as the "true-self-as-guide" lay theory. Survey studies on this topic asked participants in the United States (Schlegel et al., 2013a) as well as in China, India, Singapore, and South Korea (Kim et al., 2018b, as cited in Rivera et al., 2019) to rate how useful various decision-making strategies were for resulting in satisfying decisions. In each country surveyed the true self was consistently rated as among the most valuable guides for decision-making. In the United States and Singapore, the true self was rated the most valuable guide of all twelve

rated sources of guidance such as seeking information from others, intuition, religion, and rational processing (Rivera et al., 2019; Schlegel et al., 2013a). Participants in China, India, and South Korea rated the true self in the top three most useful resources for decision-making (Rivera et al., 2019).

Feelings of Being Yourself: Considering Authenticity

While remarkable in light of the societal and philosophical differences between these countries, worldwide cross-cultural belief in the true self as decision guide does not fully establish whether the true self can effectively serve this function in reality. That is, are these beliefs simply culturally-inherited narratives, or do people actively rely on their true self-orientations in moments of uncertainty? Findings within the companion literature on authenticity point to such a role.

Kernis and Goldman's (2006) influential article on the components of authenticity describe it as "the unobstructed operation of one's true or core self in one's daily enterprise" (p. 32). Heavily concordant with our discussion, it has been argued that psychological essentialism underpins each dimension of authenticity (Newman, 2019) and that an essentialist account of authenticity best explains the patterns revealed by research into authenticity (van Gerven et al., 2019). Researchers in this literature are currently striving to arrive at an adequate complete definition of authenticity considering its subjectivity and the difficulty in measuring the authenticity of a given action (Hicks et al., 2019; Jongman-Sereno & Leary, 2019), an endeavor that has thus far spanned multiple decades (Harter, 2002). Acknowledgements of true self-orientations laying at the root of authenticity theory have long surfaced in this debate, with Vannini and Franzese (2008) arguing: "We argue that authenticity is about being true to one's self. […] In order

to understand authenticity, a researcher must then take into consideration at least two things: people's emotional experiences of being true or untrue to one's self and people's ideas about what their true self is" (p. 1621). A simple working definition for our purposes can be taken from the published development of the most widely used self-report scale of authenticity. Therein a "person-centered view" of authenticity is adopted and subsequently defined as being composed of a person's feelings of their own self-alienation, living consistently with their values and beliefs, and degree of acceptance of external influence (Wood et al., 2008).

Relevant to evaluating the active benefits of true self-orientations, assessing the authenticity of oneself, a person, or an object has been argued to be achieved by evaluating the target's match with a particular essence (Newman, 2016). As such, authenticity as a construct is debated due to its apparent requirement of the veridical account of the true self being accurate. A partial solution to this obstacle for authenticity research mirrors the recent acknowledgement that true self-orientations may be important for psychological health. In recent years, increased attention has focused on distinguishing between assessing a target's veridical authenticity and the phenomenological experience of *feeling* authentic (Lenton et al., 2013). The terms "perceived authenticity" and "state authenticity" have gained popularity for referring to these felt experiences in order to specify the facet of authenticity under discussion. Considering that much of personal authenticity measurements have relied on self-assessments, perceived authenticity is arguably the umbrella containing most research on the construct.

Making this distinction can perhaps facilitate measurement refinement, as some authenticity items are more relevant for representing in-the-moment authentic feelings (e.g., “I feel that I am doing the things that are right for me”, “I feel as if I don’t know myself very well”, Wood et al., 2008) than others (e.g., general behavior: “I always stand by what I believe in”, social preferences: “I dislike people who pretend to be what they are not”, daily affordances: “My daily behavior reflects ‘the real me’”, values: “I think it is better to be yourself, than to be popular”, Wood et al., 2008; ease of self-understanding: “I find it very difficult to critically assess myself”, Kernis & Goldman, 2006). In addition, perceived authenticity items need to clarify for participants whether they should respond about their in-the-moment feelings or opinions of their overall authenticity, since phrases like “I feel…” can be interpreted as asking about feeling states or simply as an alternate expression of “I think…”. It may be that phenomenological feelings of authenticity warrant dedicated scales or subscales to capture their unique contribution. Clearly highlighting the phenomenological component of assessing one’s own authenticity also furthers the whole field of authenticity research by prompting researchers to ask what the antecedents and benefits of the in-the-moment feeling of being authentic and true to oneself might be (Rivera et al., 2019; Sedikides et al., 2019; Sedikides et al., 2017). Solutions to puzzles about authenticity arise from this consideration. For example, adding to a robust heritage of research on behavior and trait mismatch (Mischel, 1968), people report feeling most authentic when acting in particular ways (e.g., more extraverted, more agreeable) even when these behaviors are inconsistent with their Big Five personality trait scores (Fleeson & Wilt, 2010). By directly emphasizing the difference between a person’s authentic feelings and their (difficult to

define and measure) *actual* authenticity, we can now appreciate such conflicts in a person's perceptions and behavior as providing us information about the antecedents of perceived authenticity.

One could predict that, following the essentialist description of authenticity as the unobstructed operation of the true self and the acknowledged primacy of subjective experience and beliefs in the authenticity and true self constructs, a merging of the two lines of theory and research may be fast approaching. This represents a compelling case for using the research on perceived authenticity's connection to well-being to enrich our review despite the inconsistent measurement of perceived authenticity already discussed. Paralleling the positive associations detected between true self-orientations and well-being, a strong link has emerged between higher authenticity self-ratings and positive well-being outcomes (Bryan et al., 2017; Goldman & Kernis, 2002; Heppner et al., 2008; Ito et al., 2009; Ito & Kodama, 2007; Kernis & Goldman, 2006; Liu & Perrewe, 2006; Ryan et al., 2005; Wood et al., 2008). The absence of authentic feelings shows the opposite associations with optimal functioning, with a longitudinal design suggesting a bidirectional relation between academic amotivation and feelings of self-alienation, a subscale of Wood et al.'s (2008) authenticity scale (Kim et al., 2018a).

Perceived authenticity research also reveals relevant implications for the possible threat resilience and coping readiness of true self-orientations. In a daily diary study, after experiencing interpersonal conflicts, participants with higher authenticity did not report lower general well-being (Wickham et al., 2016). Participants higher in authenticity additionally have demonstrated lower tendency to distort the realities of threatening life events' unpleasant consequences (Lakey et al., 2008). In three studies, individuals

reporting higher perceived authenticity experienced less loss of hope in the face of limited future time perspective manipulations (Davis & Hicks, 2013). Resonating with this, self-rated authenticity has been shown to be most strongly positively related to self-esteem after limited future time manipulations, indicating that feelings of authenticity might serve a protective role against such a stressor (Davis et al., 2015). Longitudinal work has revealed self-reported levels of authenticity to predict later increased satisfaction with life and decreased feelings of distress (Boyraz et al., 2014). Separate longitudinal work has also found lower self-reports of living authentically to be associated with higher stress at a second timepoint when controlling for coping strategies (Maffly-Kipp et al., 2020).

Strength in the Self-concept

Encouraging support for a bolstering function true self-orientations also arises in another related literature focused on the self-concept broadly. Probes into understanding the self-concept in terms of its organization, complexity, and perceived clarity have yielded a few patterns that connect particular configurations of the self-concept with being well-positioned for threat coping and as such are relevant to highlight here. Studies have repeatedly found a more elaborate and multifaceted self-concept, referred to as self-complexity, to be associated with better stress coping (Campbell et al., 1991; Dixon & Baumeister, 1991; Gramzow et al., 2000; Niedenthal et al., 1992; Rothermund & Meiniger, 2004), although a negative relationship between self-complexity and coping has occasionally been found by others (Brown & Rafaeli, 2007; Koch & Shepperd, 2004; Rafaeli-Mor & Steinberg, 2002). Importantly, it has been suggested that high self-complexity can be burdensome if the individual does not feel there to be an underlying

structure unifying the various facets of their self-concept (i.e., high self-concept differentiation, Donahue et al., 1993; Lutz & Ross, 2003).

Paralleling this, coping implications have also been demonstrated for self-concept clarity, defined as having clear and confident definition, consistency, and stability in one's perceived self-aspects. Higher self-concept clarity is related to better coping with a romantic breakup (Slotter et al., 2010) and bereavement (Boelen et al., 2012). Together, these findings suggest that a coherent self-concept, and the confidence with which one feels their self-concept to be stable and clearly-outlined, to be positively related to coping success. People higher in self-concept clarity have also been shown to be more likely to utilize information about themselves as a touchstone for guiding information-relevant behavior (Guadagno & Burger, 2007). These combined findings represent an encouraging sign that people with elaborated and certain self-concepts are both better able to cope with stress and access their self-knowledge in an actionable way. Perhaps most relevantly, participants experiencing a self-concept clarity threat reported higher tendency to reflect on their autobiographical pasts which in turn was marginally related to higher self-continuity, suggesting the ability to voluntarily use self-knowledge to regain self-related stability (Jiang et al., 2020). I will now turn to address the possibility that true self-orientations can be similarly relied on for resilience directly.

Re-centering Ourselves: Considering the True Self's Functions

Reviewing this collection of connected literatures elucidates a consistent pattern that feeling in touch with yourself and possessing a sense of self-understanding seems to be associated with better resilience, a pattern that is echoed in everyday narratives worldwide. Having established this foundation, it is possible to explore existing research

on the adaptive function of true self-orientations. To address how orienting to the true self might be useful for psychological flourishing, we should be clear about what it means to be useful in such a way. Psychological health could be most readily supported by fostering its growth or bolstering its defenses.

Fostering Psychological Health

The link between meaning in life and both self-essentialism and true self-concept accessibility, reviewed above, suggests a possible pathway by which these constructs might be useful in actively increasing psychological health. Given that meaning in life is considered a basic psychological need, if there existed a direct causal influence of self-essentialism and true self-concept accessibility on increasing meaning in life this would demonstrate a strong case that particular orientations to the true self can benefit psychological health. Even prior to the detection of a link between self-essentialism and meaning in life, theorists suggested that believing in the true self grants an individual a personalized route to forming a framework of meaning structures, framing it poetically as a "wellspring of meaning" (Schlegel et al., 2013b, p. 180). Despite this compelling theoretical argument, it may be difficult to empirically establish a causal link of true self-orientations facilitating meaning development due to the complex lifelong process of building a sense of meaning.

If this causal hypothesis were true, this would at least partly explain meaning's positive associations with both self-essentialism and true self-concept accessibility. This assertion also dovetails with the literatures on self-affirmation (Sherman & G. Cohen, 2002; Sherman & G. Cohen, 2006; Steele, 1988) and meaning maintenance (Heine et al., 2006), which together posit that to cope with a perceived threat or loss in a self-central

domain, people are able to gain stability and defend the self by connecting with an unrelated central identity or group of values such as a meaning framework. Meaning's buffering of stressor impact has been demonstrated repeatedly in adults (Appel, 2020; Krause et al., 2017; Larner & Blow, 2011; Park, 2010; Park, 2005; Park et al, 2008) and adolescents (Aviad-Wilchek & Ne'eman-Haviv, 2018; Dulaney et al., 2018). These findings suggest that, if beliefs, traits, and identities projected onto one's idea of their true self can help them construct personal meaning frameworks, these true self-orientations may also indirectly protect psychological health from threats.

Defending Psychological Health

True self-orientations have also recently been linked with directly protecting psychological health. Psychological health might be at risk when a person encounters a threatening or uncertain situation that unbalances them, spurring them to restabilize and potentially seek decision guidance or coping support. In the case of seeking decision guidance, when called to make a major decision a person can feel uncertain, as discussed previously. If they subscribe to the true-self-as-guide lay theory, this person might seek connection with "who they really are" for direction. Insights from the qualitative responses mentioned suggest that at the very least this theory is ready-to-mind enough for people to endorse consulting their true selves when needing to make a decision or get in touch with their 'core values' for information (Dulaney & Graupmann, 2021a). The true self is consistently rated as a more important guide for satisfying decision-making than other strategies (Schlegel et al., 2013a). Selecting goals consistent with the true self has been shown to mediate the pathway to actual goal attainment among people high in self-control (Stavrova et al., 2019). Higher decision-satisfaction has also been linked with

stronger belief in the true self as something a person discovers (i.e., an extant but undiscovered core nature) rather than creates for themselves (Schlegel et al., 2011). Further, using daily diary methods, perceived true self-knowledge has been shown to covary with decision satisfaction and manipulations of true self-knowledge or decision-satisfaction have been shown to affect feelings of decision satisfaction or true self-knowledge respectively (Schlegel et al., 2013a). While facsimile recreations of major life decisions are difficult to construct experimentally, Kim et al. (2021) have found positive correlations between true self-knowledge and decision satisfaction (Study 1) in addition to higher reported decision satisfaction among participants using the true-self-as-guide for decision-making than among those using other strategies (Studies 2 & 3). Taking these findings together, it appears that believing in a true self and having confidence in it as a decision guide might help a person select a problem-solving strategy for dealing with uncertainty. While compelling, clear conclusions are obfuscated by methodological limitations. In-lab decision-making generally employs smaller decision tasks, such as asking participants to choose between pairs of hypothetical occupations or plan their days (and actually follow their plans) using different possible guides (Kim et al., 2021), and it remains unclear whether the decision referents used in laboratories are appropriate for generalizing to reasoning about major real decisions.

In contrast with times of important decision making, a scenario in which a person might seek support and which lends itself better to being validly reproduced experimentally is the aforementioned threat-coping process. It can be very stressful for a person when they are caused to question their stability in important life arenas. In addition to basic access to physical necessities, a person is likely to experience stress

when facing threats to their worth (Heine et al., 1999; Sherman & G. Cohen, 2002; Sherman & G. Cohen, 2006; Steele, 1988), moral character (Mulder & Aquino, 2013; Steele, 1988), basic psychological needs (Deci & Ryan, 2000; Heine et al., 2006; Williams, 1997; Williams, 2001), sense of self-continuity (Sedikides et al., 2008), and social comparisons (Heine et al., 1999; Leonardelli et al., 2010) to form an extensive but non-exhaustive list. Depending on the nature of this threat, solutions might include reframing it, neutralizing it, or seeking a source of support to aid in coping with it; thereby regaining stability in each case. This presents another opening for true self-orientations to possibly serve a protective function by way of helping to reinterpret and resolve these threats. Indeed, in the context of the personal upheaval associated with changes in the self over time, Bench et al. (2015) have proposed that taking an essential view of the true self as a stable unchanging core might help diffuse such threats to self-continuity and foster a sense of coherence in one's life-story. Such life story coherence has been shown to be linked to increased well-being (Baerger & McAdams, 1999).

Dialectical Self-views: A Contrasting Case

Promising evidence is emerging to suggest just such a role for true self-orientations in buffering threats to psychological security. This evidence is thus far incomplete, representing an exciting prospect for new research to contribute to scientific knowledge. At this important juncture, it is appropriate to consider arguments for the benefits of taking flexible, permeable, and dialectical views of the self rather than our essentialist case of focus as a means of predicting important boundaries of self-essentialism's associations to well-being.

Multiple findings in the literature on dialectical self-views suggest that allowing for internal flexibility, evolution, and change is associated with better stressor reactions and outcomes. Dialectical self-views have been shown to moderate the process of coping with high betrayal traumas, an example of extreme stress, such that these views allowed trauma survivors to maintain their self-compassion and thereby experience less post-traumatic stress (Boyraz et al., 2019). Further, dialectical self-beliefs have been shown to buffer the threat of evidence of incompatibilities between two of one's most central identities (Rabinovich & Morton, 2016). In this research, only participants high in naïve self-dialecticism were spared from decreased well-being in the face of such evidence. Compellingly, Boyraz and colleagues (2019) discuss the coping aptness of both self-essentialism and self-dialecticism:

> "compared to individuals who have a high need of maintaining stable and consistent self-perceptions, those with dialectical self-beliefs may feel less threatened and experience less disruption in their sense of self-coherence and self-continuity when their self-perceptions are challenged by traumatic events. In addition, having a dialectical self-view may reduce maladaptive responses that can result from an inability to tolerate or integrate contradictions" (p. 3).

In contrast, these researchers proposed that essentialist self-beliefs may limit trauma survivors' ability to reframe their past experiences in efforts to generate self-compassion because such flexibility is not allowed by portrayals of the self as unchanging (Boyraz et al., 2019). In my view, this is a compelling argument for the boundaries of the ability of self-essentialism to usefully serve a person under stress. Accordingly, I have integrated these boundaries into my theoretical framework and

hypotheses following from it, as well as including elements related to self-dialecticism in two of my planned studies. I will now discuss the theoretical case for these studies as situated in the larger literature on true self-orientations and their potential functions.

Rationale

The question of whether true self-orientations can help a person more effectively cope with and recover from a troubling threat, and what the limits of such a role might be, provides a potentially fruitful avenue for understanding true self-orientations' utility. Lay narratives signal this role as a pillar of psychological stability. The directive that one should "dig deep" to push through times of hardship, confusion, or challenge—while possibly gesturing towards the inner strength or courage to be found in emotion regulation and grit—may also be a call to discover "what you're made of", to reveal "who you really are" (Dulaney et al., 2019; Rivera et al., 2019). Qualitative work reveals lay belief in such a role for true self-orientations in these sorts of uncertain moments. (Dulaney et al., 2021a). Among the central life arenas that can be threatened in order to test this function, there are compelling reasons to think true self-orientations would be most apt for assuaging threats to a person's moral character. People are motivated to see themselves as moral (Miller & Effron, 2010; Monin & Miller, 2001), and seek to maintain these self-views when confronted with evidence to the contrary by using counter-evidence to shore up their moral credentials (Effron, 2014). People also cope with self-threats by portraying themselves as more highly moral, a promising interlinking of self-threat coping and strengthening connection to one's sense of morality (Jordan & Monin, 2008). Considering this motivated search to reassure and re-secure one's moral self-view, and given the strong evidence that the true self is thought of as highly morally

good, a threat to one's moral character may be precisely the type of destabilizing experience that can be effectively coped with by engaging the true self-concept.

No efforts have directly tested the role of the true self in recovering from a threat to one's moral character, however some relevant evidence has emerged. While not precisely targeting the questions at hand here, Baldwin et al. (2014, Study 6) found that among participants experiencing threats to their true selves (writing prompts about situations, experiences, and relationships that make it difficult or impossible to truly be themselves, p. 11), participants who were given the opportunity to reflect on a nostalgic personal memory did not experience decreased feelings subjective well-being and being able to express their true selves in response to the threat. Importantly, these authors proposed that nostalgia is capable of buffering threats to the true self-concept "by bringing to mind past experiences in which controlling and extrinsic influences on one's self were (or are perceived to have been) minimal and that highlight one's core and authentic traits" (p. 3) and that having these experiences and central traits in mind offers "a clear picture of the intrinsic and authentic self, which is then assimilated into the current self-concept" (p. 3). If this proposed mechanism were true, this work signifies that people can benefit from following pathways towards activation of their true self-concepts and that this can help assuage direct true self-concept threats at least. While it would be important to know that people feel defensive of their true self-concepts and Baldwin and colleagues' (2014) work is a step towards establishing this, our aims lay in tackling the broader task of evaluating true self-orientations as a self-affirming resource for compensation with threats to many types of important self-foundations.

Closer to our line of inquiry, experimentally activating the true self-concept before giving participants intelligence test failure experiences or asking them to describe a time when they hurt someone's feelings led to decreased shame (an emotion arising from global devaluations of the self) in response to these unpleasant tasks, while these participants remained free to experience guilt (negative evaluations of the provoking behavior, Vess et al., 2014). Feelings of shame are not themselves a metric of well-being, they are related to variables with implications for well-being such as psychological distress (Velotti et al., 2017). Further, while the authors do not report on qualitative themes contained in participants' descriptions of their past experiences with hurting another's feelings, it is plausible that many of these guilt- and shame-evoking experiences had an element of being morally unseemly. It is also useful to again recall Christy and colleagues' (2016) findings that evidence of our own immorality leads us to feel more alienated from and less aware of who we really are as measured by the self-alienation and awareness subscales of Wood et al.'s (2008) Authenticity Scale. Together, these research lines indicate that true self-orientations can dampen the emotional impact of troubling personally relevant feedback, and that threats to moral character affect people in a way that activates their concept of the self. The time is thus appropriate to test the extent to which activating a person's particular orientations to having a true self might partly determine threat response trajectories. As discussed, threats to one's moral character seem to be highly relevant stressors for testing the utility of the true self as a defense resource in many regards. This gap in the literature represents a promising opportunity for making progress in understanding the connection between true self-orientations and psychological fitness.

The Current Research

In the research outlined here I endeavor to assess across two studies how true self-orientations might aid the coping response process among participants facing threats to their moral character. I will now introduce my theoretical foundations before presenting the research to follow.

Theoretical Framework

Herein I use a specific theoretical framework, gathering from psychology, philosophy, and lay ideas, in constructing hypothesized outcomes for both studies. I theorize that true self-orientations allow an individual to maintain a sense of core stability during times of moderate stress because, while one's environment and circumstances may feel disorienting and chaotic, a strong sense of true self provides a plausible route to feel that there is an organization underlying the confusion and be confident in the worth of the "real me" despite the moment's discouraging challenges. In this way, true self-orientations can act as a self-theory for explaining our experiences to ourselves and remaining secure in our self-narratives. Times of extreme conflict and stress, by contrast, may be so threatening or confusing as to challenge the applicability of the true self theory or challenge the integrity of the true self-concept as a whole. In these times I predict strong belief in the true self to be less effective in coping with the stressors at hand, and perhaps even burdensomely rigid, preventing one from finding creative and pragmatic alternative solutions. This idea has been poetically described by eminent Heideggerian philosopher McNeill in his analysis of Heidegger's 1939 lecture course regarding his own contemplations of Nietzsche. In McNeill's (2006) interpretation, the convergent perspectives of these philosophers present the human phenomenological self, a knower

and schematizer of the world, as a wave in the river of chaos that assaults our comprehension at all times but from which we originate and in which we are constantly re-constituted. McNeill writes:

> Withstanding the excessive force of chaos, coming to stand fast in it, being propelled toward stability and steadfastness—this is nothing alien to life, notes Heidegger, but corresponds to the very essence of bodying life. It is the way in which a living body, rising like a wave, perhaps, first emerges, comes to a stand, stabilizes and establishes itself—erects itself. Not in such a way as to oppose life, but in a way 'suited to its nature,' as Heidegger just expressed it—namely, to the nature of life as the torrential urge of streaming chaos (p. 159).

We can think of the self, which is capable of believing it contains a true self at its core, as holding onto and applying its true self theories to help it maintain its structural integrity in the face of stressful threats, to metaphorically stand and assert itself briefly as a wave and force the assimilation of the chaos it confronts into its own shapes and schemas. If the stressors or conflicts confronted are large or powerful enough, the fragile wave-like true self theory will collapse and instead be accommodated into the larger river.

The idea that a true self theory might be beneficial for moderate stressor coping but less effectual or deleterious in the face of extreme challenge mirrors Proulx and Inzlicht's (2012) description of the process in which a person might seek to assimilate or accommodate a threat to their meaning structures. Applying Piaget's (2000) theory of cognitive development to responses to meaning threats they write, "(meaning-threatening) experiences that are inconsistent with our schemata will arouse a sense of disequilibrium, which in turn motivates an assimilation of the experience so that it

matches our schemata, or an accommodation of our schemata so that they account for the experience" (p. 325). Dovetailing with Schlegel and colleagues' (2013b) assertion that the true self is a personalized meaning framework, I theorize that the true self-concept is precisely such a meaning-making schema that can assimilate but sometimes must accommodate stimuli.

Research on the true self-orientations have largely focused on the prevalence, content, and benefits of beliefs in the true self. In line with my theoretical framework, the cross-cultural psychology literature complements the examinations of true self-orientations by providing support for the prediction that rigid essentialist true self beliefs will fail to provide support in the face of high stress. In these instances, dialectical self-views may be more appropriate for facilitating accommodation of troubling information or experiences. In instances of moderate stress, self-essentialism may be most useful for addressing the threat. In the sequence of research studies outlined below, I attempt to bring into concert the coping predictions that have arisen from the research literatures on true self-orientations and dialectical self-views by investigating true self-orientations as coping supports at different degrees of personal morality threat extremity, in other words exploring the boundary conditions of belief in the true self as an anchor in rocky seas.

Outline of Studies

To test the aptness of true self-orientations as a coping support in response to moral character threat, first I examined baseline self-essentialism beliefs as a potential moderator of coping success in response to personal morality threat (Study 1). I then tested the extent to which people, when under personal morality threat, sought stability through connection with their true self and to what extent these efforts yielded coping

success (Study 2). To test my theoretical framework, personal morality threat was manipulated experimentally and took on low, moderate, or high threat levels. Given the intertwining of moral beliefs and true self-orientations, I hypothesized that true self-orientations would emerge as helpful at moderate levels of threat and less-so at high levels of threat. A figure accompanies hypotheses, described in turn below, to illustrate how this theoretical framework was predicted to apply to the specifics of each design.

Study 1

As a first step towards understanding how baseline, latent true self-orientations might relate to threat response processes and trajectories, this study assessed self-essentialism as a moderator of self-reported well-being following a morality threat exposure.

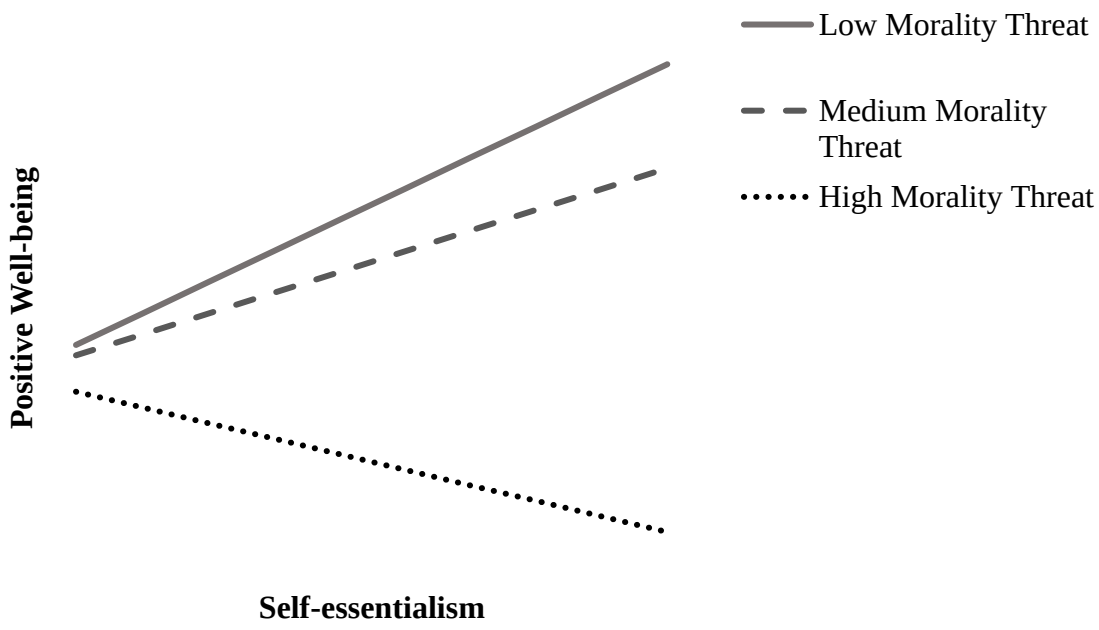
Hypothesis I

I predicted there would emerge an interaction of threat level and self-essentialism predictors, such that self-essentialism would help buffer the impact of moderate personal morality threat on measured well-being outcome variables. To investigate this prediction, separate moderated regression analyses were performed to probe the main effect of threat level and self-essentialism as well as a possible two-way interaction between threat level and self-essentialism in predicting meaning, meaning searching, each psychological need fulfillment subscale, satisfaction with life, and subjective vitality. As threat level is a categorical variable, dummy coding was employed with participants in the low morality threat group as the reference group. A follow-up simple slopes analysis was planned should the interaction term between threat level and self-essentialism have emerged as a

significant predictor of a given outcome variable. The predictions outlined have been visualized graphically, see Figure 1.

Figure 1

Hypothesized Pattern of Well-being Outcomes for Study 1, Using Self-essentialism and Morality Threat Level as Predictors



Method

Participants

Participants were recruited through DePaul University's Sona online platform which displayed its recruitment posting to students in the Introductory Psychology Subject Pool, showed a brief description of the study, and allowed students to register for a participation slot in exchange for the standard amount of course credit. Recruitment yielded a total *N* of 153 participants. Following noncompliance and manipulation screening discussed in Study 1's Analyses and Results section, I arrived at a final *N* of 138 (age 18–37, *M* = 20.15, *SD* = 3.34; 81.9% female, 18.1% male; political

ideology (1 = very conservative to 7 = very liberal) *M* = 5.09, *SD* = 1.46; religiosity (1 = not religious at all to 7 = very religious) *M* = 3.35, *SD* = 1.87; 0.7% Arab, 8.7% Asian, 0.7% Asian and Black, 1.4% Asian and White, 9.4% Black, 1.4% Black and Latino/a, 2.8% Black and White, 0.7% Jewish, 21.7% Latino/a, 1.4% Latino/a and White, 2.1% Middle Eastern, 0.7% North African, 0.7% Pacific Islander, 46.4% White, 0.7% White, Black, & Native).

Procedure

Upon a participant's registration to take part in the research, they were provided with a link to an external Qualtrics survey containing the tasks and measures contained in this study. As the link's viability would not expire until the conclusion of the research but would allow only a single use per participant, participants were advised to use the link at a time when they had an uninterrupted space of time to completely finish the study. Once a participant used the link, they were greeted with the first page of the study presenting a general outline of the associated research topics, risks, and benefits; and asked them to indicate their willingness to take part in the study by advancing to the next page as opposed to closing the browser window. Participants were asked on this page to minimize distractions and silence their electronic devices.

On the following survey pages, participants responded on self-essentialism items. At this point, they were each randomly assigned to one of three levels of a personal morality false feedback threat manipulation, followed by another series of self-report measures targeting satisfaction with life, psychological need satisfaction, subjective vitality, and demographic items. The study then concluded by debriefing them and redirect them to Sona for course credit allocation.

Morality Threat Manipulation. Participants completed a series of 40 items asking them to report their frequency of performing specific moral (20 items) and immoral behaviors (20 items) in the past. Afterwards, they received false feedback about their performance with regards to their peers. This manipulation was inspired by one employed by Christy et al. (2016), in which participants were sorted into three conditions, such that one condition involved them endorsing 20 moral, 20 nonmoral, *or* 20 immoral modified items from the Conventional Morality Scale (Tooke & Ickes, 1988), the Moralization of Everyday Life Scale (Lovett et al., 2012), and the Aggression Questionnaire (Buss & Perry, 1992). In this present study, participants answered all 40 randomized moral and immoral items to ensure the false morality feedback received has the highest chance of being believed due to the length of the list and different response patterns that could be plausibly judged at a certain level of morality (e.g., an immoral grade could be plausibly created by either high endorsement of immoral behaviors or low endorsement of moral behaviors). Also, for the sake of believability I expanded the original 2-point response scale, including "I have not done this" and "I have done this", to instead read "I have not done this", "I have done this on occasion", "I have done this often", and "I have done this very often." Participant response patterns were planned for comparing against their condition to detect any drastic variation of scores from condition. Nonmoral items were omitted as they all referred to grocery shopping behaviors and would be out of place when interspersed with immoral and moral behavior items. Although the items' prompt asks the frequency with which the participant has performed the behaviors in their lifetime, it is also conceivable that grocery shopping behaviors have

taken on some degree of moral valence in participants' mid-pandemic context at the time of study data collection.

As in Christy et al. (2016), albeit modifying the false feedback slightly, participants were provided with a mock "visual representation" of their supposed personal position among the range of scores obtained by all participants. Participants were randomly assigned to receive false feedback that was either low in personal morality threat severity: "Compared to the other students who have participated in this study, you scored in the *90th percentile* of behaving morally. That is, you scored higher on moral qualities than 90% of DePaul students"; moderate in personal morality threat severity: "Compared to the other students who have participated in this study, you scored in the *45th percentile* of behaving morally. That is, you scored lower on moral qualities than 55% of DePaul students"; or high in personal morality threat severity: "Compared to the other students who have participated in this study, you scored in the *15th percentile* of behaving morally. That is, you scored lower on moral qualities than 85% of DePaul students." The corresponding visual representation of their position appeared below the feedback statement the participant received.

Measures

Funnel Debriefing. To allow for checking the manipulation's success and detecting participant suspicion regarding the nature of the false feedback, immediately prior to the true debriefing survey page participants proceeded through a funnel debriefing sequence. This component consisted of seven pages, each containing one free-response question probing participants' thoughts about the study, progressively approaching the topic of the funnel debriefing with increasing specificity. These

questions proceeded as so: “Do you have any initial thoughts or reactions about this study?”, “Did you notice anything unusual in the study? If so, what?”, “Did you notice anything unusual or inconsistent about the moral behaviors questionnaire?”, “Why do you think we showed you feedback on the moral behaviors questionnaire?”, “What do you remember your morality score being?”, “Do you think your morality score was accurate?”, and “To what extent did you believe the feedback of your morality score relative to all other participants?”.

Meaning in Life. Meaning in life was assessed using the ten-item Meaning in Life Questionnaire (MLQ; Steger et al., 2006). Sample items of the MLQ include “I have a good sense of what makes my life meaningful” (Presence of Meaning subscale) and “I am looking for something that makes my life feel meaningful” (Search for Meaning subscale). The MLQ uses a seven-point scale (-3 = Completely Untrue to +3 = Completely True), and internal reliability for the Presence of Meaning subscale in the original publication was very good (Cronbach’s α = .82, .86, & .86) across three studies, as was the internal reliability for the Search for Meaning subscale (α = .86, .87, & .87).

Psychological Need Fulfillment. Fulfillment of four basic psychological needs; self-esteem needs fulfillment, meaning needs fulfillment, control needs fulfillment, and belonging needs fulfillment; were assessed using 20 items developed by Zadro et al. (2004). Sample items include (self-esteem; original publication α = .70 – .76) “I feel good about myself”, (meaning; α = .66 – .69) “I feel meaningless”, (control; α = .72 – .80) “I feel I have the ability to determine my actions”, and (belonging;

α = .71 – .74) “I feel I belong”. These questions use a five-point scale (1 = Not At All to 5 = Extremely).

Satisfaction with Life. To capture their satisfaction with life, participants completed the five-item Satisfaction with Life questionnaire (e.g., “If I could live my life over, I would change almost nothing”, “I am satisfied with my life”; Diener et al., 1985). This questionnaire uses a seven-point Likert-type scale (-3 = Disagree Completely to +3 = Agree Completely). Internal reliability in the original publication was very good (α = .87).

Self-essentialism. Self-essentialism was measured using an adapted version of Bastian and Haslam’s (2008) Essentialism Scale. The modifications; first outlined in Dulaney et al., (2019); include five items not in the original Essentialism Scale as well as altered language to refer to participants’ own selves. This self-essentialism measure contains 20 items using a seven-point Likert-type scale (-3 = Disagree Completely to +3 = Agree Completely) and is comprised of three subscales (for full discussion of measure factor structure and comparisons with the Essentialism Scale’s factor structure, see Dulaney et al., 2019). The 11-item Self Entitativity subscale measures belief that the participant’s true self exists and has defined, stable boundaries (e.g., “I have a true self”, “I am either a certain type of person or I am not”). The four-item Biological Basis subscale measures belief that the participant’s true self is determined by their personal genetic makeup (e.g., “Whether I am one kind of person or another is determined by my biological make-up”, “There are different types of people and with enough scientific knowledge the ‘type’ of person I am can be traced back to genetic causes”). The five-item Informativeness subscale measures belief that the participant’s true self is a causal agent

in determining their behavior, and that knowledge about their true self can be used to predict their future behavior (e.g., “It is possible to know about many aspects of me once you become familiar with a few of my basic traits”, “When getting to know me it is possible to get a picture of the kind of person I am very quickly”). Internal consistency for the overall measure in the original study was very good (α = .88 MTurk sample; α = .85 student sample), was very good for the Self Entitativity subscale (MTurk: α = 0.85; students: α = 0.83), was excellent for the Biological Basis subscale (MTurk: α = 0.93; students: α = 0.89), and was good for the Informativeness subscale (MTurk: α = 0.82; students: α = 0.75; Dulaney et al., 2019). Higher scores represent stronger endorsement of self-essentialism beliefs.

Subjective Vitality. Subjective vitality was assessed using items from the seven-item Subjective Vitality Scale (Ryan & Frederick, 1997). Example items include “I feel alive and vital”; “I don’t feel very energetic” (α = .84, .84, & .86; 1 = Not At All True, 7 = Very True).

Analyses and Results

Assessment for Response-Level Noncompliance

Each participant record was checked to identify participant noncompliance. For example, participants who chose the same response option for every item on a measure containing reverse-scored items would have their item responses deleted for said measure as this indicates an unengaged participant. Data from participants who did not complete a substantial amount of the questionnaire (e.g., multiple entire measures not completed) would also not have been used, but this behavior did not occur. Non-extreme cases, such as one entire measure being left empty, were scrutinized for data file inclusion

qualification and usage in pairwise analyses. Two participants were eliminated from analyses entirely for submitting scale responses in runs of the same digit within each measure, with the exception of one of said participants providing varying data for the satisfaction with life and subjective vitality questions. Each of these participants submitted responses in runs for standard- and reverse-scored items alike, and took between two-and one-half minutes and four-and-one-half minutes to submit their full survey answers. A further four participants showed similar, but less egregious, study noncompliance involving answering one or more variables in sequences of runs of a single digit. Commonly this digit was the corresponding scale's neutral point (e.g., Neither Agree Nor Disagree), indicating fence-sitting. In these cases, the participants were removed from both scale-level analyses, such as when computing bivariate correlations, or item-level analyses, such as when computing internal reliability estimates or performing factor analyses to assess subscale structure, for the affected variables.

Overview of Main Data Analysis

At the conclusion of this screening for noncompliance, I then thoroughly evaluated the efficacy of the morality threat manipulation. I did this by screening participants' funnel debriefing scores for signs of suspicion, and also by comparing participants' moral behavior item endorsement to detect anyone who was an obvious mismatch to their assigned threat condition, detailed below. Once this screening was complete, I built all Study 1 continuous scale means using scale and subscale construction driven by factor analysis results. Upon scale construction I calculated descriptive statistics and bivariate correlation. I then describe my process for determining

post-hoc sensitivity analysis decision criteria for evaluating detected effect sizes. Finally, I proceed with the main analyses for investigating the predictions under Hypothesis I.

Manipulation Check: Morality Threat Naivete and Fit

Assessing responses to the sequential funnel debriefing required balancing between being overly-permissive and overly-restrictive in which answers signaled removal from analyses. For instance, by the nature of the funnel debriefing's increasing emphasis on the morality questionnaire, many participants likely realized the manipulation for the first time while answering said questions. An example of a likely occurrence of this was an answer given to the fourth question in the sequence "Why do you think we showed you feedback on the moral behaviors questionnaire?" by a participant who was in the highest threat condition and mentioned no suspicion in the three prior questions in the funnel debriefing, *"A possible guess is to influence or see how it could affect my future answers."* While this participant might be screened out under the strictest guidelines to remove the chance that they had this realization prior to being questioned, such an approach would also be likely to screen out participants from the threatening conditions due to the intended surprise associated with these experiences. I approached screening for manipulation suspicion with the plan to consider participants who reported suspicion within the first three questions, as this would be a good sign of their having had the realization during the study, and as the third question explicitly gives them the opportunity to comment on the morality questionnaire experience. Later answers would also be assessed for content that could reinforce earlier vague mention of suspicion, particularly when these later answers involved participants' strong claims of suspicion rather than speculative as in the example above. Of the 151 participants

retained in the dataset following noncompliance screening, a further thirteen participants were excluded from analyses after manipulation check screening. Five of these participants reported problems viewing the morality score graphic and were removed due to the risk of this complicating the manipulation's impact for them. The remaining nine participants volunteered thoughts of suspicion early in the debriefing, with statements such as imagining researchers' likely goals: *"I think it was about showing you if you had bad morals and seeing how you felt about yourself after"* (response to funnel question #1), and questioning the accuracy of the results: *"I feel like the morality histogram was a random thing not based on anything I actually picked"* (response to funnel question #2).

Remaining participants' morality questionnaire responses were then compared against their condition to ensure no analysis retention for participants whose condition was impossible. As an extreme hypothetical for illustration, had a participant sorted into the highest threat condition not endorsed having done any of the twenty immoral behaviors, and had endorsed the highest rate of performing all twenty moral behaviors, mathematically they could not be rated below any single other participant on morality, much less 90% of all other participants. No such impossible matches to condition occurred. As a result, the manipulation screening process yielded a final overall *N* of 138, with a by-condition *N* distribution of 49 participants in the low threat condition, 44 participants in the moderate threat condition, and 45 participants in the high threat condition.

Scale Construction

To ensure confidence in scale construction as regards appropriate factor structure and data fit in the present sample, and to complement coefficients of reliability,

confirmatory factor analyses (CFA) were employed for all measures using the following analytic plan. Should any measure have demonstrated poor fit, evidenced by a comparative fit index (CFI) of < .90, a Tucker-Lewis index (TLI) of < .90, a root mean square error of approximation (RMSEA) of > .08, and a significant chi-square test with large test value far from zero, a follow-up exploratory factor analysis (EFA) would be employed in pursuit of obtaining scales with the best factor structure possible. Such an EFA would be performed using principal axis factoring with a direct oblimin rotation with a default delta value of zero, retaining Eigenvalues greater than one, with the goal of a solution with coherent simple structure that explained at least 50% total between-item variance and fair factor item loadings of $\geq$ .40 (Comrey & Lee, 1992). Should multiple factor solutions explain more than 50% total between-item variance, item factor loadings would be scrutinized for optimal simple structure. Additional solution confidence would be lent by Bartlett's Test of Sphericity emerging as significant and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) score of ideally reaching .90 but accepted at $\geq$ .70 (< .60 = "unacceptable", >.70 = "middling", > .80 = "meritorious", > .90 = "marvelous"; Kaiser, 1974, p. 35).

Confirmatory Factor Analyses.

Meaning in Life. Confirmatory factor analysis of the MLQ items, with five Presence of Meaning items and five Search for Meaning items, indicated fairly good fit (CFI = .92, TLI = .90, RMSEA = .11, RMSEA 90% CI [.087, .142], χ^2 = 95.2, df = 34, p < .001). As the RMSEA value was higher than ideal, and the chi-square test was significant, an EFA was performed to understand whether stronger evidence would emerge for an alternate model. The EFA strongly supported the published factor structure

of the MLQ, as shown in Appendix Table A1, with Bartlett's test being significant (χ^2 = 789.63, df = 45, p < .001) and a KMO score =.84. As such, the outcome variable meaning was built using all Presence of Meaning subscale items, and the outcome variable meaning searching was built using all Search for Meaning subscale items. Reliability for the meaning items was very good (α = .90; McDonald's ω = .91), and was good for the meaning searching items (α = .87; ω = .87).

Satisfaction with Life. Satisfaction with life items were tested for the degree to which all five items were represented appropriately by a single factor, which the CFA strongly supported (CFI = .99, TLI = .98, RMSEA = .066, RMSEA CI [.00, .148], χ^2 = 8.00, df = 5, p = .16). No follow-up EFA was thus deemed necessary and the expected configuration was retained for constructing satisfaction with life outcome variable scale means. Reliability among satisfaction with life items was very good (α = .89; ω = .90).

Subjective Vitality. The single-factor configuration of subjective vitality items gained fair support for a good fit with the data (CFI = .92, TLI = .87, RMSEA = .15, RMSEA 90% CI [.11, .19], χ^2 = 57.6, df = 14, p < .001). As with the MLQ's factor structure, a follow-up EFA strongly supported subjective vitality items' single-factor structure as shown in Appendix Table A2, Bartlett's test emerging as significant (χ^2 = 522.22, df = 21, p < .001) and KMO = .88. It may be that indications of good model fit in the MLQ's and Subjective Vitality Scale's corresponding CFAs responded to the presence of a reverse-scored item, of which both the MLQ and the Subjective Vitality Scale have one. Subjective vitality outcome variable scores were built using all seven

Subjective Vitality Scale items. Subjective vitality items shared very good assessments of internal reliability (α = .90; ω = .90).

Exploratory Factor Analyses.

Psychological Need Fulfillment. The CFA performed on Psychological Need Fulfillment items to assess the presence of the four basic needs subscales indicated poor fit with the tested structure (CFI = .72, TLI = .67, RMSEA = .14, RMSEA 90% CI [.13, .15], χ^2 = 628, df = 164, $p < .001$). Displayed in Table 1, the EFA yielded a four-factor solution with coherent simple structure. Bartlett's test emerged as significant (χ^2 = 1598.88, df = 190, $p < .001$) and KMO = .89.

Table 1

Psychological Need Fulfillment Item Pattern Matrix Factor Loadings from Exploratory Factor Analysis with Direct Oblimin Rotation in Study 1

	Factor			
Item	I	II	III	IV
(B5) I feel positive acknowledgement.	**.57**	.21	.14	.18
(SE5) I feel satisfied.	**.48**	.10	.31	.14
(B4) I feel I belong.	**.46**	.18	.27	.14
(SE3) I feel liked.	**.44**	.25	.25	.20
(M1) I feel invisible. (reversed)	.08	**.86**	.01	-.10
(M3) I feel non-existent. (reversed)	.03	**.82**	-.03	-.03
(M2) I feel meaningless. (reversed)	.13	**.80**	-.04	-.01
(B2) I feel rejected. (reversed)	-.04	**.76**	-.03	.14

(B3) I feel like an outsider. (reversed)	.08	**.74**	.04	.03
(B1) I feel “disconnected". (reversed)	.07	**.61**	.04	.15
(C4) I feel unable to influence the actions of others. (reversed)	-.10	**.39**	-.01	-.00
(C3) I feel I have the ability to determine my actions.	-.06	-.01	**.79**	-.03
(C2) I feel I have control over the current situation.	.09	-.03	**.69**	.04
(C1) I feel powerful.	.05	-.09	**.63**	.31
(M5) I feel useful.	.35	.16	**.53**	-.03
(M4) I feel important.	.27	-.03	**.50**	.27
(C5) I feel other people decide on the events in my life. (reversed)	-.32	.30	**.38**	-.01
(SE2) My self-esteem is high.	.01	-.07	.08	**.90**
(SE1) I feel good about myself.	.29	.04	-.07	**.77**
(SE4) I feel insecure. (reversed)	-.28	.27	.08	**.58**
Factor Correlations				
I	8.52(40.75%)			
II	.07	2.59(11.02%)		
III	.28	.46	1.24(4.04%)	
IV	.33	.40	.52	1.10(3.81%)

Note. Factor correlations appear below the diagonal, Eigenvalues on the diagonal, and by-factor percent of variance explained in parentheses. Factor loadings ≥ .40 are emphasized in bold. (B) = Belonging Need Fulfillment Subscale; (SE) = Self-esteem Need Fulfillment Subscale, (M) = Meaning Need Fulfillment Subscale, and

(C) = Control Need Fulfillment Subscale, with corresponding original subscale number. Solution converged after 37 iterations.

Factor I, termed “Comfort Fulfillment,” seems to represent feelings of overall good social standing, acceptance, and simple contentment. Factor II, termed “Meaning Fulfillment,” strongly consisted of themes pertaining to feelings of nothingness, such that these items asked people to endorse feeling invisible, non-existent, and ignored. This naming was chosen not only because this factor contained items originally designed to capture fulfillment of meaning needs, but also because it appears that as entire group the items loading on Factor II may capture variation on feelings of “mattering”, a theorized third component of meaning in life not assessed by the MLQ (George & Park, 2016). A point of caution lays in the observation that the Meaning Fulfillment factor contained only negatively-worded items and all but two of the total psychological need fulfillment items—suggesting the possibility that negatively-worded items tended to hang together—however the conceptual coherence of the Meaning Fulfillment items as well as the loading of two negatively-worded items onto other factors strengthens confidence in this factor structure being thematically significant. Factor III, termed “Control Fulfillment,” contains items assessing participants’ feelings of efficacy and ability to enact their desires with agency. Finally, Factor IV, termed “Self-esteem Fulfillment,” contains items specifically targeting participants’ self-esteem directly. Internal reliability among all psychological need fulfillment items was very good ($\alpha = .93$; $\omega = .93$) and was good-to-very good for its subscales (Comfort Fulfillment $\alpha = .86$; $\omega = .86$; Self-esteem Fulfillment $\alpha = .82$; $\omega = .84$; Meaning Fulfillment $\alpha = .89$; $\omega = .89$; Control Fulfillment $\alpha = .83$; $\omega = .84$).

Self-essentialism. The initial CFA of self-essentialism items signified poor fit (CFI = .78, TLI = .75, RMSEA = .10, RMSEA 90% CI [.09, .12], χ^2 = 416, df = 167, $p < .001$), and thus a follow-up EFA was performed.

The EFA, unconstrained in number of factors and allowed to iterate based on achieving Eigenvalues greater than one, produced a six-factor solution. Scrutinizing the solution revealed that items on Factors V and VI—which combined together explained 5.7% of the total variance—also loaded well on another factor within Factors I–IV, which explained a combined 52.87% of the total variance. Further, assigning those items to Factors I–IV yielded more conceptually coherent simple structure. The four-factor solution was supported by a significant Bartlett's test result (χ^2 = 1177.01, df = 190, $p < .001$) and meritorious KMO = .80. Pattern matrix loadings of this solution when constrained to four factors are displayed in Table 2. Pattern loadings of the initial six-factor solution can be found in Appendix Table A3.

Table 2

Self-essentialism Item Pattern Matrix Factor Loadings from Exploratory Factor Analysis with Direct Oblimin Rotation in Study 1

	Factor			
Item	I	II	III	IV
(E3) I am either a certain type of person or I am not.	**.88**	-.04	-.07	-.10
(E5) The kind of person I am is clearly defined, I either am a certain kind of person or I am not.	**.83**	.01	.03	.11
(E2) I either have a certain attribute or I do not.	**.74**	-.07	-.11	-.10

(E4) There are certain 'types' of people and the 'type' of person I am can be easily defined.	**.61**	-.08	-.06	.29
(E6) I have a distinct personality type.	**.49**	.13	.22	.11
(E1) The boundaries that define the differences between myself and others are clear-cut.	**.32**	.04	-.04	-.03
(E18) I have a true self even if I don't always act in accordance with it.	-.03	**.79**	-.11	-.11
(E16) I have a true self.	.04	**.76**	-.03	-.11
(E17) Even if parts of me change over time, who I really am deep down stays the same.	.01	**.68**	-.07	.06
(E20) My actions are guided by who I really am deep down.	.11	**.47**	-.01	.22
(BB14) With enough scientific knowledge, the basic qualities that I have could be traced back to, and explained by, my biological make-up.	-.02	-.02	**-.90**	.00
(BB13) Whether I am one kind of person or another is determined by my biological make-up.	.11	.06	**-.84**	-.09
(BB15) The kind of person I am can be largely attributed to my genetic inheritance.	-.05	.18	**-.74**	.10

(BB12) There are different types of people and with enough scientific knowledge the 'type' of person I am can be traced back to genetic causes.	.09	.07	**-.67**	.11
(E19) The person I am deep down changes from situation to situation. (reversed)	-.04	.22	.23	-.05
(I8) It is possible to know about many aspects of me once you become familiar with a few of my basic traits.	.03	.07	-.09	**.79**
(I10) Knowing about a few of the basic traits that I have can lead to accurate predictions of my future behavior.	.00	.09	-.09	**.78**
(I9) When getting to know me it is possible to get a picture of the kind of person I am very quickly.	.05	.11	-.10	**.69**
(I7) Generally speaking, once you know me in one or two contexts it is possible to predict how I will behave in most other contexts.	.06	-.05	.09	**.68**
(I11) Although I may have some basic identifiable traits, it is never easy to make accurate judgments about how I will behave in different situations. (reversed)	-.04	-.10	.01	**.33**
Factor Correlations				
I	5.39(24.99%)			

II	.24	2.56(10.70%)		
III	-.26	-.05	2.32(9.61%)	
IV	.35	-.01	-.20	1.77(6.78%)

Note. Factor correlations appear below the diagonal, Eigenvalues on the diagonal, and by-factor percent of variance explained in parentheses. Factor loadings ≥ .40 are emphasized in bold. (E) = Self Entitativity Subscale, (BB) = Biological Basis subscale, and (I) = Informativeness Subscale with corresponding original scale number in parentheses. Solution converged after 8 iterations.

The factor solution supported building Biological Basis (III) and Informativeness (IV) subscales as planned, and item I11's lower-than-desired loading on the Informativeness factor is consistent with past work (Dulaney et al., 2019) where it also demonstrated slightly lower Informativeness loading which was attributed to the reverse-scoring of the item. Its inclusion in the Informativeness factor was further bolstered by its absence of loading on any other factor. The factor solution supported splitting the original Self Entitativity factor into two, Person Kind (I) and True Self (II), which consisted of modified items belonging to the analogous factor of Bastian and Haslam's (2008) Essentialism Scale and four of the five items written for measuring self-essentialism directly (Dulaney et al., 2019). The reverse scored item (E19) loaded weakly onto the True Self factor, and caused internal reliability to suffer, so it was excluded from computing True Self subscale scores. Scores for all other subscales were computed as described. Overall reliability among all self-essentialism items was good ($\alpha = .83$; $\omega = .84$), and was also good for its detected subscales (Person Kind $\alpha = .83$; $\omega = .84$; Biological Basis $\alpha = .88$; $\omega = .88$; Informativeness $\alpha = .80$; $\omega = .81$; True Self $\alpha = .78$; $\omega = .79$).

While interpretation of differences between this factor solution and past findings is limited by the sub-optimal 6.9:1 participant-to-item ratio in Study 1, comparing the themes covered in Person Kind items and True Self items suggests that people make a meaningful distinction between person/personality types and true selves outright. It may be that the existence of "types of people" is conceptualized in lay understanding by self-essentialists as another consequence to the existence of true selves, a potentially fruitful area for further exploration.

Initial Analyses

Descriptive statistics were calculated for all continuous variables measured, as reported in Table 3. In addition, Table 4 displays by-condition descriptives to serve as companion referents for informing regression findings. No cases of outlier concern were identified for removal. To begin understanding how measured variables related to one-another in this study, bivariate correlations were calculated and are displayed for all variables in Table 5.

Table 3

Descriptive Statistics for All Study 1 Variables; Overall

	M(*SD*)	Listwise *N*
Self-essentialism	4.46(0.70)	130
Meaning	4.44(1.45)	135
Meaning Searching	5.25(1.15)	130
Psych. Need Fulfillment	3.40(0.73)	128
Comfort Fulfillment	3.22(0.87)	135
Meaning Fulfillment	3.75(0.92)	132
Control Fulfillment	3.27(0.82)	135
Self-esteem Fulfillment	3.06(1.01)	135
Satisfaction with Life	4.28(1.45)	132
Subjective Vitality	4.38(1.27)	129
Person Kind	4.66(1.07)	134
True Self	5.41(0.98)	136
Biological Basis	3.60(1.24)	133
Informativeness	4.20(1.15)	135

Table 4

Descriptive Statistics for All Study 1 Variables; by Threat (Low, Moderate, High)

	Low	Moderate	High
Self-essentialism	4.17(0.63); 44	4.65(0.73); 44	4.58(0.66); 42
Meaning	4.10(1.45); 47	4.56(1.45); 44	4.68(1.42); 44
Meaning Searching	5.28(1.26); 47	5.33(0.94); 43	5.13(1.24); 40
Psych. Need Fulfillment	3.34(0.84); 47	3.55(0.70); 43	3.32(0.61); 38
Comfort Fulfillment	3.11(0.89); 48	3.41(0.90); 44	3.13(0.79); 43
Meaning Fulfillment	3.64(1.01); 48	3.80(0.91); 43	3.84(0.82); 41
Control Fulfillment	3.24(0.93); 48	3.45(0.76); 44	3.13(0.73); 43
Self-esteem Fulfillment	3.06(1.08); 47	3.20(1.03); 44	2.92(0.92); 44
Satisfaction with Life	4.07(1.44); 48	4.45(1.44); 44	4.34(1.49); 40
Subjective Vitality	4.25(1.36); 47	4.45(1.28); 42	4.45(1.17); 40
Person Kind	4.51(1.06); 47	4.80(1.19); 44	4.67(0.94); 43
True Self	5.14(1.03); 48	5.43(0.93); 44	5.68(0.92); 44
Biological Basis	3.27(1.10); 46	3.99(1.22); 44	3.57(1.32); 43
Informativeness	3.86(1.18); 47	4.42(1.16); 44	4.33(1.06); 44

Note: All information is organized in the *M*(*SD*); *N* configuration.

Table 5

Pairwise Bivariate Correlations for All Study 1 Variables

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. Self-essentialism	—													
2. Meaning	.30**(129)	—												
3. Meaning Searching	.05(124)	-.13(130)	—											
4. Psychological Need Fulfillment	.18*(121)	.65***(126)	-.21*(124)	—										
5. Comfort Fulfillment	.27**(128)	.63***(133)	-.21*(129)	.82***(128)	—									
6. Meaning Fulfillment	.03(124)	.41***(129)	-.19*(126)	.82***(128)	.51***(129)	—								
7. Control Fulfillment	.28**(128)	.66***(133)	-.04(129)	.84***(128)	.70***(133)	.48***(130)	—							
8. Self-esteem Fulfillment	.14(128)	.45***(133)	-.16(128)	.77***(128)	.64***(133)	.48***(130)	.61***(134)	—						
9. Satisfaction with Life	.32***(126)	.63***(131)	-.06(127)	.61***(124)	.65***(130)	.37***(127)	.59***(131)	.43***(130)	—					
10. Subjective Vitality	.33***(124)	.71***(128)	-.15(124)	.72***(122)	.72***(128)	.49***(123)	.64***(128)	.62***(128)	.67***(125)	—				
11. Person Kind	.78***(130)	.18*(132)	.03(127)	.11(124)	.09(131)	.01(128)	.23**(131)	.07(131)	.19*(129)	.20*(126)	—			
12. True Self	.51***(130)	.43***(134)	.09(129)	.26**(126)	.28**(133)	.15(130)	.31***(133)	.15(133)	.26**(131)	.32***(128)	.23**(134)	—		
13. Biological Basis	.63***(130)	.19*(132)	-.04(127)	.11(124)	.18*(131)	-.00(127)	.16(131)	.06(131)	.28**(129)	.21*(126)	.29**(131)	.21**(133)	—	
14. Informativeness	.69***(130)	.09(133)	.12(128)	.08(125)	.22*(132)	-.03(129)	.09(132)	.14(132)	.19*(130)	.23**(128)	.40***(133)	.06(135)	.26**(132)	—

Note. Pearson correlations are presented below the diagonal, with correlation test *N*s in parentheses and $df = (N\text{-}2)$. $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Assessing Bivariate Correlations

Bivariate correlations lend further insight into how self-essentialism's subscales relate to one-another. The idea that True Self is a related but distinct subscale among self-essentialism items, which arose during EFA of the self-essentialism items is also supported here. True Self related to both Person Kind ($r(132) = .23$, $p < .001$) and Biological Basis ($r(131) = .21$, $p < .001$), but not Informativeness. Because people have autobiographical memory and therefore possibly some insight into their behavioral inconsistencies despite believing they have a true self, the Informativeness factor—which addresses participants' beliefs that their behavior is cross-situationally consistent and predictable—may be less closely-connected to self-essentialism than informativeness notions are to other targets of essentialism. A hallmark of essentialist thought is the assumption that knowing an object's essence informs your predictive power regarding what it can be expected to do in the future (Yzerbyt et al., 1997). As I have proposed in the past (Dulaney et al., 2019), Informativeness notions may be thought of as downstream consequences of the existence of essential entities. In other words, under psychological essentialism, a quality of entities is that their behavior is stable over time because they are themselves inherently stable. If so, informativeness might not be as central to essentialist self-thinking as concepts targeted by other factors that explained greater variance such as Person Kind and True Self.

Bivariate correlations also support to the possibility that the Meaning Fulfillment factor of the Psychological Need Fulfillment items targets meaning in life in a different way than do the items from the MLQ. Consistent with the idea that the Meaning Fulfillment subscale items capture participants' feelings of meaning in life's mattering

component, meaning fulfillment was positively correlated with meaning ($r(127) = .41$, $p < .001$). Paralleling findings elsewhere (Dulaney et al., 2019; Dulaney et al., 2021), meaning was related to self-essentialism ($r(127) = .30$, $p = .001$). Interestingly, meaning fulfillment was not related to self-essentialism scores ($r(122) = .03$, $p = .72$). To the extent that meaning fulfillment captures feelings of mattering, this adds greater specificity to the link between meaning and self-essentialism constructs.

Turning to assess self-essentialism's relationship to well-being outcomes in this study, self-essentialism again had a medium-sized positive association with meaning just as in Dulaney et al., 2019 (current $r(127) = .30$, $p = .001$, prior $r(264) = .32$, $p < .001$) and had a medium-sized positive association with satisfaction with life which had ranged from small- to medium-sized in the past research (current $r(124) = .32$, $p < .001$, prior $r(262) = .25$, $p < .001$, $r(107) = .44$, $p < .001$). Self-essentialism likewise showed a medium-sized positive relationship to subjective vitality ($r(122) = .33$, $p < .001$), theoretically consistent with subjective vitality's positive association with feelings of being authentic (Thomaes et al., 2017). All correlations from the current endeavor exceeded the minimum detectable correlation with their test *N's* (.045–.046) at a power of .80 testing against a null hypothesis correlation of zero. Post-hoc sensitivity analysis approaches in Study 1 are covered in more depth in the next section.

Taken together, present and past work form a compelling case for a medium-sized correlation between self-essentialism and these measures of well-being. As psychological need fulfillment items evidenced a unique factor structure here, linking current correlations to past detections is dubious, but comfort fulfillment and control fulfillment each shared small positive correlations with self-essentialism (comfort $r(126) = .27$,

p = .002; control $r(126) = .28$, p = .002), as did overall psychological need fulfillment scores ($r(119) = .18$, p = .042), supporting a small role of self-essentialism in feelings of one's psychological needs being met following a threat induction. Of self-essentialism's subscales, True Self was most consistently positively related to well-being outcomes, suggesting it may capture the most relevant beliefs for well-being among all self-essentialism items.

Post-hoc Sensitivity Analysis

In the course of examining Hypothesis I, I employed post-hoc sensitivity analyses to check whether the research was sufficiently sensitive for detecting the effect sizes reported in the main analyses. This is done by calculating minimum detectable effect sizes and then comparing these criteria against their corresponding observed effect sizes. Global model sensitivity was assessed by calculating the sensitivity for a fixed linear multiple regression model's R^2 deviation from zero, with a power of 0.80, the by-test sample sizes reported alongside analyses, and five predictors. Local predictor sensitivity was also assessed by calculating the sensitivity, for a two-tailed test, of a fixed linear multiple regression's single regression coefficient, a power of .80, the by-test sample size, and five predictors. Cohen's f^2 (J. Cohen, 1988) was obtained for these effects using a conversion of R^2 to f^2, with specific equations given for calculating both global model and local predictor effects by Selya et al. (2012).

Hypothesis I

Using multiple moderated regression, I examined the resilience of participants to the experience of morality threat based on their self-essentialism scores. While in my view all items belonging to the self-essentialism measure mutually reinforce true self-

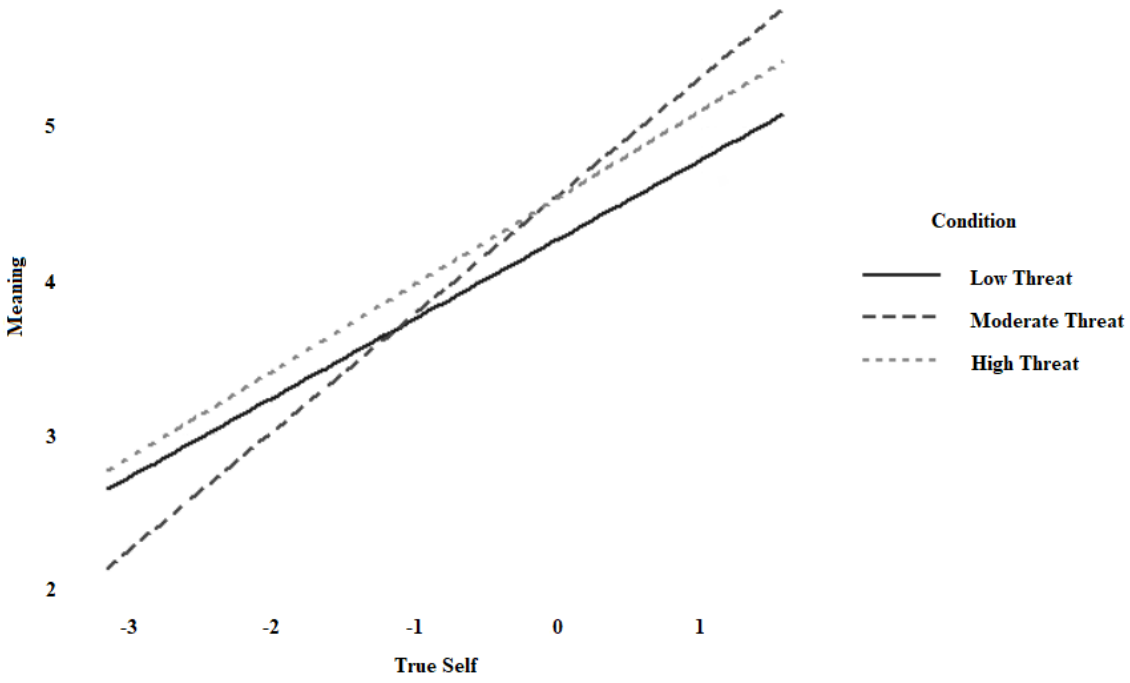
orientations, I expected that a particular subscale's items may contribute more meaningfully to psychological resilience in the moment. For instance, questions comprising the Person Kind and True Self subscales in the detected factor structure may be most central to people's essentialist self-beliefs, while other subscales may capture ideas of possible antecedents (Biological Basis) and consequences (Informativeness) associated with such beliefs. In this vein, should self-essentialism overall not emerge as a significant predictor in a model I planned to assess the involvement of self-essentialism's subscales as predictors interacting with participants' condition for explaining target outcomes. These would take place in separate analogous regression models with the same structure as the model testing the contribution of self-essentialism overall. That is, all models examined tested the contributions of the main effect term of self-essentialism or one of its subscale variables, the main effect term of participant condition, and their interaction term as predictors of one of the dependent variables targeted. In Hypothesis I, I stated my expectation that increases in self-essentialism would be more positively associated with increased well-being and positive feelings following a moderate threat as compared to following a high threat, and that in such an instance of a high threat firm true self-orientations may be conversely burdensome for well-being resilience. Still, people in the moderate threat condition were expected to feel lower mean well-being than in the low threat condition, considering the people in the low threat condition had not received feedback of being less moral than many of their peers. By referring to Table 4 it is possible to see that participants' morality threat condition seemed to have a weaker than hypothesized impact on outcome variables, with all by-condition means per variable falling within the same major scale point with the exception of two instances. Significant

model contributions are discussed below along with visualizations of predictor effects to aid hypothesis assessment. Full model statistics are provided in Appendix B.

Meaning. In the overall model testing for the main effect and interaction effect contributions of self-essentialism and participant condition predicting meaning, no predictor effects made significant contributions. Following this finding, subscale involvement tests were employed. When testing for the contributions of Person Kind, True Self, Biological Basis, and Informativeness in separate regression models, a significant main effect of True Self was detected as contributing to meaning (B = .51, SE = .19, t(128) = 2.75, p = .007, 95% CI [.14, .89], observed predictor local $f^{2 =}$ 0.21, meets criterion local $f^{2 =}$ .059 with test N = 134). For the overall model, F(5, 128) = 6.23, p < .001, adjusted R^2 = .16, corresponding observed global model f^2 = 0.19, meets global criterion f^2 = 0.10 with test N of 134 and five predictor terms. The main effect of condition did not significantly predict meaning (intercept estimate B = 4.26, SE = .20, t(128) = 21.05, p < .001, 95% CI [3.86, 4.66]; moderate threat estimate B = .28, SE = .28, t(128) = 1.00, p = .32, 95% CI [-.28, .85]; high threat estimate B = .27, SE = .29, t(128) = .93, p = .35, 95% CI [-.30, .84]; predictor $f^{2 =}$ 0.022). Further, no interaction effects emerged as significant (True Self X moderate threat estimate B = .25, SE = .29, t(128) = .88, p = .38, 95% CI [-.32, .82]; True Self X high threat estimate B = .05, SE = .29, t(128) = .16, p = .87, 95% CI [-.52, .62]; predictor f^2 = 0.0063). A depiction of this cross-condition main effect is displayed in Figure 2 for visual understanding. Including Biological Basis in the model instead revealed no new information, and including Person Kind and Informativeness resulted in a marginal main effect condition difference in meaning at high threat for each of their respective models.

Figure 2

True Self Scores Significantly Predicting Meaning Across Conditions in Study 1



These results suggest that, across conditions, believing one has a true self substantially explains meaning. The lack of effect of condition makes it difficult to further interpret the extent to which self-essentialism served as a protective barrier against false feedback threat here. One interpretation is that self-essentialism was equally effective for buffering all levels of threat. Conversely, another interpretation is that the threat conditions were either not stressful enough, or not believable enough, to provoke observable differences in life meaning. Still another possibility is that personally-threatening false feedback may not affect meaning in life at the moment it is received and may rather have downstream effects on meaning via self-doubt and negative self-evaluations springing from the threatening information, with observable consequences for meaning to follow.

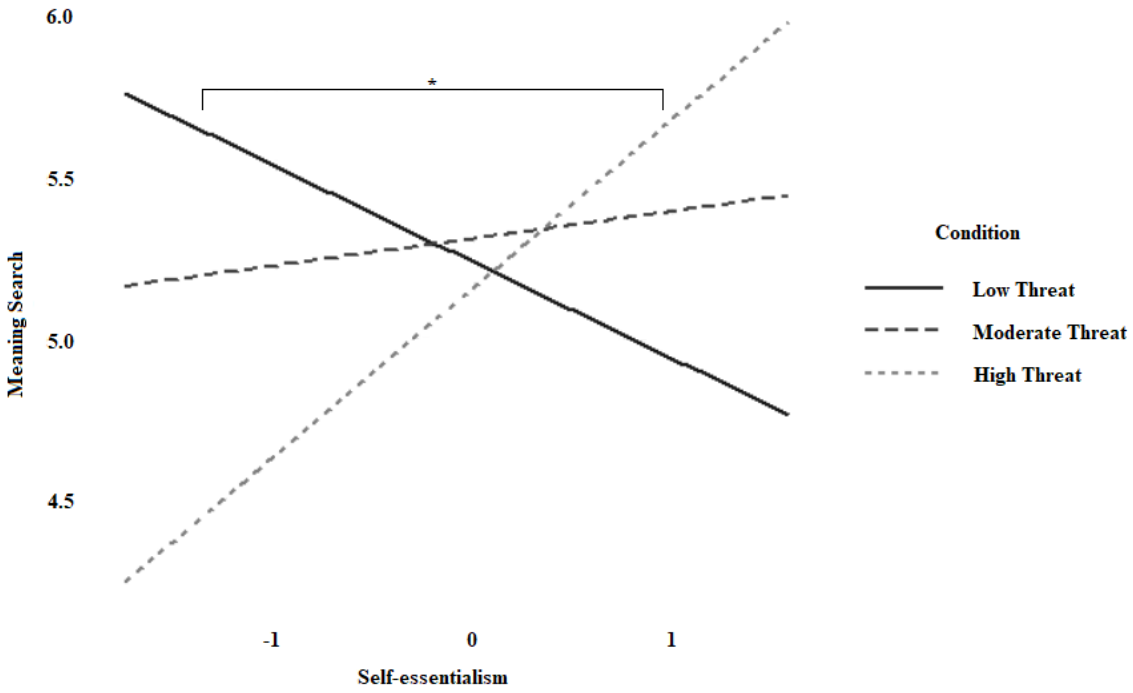
Meaning Searching. Turning to examine outcomes in meaning searching captured by the Search For Meaning subscale, the interaction between self-essentialism and participant condition significantly predicted meaning searching (intercept estimate B = 5.23, SE = .19, t(118) = 28.19, p < .001, 95% CI [4.87, 5.60], self-essentialism X high threat predictor estimate B = .82, SE = .38, t(118) = 2.13, p = .035, 95% CI [.06, 1.58], observed predictor f^2 = 0.037, does not meet criterion f^2 = .064 with test N = 124). The overall model did not significantly explain meaning searching, F(5, 118) = 1.04, p = .40, adjusted R^2 = .002, observed model f^2 = .002, does not meet criterion f^2 = .11; suggesting that one or more predictor main effect terms may not be appropriate for model inclusion. There were no significant main effects in the model (self-essentialism B = -.30, SE = .27, t(118) = -1.10, p = .27, 95% CI [-.83, .24]; moderate threat estimate B = ., SE = .29, t(118) = -1.00, p = .32, 95% CI [-.87, .29]; high threat estimate B = -.07, SE = .26, t(118) = -.28, p = .78, 95% CI [-.59, .44]), and the remaining interaction predictor was also not significant (self-essentialism X moderate threat predictor estimate B = .38, SE = .36, t(118) = 1.07, p = .29, 95% CI [-.32, 1.09]).

Probing the significant interaction of self-essentialism and the high threat condition for predicting meaning searches, as significantly different from the low threat condition, yielded an intriguing pattern. For participants in the high threat condition, the simple slope of self-essentialism and meaning searching was positive (B = .52, SE = .27, t(118) = 1.91, p = .058, 95% CI [-.02, 1.06]), which reversed direction for participants in the low threat condition (B = -.30, SE = .27, t(118) = -1.10, p = .28, 95% CI [-.83, .24]). Participants in the moderate threat condition showed a negligible slightly positive

relationship between self-essentialism and meaning searching (*B* = .08, *SE* = .23, *t*(118) = .36, *p* = .72, 95% CI [-.37, .54]). This pattern is depicted in Figure 3.

Figure 3

Self-essentialism Scores and Condition Significantly Predicting Differences in Meaning Searching in Study 1



As none of these simple slopes achieved significance, it appears that data collection from additional participants may be necessary to establish confidence in the precise strength and magnitude of these relationships. An initial interpretation of this pattern is that the positive link between self-essentialism and meaning searching among participants under high threat suggests support for Hypothesis I. Searching for meaning is associated with decreased well-being in adults (K. Cohen & Cairns, 2012), and thus it appears that higher self-essentialism is not able to buffer the meaning threat provoked by

high personal morality threat as hypothesized. Increased self-essentialism seems to increase participants' vulnerability to the psychological weight of this personal stressor perhaps due to the rigidity strong self-essentialism implies about the true self's ability to change for the better. As such, this result also indicates that a personal morality threat is threatening at least in part because it triggers self-doubt as suggested elsewhere (Christy et al., 2016).

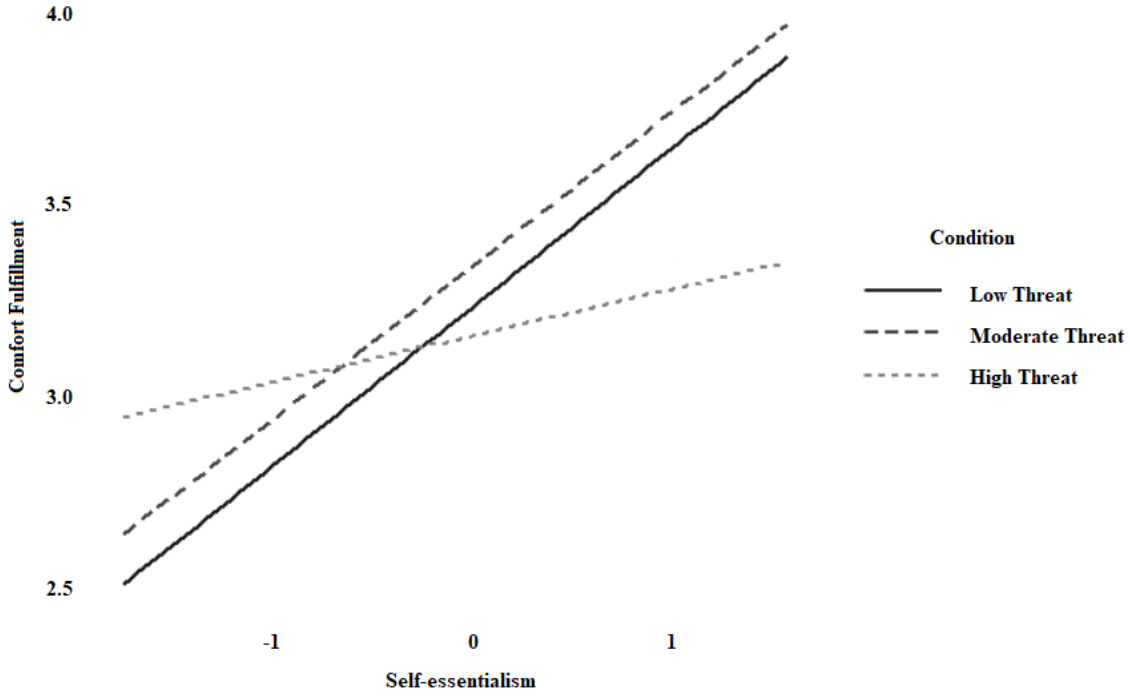
Under Hypothesis I, I also predicted that participants under moderate threat would find essentialist self-views to be useful in resisting the threat, and in this simple slopes analysis self-essentialism was unrelated to meaning searching under moderate threat. If we are to take seriously the small positive slope between self-essentialism and meaning searching in this condition, it may imply that the threat imposed by this manipulation level was sufficient for provoking a slight meaning search that self-essentialism was ineffective in buffering and potentially imposed a small burden in any attempts to resolve the meaning search. If self-essentialism actually holds no connection, of any direction, to meaning searching at this level of threat this would mean that it does not provide support in this circumstance but also that it is not disadvantageous. Participants in the low threat condition, rated above their peers on moral behavior, showed a negative relationship between self-essentialism and meaning searching. If the pattern indeed exists beyond this data collection where its simple slope did not reach significance, since true self-orientations depict the true self as highly moral, stronger self-essentialists may be more likely to accept moral affirmation unquestioningly. Or, this negative association between self-essentialism and meaning searching could be another sign of self-essentialism's general linkages to positive well-being.

Psychological Need Fulfillment. While Psychological Need Fulfillment is comprised of four groups of distinct needs, a preliminary analysis of all 20 Psychological Needs items as a global scale outcome found no involvement of self-essentialism or self-essentialism subscales. Results of this regression with overall self-essentialism as predictor appear in Appendix Table B4. Psychological Need Fulfillment subscale behavior was subsequently examined, with scores on each subscale as individual outcomes.

Comfort Fulfillment. Scores on the full self-essentialism scale had a significant main effect for predicting comfort fulfillment (B = .41, SE = .20, $t(122) = 2.00$, p = .047, 95% CI [.005, .82], observed predictor $f^2 = 0.064$, meets criterion $f^2 = 0.062$ with test N = 128). For the overall model, $F(5, 122) = 2.50$, p = .034, adjusted R^2 = .056, observed model f^2 = .059, does not meet criterion f^2 = 0.11. The main effect of condition did not significantly predict comfort fulfillment (intercept estimate B = 3.23, SE = .14, $t(122) = 22.79$, $p < .001$, 95% CI [2.95, 3.51]; moderate threat estimate B = .11, SE = .19, $t(122) = .55$, p = .58, 95% CI [-.28, .49]; high threat estimate B = -.08, SE = .20, $t(122) = -.39$, p = .70, 95% CI [-.46, .31]), and there were no significant interaction effects as well (self-essentialism X moderate threat estimate B = -.01, SE = .27, $t(122) = -.05$, p = .96, 95% CI [-.55, .52]; self-essentialism X high threat estimate B = -.29, SE = .29, $t(122) = -1.00$, p = .32, 95% CI [-.87, .29]). On their own, self-essentialism subscales were not significant contributors to comfort fulfillment in their corresponding models. The main effect of self-essentialism predicting comfort fulfillment across all conditions can be observed in Figure 4.

Figure 4

Self-essentialism Significantly Predicting Comfort Fulfillment Across Condition in Study 1



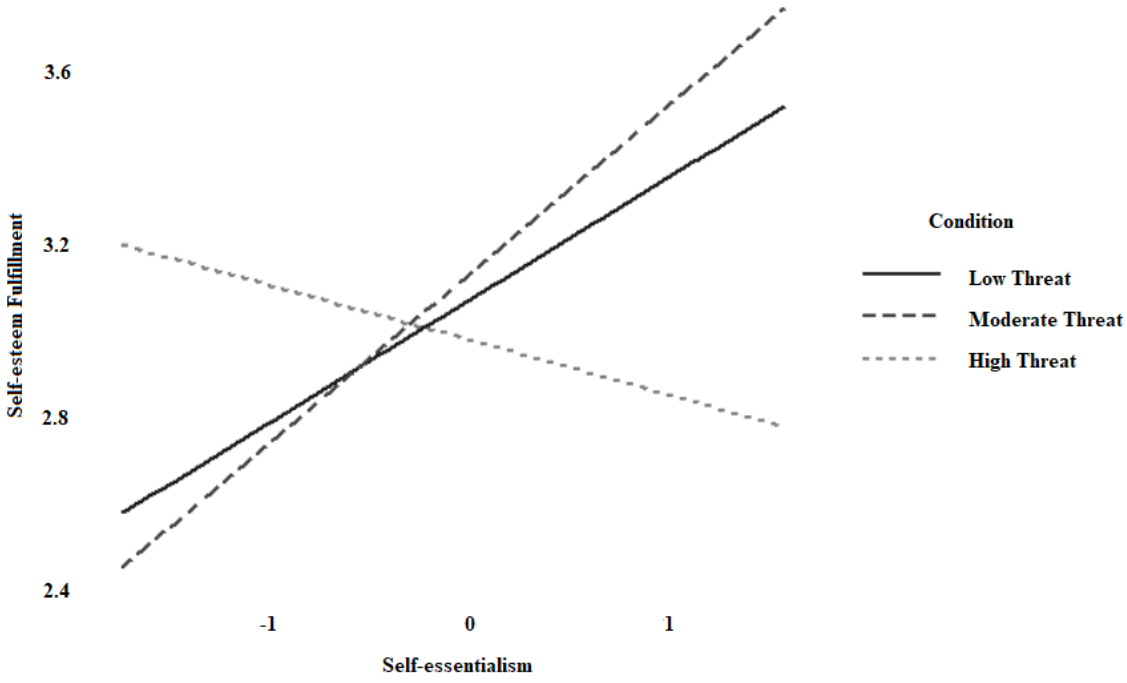
This main effect of self-essentialism in predicting comfort fulfillment indicates that self-essentialism is beneficial for general feelings of satisfaction and positive social standing, even among people who have received a threat designed to destabilize these feelings. Again, much interpretation is limited here due to the lack of significant effects of threat condition. Hypothesis I predicted positive relationships between self-essentialism and well-being in the low and moderate threat conditions, and this was supported. The negative relationship between self-essentialism and well-being in participants under high threat was not evident here when measuring comfort fulfillment. If we consult Figure 4, it is interesting that self-essentialism did not predict comfort fulfillment as strongly in the high threat condition, a possible glimpse of the

disadvantages predicted for self-essentialism in this condition. However, this is again speculative in the absence of a significant interaction effect.

Self-esteem Fulfillment. The model assessing self-esteem fulfillment showed no significant main effects for self-essentialism or condition, and no significant interaction effects. Model estimates are visualized in Figure 5. Models including self-essentialism subscales as predictors similarly showed no significant main or interaction effects.

Figure 5

Self-esteem Fulfillment was Not Significantly Predicted by Self-essentialism or Condition in Study 1



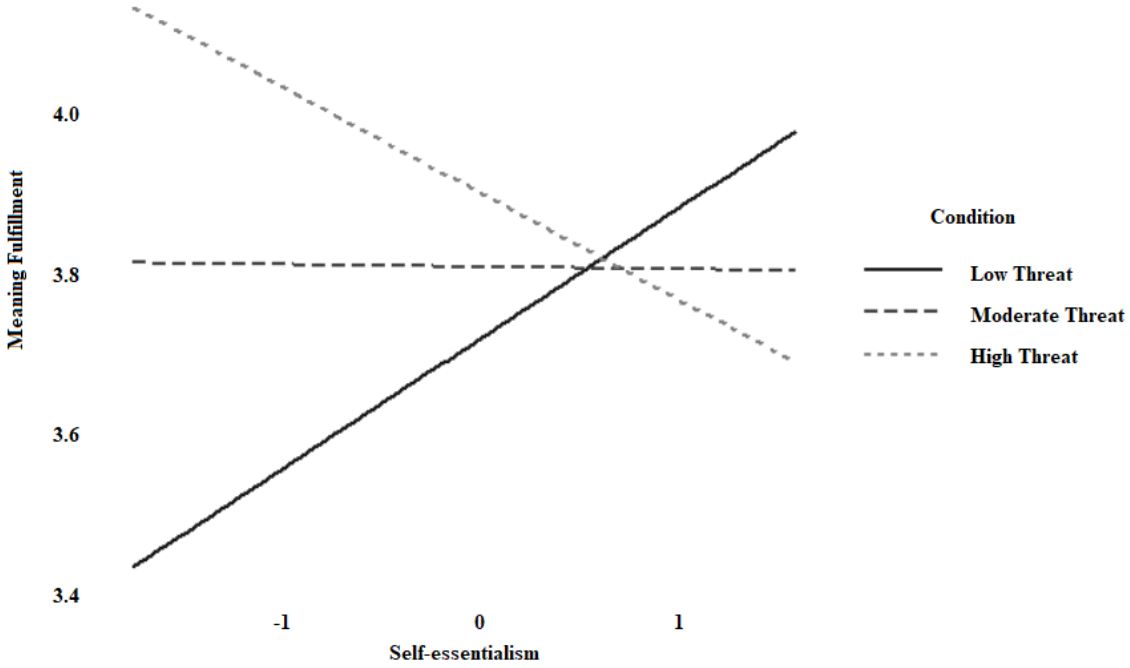
While visually the estimates map onto Hypothesis I, such that increases in self-essentialism were paired with decreased self-esteem fulfillment under high threat and with increased self-esteem fulfillment in participants under moderate and low threat, we do not have statistical justification for rejecting the null hypothesis that in the long run

these estimates would not differ. Still, it would be worth returning to these patterns again in follow-up work to confirm or disconfirm such an interaction.

Meaning Fulfillment. Turning to address meaning fulfillment, models containing self-essentialism or alternately its subscales found no significant main effects or interaction effects predicting meaning fulfillment. As discussed above, items in this subscale appear to capture participants' perceptions that their life matters, and the lack of a significant role for self-essentialism in predicting meaning fulfillment parallels there being no detected significant correlation between these variables. Estimates from the model containing self-essentialism are displayed in Figure 6, and visual patterns cohere with those described above for other outcomes such that the estimate in the high threat condition shows a negative self-essentialism to meaning fulfillment association. Additionally, in the low threat condition meaning fulfillment visually increased together with self-essentialism, suggesting the possibility that these variables may share significant positive correlations in paradigms not employing threat. Without a significant main effect of condition, however, there is not enough evidence here to be certain of this.

Figure 6

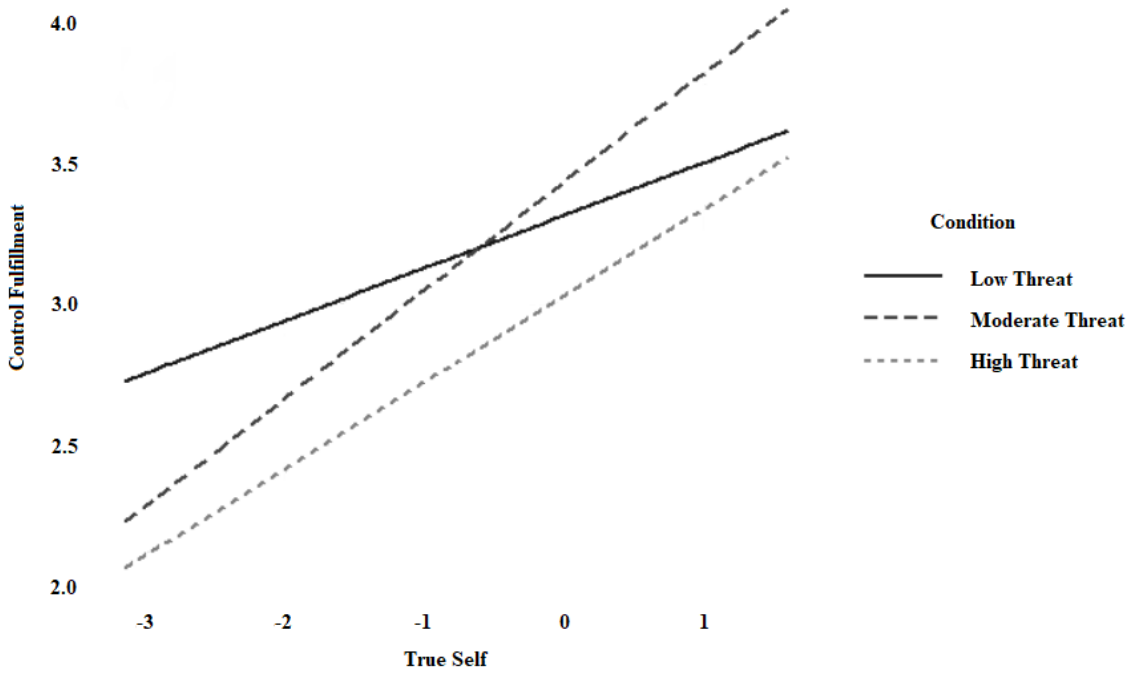
Meaning Fulfillment was Not Significantly Predicted by Self-essentialism or Condition in Study 1



Control Fulfillment. Finally, examining control fulfillment, no regression sequences found significant main or interaction effects for predicting control fulfillment values. In the regression that included True Self as the self-essentialism-related predictor, it had a marginal main effect (B = .19, SE = .11, $t(127) = 1.71$, p = .090, 95% CI [-.03, .40], observed predictor $f^{2 =}$ .094, meets criterion $f^{2 =}$ .060 with test N = 133; overall model: $F(5, 127) = 4.27$, p = .001, adjusted R^2 = .11, observed model f^2 = .12, meetst criterion f^2 = .10), and accordingly this is the model for which estimates are displayed in Figure 7 below, and which was highly similar in direction and magnitude to analogous estimates using overall self-essentialism as a predictor.

Figure 7

True Self Marginally Predicting Control Fulfillment Across Condition in Study 1



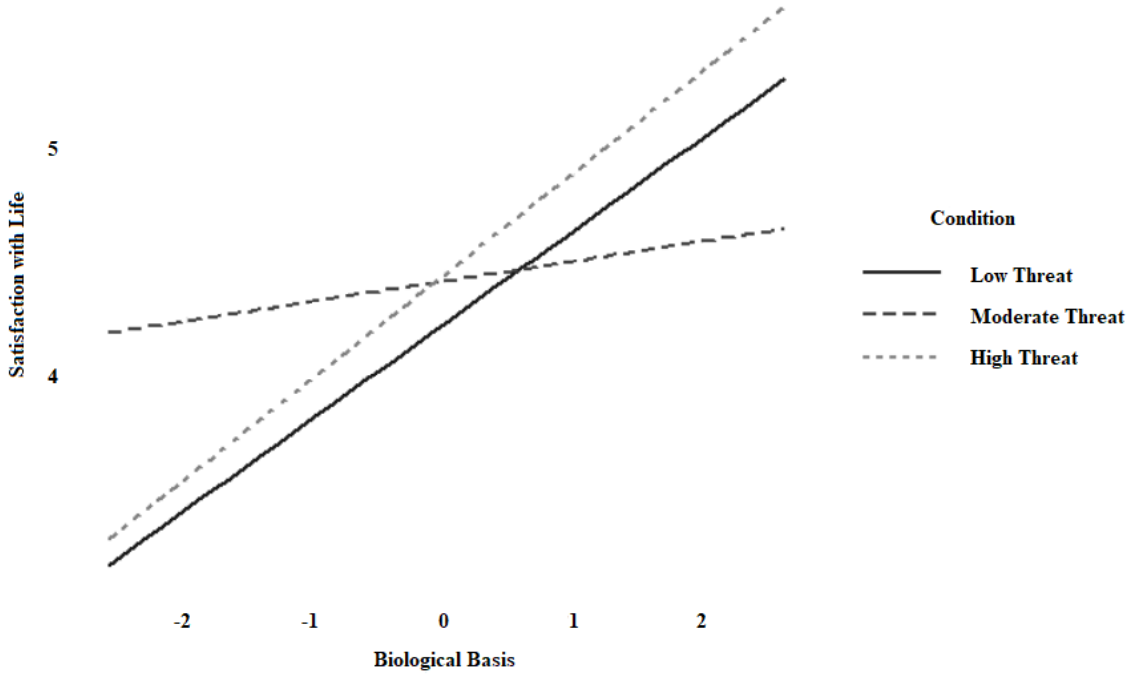
Interpretation of marginal effects is best approached with caution. The direction of the main effect is in line with True Self's overall correlation with ($r(131) = .31$, $p < .001$) control fulfillment. As with all main effects of self-essentialism and its underlying subscales, in the absence of interaction effects it is difficult to ascertain the extent to which the measured variable—control fulfillment in this case—was unresponsive to the threat induction as opposed to self-essentialism being so protective against the threats that no level of threat manipulation was strong enough to observably overcome the buffering.

Satisfaction with Life. Satisfaction with life was marginally explained by overall self-essentialism scores ($B = .59$, $SE = .34$, $t(120) = 1.76$, $p = .081$, 95% CI [-.07, 1.26], observed predictor $f^{2} = .095$, meets criterion $f^{2} = .063$ with test $N = 126$; overall model:

$F(5, 120) = 3.01$, $p = .013$, adjusted $R^2 = .074$, observed model $f^2 = .080$, did not meet criterion $f^2 = .11$). Examining self-essentialism subscale behavior, the inclusion of Biological Basis scores in the model significantly explained satisfaction with life ($B = .41$, $SE = .19$, $t(123) = 2.14$, $p = .03$, 95% CI [.03, .78], observed predictor $f^2 = .071$, meets criterion $f^2 = .062$ with test $N = 129$; overall model: $F(5, 123) = 2.74$, $p = .02$, adjusted $R^2 = .064$, observed model $f^2 = .068$, does not meet criterion $f^2 = .10$). Condition did not show a significant main effect or significant interaction effects (intercept $B = 4.23$, $SE = .22$, $t(123) = 19.51$, $p < .001$, 95% CI [3.80, 4.66]; moderate threat estimate $B = .18$, $SE = .31$, $t(123) = 0.60$, $p = .55$, 95% CI [-.43, .80]; high threat estimate $B = .21$, $SE = .31$, $t(123) = .69$, $p = .49$, 95% CI [-.40, .83]; Biological Basis X moderate threat estimate $B = -.32$, $SE = .26$, $t(123) = -1.24$, $p = .22$, 95% CI [-.83, .19]; Biological Basis X high threat estimate $B = .04$, $SE = .25$, $t(123) = 0.15$, $p = .88$, 95% CI [-.46, .54]). No other self-essentialism subscale contributed significantly in a main effect or interaction, so it may be that the Biological Basis contribution explains the marginal main effect of self-essentialism overall. The main effect of Biological Basis is depicted across conditions in Figure 8.

Figure 8

Biological Basis Significantly Predicting Satisfaction with Life Across Conditions in Study 1



Reviewing Figure 8, it is first visually apparent that the same pattern of blunted positive association between self-essentialist ideas (specifically Biological Basis here) and well-being under high threat again emerged here. Hypothesis I is partially supported by these findings, as a positive link between self-essentialism and satisfaction with life in both low and moderate threat conditions was predicted, however the moderate threat condition did not show an appreciably weaker relationship between the two compared to the low threat condition. The visual weakening of this relationship under high threat would be consistent with Hypothesis I's prediction of an attenuated effectiveness for self-essentialism in threat resilience in this condition. Still, only the positive main effect of Biological Basis on satisfaction with life has statistical support for consideration. Again

these true self-orientations positively predicted well-being here, but it is less clear why only the Biological Basis subscale—measuring participants' beliefs that who they are is stamped into their genetic makeup—contributed to satisfaction with life as a predictor in this model, particularly as all self-essentialism subscales positively correlated with satisfaction with life in bivariate analyses.

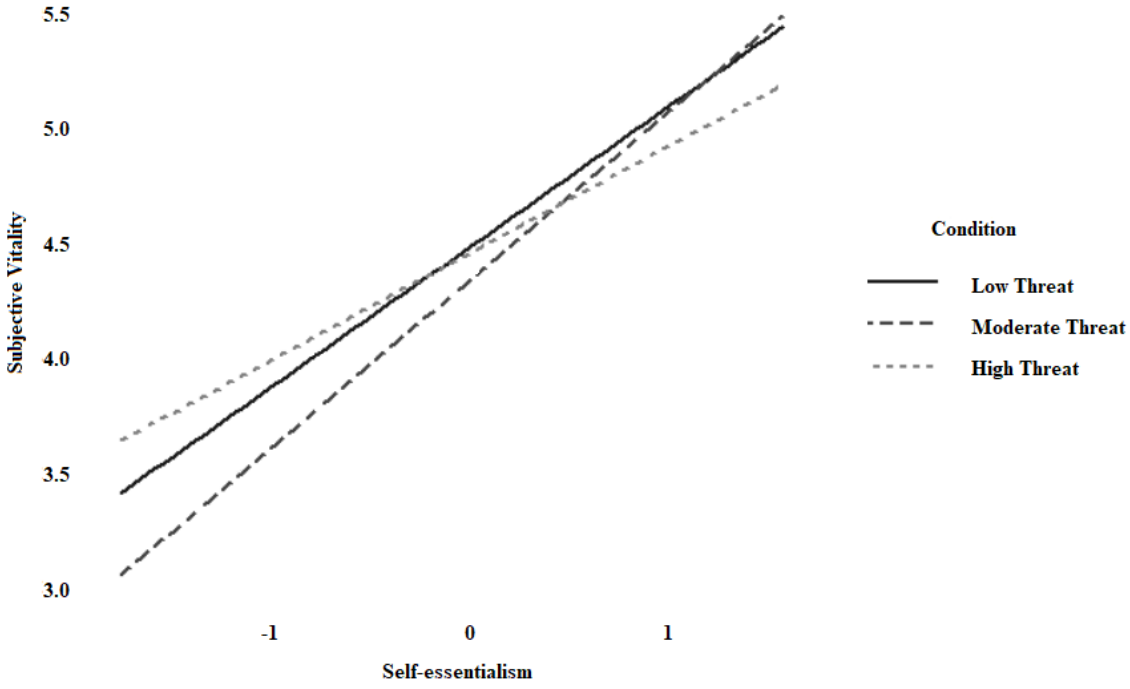
Considering that data were collected in November of 2020 and January of 2021, participants' national context was one of increased complexity, both in overall assessments of life satisfaction due to the pandemic and also in people's relationship to their personal identities due to ongoing national conflict and disagreement surrounding issues of social class, oppression, and election integrity. It is possible that in such a context participants drew new satisfaction or pride from their own genetic identity, or the idea that a person's nature is biologically-based, as satisfaction with life has in the past been unrelated to Biological Basis scores (Dulaney et al., 2019). If so, the implications are not altogether positive, as tying one's identity to genetics may heighten the extent to which one makes distinctions between in- and out-groups, and essentializing social group members has been linked with increased stereotype endorsement (Haslam et al., 2000; Yzerbyt & Rocher, 2002).

Subjective Vitality. Subjective vitality was significantly explained by a main effect of self-essentialism (B = .61, SE = .29, $t(118) = 2.08$, p = .040, 95% CI [.03, 1.18], observed predictor $f^{2 =}$ .11, meets criterion $f^{2 =}$ .064 with test N = 124; overall model: $F(5, 118) = 3.10$, p = .011, adjusted R^2 = .079, observed model f^2 = .086, does not meet criterion f^2 = .11). No other main or interaction effects were significant (intercept B = 4.47, SE = .20, $t(118) = 22.25$, $p < .001$, 95% CI [4.07, 4.87]; moderate threat

estimate B = -.14, SE = .28, t(118) = -0.52, p = .60, 95% CI [-.69, .40]; high threat estimate B = -.03, SE = .28, t(118) = -0.09, p = .93, 95% CI [-.58, .53]; self-essentialism X moderate threat estimate B = .12, SE = .39, t(118) = 0.31, p = .76, 95% CI [-.64, .88]; self-essentialism X high threat estimate B = -.14, SE = .42, t(118) = -0.34, p = .73, 95% CI [-.97, .69]). This significant main effect was echoed by a marginal main effect of the Biological Basis subscale (B = .33, SE = .17, t(120) = 1.91, p = .058, 95% CI [-.01, .66], observed predictor $f^{2\,=}$ 0.042, does not meet criterion $f^{2\,=}$ .063 with test N = 126; overall model: F(5, 120) = 1.29, p = .27, adjusted R^2 = .012, observed model f^2 = .012, does not meet criterion f^2 = .11), while no other significant subscale involvement appeared. Figure 9 portrays the significant contribution of self-essentialism for explaining subjective vitality across conditions.

Figure 9

Self-essentialism Significantly Predicting Subjective Vitality Across Conditions in Study 1



This finding of a main effect of self-essentialism in predicting increased subjective vitality builds on the pattern observed throughout Study 1 that, across conditions, self-essentialism was associated with positive well-being. The implications here parallel the above detections of analogous main effects in other outcomes (i.e., meaning, control fulfillment) with no model contribution of condition, either significant or visual: For all participants, even those given threatening feedback, self-essentialism was related to positive well-being as represented by subjective vitality. It may be that no group of participants was sufficiently threatened to show subjective vitality differences, that subjective vitality is not an aspect of well-being that responds to threat of this kind, or that self-essentialism so successfully neutralized the false feedback

given in the moderate and high threat false-feedback conditions that participants in these conditions had well-being scores that were statistically indistinguishable from participants who were not threatened. After considering the analysis-wise implications for these findings, I now assess Study 1's observed patterns as a whole for further informing and evaluating Hypothesis I.

Discussion

Under my theoretical framework, I consider true self-orientations to be bountiful resources for constructing personal meaning and for pragmatic coping responses to destabilizing stimuli. This led me to predict people's baseline self-essentialism differences to show a buffering effect of moderate threat. Acknowledging that true self-orientations highly essentialize the true self, portraying it as inherent, immutable, stable, and informative, I also predicted that self-essentialism would pose a well-being risk in cases of high personal threat. This, I argued, was due to self-essentialism's assumed inability to assimilate the threatening information of immorality and inability to accommodate new possibilities of alternate selves.

Variable patterns in the low and moderate threat conditions were largely consistent with Hypothesis I, with slope estimates of self-essentialism or its subscales increasing together with most well-being outcomes, many of which supported by significant main effects of self-essentialism as a model predictor of positive well-being (i.e., meaning, lower meaning searching, comfort fulfillment, control fulfillment, satisfaction with life, subjective vitality). As covered in by-analysis interpretations, the extent to which this signifies effective coping with moderate threat is unclear given the lack of significant condition participation in most models.

Hypothesis I's variable predictions in the high threat condition were less consistent to emerge, but specific analyses yielded important results supporting the theoretical model. In the model predicting meaning searching self-essentialism interacted with threat condition, with participants in the high threat condition reporting more searching for life meaning the more they endorsed essentialist self-views. By comparison, participants in the low threat condition showed less meaning searching related to higher self-essentialism, indicating less motivation to search for meaning during times of stability for people who believe they have a true self. Associated with well-being costs (K. Cohen & Cairns, 2012), this increased searching for meaning among strong self-essentialists under high threat signifies evidence that rigid self-views are inconsistent with judgments of immorality and consequently elicit motivations to resecure meaning. Additional support for Hypothesis I's expected patterns in high threat arose visually, but usually not significantly, in regression models: under high threat specific positive well-being outcomes of self-essentialism were attenuated (i.e., comfort fulfillment, satisfaction with life), or even inverted (i.e., meaning searching, meaning fulfillment, self-esteem fulfillment). Together, the emergence of Hypothesis I's expected patterns for search for meaning while other well-being variables did not respond as conclusively to the threats suggests that meaning searching may be the most sensitive among the well-being variables measured here to these types of threat reactions.

Following Study 1's analyses and questions over manipulation efficacy, I reviewed the personal morality threat manipulation materials to identify potential areas for improvement. Given that some participants in the low and high threat condition remarked disbelievingly on their extreme morality scores early in the funnel debriefing,

for Study 2 I adjusted these conditions' feedback and in turn also adjusted the feedback given in the moderate threat condition to maintain its position between the extremes. Beyond the scope of this investigative sequence, Study 1's conclusions could be further informed by collecting baseline measurements of all outcome variables measured here prior to administering the threat, and without administering self-essentialism items in the design, to lend more conclusive strength regarding the effects of the threat manipulation alone. I return to the indications and conclusions of Study 1 in the General Discussion, where I evaluate them in broader terms alongside the findings of Study 2, which I discuss next.

Study 2

This study was designed to directly examine true self-orientations as in-the-moment adaptive coping supports. As in Study 1, participants' moral characters were threatened, with some adjustments for this study. After this personal morality threat, participants were instructed to choose between three distinct activities they would undertake next. These activities have been designed to represent an option to reflect on and connect with their true self, an option to reflect on the flexible nature of their self, or an option to reflect on the qualities of who they are in daily life. The goal of this design was to explore the extent to which participants would desire and pursue connection with their true self following low, medium, and high levels of personal morality threat.

This study examined participants' in-the-moment use of their true self-orientations for threat processing support following a personal morality threat. Study 2 aimed to first assess variation in participant preference to connect to their true self—represented by participants' choice and desirability ratings of three different

activities: reflective descriptions of their true self, consideration of flexible aspects of their self, and reflective descriptions of their everyday qualities, following low, moderate, and high personal morality threat. Complementarily, this study investigated how effective each of the three activities might be for helping participants cope with evidence of personal morality threat by randomly assigning participants to one of the activities, having them actually perform the assigned activity task, and subsequently self-report on a variety of well-being outcome measures.

Hypotheses

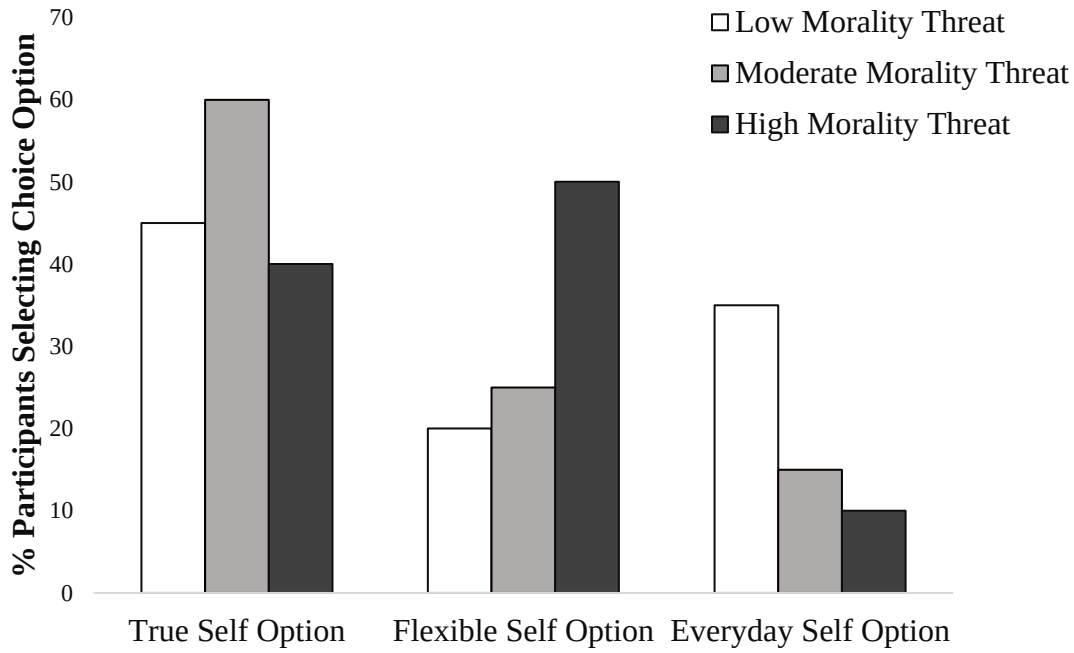
Hypothesis II

I expect participants under moderate morality threat to preferentially select the task in which they describe their true self to help them adjust to the threat. An aspect of my hypotheses which is less certain to emerge is the possibility that participants under high morality threat would preferentially select the flexible self-description task as a way to escape from overly rigid true self-orientations as suggested by the literature on self-dialecticism (Boyraz et al., 2019), and would seek to avoid describing their true selves accordingly. However, it might be that the true self is seen as so fundamentally moral and so positively valenced that even the highest threat condition here would not be enough to drive participants away from their attachment to their true self-orientations, producing similar levels of true self-description preference among participants in moderate and high threat. Additionally, I predicted that participants under low threat would most prefer describing their true self, next prefer describing their everyday self due to its familiarity, and least prefer describing their flexible self-aspects due to its relative unfamiliarity. Under moderate and high threat, I predicted that participant preference for everyday

self-description might fall substantially since it is feedback about their past behavior that was the source of this threat. A chi-square test of independence was planned to compare the three groups of personal morality threat on their prevalence of selecting each of the three activity choice options. A visualization of these predictions appears in Figure 10, which also depicts the possibility of participants under high threat choosing to describe their flexible self-aspects.

Figure 10

Hypothesized Pattern of Choice of Task for Each Level of Personal Morality Threat



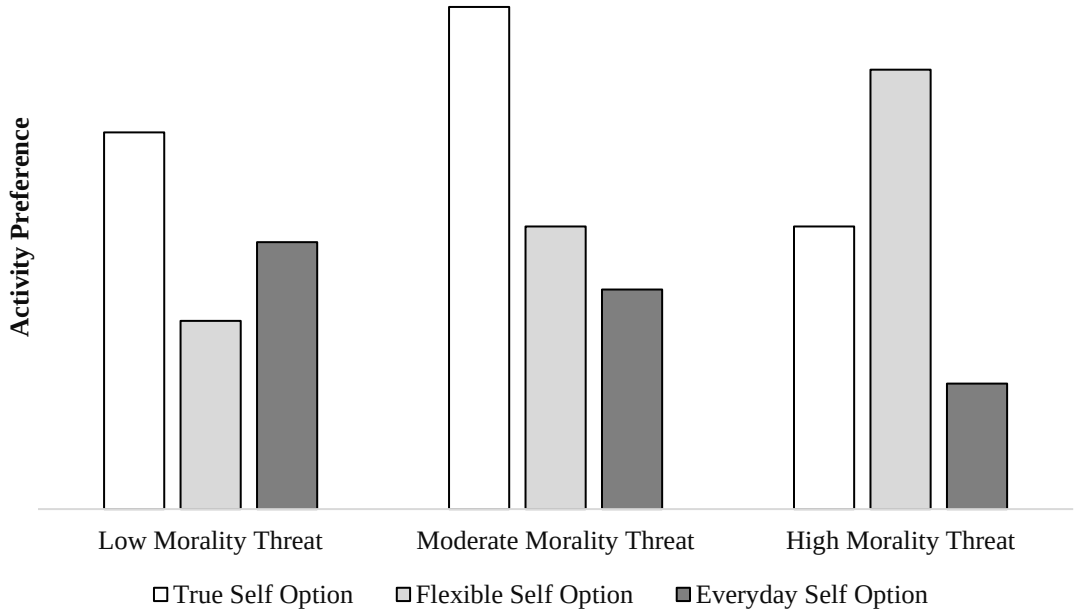
Hypothesis III

Assessing participants' degree of desire to perform each of the provided activity descriptions, measured continuously, allowed me to probe their preference for each activity beyond Hypothesis II's analysis of the categorical activity choice. It was expected that participants would likely mentally rank the self-description tasks in order of

the participants' preference to engage in them at least to some degree, and express these rankings via the graphical sliders. This would mean that one task's preference ratings would be partially dependent on the other tasks' ratings, and a repeated-measures analysis of variance (ANOVA) was therefore employed to compare the low, medium, and high morality threat conditions on preference to engage in each of the three activities. Despite the different analytic approaches between Hypothesis II and III, the reasoning behind the predictions was the same. Hypothesis III consists of the expectation that participants would have a high desire to engage with the true self in states of low threat and especially states of moderate threat, and that this desire would decrease in states of high threat assuming they perceived the threat as sufficiently strong. Continuing, participants would most prefer to engage with flexible self-representations under the highest threat, and would seek to engage with their everyday selves the most under lowest threat. Approach towards the everyday self was predicted to fall as threat level rose. Planned comparisons were performed to assess the particulars of this hypothesis beyond the broad expectation that a significant main effect of threat condition would emerge for activity preference. These expected patterns are illustrated in Figure 11.

Figure 11

Hypothesized Pattern of Desire to Perform Each of the Three Activity Options by Level of Personal Morality Threat



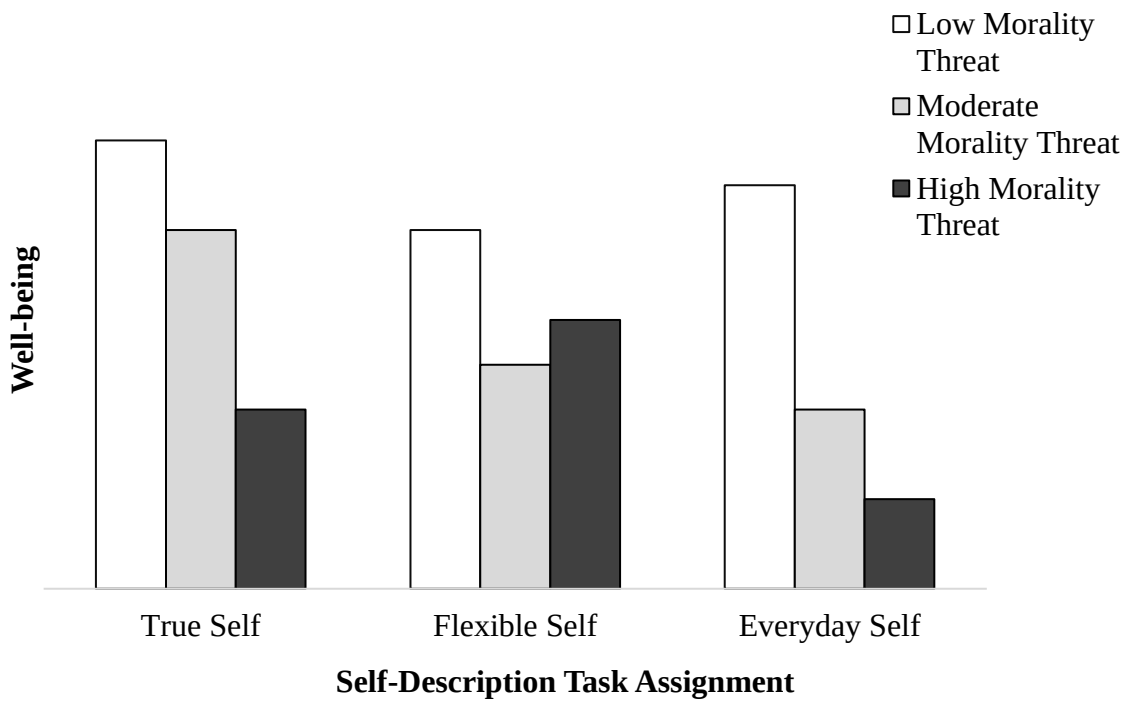
Hypothesis IV

Corresponding to the theoretical framework in use, I anticipated that participants under moderate threat would most benefit from performing the true self-reflection activity and that participants under high threat were likely to most benefit from performing the flexible self-reflection activity. To evaluate this hypothesis, a 3 x 3 ANOVA was performed with morality threat condition and assigned activity condition predicting each well-being score. I expected well-being to be highest in participants exposed to low morality threat since this was the least stressful and was in fact potentially affirming due to participants receiving the false feedback that they scored well on morality compared to their peers. A main effect of threat condition on well-being was

thus expected to emerge in addition to a significant interaction between threat condition and activity task assignment. An acknowledged area for potential failure of the theoretical framework was in the possibility that, due to the true self carrying such positive associations in everyday life and additionally being thought of as highly morally good, people assigned to both the high morality threat condition and the true self-reflection condition might show higher well-being scores than expected. Figure 12 has been provided to illustrate both the hypothesized predictions and additional conceivable likely outcomes for non-hypothesized condition permutations.

Figure 12

Hypothesized Pattern of Well-being and Psychological Need-Fulfillment for Each Level of Personal Morality Threat and Task Assignment



Method

Participants

Participants belonging to Prolific's paid participation pool were recruited via Prolific's electronic platform. Recruitment yielded a total *N* of 444 participants. For all included participants following the noncompliance and manipulation check screening discussed in Study 2's Analyses and Results section, the *N* was 388 (age 18–64, *M* = 31.47, *SD* = 9.97, three nonresponding, for participants who input a birth year to represent age (*N* = 4) their age was entered as their minimum age in years plus 0.5; 57.00% male, 0.3% Intersex, 0.3% Non-Binary, 1.5% wishing not to indicate; political ideology *M* = 4.89, *SD* = 1.72; religiosity *M* = 1.93, *SD* = 11.72; 12.6% Asian, 0.3% Asian and European, 0.3% Asian and Latina, 1.5% Asian and White, 13.2% Black, 1.1% Black and White, 0.3% Hispanic/Latina, Native American, and White, 3.1% Latino/a, 0.6% Latino/a and White, 0.3% Middle Eastern, 1.0% Native American, 0.3% Native American and European, 0.3% Native American, Pacific Islander, and White, 0.3% Native American and White, 62.9% White, 0.3% White, Black, and Native American, 0.3% White Hispanic, 0.3% White and Hispanic, 0.3% White and Mexican, 0.3% White and Middle Eastern, 0.9% nonresponding).

Procedure

Mirroring the procedural plan outlined in Study 1 adjusted for delivery via Prolific, Prolific provided participants with a Qualtrics survey link containing all tasks and measures for this study. Upon using the survey link participants who wished to do so indicated their consent to take part in the study, they passed a page which served to capture their unique Prolific identification string. Much like the Sona identification

string, this information allows researchers to remain blind to participant identity while also being able to pair their survey behavior with their study registration in Prolific for the purposes of rejecting payment. They then answered four demographic questions to confirm their fit with Prolific's recruitment filters, and finally a page instructing them to minimize distraction prior to beginning. Any non-consenting or filter-divergent participants were routed away from the survey and instructed to withdraw from the research on these grounds. As in Study 1, participants who passed the preliminary pages were then randomly assigned to experience one of three levels of morality threat. Following completion of the morality threat manipulation, participants indicated which of three self-description activities they would most prefer to engage in if they had a choice before continuing on to further parts of the study. After expressing their preferences, participants were randomly assigned to complete one of the three written description tasks regardless of their choice, after which they completed identical well-being, need-satisfaction, vitality, and demographic items as used in Study 1. The study concluded with participant debriefing and automatically redirected them to Prolific to receive participation payment of $3.63.

Morality Threat Manipulation. Participants were again randomly assigned to experience one of three threat induction conditions (low personal morality threat, moderate personal morality threat, and high personal morality threat). Due to the absence of coherent task differences in Study 1's findings, I modified these experiences to be both more believable and more in line with the modes in which the materials had been shown to be effective in other research (Christy et al., 2016). In this study, participants in the low threat condition answered the 20 items measuring past performance of moral

behaviors in randomized order, and participants in the high threat condition answered the 20 items measuring past performance of immoral behaviors in randomized order. Participants in the moderate threat condition encountered 20 items, taken from both immoral and moral behavior lists and presented in random order, so as to more closely induce the sense of moderate morality threat targeted here.

This combination of items included all but six of the immoral behavior items, selected to be most relevant for participants' lives and likely to be endorsed. Six moral behavior items were selected for inclusion based on their low likelihood to allow participants to restore their feelings of personal morality. Additionally, to increase the chance of participants endorsing behaviors I expanded Study 1's response scale to include a fifth option, becoming the new next-to-lowest option (1 = "I have not done this", 2 = "I have done this once or twice", 3 = "I have done this on occasion", 4 = "I have done this often", and 5 = "I have done this very often."). Upon completing their conditions' corresponding questionnaires, participants were again presented with a component that displayed false feedback morality scores.

This false feedback phase differed slightly from its Study 1 analogue: due to the small number of participants excluded from Study 1 for reporting that the visual depiction of their score failed to load, to avoid this from recurring I omitted these graphics from Study 2. To increase believability in another way, the first page participants saw when advancing past their morality questionnaire was one containing the message "The study will proceed to the next page in one moment." and which automatically advanced after five seconds to the page containing the message "As part of our research, we have calculated your overall moral behavior score based on your

answers to the previous questions. The next page displays your score on these questions in the context of all other Prolific participants who have taken part in our research. Please proceed to the next page to view your results." In this way, the page displayed for five seconds lent plausibility to the idea that scores were being calculated and compared against others during that time, more so than had participants been told their score was calculated or shown their score outright immediately upon advancing the page.

On advancing the page, participants in the low morality threat condition saw the message "Compared to the other participants who have taken part in this study, you scored in the *85th percentile* of behaving morally. That is, you scored higher on moral qualities than 85% of Prolific participants."; participants in the moderate morality threat condition saw "Compared to the other participants who have taken part in this study, you scored in the *65th percentile* of behaving morally. That is, you scored lower on moral qualities than 35% of Prolific participants."; and participants in the high morality threat condition saw "Compared to the other participants who have taken part in this study, you scored in the *40th percentile* of behaving morally. That is, you scored lower on moral qualities than 60% of Prolific participants." Differences in these reported percentiles compared to Study 1's false feedback were integrated in hopes of producing more reliable condition differences compared to Study 1's findings, and in hopes of reducing the likelihood of manipulation suspicion in both the low and high threat conditions evidenced by Study 1 participants' shock at how strongly moral/immoral they had scored compared to their peers.

Activity Selection Task. Participants were presented with descriptions of three self-reflection written tasks, one involving reflecting on and describing their true self, a

task to reflect on and describe the flexible nature of their self, and a task to reflect on and describe their everyday self. Participants were asked to indicate their preferred task to engage in of the three, with instructions written so as not to suggest that their doing so would dictate the next step of the study: "Next, please choose between the following three options to select what activity you'd prefer to complete if you had a choice. Please choose based on what you most want to do at this time." The following task descriptions were presented in random order:

True Self-Reflection Activity Description. "Option: True Self-Description Activity. This activity involves having you take a few minutes to reflect on and then describe **your true self**: Which aspects of you are most constant and stable? Who are you deep down?"

Flexible Self-Reflection Activity Description. "Option: Flexible Self-Description Activity. This activity involves having you take a few minutes to reflect on and then describe **flexibility within yourself**: Which aspects of you undergo change? How are you as a person different over time?"

Everyday Self-Reflection Activity Description. "Option: Everyday Self-Description Activity. This activity involves having you take a few minutes to reflect on and then describe **your usual self**: Which aspects of you do you present to the world and in public? Who are you in everyday life?"

One challenge to the activity options provided is that the label "true self" is one that exists in normal speech, while the idea of an everyday self is less elaborated, and as there is not a specific label for a dialectical self the term "flexible self" has been used. I have decided that this disadvantage is acceptable in order to keep participants as close as

possible to the true self construct that is at the heart of the line of inquiry here. To assess potential labeling and content differences, prior to administering these materials the wording of each task was pilot tested among 54 DePaul University graduate students and advanced undergraduates in the Psychology Department.

Using a Qualtrics survey these students volunteered their ratings for the task descriptions to be used by participants to indicate their task selections. All students were naïve to this project's specific research questions. Each student rated all task descriptions, which were presented in random order and on a separate page per task, on the questions "How interesting does this activity sound to complete?" and "How easy does this activity sound to complete?" (1 = Not At All to 5 = Extremely). A repeated-measures ANOVA detected no differences in activity interest (true self task $M = 3.61$, $SD = 0.98$; flexible self task $M = 3.56$, $SD = 0.84$; everyday self task $M = 3.52$, $SD = 0.97$; $F(2, 106) = 0.34$, $p = .71$, $\eta_p^2 = 0.006$, corresponding Cohen's $f = 0.078$, criterion $f = .16$ for test N = 54, power = 0.80, average correlation among repeated measures = .60, nonsphericity correction $\varepsilon = 1$).

Differences in activity ease were detected, such that the everyday self-description activity was perceived to be a bit easier to complete than either of the other tasks (true self task $M = 2.94$, $SD = 1.09$; flexible self task $M = 2.98$, $SD = 0.92$; everyday self task $M = 3.50$, $SD = 0.88$; $F(2, 106) = 7.31$, $p = .001$, $\eta_p^2 = 0.12$, corresponding Cohen's $f = 0.37$, meets criterion $f = .21$ for test $N = 54$ and average correlation among repeated measures = .25). Post-hoc tests revealed that the everyday self-description task seemed easier to complete than both the true self-description task ($t(106) = 3.42$, familywise Bonferroni adjusted $p = .003$) and the flexible self-description task ($t(106) = 3.19$,

familywise Bonferroni adjusted $p = .006$). Perhaps by virtue of having more familiarity with the daily self, it appears that describing the everyday self is perceived as being easier than describing the true self and flexible self. Accordingly, I proceeded in carrying out data collection for Study 2 and approached analyses of participants' choices with this in mind.

After making their selection, on the following page participants rated all three activities in terms of their preference to engage in them via graphical sliders. This design allowed participants to provide both categorical choice responses and continuous desire ratings which could be separately analyzed for effects of condition. The order of choice selection options as well as the order of the rating sliders were constrained to the randomized order that each participant received the descriptions in.

Written Self-Description Task Assignment. Upon rating all activities and advancing to the next page, participants were then randomly assigned to complete one of the written description tasks over the next five minutes regardless of their prior choice of task. Administering this component consisted of two survey pages; one containing instructions, and one containing the task itself. To ease the transition to assignment to tasks participants may not have chosen, the instructions page read, "In this next part of the study, you will be given one of the written description activities to complete; it may not be your top rated activity. Please proceed to the next page to begin." The task page consisted of one of three task-descriptions appearing below, and automatically advanced after 5 minutes had elapsed so as to constrain the experiential written manipulation in length of delivery across participants.

True Self-Reflection Activity. "This activity collects your written thoughts on a topic. Specifically, over the next 5 minutes please reflect on **your true self**. Which aspects of you are most constant and stable? Who you are deep down? Describe your true self as thoroughly as possible, reflect on the aspects of you that you feel are most central to who you are at your core, in as much detail as possible. After 5 minutes, the study will advance to the next component."

Flexible Self-Reflection Activity. "This activity collects your written thoughts on a topic. Over the next 5 minutes please reflect on **flexibility within yourself.** How might important aspects of you be able to undergo change? How might you as a person be different over time? Describe your self-flexibility as thoroughly as possible, reflect on how even central aspects to who you are can change, in as much detail as possible. After 5 minutes, the study will advance to the next component."

Everyday Self-Reflection Activity. "This activity collects your written thoughts on a topic: Over the next 5 minutes please reflect on **your usual self.** Which aspects of you do you present to the world and in public? Who are you in everyday life? Describe your everyday self as thoroughly as possible, reflect on the parts of yourself that you most display publicly on a usual day when you are in usual situations, in as much detail as possible. After 5 minutes, the study will advance to the next component."

Assigning a share of participants to engage with flexible self-representations of the self allows us to assess whether, as asserted in the literature on self-dialecticism (Boyraz et al., 2019), this flexibility might facilitate pragmatic coping with extreme threats as opposed to rigid true self-orientations. The assignment of other participants to describe their everyday self is consistent with the research on true self-orientations which

frequently contrasts the true self with the everyday self (Baldwin et al., 2014; Schlegel et al., 2011; Schlegel et al., 2009). It is meant to be a neutral baseline option that is neither particularly strongly located on the stability-flexibility continuum nor particularly morally valenced or useful for coping, but which still has to do with the self so as not to introduce potential uncertainties about participant choice that other options would like describing friendships or hobbies.

Measures

This study employed the identical measures used in Study 1 to assess meaning in life, psychological need fulfillment, satisfaction with life, subjective vitality, participant demographics, and funnel debriefing questions. Three graphical sliders also allowed participants to indicate their preferences for engaging in the three self-description writing tasks. The position of each slider started in the middle of the response scale (left extreme (0): Not At All; right extreme (100): Very Much), and the value of the slider's position was not shown to participants.

In keeping with Prolific's recommendation and allowed grounds for rejecting participant payment, I added two attention-check questions in the latter half of the study ("Please indicate you are paying attention by selecting "Extremely"", interspersed randomly amongst items assessing psychological need fulfillment; & "To indicate you are paying attention to this study, please select "Agree"", appearing in the demographic questions). Prolific recommends adding at least two attention check questions for any study longer than approximately five minutes, and considers failure of both attention checks—but not one—to be grounds for rejecting payment. These questions were

included in the latter half of the study as the first half is sufficiently interactive enough to establish attention compared to the Likert-type response format in the latter half.

Analyses and Results

Analysis for Response-Level Noncompliance

As a first step, responses were screened for the occurrence of answering in strings of single digit runs. This was not detected from any participant, which is understandable given that participants belonged to a workforce of survey takers on a platform allowing researchers to screen for compliance before approving payment. Upon reviewing participants' written responses, one participant was removed for inserting strong, disorganized complaints—at being asked to write for five minutes—into the written task box, and ran out of time to complete their answer. Accordingly, their data in the latter half of the study were uninterpretable and they were removed from analyses due to their erratic response there and during the debriefing section. Participants who were only able to write a few words before the survey advanced (N = 5)—indicating inattention for five minutes, not understanding the instructions, or losing track of time to collect their thoughts—or who reported not wishing to volunteer that self-description information (N = 2) were additionally removed from analyses from that point forward as their answers on the subsequent Likert-type semantic differential questions were uninterpretable. This was due to doubt in the manipulation success and their potential for feeling surprise, worry about losing payment, or frustration at being interrupted that could have then affected their later question responses. An additional three participants were considered for exclusion due to writing very short responses (True Self Task: *"I have followed my heart, trusted my inner voice to lead me;"* Flexible Self Task: *"Honesty, fairness;"*

Everyday Self Task: *"I am an American male who is married"*) but were retained because it was expected that participants would show natural variation in their ability to describe these self-conceptualizations. Without a strong theoretical framework for response length and complexity criteria, removing participants on these grounds would be premature and imprudent.

Overview of Main Data Analysis

On the conclusion of this noncompliance screening, a second stage of screening began for assessing manipulation naivete and degree of participants' morality score fit with their assigned threat condition. Following this, I constructed scale means for all continuous variables measured, with item configurations informed by factor analysis procedures, and computed descriptive statistics and bivariate correlations for all scales. I then described my approach to determining post-hoc sensitivity analysis decision criteria, before commencing with main analyses to test Hypotheses II, III, and IV.

Manipulation Check: Morality Threat Naivete and Fit

Participants were again checked for extreme mismatch between their morality score and assigned threat condition. Study 1's design benefited from participants answering both immoral and moral behaviors and thus being less able to track their behavior endorsement patterns. Conversely, in Study 2 participants only answered 20 questions, making it easier for them to maintain a general sense of how moral or immoral they were portraying themselves as being. There was thus the possibility that participants could endorse none of the 20 immoral behavior items in the high threat condition, or endorse none of the 20 moral behavior items in the low threat condition, but still be given the impossible feedback of being very highly immoral or very highly moral with regard

to their peers respectively. To screen for this, participants who had low immoral behavior endorsement totals in the high threat condition, which if all items were answered could range from 20–100 and had an endorsement range of 19–82 (M = 41.62, SD = 10.79) if participants answered all items, were evaluated for how many items they endorsed and to what degree of strength. Participants with impossible totals (a score of 19 or 20; N = 2) were removed from analyses. Funnel debriefing responses of the remainder of low-scoring ($\leq$ 30) participants were consulted for signs of suspicion in these participants. Participant who reported suspicion or not believing their score (N = 6) were also excluded from analyses.

Participants assigned to the moderate threat condition were then screened for condition assignment fit. Endorsement totals of the Immoral Behavior questions, if fully answered, could range from 14–70 and had an endorsement range of 12–55 (M = 28.22, SD = 8.47). Endorsement totals of the Moral Behavior questions, if fully answered, could range from 6–30 with an endorsement range of 9–30 (M = 20.16, SD = 4.75). Funnel debriefing responses were reviewed for participants with low Immoral Behavior endorsement ($\leq$ 25 in favor of casting a wide net for suspicion detection) and/or extremely high endorsement of Moral Behaviors ($\geq$ 25). Among these participants, four reported suspicion or not believing their score feedback, one reported feeling their score was good and thus seem to have been affirmed rather than threatened, and two participants reported believing their feedback score but had scored the minimum possible on immorality and the maximum possible on morality. Consequently, these seven participants were removed from analyses.

Participants assigned to the low threat condition were also screened for low moral behavior endorsement. These scores could range from 20–100 and had an endorsement range of 32–100 (M = 72.66, SD = 13.04). Participants with low Moral Behavior endorsement totals ($\leq$ 60) were then screened for reports of suspicion or disbelief in their funnel debriefing responses. This screening identified suspicion or skepticism among the five lowest-scoring participants on moral behavior (range 32–48), and one participant who reported inattention when asked about their score and its accuracy (i.e., Q5-What do you remember your morality score being?: *"I don't remember it;"* Q6-Do you think your morality score was accurate?: *"I don't know either way;"* Q7-To what extent did you believe the feedback of your morality score relative to all other participants*?:"I really don't know. I honestly didn't pay much attention to the 'results' part at all, didn't interest me"*), who were then removed from analyses.

Following this screening for fit, I also screened to remaining participants for naivete regardless of score-threat match. To be consistent with Study 1's procedure for funnel debriefing review, I again checked remaining participant mentions of suspicion regarding the personal morality threat in the first three segments of the funnel debriefing process, identifying and therefore excluding 24 participants with instances of early suspicion. In cases of ambiguity, such as when a participant made a statement that could either indicate suspicion or simply reactionary disagreement with their score (e.g., Q3-Did you notice anything unusual or inconsistent about the moral behaviors questionnaire?: *"Yes, I don't think my morality score should have been that low"*) answers to the remaining debriefing steps were reviewed for clarification. If participants did not report suspicion in those segments, they were retained for analyses (e.g., same

participant: Q4-Why do you think we showed you feedback on the moral behaviors questionnaire? *"For me to know my moral standards compared to others,"* an answer which essentially describes rather than explains the manipulation procedure). In addition, responses to the latter four questions were reviewed, identifying people (N = 4) making claims about their state of mind during the study (e.g., Q6-To what extent did you believe the feedback of your morality score relative to all other participants?: *"I immediately felt like it was false"*), a single participant who reported extreme beliefs and colorful self-deprecating claims leading them to question their threat assignment to the highest threat condition, and a single participant who said they did not see their score. At the conclusion of noncompliance, naivete, and threat fit screening, the final study N was 388 (Low Threat, True Self Task N = 50; Low Threat, Flexible Self Task N = 46; Low Threat, Everyday Self Task N = 45; Moderate Threat, True Self Task N = 32; Moderate Threat, Flexible Self Task N = 49; Moderate Threat, Everyday Self Task N = 48; High Threat, True Self Task N = 48; High Threat, Flexible Self Task N = 35; High Threat, Everyday Self Task N = 35).

Scale Construction

Upon arrival at the final group of participants for inclusion in analyses, scale construction began by first assessing the extent to which each variable's planned structure accurately fit the patterns of variance within the data. CFAs were performed on all measured variables using the goodness of fit criteria specified in Study 1, with the plan to be followed by an EFA—assessing factor solutions with guidelines also specified in Study 1—for any given variable that evidenced poor fit in CFA results.

Confirmatory Factor Analyses.

Meaning in Life. The CFA strongly supported retention of the planned scale structure of both the meaning and meaning searching variables (CFI = .97, TLI = .97, RMSEA = .07, RMSEA 90% CI [.06, .09], χ^2 = 103.6, df =34, p < .001), with these scales being constructed using the five items from the MLQ's Presence of Meaning subscale and the five items from its Search for Meaning subscale respectively. The meaning and meaning searching variables were thus built accordingly, and reliability was very good for each (meaning α = .92; ω = .93; meaning searching α = .90; ω = .90).

Satisfaction with Life. CFA techniques resulted in strong support for the Satisfaction with Life items belonging to a single satisfaction with life factor (CFI = 1.00, TLI = 1.01, RMSEA = .00, RMSEA 90% CI [.00, .03], χ^2 = 1.75, df = 5, p = .88), and the satisfaction with life variable was thus constructed with all five items included. Internal reliability was indicated to be good for the five satisfaction with life items (α = .88; ω = .89).

Subjective Vitality. As theorized, items from the Subjective Vitality Scale were well-explained by a single factor, evidenced by CFA indication of good fit (CFI = .98, TLI = .97, RMSEA = .097, RMSEA 90% CI [.07, .12], χ^2 = 65.6., df =14, p < .001). As the RMSEA value was a bit high, a follow-up EFA was used to lend credence to this factor solution, the results of which can be found in Appendix Table C1. The EFA strongly supported this single-factor solution; no additional factors were suggested, and solution assessment statistics were good (Bartlett's test: χ^2 = 2421.60, df = 21, p < .001; KMO = .94, "marvelous"). Internal reliability was indicated to be very good for the seven subjective vitality items (α = .94; ω = .95).

Exploratory Factor Analysis.

Psychological Need Fulfillment. As in Study 1, CFA support for the pre-planned subscale structure of Psychological Need Fulfillment items was lower than desired (CFI = .85, TLI = .83, RMSEA = .12, RMSEA 90% CI [.11, .13], χ^2 = 1068.00, df = 164, p < .001). Consequently, an EFA was performed to ascertain the best factor solution for explaining between-item variance in the present study. The EFA designed to iterate for detection of solutions explaining Eigenvalues greater than one suggested a two-factor solution largely grouping positively and negatively worded items into separate item groups, supported by model assessment statistics (Bartlett's test: χ^2 = 5758.14, df = 190, p < .001; KMO = .97, "marvelous"). Given that a more complex solution emerged in Study 1, and my awareness of an ostensible four-factor intended design for these items, I also examined EFA support for three and four factor solutions. Adding a third factor explained an additional 2.04% item variance with an Eigenvalue total under one (.96), and largely matched the two factor solution's loadings besides isolating two of the negatively-worded items together (C4 "I feel unable to influence the actions of others", C5 "I feel other people decide on the events in my life"). Given the lack of statistical support and theoretical motivation for keeping these items separate from the other negatively-worded items, this three-factor solution was not considered further.

The four-factor solution performed similarly, explaining an additional 1.44% of item variance and a small Eigenvalue total of .68. This solution again exhibited the two factors produced by the two-factor solution, the third factor produced by the three-factor solution, and a fourth factor consisting of two items (SE2 "My self-esteem is high", SE 4 "I feel insecure" (reversed)), which loaded more strongly onto Factors I and II respectively. Additionally, a third item loaded weakly onto the third factor ("I feel I have

the ability to determine my actions"), seemingly due to similar length, content, and overlap of specific words. This item loaded more strongly onto Factor I. Following this investigation, the four-factor solution was also judged to be statistically and theoretically unsupported and the initial two-factor solution was thus retained for scale construction.

Examining the two-factor solution, the exception to the grouping into two factors by question valence was that one negatively-worded question ("I feel "disconnected""), when reversed as all negatively-worded questions were before the EFA was performed, loaded more strongly with the positively-worded questions for unclear reasons. Given the considerable difference in its loadings with the positive versus the negative items, it was kept with the positively-worded questions for scale construction. The positively-worded group of items and this single negatively-worded item in reversed form comprised Factor I, which was termed "Positive Feelings", and the remaining negatively-worded items comprised Factor II, which was termed "Negative Feelings". For the purposes of computing an overall Psychological Need Fulfillment variable all negatively-worded items were averaged in reverse-scoring form together with all positively-worded items. When kept separate, in acknowledgement that the main difference in the factors was positive and negative valence, the negative feelings variable was constructed in non-reversed form. Internal reliability among all Psychological Need Fulfillment items was very good ($\alpha = .96$; $\omega = .96$), was also very good for the positive feelings subscale ($\alpha = ..96$; $\omega = .96$), and was good for the negative feelings subscale ($\alpha = .88$; $\omega = .89$). Pattern matrix loadings for the two-factor solution are displayed in Table 6.

Table 6

Psychological Need Fulfillment Item Pattern Matrix Factor Loadings from Exploratory Factor Analysis with Direct Oblimin Rotation in Study 2

	Factor	
Item	I	II
(M4) I feel important.	**.94**	-.09
(SE1) I feel good about myself.	**.93**	-.03
(C1) I feel powerful.	**.91**	-.15
(SE5) I feel satisfied.	**.87**	.00
(SE2) My self-esteem is high.	**.83**	.03
(M5) I feel useful.	**.83**	.05
(B5) I feel positive acknowledgement.	**.82**	.00
(C2) I feel I have control over the current situation.	**.78**	.01
(B4) I feel I belong.	**.77**	.12
(SE3) I feel liked.	**.73**	.14
(B1) I feel “disconnected." (reversed)	**.52**	**.42**
(C3) I feel I have the ability to determine my actions.	**.48**	.15
(M1) I feel invisible. (reversed)	.00	**.80**
(M3) I feel non-existent. (reversed)	.10	**.75**
(B2) I feel rejected. (reversed)	.26	**.66**

(M2) I feel meaningless. (reversed)	.22	**.61**
(B3) I feel like an outsider. (reversed)	.28	**.56**
(C5) I feel other people decide on the events in my life. (reversed)	-.12	**.51**
(C4) I feel unable to influence the actions of others. (reversed)	-.00	**.50**
(SE4) I feel insecure. (reversed)	**.42**	**<u>.43</u>**
Factor Correlations		
I	11.21(54.42%)	
II	.58	1.96(7.71%)

Note. Factor correlations appear below the diagonal, Eigenvalues on the diagonal, and by-factor percent of variance explained in parentheses. Factor loadings $\geq$ .40 are emphasized in bold. In cases of multiple loadings $\geq$ .40, the assigned factor is also underlined. (B) = Belonging Need Fulfillment Subscale; (SE) = Self-esteem Need Fulfillment Subscale, (M) = Meaning Need Fulfillment Subscale, and (C) = Control Need Fulfillment Subscale, with corresponding original subscale number. Solution converged after 5 iterations.

Initial Analyses

Descriptive statistics—overall as well as for each unique by-condition configuration—and bivariate correlations were again calculated for all continuous variables measured and can be found in Tables 7–10 and 11 respectively. Outlier presence was again assessed, and no instances of concerning outliers were identified for deletion. While predictor variables of interest were not measured continuously in this study, meaning correlated most strongly with preference for engaging in the true self-description task across conditions ($r(372) = .35$, $p < .001$, medium-sized effect). This is

interesting in that it represents another possible way of observing a connection between meaning and true self-orientations. As preference for each self-description task was measured continuously, these ratings were included in the descriptives and correlational tables to facilitate maximum insight into relationships between all continuous variables captured in ways such as this. However, these ratings' interactions with other dependent variables of interest can only be interpreted in a limited manner due to the written activity that followed the ratings but preceded the assessment of all other dependent variables.

Table 7

Descriptive Statistics for All Study 2 Variables; Overall

	M(*SD*)	Listwise *N*
Meaning	4.62(1.54)	382
Meaning Searching	4.94(1.30)	381
Psychological Need Fulfillment	3.43(.91)	356
Positive Feelings	3.19(1.02)	364
Negative Feelings	2.22(.91)	377
Satisfaction with Life	4.32(1.45)	383
Subjective Vitality	4.40(1.55)	379
True Self Task Preference	62.59(28.79)	379
Flexible Self Task Preference	55.83(26.31)	376
Everyday Self Task Preference	64.30(26.03)	385

Table 8

Descriptive Statistics for All Study 2 Variables; by Threat and Self-Description Writing Task Assignment

	Configuration of Threat (Low, Moderate, High) and Writing Task (True, Flexible, Everyday) Level								
	Low; True	Low; Flexible	Low; Everyday	Moderate; True	Moderate; Flexible	Moderate; Everyday	High; True	High; Flexible	High; Everyday
Meaning	4.78(1.54); 50	4.33(1.52); 46	4.50(1.48); 45	4.55(1.58); 30	4.64(1.49); 49	4.71(1.43); 47	4.87(1.75); 47	4.32(1.58); 33	4.80(1.50); 35
Meaning Searching	5.15(1.23); 47	5.11(1.16); 44	4.88(1.49); 45	5.07(1.24); 32	5.06(1.20); 49	4.77(1.24); 48	4.98(1.46); 47	4.65(1.24); 35	4.70(1.40); 34
Psychological Need Fulfillment	3.54(0.79); 48	3.32(0.88); 40	3.19(1.01); 43	3.50(0.80); 27	3.48(0.81); 47	3.53(0.88); 45	3.69(0.91); 42	3.17(1.03); 32	3.43(1.06); 32
Positive Feelings	3.35(0.94); 48	3.10(0.98); 41	2.96(1.11); 44	3.20(0.98); 28	3.21(0.88); 48	3.25(1.00); 47	3.46(1.06); 43	2.83(1.11); 33	3.25(1.13); 32
Negative Feelings	2.20(0.77); 50	2.46(0.97); 44	2.40(1.08); 44	2.12(0.73); 31	2.12(0.84); 48	2.06(0.84); 46	2.00(0.83); 45	2.30(0.99); 34	2.27(1.06); 35
Satisfaction with Life	4.38(1.50); 50	4.09(1.50); 45	4.22(1.45); 44	4.52(1.22); 32	4.49(1.33); 49	4.22(1.18); 45	4.51(1.49); 48	3.89(1.69); 35	4.54(1.66); 35
Subjective Vitality	4.61(1.40); 50	4.02(1.41); 45	4.16(1.75); 45	4.51(1.49); 31	4.36(1.50); 46	4.47(1.56); 46	4.87(1.55); 48	3.97(1.73); 34	4.44(1.49); 34
True Self Task Preference	64.65(27.40); 48	62.96(27.20); 45	62.80(30.97); 45	65.47(29.64); 32	58.24(29.75); 46	59.65(31.29); 48	64.30(27.68); 47	64.06(30.28); 33	62.46(26.38); 35
Flexible Self Task Preference	59.44(25.69); 48	60.29(23.76); 45	63.00(25.50); 45	54.57(30.03); 30	47.17(25.00); 47	54.81(28.27); 48	54.06(24.38); 47	48.18(27.97); 33	59.91(25.15); 33
Everyday Self Task Preference	64.12(27.58); 49	68.30(18.09); 46	61.64(25.14); 45	69.50(27.98); 32	62.14(26.54); 48	62.92(29.32); 48	67.19(22.26); 48	55.85(32.64); 34	67.03(24.04); 35

Note: All information is organized in the *M*(*SD*); *N* configuration.

Table 9

Descriptive statistics for all Study 2 variables; by Threat (Low, Moderate, High)

	Low	Moderate	High
Meaning	4.54(1.51); 141	4.65(1.48); 126	4.69(1.63); 115
Meaning Searching	5.05(1.30); 136	4.96(1.22); 129	4.80(1.38); 116
Psychological Need Fulfillment	3.36(0.90); 131	3.50(0.83); 119	3.45(1.01); 106
Positive Feelings	3.14(1.01); 133	3.22(0.95); 123	3.20(1.12); 108
Negative Feelings	2.35(0.94); 138	2.10(0.81); 125	2.17(0.95); 114
Satisfaction with Life	4.24(1.48); 139	4.40(1.25); 126	4.34(1.61); 118
Subjective Vitality	4.27(1.53); 140	4.44(1.51); 123	4.48(1.62); 116
True Self Task Preference	63.49(28.36); 138	60.61(30.22); 126	63.67(27.83); 115
Flexible Self Task Preference	60.88(24.88); 138	51.88(27.55); 125	54.05(25.86); 113
Everyday Self Task Preference	64.70(24.00); 140	64.27(27.91); 128	63.85(26.45); 117

Note: All information is organized in the *M*(*SD*); *N* configuration.

Table 10

Descriptive Statistics for All Study 2 Variables; by Self-Description Task Assignment

(True Self, Flexible Self, Everyday Self)

	True Self	Flexible Self	Everyday Self
Meaning	4.76(1.62); 127	4.45(1.52); 128	4.66(1.46); 127
Meaning Searching	5.07(1.31); 126	4.97(1.21); 128	4.79(1.37); 127
Psychological Need Fulfillment	3.58(0.83); 117	3.34(0.90); 119	3.38(0.98); 120
Positive Feelings	3.35(0.99); 119	3.07(0.98); 122	3.15(1.07); 123
Negative Feelings	2.11(0.78); 126	2.29(0.93); 126	2.24(0.99); 125
Satisfaction with Life	4.46(1.42); 130	4.19(1.50); 129	4.31(1.42); 124
Subjective Vitality	4.68(1.48); 129	4.13(1.53); 125	4.35(1.60); 125
True Self Task Preference	64.72(27.86); 127	61.50(28.87); 124	61.52(29.72); 128
Flexible Self Task Preference	56.25(26.23); 125	52.16(25.91); 125	59.07(26.53); 126
Everyday Self Task Preference	66.60(25.71); 129	62.69(26.03); 128	63.59(26.39); 128

Note: All information is organized in the *M*(*SD*); *N* configuration.

Table 11

Pairwise Bivariate Correlations for All Study 2 Variables

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Meaning	—									
2. Meaning Searching	-.09(376)	—								
3. Psychological Need Fulfillment	.77***(351)	-.09(349)	—							
4. Positive Feelings	.78***(358)	-.00(357)	.96***(356)	—						
5. Negative Feelings	-.59***(372)	.22(370)	-.87***(356)	-.70***(356)	—					
6. Satisfaction with Life	.70***(378)	.04(376)	.76***(352)	.78***(359)	-.57***(373)	—				
7. Subjective Vitality	.75***(373)	.05(372)	.84***(349)	.86***(356)	-.63***(369)	.71***(374)	—			
8. True Self Task Preference	.35***(374)	.12*(373)	.28***(348)	.34***(356)	-.13*(368)	.27***(374)	.35***(370)	—		
9. Flexible Self Task Preference	.19***(370)	.13*(369)	.18**(345)	.22***(353)	-.07(365)	.20***(371)	.27***(367)	.42***(373)	—	
10. Everyday Self Task Preference	.27***(379)	.10*(378)	.22***(354)	.25***(362)	-.11*(374)	.27***(380)	.27***(376)	.38***(379)	.39***(376)	—

Note. Pearson correlations are presented below the diagonal, with correlation test *N*s in parentheses and *df* = (*N*-2). $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Post-hoc Sensitivity Analysis

As in Study 1, using post-hoc sensitivity analyses I determined minimum detectable effect sizes as decision criteria in determining whether Study 2 analyses were sufficiently sensitive to detect observed effects. For all sensitivity analyses, a desired power of 0.80 was used, in addition to by-test *N*s reported alongside main analyses. When tests' observed effect sizes were produced in a form other than the test statistic indicated in the sensitivity analysis calculator, an online calculator was used to perform the conversion to the required statistic, specified in Appendix H. For χ^2 tests, sensitivity for a generic χ^2 test was computed. For repeated-measures ANOVA, repeated-measures within factors test sensitivity was computed, with average correlation among repeated measures reported with corresponding analysis. For all other ANOVA applications, fixed effects model sensitivity testing special, main effects, and interactions was calculated. Post-hoc tests examining both within- and between-subjects mean differences were compared against sensitivity criteria determined for t-tests for the difference between two independent means using *N*'s of each comparison group.

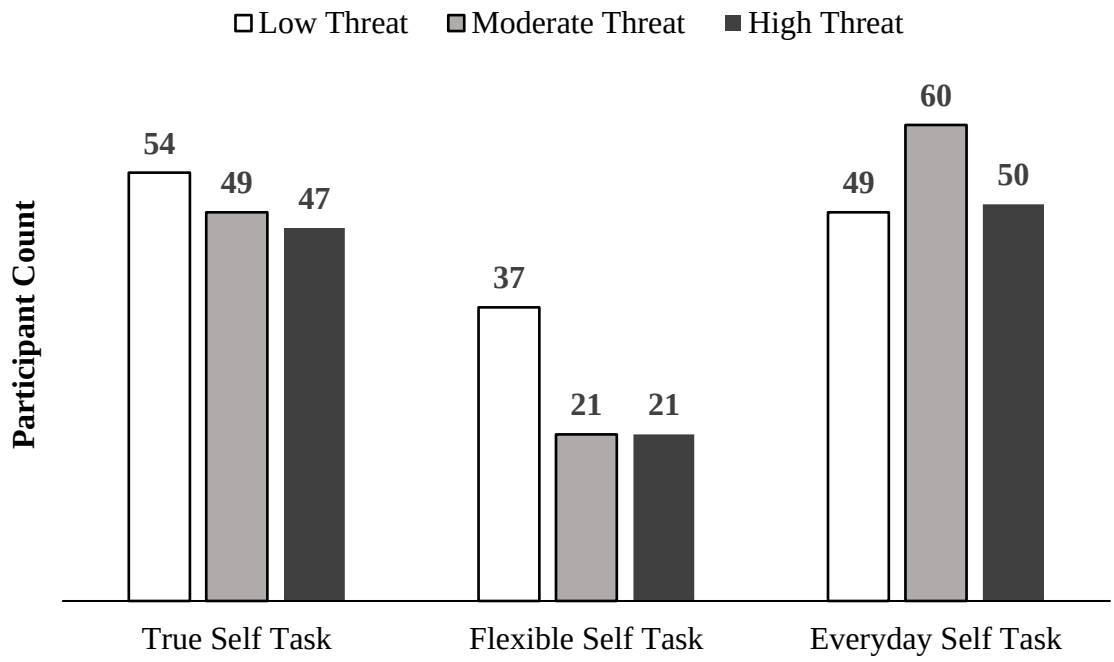
Hypothesis II

A chi-square test for independence did not find significant support of an association between threat assignment and which task participants selected when asked to choose the one they would most want to engage in at the time (χ^2 (4, N = 388) = 6.24, p = .18, Cramer's V = 0.090, Cohen's w = 0.13; does not meet criterion w = 0.18). A Bayes Factor (*BF*) was obtained by Bayesian analysis of these contingency tables, finding that the data was 48.51 times more likely under the null hypothesis (no effect of morality threat) than the alternative hypothesis (a nonzero effect of morality threat),

BF_{01} = 48.51 (see Analysis and Results section Hypothesis IV for discussion of the approach to Bayesian analyses employed here). Figure 13 displays by-condition participant counts in task choice.

Figure 13

Participant Counts in Choice of Task for Each Level of Personal Morality Threat in Study 2



Evaluating patterns in by-condition participant choice counts tentatively lends additional, but statistically unsupported, information. Consistent with Hypothesis II's Figure 10, fewer participants in the high threat condition chose the true self task than participants in the low threat condition, consistent with the idea that highly threatened people would seek to avoid true self-connection. However, we did not see the anticipated spike in motivation for moderately threatened participants to connect with their true selves for coping; if anything, they also sought the true self less when threatened. The

frequent choice to engage with the true self across conditions implies that under all degrees of threat imposed here the true self was still seen as an attractive idea.

We also saw a large drop in participants choosing to describe their self-flexibility under moderate and high threat. This does not match Figure 10, which depicts the expectation that participants would increasingly prefer thinking about their self-flexibility with increasing threat exposure severity. If this corresponds to real effect, two compatible interpretations are evident. One on hand, it may be that for people in individualistic Western contexts, considering flexibility within oneself is seen as novel and potentially uncomfortable, even for nonthreatened people as participants in the low threat condition also chose this option less frequently. For people under moderate and high threat, if considering self-flexibility were indeed seen as a new or unpleasant idea generally, it would make sense that these participants would avoid engaging with it even more due to their state of discomfort. The other explanation is rooted in the task differences in perceived ease detected in pilot testing. Since the flexible self-description task was perceived by pilot testers as sounding significantly more challenging to complete than the everyday self task, participants under threat may have avoided this task out of fatigue rather than out of its conceptual content as related to their true self-orientations. Further research would be required for discerning the extent to which each of these explanations holds true.

Perceptions of ease might also explain why desire to describe the everyday self was high in the threatened groups when the predictions shown in Figure 10 were such that threatened participants were expected to avoid the everyday self. This prediction was rooted in the fact that the morality questionnaire asked participants about their current

and past daily behaviors. The everyday self seemed most likely to be connected to these daily behaviors, since theoretically the true self would be protected from blame for these actions due to its perceived moral goodness (De Freitas & Alvarez, 2019; De Freitas et al., 2017a; Knobe, 2005), and thus I expected the everyday self to be avoided when faced with judgments of immorality. In contrast with Hypothesis II, Study 2's results show that across the board people highly chose to engage with the everyday self rather than avoid it. It may be that they identified with this self more than expected to the extent that it could be conceptually considered part of their true-self-concept, or that they wished to defend against the threat by doubling down on standing by who they are day to day. Or, choice of the everyday self task may have been so high because it was perceived as an easy activity to complete, especially because participants likely felt most familiar with and able to describe the person they are on a daily basis. In addition to the everyday task being perceived as significantly easier than the other two tasks in pilot testing, it may also be that advanced psychology students find describing the true self to also be easier than does the general US population. This signifies the potential for the gulf of perceived ease between the two tasks as being even wider than pilot testing revealed and justifies the relevance for further pilot testing in a wider sample. Due to the lack of a significant chi-square test result, and the very strong evidence for the null hypothesis in the Bayesian framework, the possibilities raised here based on the distribution of task choice by condition cannot be taken as conclusive and require further empirical evaluation.

Hypothesis III

To test Hypothesis III, I performed the planned repeated-measures ANOVA testing the between-subjects factor of morality threat level, the within-subjects factor of

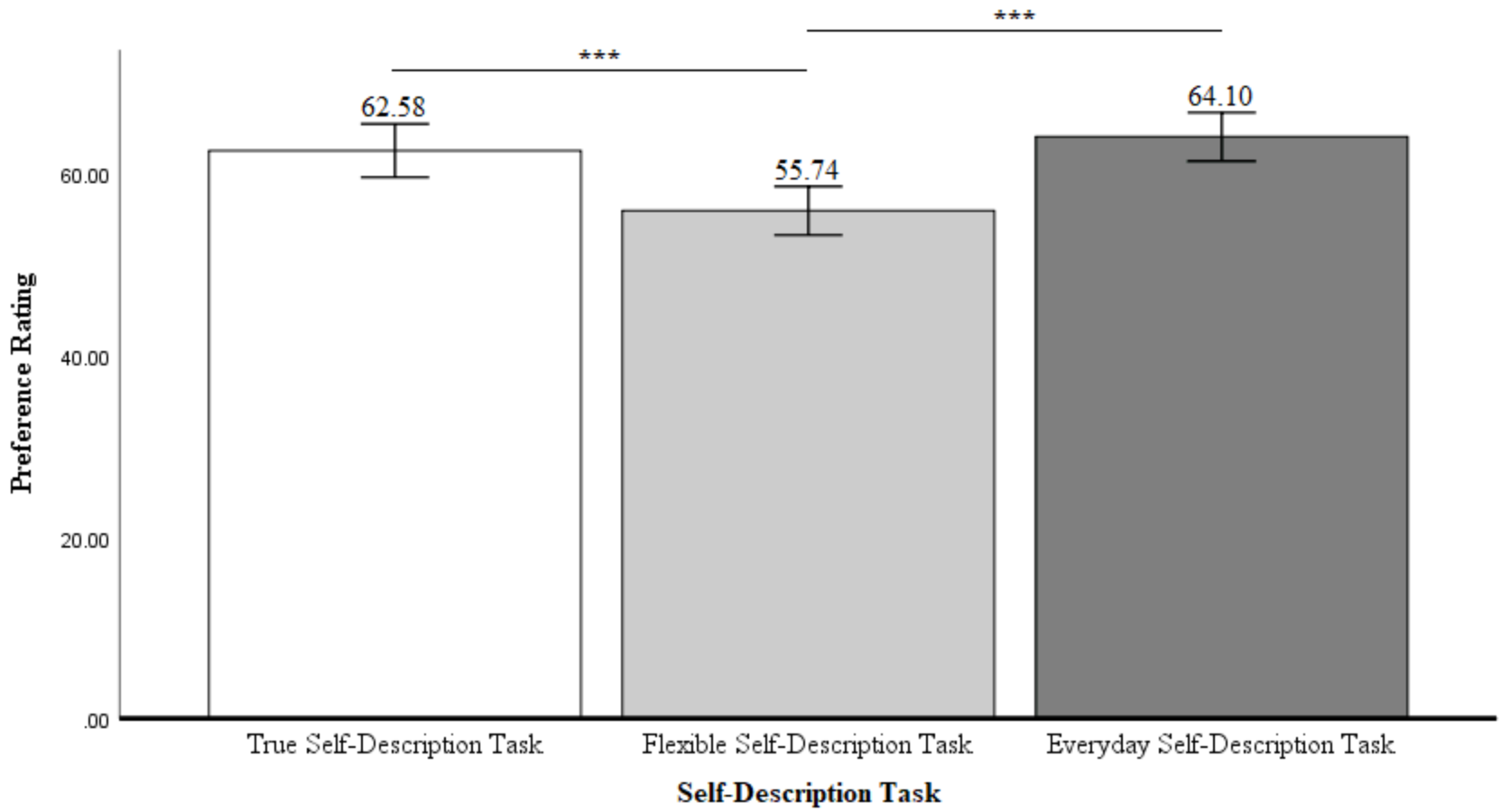
type of self-description task, and the interaction term in explaining task preference rating variance. This analysis detected no significant main effect of the between-subjects morality threat level on preference ratings ($F(2, 370) = 1.43$, $p = .24$, $\eta_p^2 = 0.008$, corresponding Cohen's $f = 0.090$, does not meet criterion $f = .13$ for test N = 373), a significant main effect of the within-subjects factor of self-description task on preference rating (Mauchly's $W = 1.00$, Approximate $\chi^2(2) = 1.90$, $p = .39$; main effect test $F(2, 740) = 16.73$, $p < .001$, $\eta_p^2 = 0.043$, corresponding Cohen's $f = 0.21$, meets criterion $f = .072$ for test N = 373, power = 0.80, average correlation among repeated measures = .402, nonsphericity correction $\varepsilon = 1$), and no significant effect of the interaction between morality threat level and self-description task ($F(4, 740) = 1.62$, $p = .17$, $\eta_p^2 = 0.009$, corresponding Cohen's $f = 0.095$, meets criterion $f = .080$).

Consistent with the less frequent outright selection of the flexible self-description task seen in Hypothesis II's analysis, here post-hoc tests found participants felt the true self-description task to be more preferable than the flexible self-description task across threat levels (*M* difference = 6.84, *SE* = 1.54, 95% CI [3.14, 10.53], $t(744) = 4.44$, $p_{bonf} < .001$, Cohen's $d = 0.23$ (small effect), meets criterion $d = .21$). Participants also found the everyday self-description task to be more preferable than the flexible self-description task (*M* difference = 8.37, *SE* = 1.54, 95% CI [4.67, 12.06], $t(744) = 5.43$, $p_{bonf} < .001$, Cohen's $d = 0.28$ (small effect), meets criterion $d = .21$), and there was no significant difference found for everyday self-description task preference over the true self-description task preference (*M* difference = 1.53, *SE* = 1.54, 95% CI [-2.17, 5.22], $t(744) = 0.99$, $p_{bonf} = .97$, Cohen's $d = 0.051$, criterion $d = .21$). Full results of the overall

repeated-measures ANOVA and the follow-up post-hocs are displayed in Appendix D. Figure 14 displays the main effect of self-description task type on preference ratings.

Figure 14

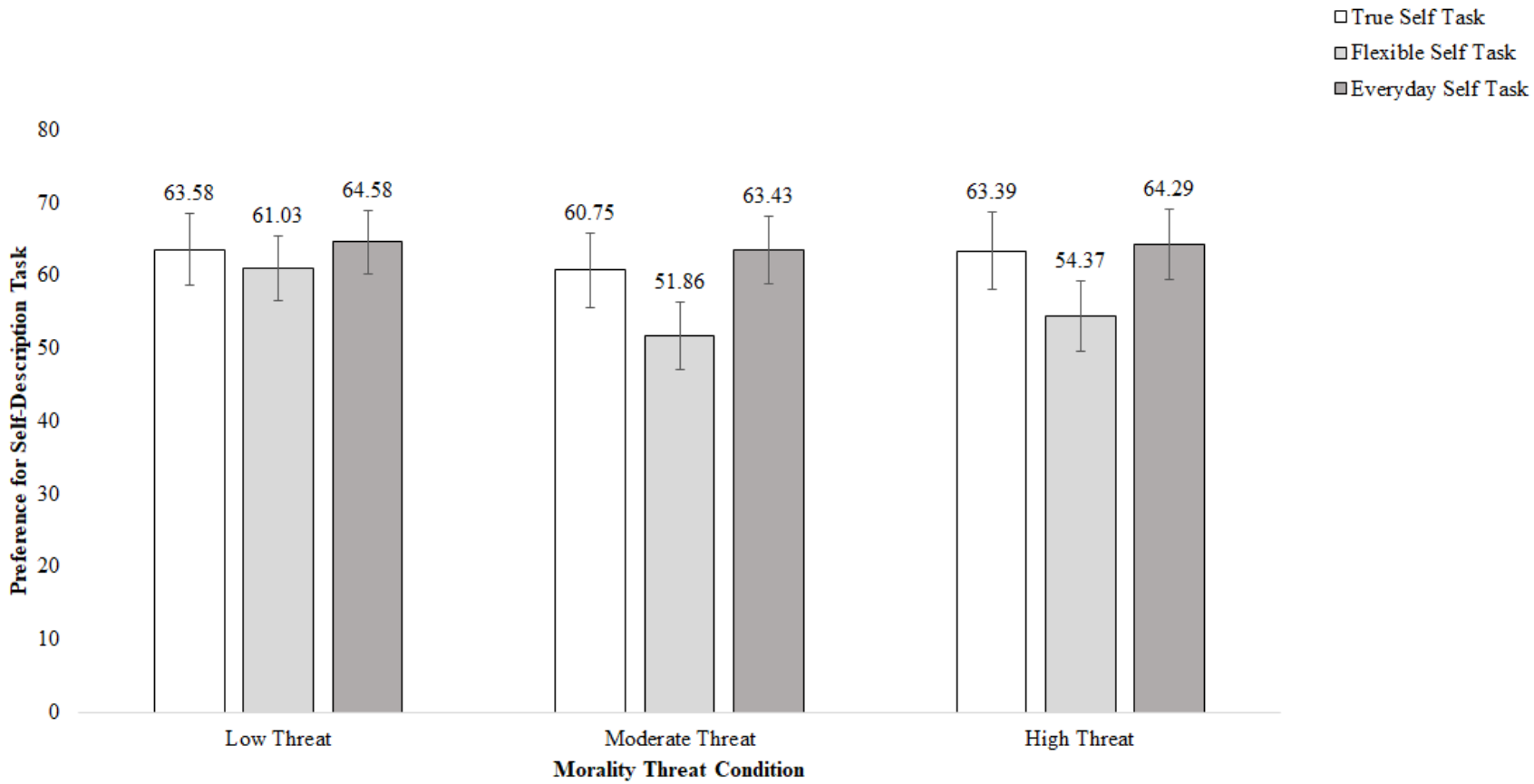
Preference Rating Differences for Self-description Tasks Across Morality Threat in Study 2



Under Hypothesis III, people in the low threat condition were expected to rate engagement with the true self task as most preferable, engagement with the everyday self task as less preferable, and engagement with the flexible self as much less preferable. When moderately threatened, people were expected to look even more positively on the idea of describing their true selves due to its theorized status as a wellspring of meaning and morality. They were expected to decrease their approach to their everyday self due to the threat. I expected some people under moderate threat to prefer the flexible self task more than in the low threat condition in order to seek threat coping by describing their self-flexibility. Finally, highly threatened participants were predicted to strongly prefer the flexible self option to neutralize the threat, were expected to be so threatened as to not see the true self as able to lend assistance, and expected to strongly avoid the everyday self. The analyses described above stand in contrast to these expectations, and Figure 15 shows by-condition preference ratings for all self-description tasks.

Figure 15

Preference Ratings for All Self-description Tasks by Morality Threat in Study 2



As becomes evident when visually evaluating each condition's mean preference ratings for the three self-description tasks, task preference varied little by condition for the true self task and the everyday self task. This generally matches the distribution of participant choice counts discussed in the evaluation of Hypothesis II, and the lack of threat response in preference for these tasks limits interpretability. The lower preference for flexible self-description across conditions also matches the less frequent choosing of this task. To the extent that this means participants across threat found it unpleasant to think that aspects of themselves can undergo change, this pattern may be an observation of overall positive regard for stable self-views. Interestingly, the by-condition preference ratings visualized here suggest a smaller difference between preference for the flexible self-description task and the other tasks than the choice counts analyzed under Hypothesis II would first suggest. Or, this smaller difference could be a product of the impact of the threat induction already fading.

Hypothesis III does not fit this overall results pattern, as moderately threatened participants did not show the expected dramatic increase in true self-approach or decrease in everyday self-approach. Highly threatened participants also did not show the expected dramatic increase for the flexible self-description task, and only differed from participants in the low threat condition overall in their slightly decreased flexible self task preference. Participants in the low threat condition exhibited roughly equal preference for all tasks. The ramifications of this for Study 2's overall conclusions are discussed following analyses examining Hypothesis IV.

Hypothesis IV

To test the presence of an effect of personal morality threat and writing task assignment on well-being and psychological need-related outcomes, separate 3 x 3 ANOVAs were performed per outcome with the strategy of consulting simple contrasts for any detected significant effect. Full test results for all ANOVAs performed are included in Appendix E. I planned to follow up any ANOVA that yielded null results with a complementing Bayesian 3 x 3 ANOVA using the involved variables to gain insight into the amount of evidence for the null hypothesis given by the present data. Evidence for a particular model—that proposed by the hypothesis testing the relevant research question or the model proposed by the null hypothesis—was judged according to widely-used cut-offs (*BF* of 1–3 = "anecdotal" support for the model, *BF* of 3–10 = "substantial" support for the model, *BF* of 10–30 = "strong" support for the model, *BF* of 30–100 = "very strong" support for the model, and *BF* of 100–150≤ = "decisive" support for the model; Jeffreys, 1961). BF_{10} and BF_{01} are the inverse of each other.

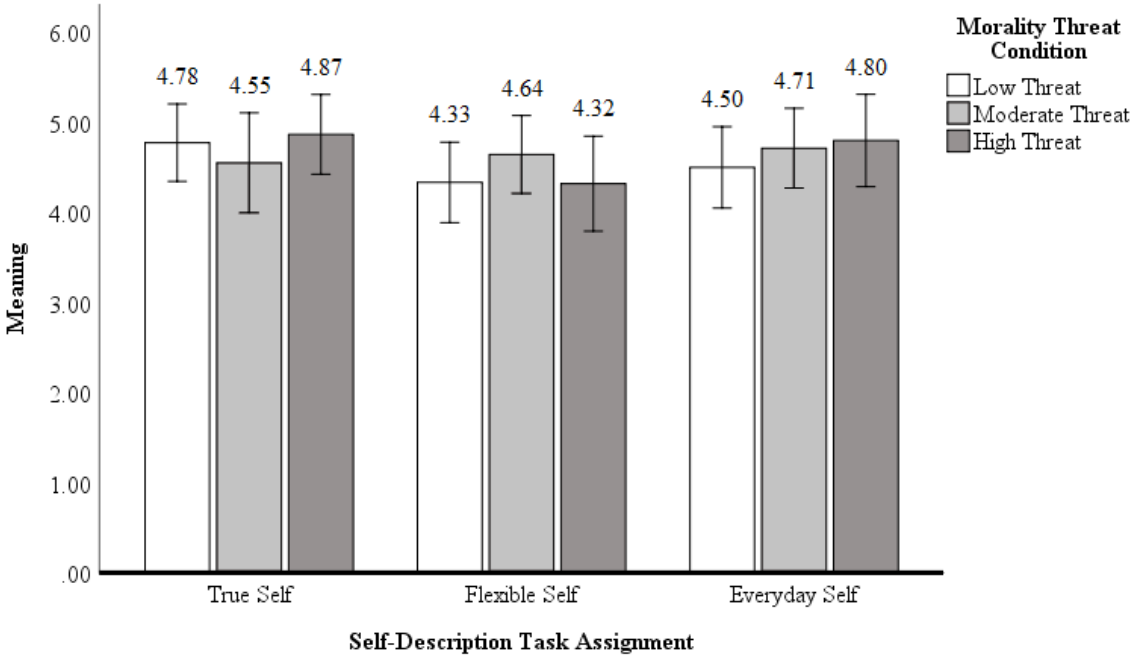
The notation can be understood such that the subscript "1" represents the alternative hypothesis H_1 and the subscript "0" represents the null hypothesis H_0. The number on the left in the notation is the numerator, and the number on the right is the denominator. BF_{10} expresses how much evidence there is for the alternative hypothesis over the null and is used here when discussing evidence in support of the alternative, while BF_{01} expresses how much evidence there is for the null hypothesis over the alternative and is used here when discussing evidence that supports the null. All Bayesian analyses were performed in jamovi (2021), using default priors specified by jamovi (Morey & Rouder, 2018; Rouder et al., 2012). Results of all Bayesian analyses

can be found in Appendix F. Over the course of this sequence of frequentist and Bayesian analyses, a large majority of outcome variables showed no significant explanations for the tested model, with strong Bayesian support in favor of the null hypothesis of there being no effect. In favor of conceptual organization, this group of null effects will be reported separately and discussed together at the beginning of Study 2's Discussion section. Significant and marginal effects are discussed within their corresponding tests in keeping with the analytic approach up to this point.

Meaning. The 3 x 3 ANOVA testing morality threat, task assignment, and their interaction for explaining meaning found no significant effects in the model (main effect morality threat $F(2, 373) = 0.26$, $p = .77$, $\eta^2 = 0.001$, $f = 0.032$, does not meet criterion $f = 0.16$ for test $N = 381$; main effect task assignment $F(2, 373) = 1.27$, $p = .28$, $\eta^2 = .007$, $f = 0.084$, does not meet criterion $f = 0.16$; interaction $F(4, 373) = 0.57$, $p = .68$, $\eta^2 = 0.006$, $f = 0.078$, does not meet criterion $f = 0.18$; Levene's test not significant, $F(8, 373) = 0.53$, $p = .84$). For assessing variable interactions visually, meaning levels for each condition configuration can be viewed in Figure 16.

Figure 16

Meaning Levels by Threat and Self-description Task Assignment in Study 2

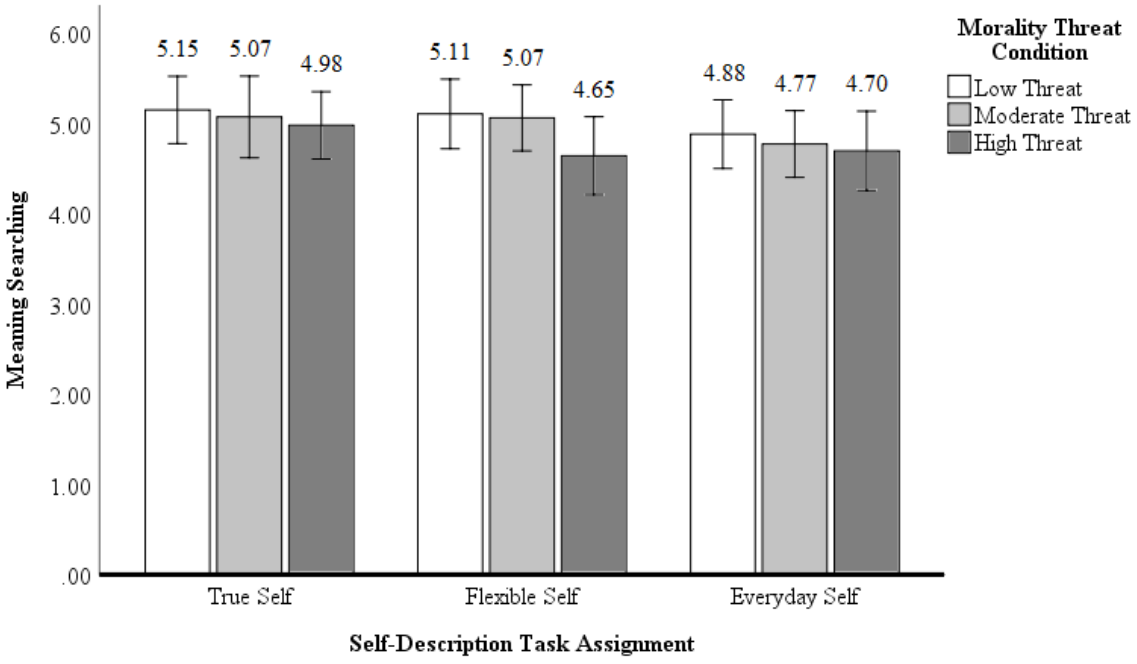


In order to understand these null findings in a conceptually meaningful way, a companion Bayesian 3 x 3 ANOVA was performed and revealed strong support against there being an effect of morality threat on meaning in life, BF_{01} = 25.29. Put in plain language to aid interpretation, this indicates the present data to be 25.29 times more likely under the null hypothesis than under the alternative hypothesis that the level of personal morality threat affected meaning in life outcomes. There was also strong evidence against there being an effect of self-description task on meaning in life, BF_{01} = 10.17, decisive evidence against an effect of including both main effects in the model (BF_{01} = 260.92), and decisive evidence against an effect of including the interaction term (BF_{01} = 7766.39).

Meaning Searching. The 3 x 3 ANOVA testing for the effect of morality threat and task assignment, and their interaction, in explaining meaning searching did not find any significant effects for the model's predictors (main effect morality threat $F(2, 372) = 1.63$, $p = .20$, $\eta^2 = 0.007$, $f = 0.084$, does not meet criterion $f = 0.16$ for test $N = 380$; main effect task assignment $F(2, 372) = 1.21$, $p = .30$, $\eta^2 = 0.008$, $f = 0.090$, does not meet criterion $f = 0.16$; interaction $F(4, 372) = 0.25$, $p = .91$, $\eta^2 = 0.003$, $f = 0.055$, does not meet criterion $f = 0.18$; Levene's test not significant, $F(8, 372) = 0.91$, $p = .51$). Figure 17 depicts the tested variables' interaction.

Figure 17

Meaning Searching Levels by Threat and Self-description Task Assignment in Study 2



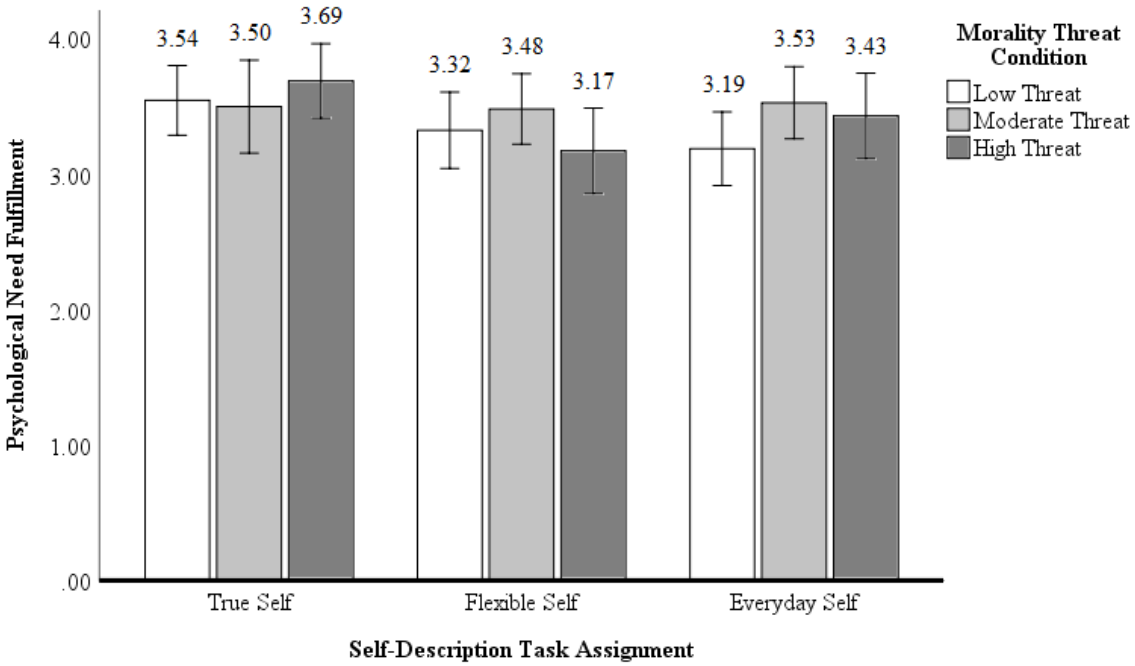
Follow-up Bayesian analysis revealed substantial evidence against an effect of morality threat on meaning searching ($BF_{01} = 9.42$), strong evidence against an effect of task assignment ($BF_{01} = 11.67$), very strong evidence against meaning searching being

explained by including both main effects (BF_{01} = 93.96), and decisive evidence against the interaction term of morality threat and task assignment explaining meaning searching variance (BF_{01} = 4534.82).

Psychological Need Fulfillment. No significant main or interaction effects were detected by the 3 x 3 ANOVA testing morality threat, task assignment, and their interaction for explaining psychological need fulfillment (main effect morality threat $F(2, 347) = 0.90$, $p = .41$, $\eta^2 = 0.005$, $f = 0.071$, does not meet criterion $f = 0.17$ for test $N = 355$; main effect task assignment $F(2, 347) = 2.48$, $p = .085$, $\eta^2 = 0.013$, $f = 0.11$, does not meet criterion $f = 0.17$; interaction $F(4, 347) = 1.07$, $p = .37$, $\eta^2 = 0.011$, $f = 0.10$, does not meet criterion $f = 0.19$; Levene's test not significant, $F(8, 347) = 0.91$, $p = .51$). The marginal main effect of task assignment observed here may have arisen from the relatively lower psychological need fulfillment means in the flexible self-description task condition. This raises the interesting possibility that this task is less useful for maintaining satisfaction of psychological needs, although it may also be due to people's lower preference for this task detected in testing Hypothesis III. Variables are graphically displayed in Figure 18.

Figure 18

Psychological Need Fulfillment by Threat and Self-description Task Assignment in Study 2



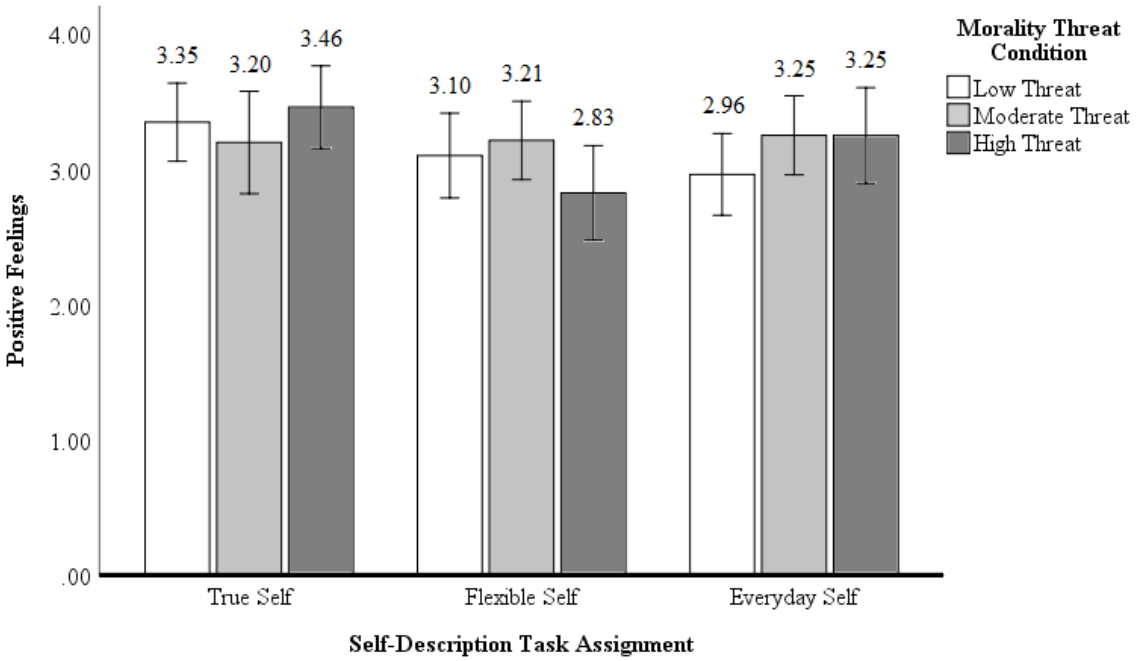
Examining this null effect from a Bayesian perspective found strong evidence for there being no effect of morality threat on psychological need fulfillment (BF_{01} = 14.69), substantial evidence for no effect of task assignment (BF_{01} = 3.21), very strong evidence for no contribution of morality threat and task assignment main effects in predicting psychological need fulfillment (BF_{01} = 33.33), and decisive evidence against the model including their interaction term (BF_{01} = 418.30).

Positive Feelings. This 3 x 3 ANOVA, testing morality threat, task assignment, and their interaction for predicting positive feelings, did not find significant contributions by any model predictor (main effect morality threat $F(2, 355) = 0.25$, $p = .78$, $\eta^2 = 0.001$, $f = 0.032$, does not meet criterion $f = 0.16$ for test $N = 363$; main effect task assignment

$F(2, 355) = 2.39$, $p = .09$, $\eta^2 = 0.013$, $f = 0.11$, does not meet criterion $f = 0.16$; interaction $F(4, 355) = 1.42$, $p = .22$, $\eta^2 = 0.015$, $f = 0.12$, does not meet criterion $f = 0.18$; Levene's test not significant, $F(8, 355) = 0.77$, $p = .63$). The marginal main effect of task assignment seen when testing overall psychological need fulfillment was observed again here. This seems particularly likely to have been generated by the decreased well-being scores (represented by positive feelings) among highly-threatened participants who completed the flexible self-description task compared to participants who completed the true self-description task. If this signifies a true pattern, it would suggest that people who are highly threatened benefit more from approaching their true self than considering their self-flexibility, the inverse of what was expected under Hypothesis IV. While marginal effects should only be consulted with care, this may be an indication against the theoretical model, or may signify that the high threat condition was not sufficiently stressful to cause true self-orientations to be burdensome. Figure 19 depicts variable interactions for this analysis.

Figure 19

Positive Feelings by Threat and Self-description Task Assignment in Study 2



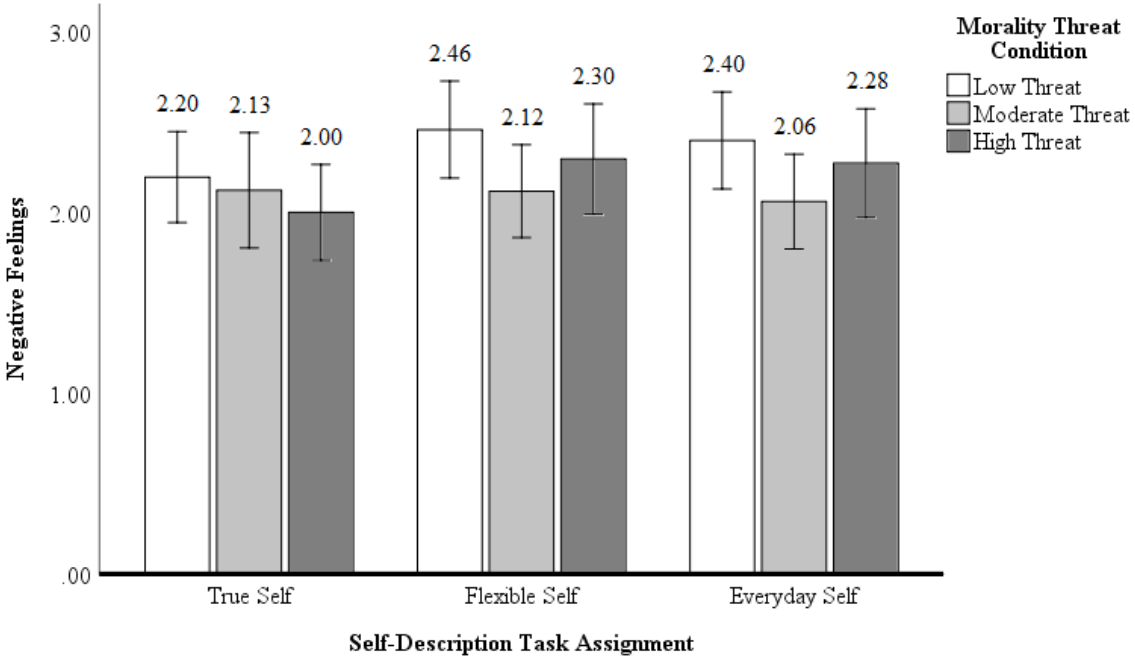
Bayesian analysis investigating this null finding revealed strong evidence for no effect of morality threat (BF_{01} = 26.23), substantial evidence for no effect of task assignment (BF_{01} = 3.34), and very strong evidence against these two main effects making contributions to positive feelings with together in the model (BF_{01} = 72.81). The analysis also found decisive evidence against the interaction term between morality threat and task assignment contributing to positive feelings (BF_{01} = 566.04).

Negative Feelings. No main effects or interaction effects, in the 3 x 3 ANOVA testing morality threat, task assignment, and their interaction for explaining negative feelings, emerged as significant (main effect morality threat $F(2, 368) = 2.64$, $p = .073$, $\eta^2 = 0.013$, $f = 0.11$, does not meet criterion $f = 0.16$ for test $N = 376$; main effect task assignment $F(2, 368) = 1.47$, $p = .23$, $\eta^2 = 0.008$, $f = 0.090$, does not meet criterion

f = 0.16; interaction $F(4, 368) = 0.42$, $p = .79$, $\eta^2 = 0.005$, f = 0.071, does not meet criterion f = 0.18; Levene's test not significant, $F(8, 368) = 1.95$, $p = .051$). Judging from the marginal effect of morality threat on negative feelings, which again should be undertaken lightly, it appears that this difference might lay between the low and moderate threat conditions. Interestingly, people in the low threat condition reported the highest negative feelings across the board, raising further doubts in the manipulation's efficacy. Variable interactions for this analysis appear in Figure 20.

Figure 20

Negative Feelings by Threat and Self-description Task Assignment in Study 2



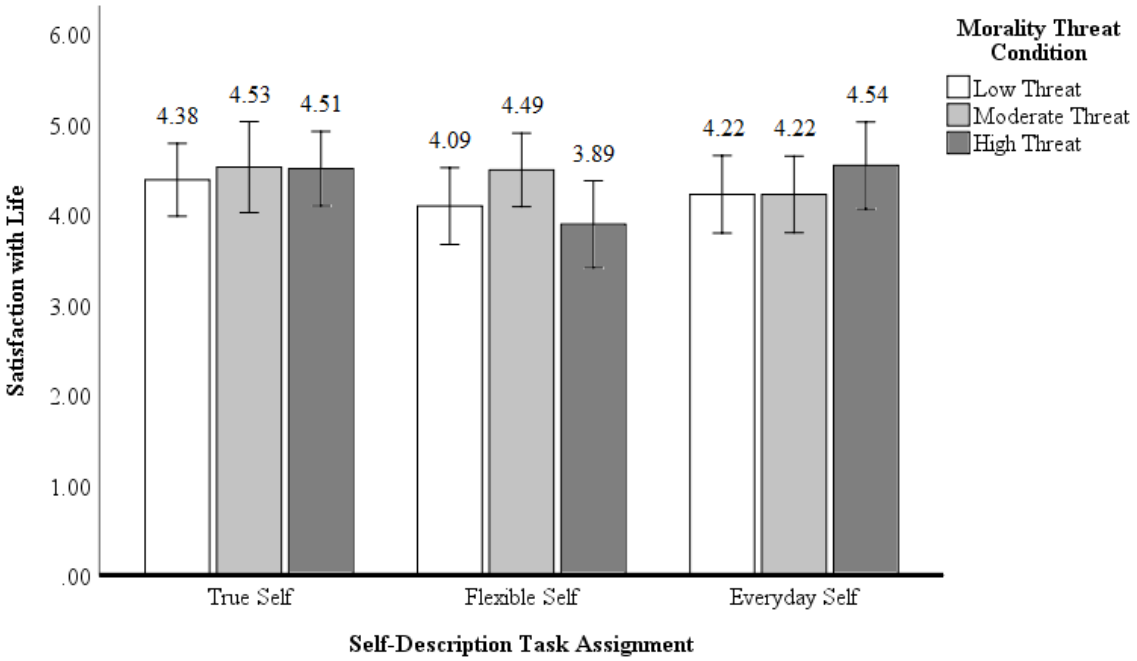
I next examined this null finding with a 3 x 3 Bayesian ANOVA with these variables and found anecdotal evidence against an effect of morality threat in predicting negative feelings (BF_{01} = 2.95), substantial evidence against an effect of task assignment (BF_{01} = 9.55), strong evidence against an effect of the two main effects in the model

simultaneously (BF_{01} = 21.03), and decisive evidence against the model including their interaction term for explaining negative feelings (BF_{01} = 720.04).

Satisfaction with Life. No significant effects of model predictors emerged in the 3 x 3 ANOVA testing morality threat, task assignment, and their interaction in explaining satisfaction with life (main effect morality threat $F(2, 374) = 0.65$, $p = .52$, $\eta^2 = 0.003$, $f = 0.055$, does not meet criterion $f = 0.16$ for test $N = 382$; main effect task assignment $F(2, 374) = 1.47$, $p = .23$, $\eta^2 = 0.008$, $f = 0.090$, does not meet criterion $f = 0.16$; interaction $F(4, 374) = 1.00$, $p = .41$, $\eta^2 = 0.011$, $f = 0.10$, does not meet criterion $f = 0.18$; Levene's test not significant, $F(8, 374) = 1.75$, $p = .085$). Variable interactions for this analysis can be seen in Figure 21. While visually the flexible self-description assignment condition showed interesting threat level differences, the test for these effects did not approach significance and the observed patterns are contrary to Hypothesis IV.

Figure 21

Satisfaction with Life by Threat and Self-description Task Assignment in Study 2



From a Bayesian perspective, there was strong evidence against an effect of morality threat on satisfaction with life (BF_{01} = 20.35) and strong evidence against an effect of task assignment as well (BF_{01} = 11.78). Both the model containing the two main effects (BF_{01} = 212.85) and the model containing the main effects with the interaction term (BF_{01} = 3348.97) were decisively unsupported.

Subjective Vitality. In the 3 x 3 ANOVA testing morality threat and task assignment, and their interaction, for predicting subjective vitality, a significant main effect of task assignment emerged as the sole predictor (main effect morality threat $F(2, 370) = 0.52$, $p = .60$, $\eta^2 = 0.003$, $f = 0.055$, does not meet criterion $f = 0.16$ for test $N = 378$; main effect task assignment $F(2, 370) = 3.87$, $p = .02$, $\eta^2 = 0.020$, $f = 0.14$, does not meet criterion $f = 0.16$; interaction $F(4, 370) = 0.59$, $p = .67$, $\eta^2 = 0.006$, $f = 0.078$,

does not meet criterion $f = 0.18$; Levene's test not significant, $F(8, 370) = 1.47$, $p = .16$). Post-hoc tests compared all condition levels to examine the significant role of task assignment in subjective vitality. These analyses revealed the location of the effect of task assignment: Participants assigned to describe their true selves reported significantly higher subjective vitality than participants describing their self-flexibility ($t(370) = 2.75$, $p_{Tukey} = .017$, *M* difference = 0.54 (*SE* difference = .20), 95% CI [.08, 1.00], Cohen's $d = 0.36$ (medium-sized effect), meets criterion $d = 0.35$ with test group *N's* = 129 and 125). Figure 22 displays interactions of variables included in the 3 x 3 ANOVA analysis, and Figure 23 shows the main effect of task assignment.

Figure 22

Subjective Vitality by Threat and Self-description Task Assignment in Study 2

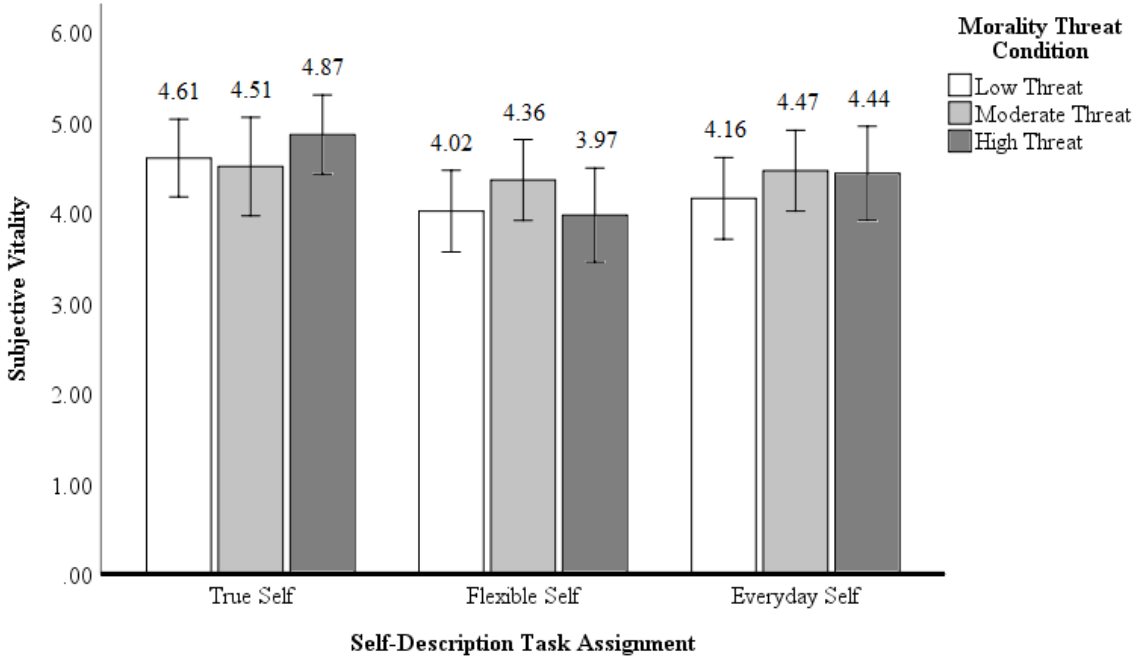
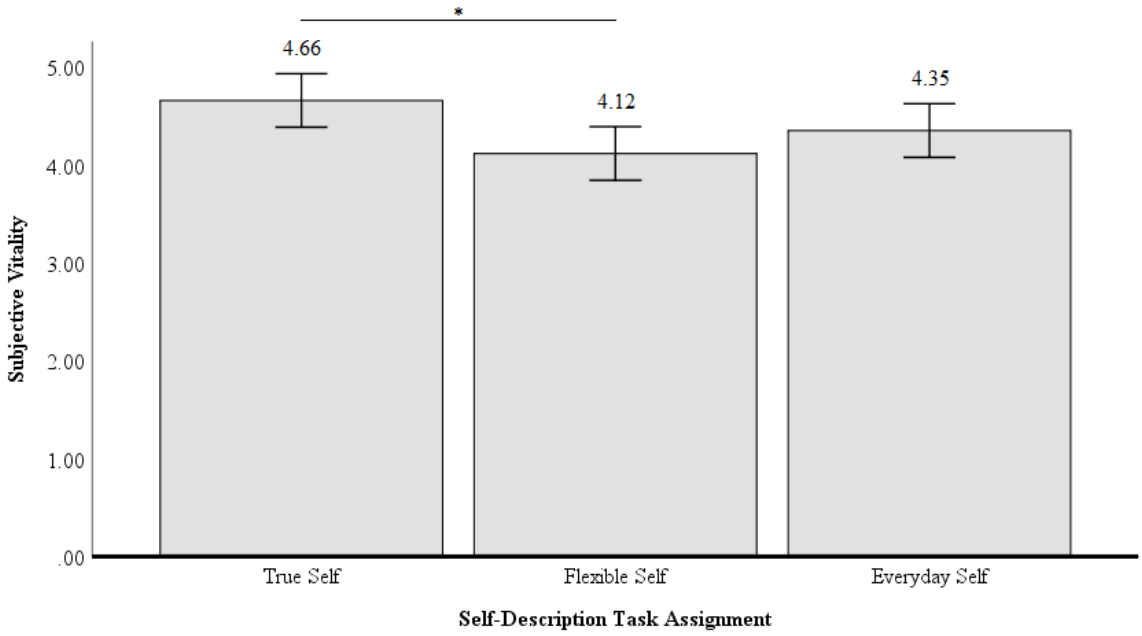


Figure 23

Subjective Vitality by Self-description Task Assignment Across Conditions in Study 2



Agreeing with the ANOVA, Bayesian analyses revealed anecdotal support for the main effect of task assignment in predicting subjective vitality (BF_{10} = 1.21). This represents a positive observation of the ability of actively connecting to the true self for producing improved well-being, or possibly signifies the challenging or unfamiliar nature of actively exploring self-flexibility among Westerners. This convergence on agreement for there being an effect of task on subjective vitality is also an encouraging sign that the written tasks designed for this research are partially effective for predicting well-being outcome scores. The precise conditions under which this might occur are unclear, but adjustments to threat severity or method of delivery might be needed for well-being differences to appear. The analysis supported the null for other model contributors, with strong evidence against an effect of morality threat (BF_{01} = 19.92) and against the model

containing both main effects (BF_{01} = 15.53), and decisive evidence against the model containing the main effects along with the interaction term (BF_{01} = 433.44).

Discussion

With the exception of subjective vitality, and three marginal effects carefully explored along with their companion analyses, no outcome exhibited a significant response to any model predictor tested under Hypothesis IV including level of threat, task assignment, or their interaction. In each of these cases, Bayesian analyses gave compelling evidence for the null hypothesis (no effect of model predictors) over the alternative hypothesis (a real effect of one or more model predictors). There are a few interesting and informative conclusions that might be drawn as a result.

First, it may be that neither threat nor task are relevant for these well-being outcomes, a possibility that would be informed by further pilot testing for materials development. If this were the case, the paradigm applied in Study 2 would be insensitive for testing Hypothesis IV, leading us very little we can draw from the variable behavior here. The fact that all by-threat and by-task means were within one half scale point from one-another lends credence to this proposition that the manipulation and task may not matter for these variables. Another possibility, explored at greater length in the General Discussion, is that providing people with the chance to reflect on what task they would prefer complicated the pathway from threat exposure to any well-being response that might have been detected without the choice interruption. A third possibility, also theoretically and practically explored in the General Discussion, is more relevant for the theoretical framework that guided these hypotheses.

The lack of an effect for any outcome variables besides subjective vitality makes the case of subjective vitality all the more interesting. Subjective vitality, the feeling of aliveness and energy (Ryan & Frederick, 1997), has been shown to be positively related to feelings of state authenticity (Sedikides et al., 2017; Thomaes et al., 2017). It may be that subjective vitality is more closely related to feelings of connecting to one's true self than other well-being outcome variables, and was therefore most positively responsive to tasks that asked participants to explore their true self and most negatively responsive to tasks involving exploration of the transient nature of their important self-aspects.

To consider Study 2's overall implications as a complementary sequence of investigations. While no there were no significant condition differences in the task that people chose following the morality threat manipulation (Hypothesis II analysis), its distribution of participant task choice counts by threat level did raise interesting possibilities. Across threat, interest in engaging with the true self was generally high, supporting the idea that people look upon the true self as positive. Choice count distribution under Hypothesis II analyses also paralleled the finding in testing Hypothesis III that people across threat levels wished to consider their potential for self-flexibility less than they wished to reflect on their true or everyday self-concepts. Hypothesis IV analyses paralleled this pattern, in lower subjective vitality among those assigned the flexible self-description task. This made the most consistent finding to emerge in Study 2, the observation that, across analytic sequences, people appeared to desire and benefit from connecting to self-flexibility less than connecting to the true self and the everyday self. I now evaluate the theoretical model and overall conclusions of Studies 1 and 2 together.

General Discussion

Examining Hypotheses and Theoretical Model

Hypothesis I

In Hypothesis I, I predicted that true self-orientations, as captured by scores on the continuous self-essentialism variable, would differently relate to well-being variables depending on the level of personal morality threat participants were assigned to experience. Specifically, I predicted that participants in the low threat condition would exhibit a positive relationship between self-essentialism and well-being. Participants under moderate threat were expected to show lower well-being than those in the low threat condition, due to the stronger threat exposure, but that self-essentialism would still positively predict well-being. Finally, under the highest threat participants were hypothesized to show a negative relationship between self-essentialism and well-being, as true self-orientations were predicted to be burdensome under high morality threat.

The moderate support for Hypothesis I, as covered in Study 1's Analyses and Results section, indicates that the personal morality threat manipulation functioned appropriately to some extent in Study 1. These types of threats seem able to observably impact continuous well-being scores as evidenced by the significant role of condition for meaning searching and its speculated role for other well-being outcomes judging from visual patterns. There was also some support for the idea that self-essentialism would protect participants from moderate threat, but expose participants to risk of greater destabilization from high threat. Since resounding support was not seen, this indicates the possibility that the theoretical model applies only for some well-being outcomes and not others, or that adjustments to manipulation severity, delivery modality, or delivery time

scale would be necessary to see significant responses on other well-being variables that did not respond here.

Hypotheses II and III

Hypotheses II and III were twin investigations into the same question: To what extent might people approach or avoid different self-conceptualizations depending on their degree of threat exposure? The expected answer to this question, projected by Hypotheses II and III onto their corresponding response variables, was that nonthreatened participants would most wish to describe their true self due to its positive cultural cachet, moderately threatened participants would want to describe their true self even more strongly due to prevalent narratives that it is a source of stability during destabilization, and that highly threatened participants would be unable to resolve strong morality threat with rigid true self-orientations and would look to escape the threat by exploring self-flexibility.

There was a lack of statistical support for Hypothesis II, and the sole finding of Hypothesis III being the lower preference for the flexible self task across threat levels is only generally relevant to the extent that it represents preference for stable self-views. The absence of threat effect in either of these analytic sequences suggests that the threat manipulation does not motivationally affect people in the ways I predicted. Unlike in Hypothesis I, where condition differences for continuous well-being outcome variables were partially evident, the manipulation does not seem to be terribly relevant for altering people's orientations to various self-conceptualizations (i.e., true self, self-flexibility, everyday self). This holds interesting theoretical implications for true self-orientations' involvement in active stressor resilience and coping, discussed below at length. Taken

together with Hypothesis I this pattern represents a qualification of the theoretical model, in the potential for the model to predict fluctuations in relations between continuous variables while the model seems inadequate for predicting behavioral outcomes.

Hypothesis IV

Dovetailing with Hypotheses II and III, Hypothesis IV extended the predicted true self approach in moderate threat and flexible self approach in high threat to the expectation that participants in each threat condition would show well-being benefits after actually completing a task in which they actively engaged with the self-conceptualization predicted to benefit them. The theoretical model saw some support in the form of task assignment's ability to explain subjective vitality, specifically the observation of lower subjective vitality among participants assigned to complete the flexible self-description task compared to participants assigned to complete the true self-description task. This result is a promising sign that, in the right conditions, the tasks employed here might be able to improve well-being outcomes, but the lack of a contribution of morality threat leaves the precise boundary conditions required to see this improvement by task uncertain. Little support for Hypothesis IV emerged, such that with the exception of subjective vitality frequentist and Bayesian analytic sequences converged to demonstrate strong evidence for the null hypothesis of no model effect in explaining measured outcomes. This lack of well-being response to morality threat followed by task assignment resonates with conclusions from Hypotheses II and III. Specifically, the theoretical model, the paradigm used in Study 2, or both appear inappropriate for explaining or affecting well-being outcome variance. The theoretical

model is evaluated next in depth in light of these findings, followed by a consideration of overall theoretical implications and need for adjustments to methodology.

Evaluation of Theoretical Model

As touched on above, the inconsistencies of confirmation for all of the four hypotheses of this research of sequence lend strong critique to the theoretical model's prospects of veridicality. Of course, there is the parallel possibility that it was the methodology used here rather than the theoretical model that was lacking, a possibility explored at length below. To evaluate the theoretical model apart from methodology, it appears that its predictions tentatively hold when concerning how continuous true self-orientations (i.e., self-essentialism), relate to continuous well-being outcomes following threat exposure. So, to the extent this is true, true self-orientations do seem to be related to better well-being resilience in the face of threat. This resilience, also in concert with the theoretical model, seemed to attenuate or disappear altogether under high threat. The theoretical model did not hold for predicting participants' preference for and subsequent well-being responses to different self-description tasks with regards to threat condition, suggesting that active use of true self-orientations does not occur, or was ineffectively operationalized and captured here. I next take a higher-level approach to these ideas, followed by a deconstruction outlining potential methodological issues.

Theoretical Implications for Self-essentialism and True Self as Resilience Anchor

Implications for the True Self as a Protective Resource

Judging from results of the analytic procedure investigating Hypothesis I, true self-orientations did seem to positively relate to well-being at low and moderate levels of threat, paralleling consistent positive relationships found between self-essentialism and

well-being under bivariate correlational approaches. Visual patterns, albeit in the absence of statistical support, also supported the predicted boundary condition of this resilience, such that highly threatened participants exhibited weakened positive or outright negative relationships between self-essentialism and well-being in many cases. This became most clear in the statistically-supported finding that higher self-essentialism was related to lower reports of the burdensome state of meaning searching in nonthreatened participants, but related to higher meaning searching in highly threatened participants. These patterns encouragingly signify that in high threat rigid true self-orientations do become ineffective for support, but are a valuable resilience resource at lower threat. The higher subjective vitality found among participants who undertook the true self-description task under Hypothesis IV, compared to participants who instead deconstructed true-self-orientation ideas by exploring self-flexibility, also agrees with the idea that across all threat levels participants may benefit from true self-connection.

Implications for the True Self as a Resource for Active Coping Strategies

Generally, Hypotheses II, III, and IV were inconsistently supported. Participants did not exhibit expected task choice and preference differences depending on their threat exposure, nor did they exhibit expected well-being outcome differences depending on both this exposure and their self-description task assignment. To the extent that the manipulation was effective in inducing degrees of perceived threat, evaluated below, this lack of confirmation may be a sign that people's various self-conceptualizations are not activated and available for agentic coping during moments of destabilization. Several implications result from this proposal.

Despite this outcome unresponsiveness demonstrated here, people readily report the true self as useful for guidance (Rivera et al., 2019; Schlegel et al., 2013a). One explanation for this is that they, due to their lack of introspective accuracy and access into the causes of their behaviors (Nisbett & Wilson, 1977), are erroneous in reporting their true self as involved in overcoming obstacles in their lives. Considering that the true self is generally assumed from a scientific perspective not to exist beyond our personal subjective definitions of it (Strohminger et al., 2017), we already have evidence that people are likely in error on this topic. It would not be a large stretch to also posit that people only *think* they reference their true self-concepts when searching for solutions. After all, without knowledge of motivation, conditioning, decision-making, emotion, and social processes, there are only so many lay-explanations for behavior and choices that secular Westerners are offered by society that represent alternatives to the idea of the true self as agentic actor.

Still, I argue that this conclusion is likely not wholly accurate. Given the efficacy of meaning-making coping (Larner & Blow, 2011; Park, 2005) and the strong theoretical connections between true self-orientations and meaning-making (Schlegel et al., 2013b), other implications seem more likely. For one, true self-orientations may not become activated and useful for such support until after a problem or threat has been known for some time. If so, participants in this sequence of studies would not have had enough time to access and be supported by their true self-orientations.

Another compatible possibility is that participants are more able to utilize their true self-concepts effectively if they are aware of the potential benefits of doing so. Metamotivational awareness of the existence of a threat that may need to be coped with,

the existence of available strategy options that might be effective for coping, and the beliefs in the likely efficacy of any or specific strategies have all emerged as key figures for coping and self-affirmation efforts (Scholer & Miele, 2016; Scholer et al., 2018). Additionally, people have shown individual differences in their likelihood to spontaneously engage in self-affirmation (Harris et al., 2019), while the theoretical model here projected the blanket expectation that all participants would generally feel motivation to resolve threat. A paradigm for future research might be developed that attempts to inform participants of the benefits of self-affirmation rooted in true self-orientations, controls for self-affirmation individual differences, navigates the difficult task of maintaining deception and not neutralizing threat impact, and thereby may yield promising results.

Still another possibility is that active coping via accessing true self-orientations is most available to people who have at least some degree of true self-concept accessibility, a capacity shown to exhibit individual differences (Schlegel et al., 2009). Follow-up work would illuminate this possibility, such that true self-concept accessibility might be assessed and integrated as a moderator or covariate when further exploring how trait true self-orientations (i.e., self-essentialism) or active true self-orientations (i.e., motivation towards and depth of engagement in the true self-concept) might operate on well-being outcomes.

Practical Implications

A very valuable lesson arising from this research endeavor is that, while true self-orientations are discussed theoretically with a unified framework of being supportive for well-being, moral feelings, and meaning structures, it seems to be the case that

operationalizations of true self-orientations vary in the degree to which they relate to or are relevant for operationalizations of these positive outcomes. This may signify the need for re-evaluating the appropriateness of including these true self-orientations under a single conceptual umbrella. Or, this may signal the need for careful and reproducible measurement and diligent exploration into the exact ways to measure and manipulate variables at each step of testing.

Given the inconsistent confirmation of the theoretical model demonstrated here, it seems necessary to refine current manipulations and additionally design new manipulations and paradigms that can more closely target and activate specific self-conceptualizations. Of particular need is the development of pilot testing and methodologies that more reliably approximate the levels of threat required for testing the theoretical model while maintaining high confidence in the persistence of deception.

For instance, it is likely that the manipulation would be more successful if applied in person with additional techniques to reinforce the deception. If a researcher with the air of authority were to ask participants to submit their morality scores as a separate survey before beginning a second survey containing written task instructions and/or outcome variables of interest, the researcher could administer the false feedback report themselves between surveys after pretending to check participants' scores against all others'. Of course, this would introduce the risk of noise due to the added social component of this paradigm. A way to remove some noise, also explored in the next section, would be the simple adjustment of assigning participants a writing task without first asking their preferences. This would serve dual functions: to remove the risk of participant confusion that may have been present here due to not receiving their task of

choice, and to preserve the impact of the threat exposure so that the writing task experience may operate on it without an intervening step during which the threat might fade or be otherwise psychologically reframed. Some additional strategies for making methodological changes appear alongside specific corresponding limitations, in the following section, that they are intended to address.

Limitations and Proposed Solutions

A major limitation in interpreting the findings presented here is the possibility that the manipulation did not achieve the desired feelings of threat, either due to miscalibration of strength or due to research designs straining belief. In addition, the modifications made to this manipulation between Study 1 and Study 2, and Study 2's relative lack of by-condition outcome differences, make it challenging to directly evaluate which form of feedback severity best approximated our desired threat inductions. Further, the sample differences between Study 1 (undergraduate) and Study 2 (national) introduce the possibility that Study 1's student participants simply found the threat more believable than the Prolific workers in Study 2, who conceivably have more experience with taking research surveys than university students in a low-level survey course in psychology. Additional pilot testing of the manipulation is needed to lend greater explanatory insight into the results discussed here.

Another limitation of both studies lays in the difficulty in interpreting funnel debriefing responses in a manner that guarantees removing all participants who were immediately suspicious of the personal morality threat while also retaining all participants who only realized the false feedback manipulation during the debriefing. Numerous Study 1 and Study 2 participants who did not volunteer reports of suspicion in

response to the first three debriefing segments were able to give the correct answer when asked directly why they were showed their morality score as compared to others or to subsequent debriefing segments. This was particularly true for Study 2, again suggesting a higher familiarity with survey designs among Prolific workers. Of course, it also could be the case that people can easily recognize the manipulation when asked directly why we used it. More complex in-person administration paradigms may be more successful in employing false feedback designs believably.

Such paradigms would also allow careful regulation of written task behavior timing, as here some Study 2 participants still reported surprise at the survey's automatic advancing despite having the chance to prepare for the task on a prior page and being informed how much time they were given for writing. Given the implication that many participants did not read this information in favor of proceeding through the survey steadily, having a researcher present to administer each study portion would allow for verbal explanation of paradigm structure. An additional consideration is the possible need for excluding participants from Study 2 Hypothesis IV analyses based on the length and conceptual relevance of their written responses for the specific task they were assigned to complete. Due to the subjective nature of self-definitions and self-orientations, and the range of people's ability to describe their self-definitions (Schlegel et al., 2009), participant exclusion based on qualitatively coding for response adequacy in future research may yield increased precision and fruitful results thereby.

Future designs may also address the possibility that the written task segment would be more relevant for buffering threat were participants to be assigned to complete the task of their choice. For instance, a participant might more avidly and deeply engage

in connection with a certain self-conceptualization if they did so under their own choosing. Contrastingly, a participant who did not receive their task choice might be more likely to disengage and seek to finish the study quickly. As there were three possible tasks a participant could be assigned to here, it was more likely than not that they would be assigned to complete a task they did not select. Participant inclusion screening and natural variation in task choice resulted in different concentrations of participants who received their task choice and those who did not across the nine possible Study 2 experiences, as can be seen in Appendix Table G1. For this reason, it was not appropriate to include task assignment concordance with task choice as a moderator in the present analyses, but would be easily controlled for in a future study that allowed participants to choose their activity in reality.

Finally, a commentary on the limiting methodological and conceptual factors across these studies would be incomplete without acknowledging the ongoing pandemic and other stressors that participants in these studies were experiencing. Participants completed Study 1 in the height of the 2020–2021 SARS-CoV-2 pandemic's effects on the United States, before vaccinations were made available and while these students were engaged in online learning. Participants in Study 1 also participated in conceivably heightened or distinctive states of perceived threat to meaning and safety. That is, they either contributed data to this research from November 2nd to 17th, 2020—in the midst of a contentious and long-undecided national election and the fallout thereof—or from January 7th to 20th, 2021—the time immediately following the January 6th Capitol Insurrection and subsequent security concerns prior to and during the Presidential election. To the extent that Study 1's participants were already experiencing sustained

perceptions of threat, this sample potentially lays outside of the population the theoretical model was designed to generate predictions for, i.e., for people not already under particular threat and with normative levels of meaning in life, happiness, and need fulfillment. It may be that were Study 1 repeated using data collected during more certain times, the relationships suggested here by visual trends would emerge clearly.

Participants in Study 2 were likely experiencing less day-to-day disruption from the pandemic and political climate, as they participated in July of 2021 when many states had reopened and vaccines were widely accessible. However, especially as Study 2 contained a national sample, these participants may have had lower levels of trust for researchers and educational institutions due to the pandemic and narrative framing surrounding it. In my view, the implications of both studies' and in particular those of Study 1 should be considered with care. I feel that this forwards a compelling justification for an effort to replicate the findings covered here, using the added methodological knowledge and detected relationships as signs for where and how to best advance this line of work.

Future Directions

I have outlined a variety of theoretical and practical possibilities to explore throughout this discussion. Most immediately and coherently, a follow-up sequence of three data collections for Study 2 seems likely to yield clearer results that would already additionally inform the present work. These would consist of a study that allowed participants to indicate their task preference, one where they were randomly assigned a task to complete without being first asked their preference, and one where they chose a task and then performed their task of choice.

I have also identified the promising prospects of helping participants focus on connecting to their true self, with clearer definitions of each self-conceptualization and messaging about the benefits of such connection. Spontaneous self-affirmation represents a potential covariate to control for, and true self-concept accessibility would be an informative moderator to include. In this vein, given the evidence here that these methods did not sufficiently activate true self-orientations for the purposes of affecting behavioral and self-reported outcomes, a manipulation designed to cognitively activate true self-orientations may optimally position participants to show patterns of interest.

Conclusion

To conclude, in reflecting on the theoretical perspectives and sequences of analyses explored here, it is clear that there is much still to be elucidated in understanding how people relate to, utilize, and may be affected by engagement in true self-orientations. A rich literature exists to indicate that the true self is a robust source of personal narrative possibility and signpost for future aspiration, and cross-cultural evidence indicates that a person is likely to meet wide acceptance and enjoy high culture fit if they are to entertain the idea of having a true self. The examinations here provide useful elaboration, support, and critique for these opportunities. Certainly, many demonstrations of true self-orientations' positive well-being link were present to be observed here, while the boundaries for observing and affecting this link were less consistently evident. Holding these parallel patterns of findings simultaneously, I have endeavored to offer illumination, solutions, and direction for how this theoretical area of study might next be advanced and grown. It is my hope that, with care and thoughtful consideration, we are

able to fully discover the ways in which true self-orientations may be used as a resource in supporting human flourishing.

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Appendix A: Supplementary Exploratory Factor Analyses for Study 1

Table A1

Meaning in Life Item Pattern Matrix Factor Loadings from Exploratory Factor Analysis with Direct Oblimin Rotation in Study 1

	Factor	
Item	I	II
(P4) My life has a clear sense of purpose.	**.91**	.00
(P6) I have discovered a satisfying life purpose.	**.88**	.05
(P1) I understand my life's meaning.	**.86**	.07
(P5) I have a good sense of what makes my life meaningful.	**.78**	.06
(P9) My life has no clear purpose (reversed).	**.63**	-.18
(S3) I am always looking to find my life's purpose.	.16	**.81**
(S7) I am always searching for something that makes my life feel significant.	.08	**.79**
(S8) I am seeking a purpose or mission for my life.	.08	**.78**
(S2) I am looking for something that makes my life feel meaningful.	-.14	**.70**
(S10) I am searching for meaning in my life.	-.29	**.69**
Factor Correlations		
I	4.02(36.93%)	
II	-.12	3.09(27.29%)

Note. The factor correlation appears below the diagonal, Eigenvalues on the diagonal, and by-factor percent of variance explained in parentheses. Factor loadings $\geq$ .40 are emphasized in bold. (P) = Presence Subscale; (S) = Search Subscale, with corresponding original MLQ scale number as published. Solution converged after 4 iterations, no additional factors contributing Eigenvalues greater than 1 were present.

Table A2

Subjective Vitality Item Factor Matrix Loadings from Exploratory Factor Analysis in Study 1

	Factor
Item	I
(7) I feel energized.	**.86**
(4) I have energy and spirit.	**.80**
(5) I look forward to each new day.	**.79**
(1) I feel alive and vital.	**.76**
(2) I don't feel very energetic. (reversed)	**.75**
(6) I nearly always feel alert and awake.	**.68**
(3) Sometimes I feel so alive I just want to burst.	**.63**
Factor:	
Eigenvalues	4.41
Percent variance explained	(57.18%)

Note. Factor loadings ≥ .40 are emphasized in bold. Items appear in order of loading, with their original scale number in the published Subjective Vitality Scale in parentheses. No rotation was possible as only a single factor was extracted. Solution converged after 4 iterations, no additional factors contributing Eigenvalues greater than 1 were present.

Table A3

Self-essentialism Item Pattern Matrix Factor Loadings with Initial Six-Factor Solution from Exploratory Factor Analysis with Direct Oblimin Rotation in Study 1

	Factor					
Item	I	II	III	IV	V	VI
(E3) I am either a certain type of person or I am not.	**.91**	.02	-.04	.02	-.01	.10
(E2) I either have a certain attribute or I do not.	**.72**	-.03	-.10	-.01	.02	-.02
(E5) The kind of person I am is clearly defined, I either am a certain kind of person or I am not.	**.72**	.03	.01	.16	.03	**.20**
(E4) There are certain 'types' of people and the 'type' of person I am can be easily defined.	**.51**	-.08	-.07	**.31**	-.03	.21
(E18) I have a true self even if I don't always act in accordance with it.	-.04	**.84**	-.04	-.04	-.07	-.04
(E16) I have a true self.	.01	**.72**	-.05	-.11	.17	.10
(E17) Even if parts of me change over time, who I really am deep down stays the same.	.03	**.68**	-.03	.12	.06	-.08

(E20) My actions are guided by who I really am deep down.	-.03	**.45**	-.02	.18	-.02	**.35**
(BB14) With enough scientific knowledge, the basic qualities that I have could be traced back to, and explained by, my biological make-up.	.00	-.07	**-.91**	-.04	-.02	.02
(BB13) Whether I am one kind of person or another is determined by my biological make-up.	.14	.05	**-.80**	-.06	-.08	-.06
(BB15) The kind of person I am can be largely attributed to my genetic inheritance.	-.11	.12	**-.77**	.03	-.06	.18
(BB12) There are different types of people and with enough scientific knowledge the 'type' of person I am can be traced back to genetic causes.	.18	.06	**-.65**	.16	.03	**-.22**
(I8) It is possible to know about many aspects of me once you become familiar with a few of my basic traits.	.05	.04	-.06	**.84**	.01	-.08

(I10) Knowing about a few of the basic traits that I have can lead to accurate predictions of my future behavior.	.01	.04	-.07	**.79**	-.04	-.03
(I7) Generally speaking, once you know me in one or two contexts it is possible to predict how I will behave in most other contexts.	.05	-.06	.13	**.72**	-.06	-.02
(I9) When getting to know me it is possible to get a picture of the kind of person I am very quickly.	.02	.07	-.07	**.69**	-.04	.05
(E19) The person I am deep down changes from situation to situation. (reversed)	.07	.15	.13	-.10	**.74**	-.09
(E6) I have a distinct personality type.	**.33**	.12	.19	.07	-.04	**.44**
(E1) The boundaries that define the differences between myself and others are clear-cut.	**.22**	.02	-.08	-.07	-.01	**.30**

(I11) Although I may have some basic identifiable traits, it is never easy to make accurate judgments about how I will behave in different situations. (reversed)	-.11	**-.23**	-.10	**<u>.22</u>**	**.28**	**.29**
Factor Correlations						
I	5.39 (25.14%)					
II	.21	2.56 (10.85%)				
III	-.24	-.13	2.32 (9.89%)			
IV	.28	.00	-.24	1.77 (6.99%)		
V	-.09	.04	.10	.04	1.13 (3.06%)	
VI	.25	.10	-.08	.28	.09	1.02 (2.64%)

Note. Factor correlations appear below the diagonal, Eigenvalues on the diagonal, and by-factor percent of variance explained in parentheses. Factor loadings $\geq$ .20 are emphasized in bold to highlight multiple notable loadings. In cases where strong loading here is not in accordance with factor assignment in the four-factor solution, underlining will be used to demonstrate factor assignment in the final four-factor solution. (E) = Self Entitativity Subscale, (BB) = Biological Basis subscale, and (I) = Informativeness Subscale with corresponding original scale number in parentheses. Solution converged after 10 iterations. Bartlett's test $\chi^2 = 1177.01$, df = 190, $p < .001$; KMO = .80

Appendix B: Study 1 Multiple Regression Full Model Estimates

Table B1

Meaning Predicted by Self-essentialism and Morality Threat Condition in Study 1

Model Predictors	B (*SE*)	*95%* CI	*t*(123)	*p*
Intercept	4.23 (0.23)	[3.77, 4.68]	18.42	< .001
Self-essentialism	0.42 (0.34)	[-0.25, 1.08]	1.24	0.22
Condition Level: Moderate Threat	0.21 (0.31)	[-0.41, 0.83]	0.67	0.50
Condition Level: High Threat	0.43 (0.31)	[-0.19, 1.05]	1.37	0.17
Self-essentialism X Moderate Threat	0.26 (0.44)	[-0.61, 1.13]	0.60	0.55
Self-essentialism X High Threat	0.12 (0.47)	[-0.81, 1.04]	0.25	0.80

Note. Overall model $F(5, 123) = 2.88$, $p = .017$, adjusted $R^2 = 0.068$

Table B2

Meaning Predicted by True Self and Morality Threat Condition in Study 1

Model Predictors	B (*SE*)	*95%* CI	*t*(128)	*p*
Intercept	4.26 (0.20)	[3.86, 4.66]	21.05	< .001
True Self	0.51 (0.19)	[0.14, 0.89]	2.75	0.01
Condition Level: Moderate Threat	0.28 (0.28)	[-0.28, 0.85]	1.00	0.32
Condition Level: High Threat	0.27 (0.29)	[-0.30, 0.84]	0.93	0.35
True Self X Moderate Threat	0.25 (0.29)	[-0.32, 0.82]	0.88	0.38
True Self X High Threat	0.05 (0.29)	[-0.52, 0.62]	0.16	0.87

Note. Overall model $F(5, 128) = 6.23$, $p < .001$, adjusted $R^2 = 0.16$

Table B3

Meaning Searching Predicted by Self-essentialism and Morality Threat Condition in Study 1

Model Predictors	B (*SE*)	*95%* CI	*t*(118)	*p*
Intercept	5.23 (0.19)	[4.87, 5.60]	28.19	< .001
Self-essentialism	-0.30 (0.27)	[-0.83, 0.24]	-1.10	0.27
Condition Level: Moderate Threat	0.08 (0.25)	[-0.43, 0.58]	0.30	0.77
Condition Level: High Threat	-0.07 (0.26)	[-0.59, 0.44]	-0.28	0.78
Self-essentialism X Moderate Threat	0.38 (0.36)	[-0.32, 1.09]	1.07	0.29
Self-essentialism X High Threat	0.82 (0.38)	[0.06, 1.58]	2.13	0.03

Note. Overall model $F(5, 118) = 1.04$, $p = .40$, adjusted $R^2 = 0.0017$

Table B4

Psychological Need Fulfillment Predicted by Self-essentialism and Morality Threat Condition in Study 1

Model Predictors	B (*SE*)	*95%* CI	*t*(115)	*p*
Intercept	3.41 (0.12)	[3.17, 3.65]	27.81	< .001
Self-essentialism	0.25 (0.18)	[-0.10, 0.60]	1.41	0.16
Condition Level: Moderate Threat	0.10 (0.17)	[-0.24, 0.44]	0.58	0.56
Condition Level: High Threat	-0.06 (0.17)	[-0.41, 0.29]	-0.35	0.73
Self-essentialism X Moderate Threat	-0.07 (0.24)	[-0.56, 0.41]	-0.31	0.76
Self-essentialism X High Threat	-0.15 (0.25)	[-0.65, 0.36]	-0.58	0.56

Note. Overall model $F(5, 115) = 1.10$, $p = .36$, adjusted $R^2 = 0.004$

Table B5

Comfort Fulfillment Predicted by Self-essentialism and Morality Threat Condition in Study 1

Model Predictors	B (*SE*)	*95%* CI	*t*(122)	*p*
Intercept	3.23 (0.14)	[2.95, 3.51]	22.79	< .001
Self-essentialism	0.41 (0.20)	[0.00, 0.82]	2.00	0.05
Condition Level: Moderate Threat	0.11 (0.19)	[-0.28, 0.49]	0.55	0.58
Condition Level: High Threat	-0.08 (0.20)	[-0.47, 0.31]	-0.39	0.70
Self-essentialism X Moderate Threat	-0.01 (0.27)	[0.55, 0.52]	-0.05	0.96
Self-essentialism X High Threat	-0.29 (0.29)	[-0.87, 0.29]	-1.00	0.32

Note. Overall model $F(5, 122) = 2.50$, $p = .034$, adjusted $R^2 = 0.056$

Table B6

Meaning Fulfillment Predicted by Self-essentialism and Morality Threat Condition in Study 1

Model Predictors	B (*SE*)	*95%* CI	*t*(118)	*p*
Intercept	3.72 (0.15)	[3.41, 4.02]	23.96	< .001
Self-essentialism	0.16 (0.22)	[-0.28, 0.61]	0.72	0.47
Condition Level: Moderate Threat	0.09 (0.21)	[-0.34, 0.51]	0.41	0.69
Condition Level: High Threat	0.18 (0.22)	[-0.25, 0.61]	0.82	0.41
Self-essentialism X Moderate Threat	-0.16 (0.31)	[-0.77, 0.44]	-0.54	0.59
Self-essentialism X High Threat	-0.29 (0.32)	[-0.92, 0.34]	-0.92	0.36

Note. Overall model $F(5, 118) = 0.38$, $p = 0.86$, adjusted $R^2 = -0.026$

Table B7

Control Fulfillment Predicted by Self-essentialism and Morality Threat Condition in Study 1

Model Predictors	B (*SE*)	*95%* CI	*t*(122)	*p*
Intercept	3.33 (0.13)	[3.07, 3.59]	25.47	< .001
Self-essentialism	0.25 (0.19)	[-0.13, 0.62]	1.30	0.20
Condition Level: Moderate Threat	0.06 (0.18)	[-0.30, 0.41]	0.32	0.75
Condition Level: High Threat	-0.24 (0.18)	[-0.60, 0.12]	-1.30	0.20
Self-essentialism X Moderate Threat	0.06 (0.25)	[-0.44, 0.55]	0.23	0.82
Self-essentialism X High Threat	0.21 (0.27)	[-0.32, 0.74]	0.79	0.43

Note. Overall model $F(5, 122) = 2.83$, $p = .019$, adjusted $R^2 = 0.067$

Table B8

Control Fulfillment Predicted by True Self and Morality Threat Condition in Study 1

Model Predictors	B (*SE*)	*95%* CI	*t*(127)	*p*
Intercept	3.32 (0.12)	[3.09, 3.55]	28.47	< .001
True Self	0.19 (0.11)	[-0.03, 0.40]	1.71	0.09
Condition Level: Moderate Threat	0.12 (0.16)	[-0.20, 0.45]	0.74	0.46
Condition Level: High Threat	-0.28 (0.17)	[-0.62, 0.06]	-1.65	0.10
True Self X Moderate Threat	0.20 (0.17)	[-0.13, 0.53]	1.17	0.24
True Self X High Threat	0.12 (0.17)	[-0.22, 0.46]	0.71	0.48

Note. Overall model $F(5, 127) = 4.27$, $p = .001$, adjusted $R^2 = 0.11$

Table B9

Self-esteem Fulfillment Predicted by Self-essentialism and Morality Threat Condition in Study 1

Model Predictors	B (*SE*)	*95%* CI	*t*(122)	*p*
Intercept	3.07 (0.17)	[2.74, 3.41]	18.07	< .001
Self-essentialism	0.28 (0.25)	[-0.21, 0.77]	1.14	0.25
Condition Level: Moderate Threat	0.06 (0.23)	[-0.40, 0.52]	0.26	0.79
Condition Level: High Threat	-0.10 (0.23)	[-0.56, 0.37]	-0.42	0.68
Self-essentialism X Moderate Threat	0.10 (0.32)	[-0.54, 0.75]	0.32	0.75
Self-essentialism X High Threat	-0.41 (0.34)	[-1.09, 0.28]	-1.18	0.24

Note. Overall model $F(5, 122) = 1.28$, $p = .28$, adjusted $R^2 = 0.011$

Table B10

Satisfaction with Life Predicted by Self-essentialism and Morality Threat Condition in Study 1

Model Predictors	B (*SE*)	*95%* CI	*t*(120)	*p*
Intercept	4.27 (0.23)	[3.81, 4.73]	18.42	< .001
Self-essentialism	0.59 (0.34)	[-0.07, 1.26]	1.76	0.08
Condition Level: Moderate Threat	0.09 (0.32)	[-0.54, 0.72]	0.28	0.78
Condition Level: High Threat	-0.05 (0.33)	[-0.69, 0.60]	-0.15	0.88
Self-essentialism X Moderate Threat	-0.12 (0.44)	[-1.00, 0.76]	-0.27	0.79
Self-essentialism X High Threat	0.34 (0.47)	[-0.59, 1.28]	0.73	0.47

Note. Overall model $F(5, 120) = 3.01$, $p = .013$, adjusted $R^2 = 0.074$

Table B11

Satisfaction with Life Predicted by Biological Basis and Morality Threat Condition in Study 1

Model Predictors	B (*SE*)	*95%* CI	*t*(123)	*p*
Intercept	4.23 (0.22)	[3.80, 4.66]	19.51	< .001
Biological Basis	0.41 (0.19)	[0.03, 0.78]	2.14	0.034
Condition Level: Moderate Threat	0.18 (0.31)	[-0.43, 0.80]	0.60	0.55
Condition Level: High Threat	0.21 (0.31)	[-0.40, 0.83]	0.69	0.49
Biological Basis X Moderate Threat	-0.32 (0.26)	[-0.83, 0.19]	-1.24	0.22
Biological Basis X High Threat	0.04 (0.25)	[-0.46, 0.54]	0.15	0.88

Note. Overall model $F(5, 123) = 2.74$, $p = .022$, adjusted $R^2 = 0.064$

Table B12

Subjective Vitality Predicted by Self-essentialism and Morality Threat Condition in Study 1

Model Predictors	B (*SE*)	*95%* CI	*t*(118)	*p*
Intercept	4.47 (0.20)	[4.07, 4.87]	22.25	< .001
Self-essentialism	0.61 (0.29)	[0.03, 1.18]	2.08	0.04
Condition Level: Moderate Threat	-0.14 (0.28)	[-0.69, 0.40]	-0.52	0.61
Condition Level: High Threat	-0.03 (0.28)	[-0.58, 0.53]	-0.09	0.93
Self-essentialism X Moderate Threat	0.12 (0.39)	[-0.64, 0.88]	0.31	0.76
Self-essentialism X High Threat	-0.14 (0.42)	[-0.97, 0.69]	-0.34	0.73

Note. Overall model $F(5, 118) = 3.10$, $p = .011$, adjusted $R^2 = 0.079$

Appendix C: Supplementary Exploratory Factor Analysis for Study 2

Table C1

Subjective Vitality Item Factor Matrix Loadings from Exploratory Factor Analysis in Study 2

	Factor
Item	I
(7) I feel energized.	**.93**
(1) I feel alive and vital.	**.92**
(4) I have energy and spirit.	**.91**
(5) I look forward to each new day.	**.83**
(6) I nearly always feel alert and awake.	**.82**
(2) I don't feel very energetic. (reversed)	**.78**
(3) Sometimes I feel so alive I just want to burst.	**.70**
Factor:	
Eigenvalues	5.28
Percent variance explained	(71.65%)

Note. Factor loadings ≥ .40 are emphasized in bold. Items appear in order of loading, with their original scale number in the published Subjective Vitality Scale in parentheses. No rotation was possible as only a single factor was extracted. Solution converged after 4 iterations, no additional factors contributing Eigenvalues greater than 1 were present.

Appendix D: Repeated-Measures ANOVA and Post-hoc Tests Investigating Hypothesis III in Study 2

Table D1

Repeated-Measures ANOVA of Morality Threat and Self-Description Task Type Predicting Task Preference in Study 2

Within-Subjects Factors	Sum of Squares	df	Mean Square	*F*	*p*	η_p^2
Task Type	14705.39	2	7352.70	16.73	< .001	0.043
Task Type X Threat	2854.93	4	713.73	1.62	.17	0.009
Residuals	325198.33	740	439.46			
Between-Subjects Factors						
Threat	3798.994	2	1899.50	1.43	.24	0.008
Residuals	490526.15	370	1325.75			

Table D2

Descriptive Statistics of Preference Ratings per Self-Description Task by Morality Threat in Study 2

Task Type	Morality Threat	*M*	*SD*	*N*
True Self-Description Task	Low	63.58	28.44	137
	Moderate	60.75	30.15	124
	High	63.39	28.08	112
Flexible Self-Description Task	Low	61.03	24.90	137
	Moderate	51.82	27.65	124
	High	54.37	25.76	112
Everyday Self-Description Task	Low	64.58	24.04	137
	Moderate	63.44	27.91	124
	High	64.29	26.84	112

Table D3

Post-hoc Comparisons of Self-Description Task Type on Task Preference in Study 2

			95% CI for Mean Difference					
		Mean Difference	Lower	Upper	*SE*	*t*	Cohen's *d*	p_{bonf}
True Self Task	Flexible Self Task	6.84	3.14	10.53	1.54	4.44	0.23	< .001
	Everyday Self Task	-1.53	-5.22	2.17	1.54	-0.99	-0.051	.97
Flexible Self Task	Everyday Self Task	-8.37	-12.06	-4.67	1.54	-5.43	-0.28	< .001

Appendix E: Frequentist ANOVAs Investigating Hypothesis IV in Study 2

Table E1

ANOVA of Morality Threat and Task Assignment Predicting Meaning in Study 2

Models	Sum of Squares	df	Mean Square	*F*	*p*	η^2	ω^2
Overall Model	12.71	8	1.59	0.70	0.69		
Morality Threat	1.26	2	0.63	0.26	0.77	0.001	-0.004
Task Assignment	6.03	2	3.01	1.27	0.28	0.007	0.001
Morality Threat X Task Assignment	5.43	4	1.36	0.57	0.68	0.006	-0.005
Residuals	887.53	373	2.38				

Table E2

ANOVA of Morality Threat and Task Assignment Predicting Meaning Searching in Study 2

Models	Sum of Squares	df	Mean Square	*F*	*p*	η^2	ω^2
Overall Model	11.16	8	1.39	0.80	0.60		
Morality Threat	5.45	2	2.72	1.63	0.20	0.007	0.003
Task Assignment	4.05	2	2.02	1.21	0.30	0.008	0.001
Morality Threat X Task Assignment	1.66	4	0.41	0.25	0.91	0.003	-0.008
Residuals	623.59	372	1.68				

Table E3

ANOVA of Morality Threat and Task Assignment Predicting Psychological Need Fulfillment in Study 2

Models	Sum of Squares	df	Mean Square	*F*	*p*	η^2	ω^2
Overall Model	9.02	8	1.13	1.48	0.16		
Morality Threat	1.48	2	0.74	0.90	0.41	0.005	-0.001
Task Assignment	4.05	2	2.02	2.48	0.08	0.013	0.008
Morality Threat X Task Assignment	3.49	4	0.87	1.07	0.37	0.011	0.001
Residuals	283.63	347	0.82				

Table E4

ANOVA of Morality Threat and Task Assignment Predicting Positive Feelings in Study 2

Models	Sum of Squares	df	Mean Square	*F*	*p*	η^2	ω^2
Overall Model	11.37	8	1.42	1.45	0.17		
Morality Threat	0.52	2	0.26	0.25	0.78	0.001	-0.004
Task Assignment	4.95	2	2.48	2.39	0.09	0.013	0.008
Morality Threat X Task Assignment	5.90	4	1.47	1.42	0.22	0.015	0.005
Residuals	367.29	355	1.03				

Table E5

ANOVA of Morality Threat and Task Assignment Predicting Negative Feelings in Study 2

Models	Sum of Squares	df	Mean Square	*F*	*p*	η^2	ω^2
Overall Model	8.11	8	1.01	1.30	0.24		
Morality Threat	4.32	2	2.16	2.64	0.07	0.013	0.009
Task Assignment	2.40	2	1.20	1.47	0.23	0.007	0.002
Morality Threat X Task Assignment	1.39	4	0.35	0.42	0.79	0.005	-0.006
Residuals	301.01	368	0.82				

Table E6

ANOVA of Morality Threat and Task Assignment Predicting Satisfaction with Life in Study 2

Models	Sum of Squares	df	Mean Square	*F*	*p*	η^2	ω^2
Overall Model	17.26	8	2.16	0.97	0.46		
Morality Threat	2.74	2	1.37	0.65	0.52	0.003	-0.002
Task Assignment	6.16	2	3.08	1.47	0.23	0.008	0.002
Morality Threat X Task Assignment	8.36	4	2.09	1.00	0.41	0.011	-0.000
Residuals	784.62	374	2.10				

Table E7

ANOVA of Morality Threat and Task Assignment Predicting Subjective Vitality in Study 2

Models	Sum of Squares	df	Mean Square	*F*	*p*	η^2	ω^2
Overall Model	26.16	8	3.27	1.47	0.17		
Morality Threat	2.46	2	1.23	0.52	0.60	0.003	-0.003
Task Assignment	18.09	2	9.04	3.81	0.02	0.020	0.015
Morality Threat X Task Assignment	5.61	4	1.40	0.59	0.67	0.006	-0.004
Residuals	878.97	370	2.38				

Table E8

Post-hoc Comparisons of Task Assignment Predicting Subjective Vitality in Study 2

			95% CI for Mean Difference					
		Mean Difference	Lower	Upper	*SE*	*t*	Cohen's *d*	p_{tukey}
True Self	Flexible Self	0.54	-0.08	1.00	0.20	2.75	0.36	.017
	Everyday Self	0.31	-0.16	0.77	0.20	1.56	0.20	.26
Flexible Self	Everyday Self	-0.23	-0.70	0.23	0.20	-1.19	-0.15	.46

Appendix F: Bayesian Analyses Investigating Hypothesis IV in Study 2

Table F1

Bayesian ANOVA of Morality Threat and Task Assignment Predicting Meaning in Study 2

Models	P(M)	P(M|data)	BF_M	BF_{01}	Error %
Null Model	0.20	0.88	28.21	1.00	
Morality Threat	0.20	0.03	0.14	25.29	0.02
Task Assignment	0.20	0.09	0.38	10.17	0.02
Morality Threat + Task Assignment	0.20	0.00	0.01	260.92	1.08
Morality Threat + Task Assignment + (Morality Threat X Task Assignment)	0.20	0.00	0.00	7766.39	1.59

Table F2

Bayesian ANOVA of Morality Threat and Task Assignment Predicting Meaning Searching in Study 2

Models	P(M)	P(M|data)	BF_M	BF_{01}	Error %
Null Model	0.20	0.83	19.77	1.00	
Morality Threat	0.20	0.07	0.31	11.67	0.02
Task Assignment	0.20	0.09	0.39	9.42	0.02
Morality Threat + Task Assignment	0.20	0.01	0.03	96.76	1.03
Morality Threat + Task Assignment + (Morality Threat X Task Assignment)	0.20	0.00	0.00	4682.10	1.46

Table F3

Bayesian ANOVA of Morality Threat and Task Assignment Predicting Psychological Need Fulfillment in Study 2

Models	P(M)	P(M|data)	BF_M	BF_{01}	Error %
Null Model	0.20	0.71	9.72	1.00	
Morality Threat	0.20	0.05	0.20	14.69	0.02
Task Assignment	0.20	0.22	1.13	3.21	0.02
Morality Threat + Task Assignment	0.20	0.02	0.09	33.33	1.33
Morality Threat + Task Assignment + (Morality Threat X Task Assignment)	0.20	0.00	0.00	418.30	2.06

Table F4

Bayesian ANOVA of Morality Threat and Task Assignment Predicting Positive Feelings in Study 2

Models	P(M)	P(M|data)	BF_M	BF_{01}	Error %
Null Model	0.20	0.74	11.34	1.00	
Morality Threat	0.20	0.03	0.12	26.23	0.02
Task Assignment	0.20	0.22	1.14	3.34	0.02
Morality Threat + Task Assignment	0.20	0.01	0.04	72.81	1.52
Morality Threat + Task Assignment + (Morality Threat X Task Assignment)	0.20	0.00	0.00	566.04	1.13

Table F5

Bayesian ANOVA of Morality Threat and Task Assignment Predicting Negative Feelings in Study 2

Models	P(M)	P(M|data)	BF_M	BF_{01}	Error %
Null Model	0.20	0.67	8.12	1.00	
Morality Threat	0.20	0.23	1.17	2.95	0.02
Task Assignment	0.20	0.07	0.30	9.55	0.02
Morality Threat + Task Assignment	0.20	0.03	0.13	21.03	1.13
Morality Threat + Task Assignment + (Morality Threat X Task Assignment)	0.20	0.00	0.00	720.04	2.79

Table F6

Bayesian ANOVA of Morality Threat and Task Assignment Predicting Satisfaction with Life in Study 2

Models	P(M)	P(M|data)	BF_M	BF_{01}	Error %
Null Model	0.20	0.88	28.77	1.00	
Morality Threat	0.20	0.04	0.18	20.35	0.02
Task Assignment	0.20	0.07	0.32	11.78	0.02
Morality Threat + Task Assignment	0.20	0.00	0.02	212.85	1.15
Morality Threat + Task Assignment + (Morality Threat X Task Assignment)	0.20	0.00	0.00	3348.97	1.84

Table F7

Bayesian ANOVA of Morality Threat and Task Assignment Predicting Subjective Vitality in Study 2

Models	P(M)	P(M|data)	BF_M	BF_{01}	Error %
Null Model	0.20	0.43	3.01	1.00	
Morality Threat	0.20	0.02	0.09	19.92	0.02
Task Assignment	0.20	0.52	4.34	0.82	0.02
Morality Threat + Task Assignment	0.20	0.03	0.11	15.53	1.01
Morality Threat + Task Assignment + (Morality Threat X Task Assignment)	0.20	0.00	0.00	433.44	1.39

Note: The BF_{01} for Task Assignment is equivalent to a $BF_{10} = 1.21$

Appendix G: Participant Manipulation Assignment by Task Choice-Task Assignment Concordance in Study 2

Table G1

Manipulation Random Assignment Distribution by Task Concordance in Study 2

			Threat			
Concordance			Low	Moderate	High	Total
Writing Choice-Assignment Mismatch	Task Assignment	True	32	20	28	80
		Flexible	36	42	31	109
		Everyday	31	28	22	81
		Total	99	90	81	270
Writing Choice-Assignment Match	Task Assignment	True	18	12	20	50
		Flexible	10	7	4	21
		Everyday	13	21	13	47
		Total	41	40	37	118

Appendix H: Effect Size Conversions

Calculators

Between eta squared, Cohen's *d,* and Cohen's *f*

https://www.psychometrica.de/effect_size.html

Between χ^2 and Cohen's *w*

https://ncss-wpengine.netdna-ssl.com/wp-content/themes/ncss/pdf/Procedures/NCSS/Chi-Square_Effect_Size_Calculator.pdf

Appendix I: Study 1 Materials

Recruitment

Study Name: Attributes and Self
Study Duration: 60 minutes or less; 40 minutes on average
Study Description: This is a research study designed to investigate your attitudes, characteristics, and everyday behavior. Your participation will involve completing questionnaires in which you answer questions about your beliefs, tendencies, and well-being. You will also be asked to provide basic demographic information about yourself (e.g., sex, race, age).
Faculty Sponsor: Verena Graupmann, PhD

Informed Consent page displayed, with consenting participants indicating consent by selecting "I agree" and advancing the page

Study Sequence

Self-essentialism

Rate the degree to which you agree with these statements. (-3, *disagree completely* — 0, *neither disagree nor agree* — +3, *agree completely*)

1. The boundaries that define the differences between myself and others are clear-cut.
2. I either have a certain attribute or I do not.
3. I am either a certain type of person or I am not.
4. There are different 'types' of people and the 'type' of person I am can be easily defined.
5. The kind of person I am is clearly defined, I either am a certain kind of person or I am not.
6. I have a distinct personality type.
7. Generally speaking, once you know me in one or two contexts it is possible to predict how I will behave in most other contexts.
8. It is possible to know about many aspects of me once you become familiar with a few of my basic traits.
9. When getting to know me it is possible to get a picture of the kind of person I am very quickly.
10. Knowing about a few of the basic traits that I have can lead to accurate predictions of my future behavior.
11. Although I may have some basic identifiable traits, it is never easy to make accurate judgments about how I will behave in different situations. (Reversed)
12. There are different types of people and with enough scientific knowledge the 'type' of person I am can be traced back to genetic causes.

13. Whether I am one kind of person or another is determined by my biological make-up.
14. With enough scientific knowledge, the basic qualities that I have could be traced back to, and explained by, my biological make-up.
15. The kind of person I am can be largely attributed to my genetic inheritance.
16. I have a true self
17. Even if parts of me change over time, who I really am deep down stays the same
18. I have a true self even if I don't always act in accordance with it
19. The person I am deep down changes from situation to situation (Reversed)
20. My actions are guided by who I really am deep down.

Morality Survey

Think about your behavior in the past. How many of these behaviors have you ever done? (I have done this – I have not done this)

Immoral Behaviors	**Moral Behaviors**
1. I have let down people who were counting on me.	1. I have been true to my word in an important matter.
2. I have shifted blame to others because it kept me out of trouble.	2. I have given a stranger directions.
3. I have stolen something because I was sure I could get away with it.	3. I have stood up for someone who was being bullied or harassed.
4. I have kept extra money accidentally given to me by a cashier.	4. I have returned extra money accidentally given to me by a cashier.
5. I have lied to my parents about something.	5. I have donated money to a charity.
6. I have lied about my age to receive an age-based discount.	6. I have been kind to someone I knew was having a bad day.
7. I have snuck into a movie theater without paying.	7. I have taken responsibility for a mistake that I made.
8. I have parked in a handicapped parking spot without being handicapped.	8. I have volunteered my time to help with an important cause.
9. I have ignored people who had car trouble.	9. I have assisted an older family member with something.
10. I have decided to keep money for myself rather than giving to charity.	10. I have returned a valuable item that I found, rather than keeping it for myself.
11. I have ignored someone struggling to carry a bag of groceries.	11. I have helped an animal that was injured, lost, or otherwise distressed or in danger.
12. I have neglected to offer my seat to an elderly or disabled individual.	12. I have given up my seat on public transportation for someone who

	needed it more.
13. I have made an offhanded racist or sexist comment.	13. I have given a thoughtful gift to a friend.
14. I have cursed or used profanity around children.	14. I have been supportive of a friend during a difficult time in their life.
15. I have cheated on a relationship partner.	15. I have helped make sure that a fair outcome was reached in a disagreement.
16. I have done something that went against my values.	16. I have demonstrated courage in a stressful situation.
17. I have physically hurt another person.	17. I have been loyal to my friends and family.
18. I have threatened people I know.	18. I have been kind to others without thinking of what they might do for me in return.
19. I have gotten into arguments when people disagreed with me.	19. I have been respectful to people whose viewpoints I strongly disagree with.
20. I have flown off the handle for no good reason.	20. I have handled a frustrating situation in a mature and dignified manner.

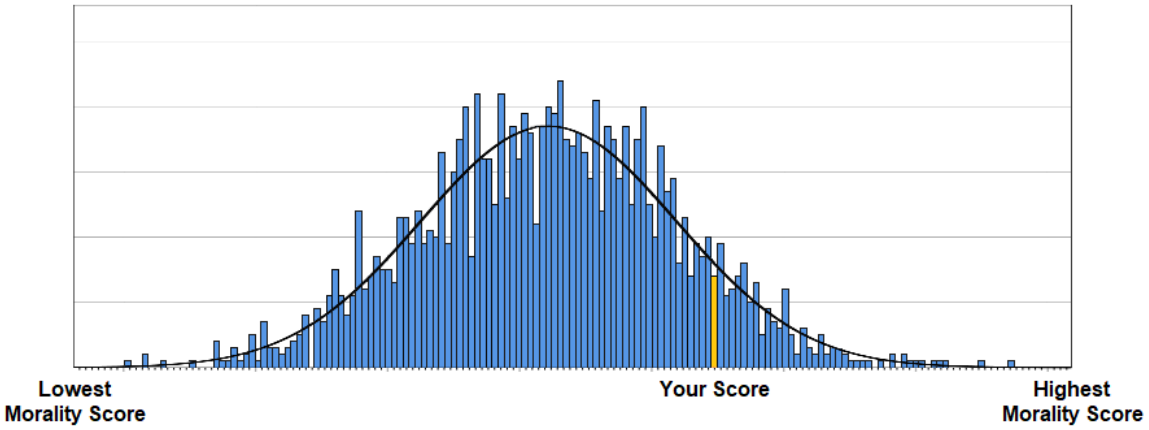
Following page notifying of score calculation:

As part of our research, we have calculated your overall moral behavior score based on your answers to the previous questions. The next page displays your score on these questions in the context of all other DePaul participants who have taken part in our research.

Please proceed to the next page to view your results.

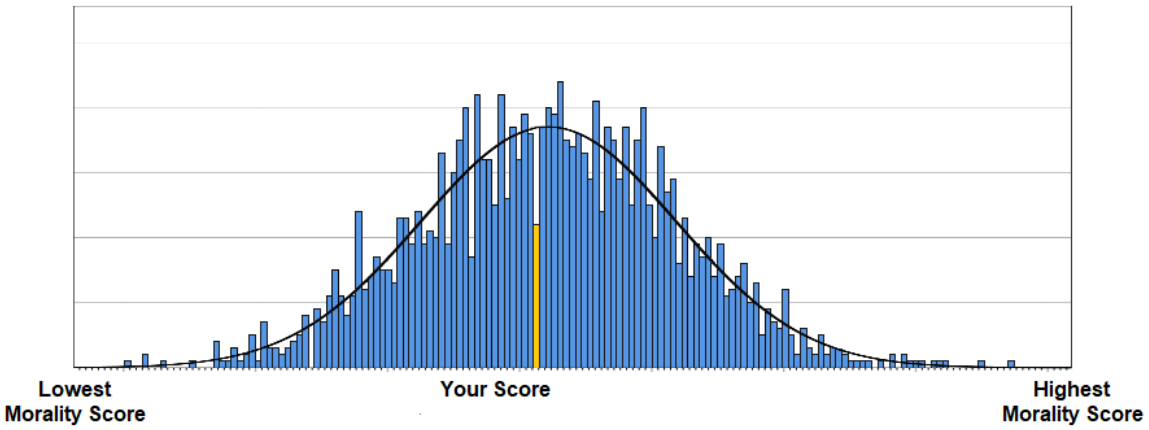
Morality Survey Results:

Low Threat: "Compared to the other students who have participated in this study, you scored in the *90th percentile* of behaving morally. That is, you scored higher on moral qualities than 90% of DePaul students"



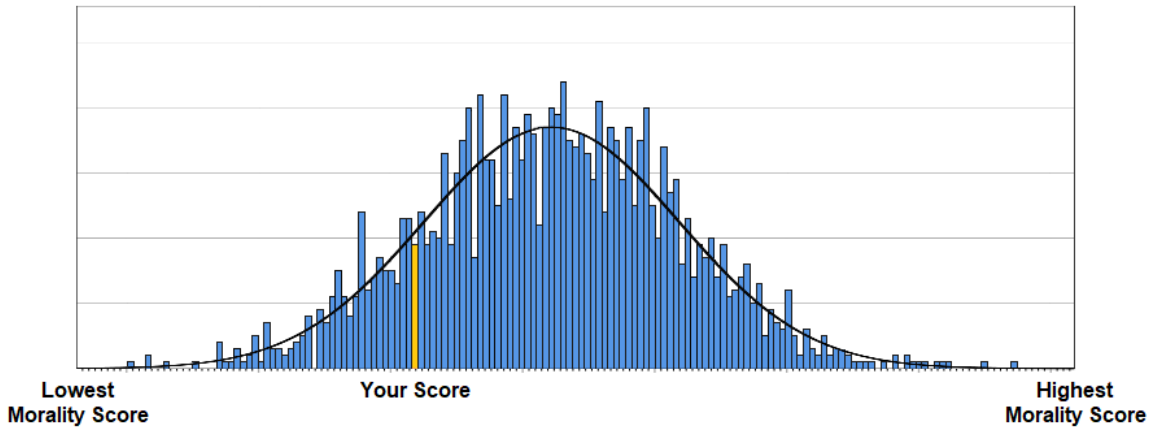
Please proceed to the next page to continue to the next part of the study.

Moderate Threat: "Compared to the other students who have participated in this study, you scored in the *45th percentile* of behaving morally. That is, you scored lower on moral qualities than 55% of DePaul students"



Please proceed to the next page to continue to the next part of the study.

High Threat: "Compared to the other students who have participated in this study, you scored in the *15th percentile* of behaving morally. That is, you scored lower on moral qualities than 85% of DePaul students."



Please proceed to the next page to continue to the next part of the study.

Dependent variables: Each questionnaire appeared on separate pages

(Groups 1 and 2 were randomly counterbalanced, with within-group questionnaire order also counterbalanced.)

Group 1:

Life Satisfaction

Rate the extent to which you agree with each of the following statements. (-3, *disagree completely* — 0, *neither disagree nor agree* — +3, *agree completely*)

1. In most ways my life is close to my ideal.
2. The conditions of my life are excellent.
3. I am satisfied with my life.
4. So far I have gotten the important things I want in life.
5. If I could live my life over, I would change almost nothing.

Meaning in Life Questionnaire

Rate the extent to which each of the following statements is true. Ranging from -3 (Completely Untrue) to +3 (Completely True)

1. I am always looking for the purpose of life
2. I am looking for an answer about the significance of life
3. I have no idea what makes my life meaningful
4. I understand the significance of life
5. I'm always looking for something that makes my life meaningful
6. I have a clear purpose in life
7. I am seeking the purpose and mission of life
8. I am looking for significance in life
9. I have a good understanding that makes my life meaningful
10. There is no clear purpose in my life

Group 2:

Subjective Vitality Scale

Please rate the following statements in terms of how they apply to you and your life at the present time.

Ranging from -3 (Completely Untrue) to +3 (Completely True)

1. I feel alive and vital.
2. I don't feel very energetic.
3. Sometimes I feel so alive I just want to burst.
4. I have energy and spirit.
5. I look forward to each new day.
6. I nearly always feel alert and awake.
7. I feel energized.

Psychological Need Fulfillment

Please indicate the number that best represents **your feelings about yourself:**

	not at all				extremely
I feel "disconnected"	1	2	3	4	5
I feel rejected	1	2	3	4	5
I feel like an outsider	1	2	3	4	5
I feel I belong	1	2	3	4	5
I feel positive	1	2	3	4	5

acknowledgement					
I feel good about myself	1	2	3	4	5
My self-esteem is high	1	2	3	4	5
I feel liked	1	2	3	4	5
I feel insecure	1	2	3	4	5
I feel satisfied	1	2	3	4	5
I feel invisible	1	2	3	4	5
I feel meaningless	1	2	3	4	5
I feel non-existent	1	2	3	4	5
I feel important	1	2	3	4	5
I feel useful	1	2	3	4	5
I feel powerful	1	2	3	4	5
I feel I have control over the current situation.	1	2	3	4	5
I feel I have the ability to determine my actions	1	2	3	4	5
I feel unable to influence the actions of others.	1	2	3	4	5
I feel other people decide on the events in my life.	1	2	3	4	5

Demographic Information

Age (in years): _____

First language: _____

Sex:

- ☐ Female
- ☐ Male
- ☐ Other (Specify: _____)

Race/ethnicity:

- ☐ Asian
- ☐ Black
- ☐ Latino/a
- ☐ Pacific Islander
- ☐ White
- ☐ Other (Specify: _____)
- ☐ Mixed (Specify: _____)

Please mark the point on the scale that best indicates your political orientation.

	very conservative (1)	(2)	(3)	(4)	(5)	(6)	very liberal (7)
I am... (1)	❍	❍	❍	❍	❍	❍	❍

Please indicate how religious you are using the following scale.

	not religious at all (1)	(2)	(3)	(4)	(5)	(6)	very religious (7)
How religious are you? (1)	❍	❍	❍	❍	❍	❍	❍

Which of the following best describes your religious beliefs?

- ❍ Jewish (1)
- ❍ Protestant (2)
- ❍ Hindu (3)
- ❍ Catholic (4)
- ❍ Buddhist (5)
- ❍ Muslim (6)
- ❍ Spiritual but Not Religious (7)
- ❍ Atheist/Agnostic (8)
- ❍ Other (please specify) (9) _____

Funnel Debriefing

1 Do you have any initial thoughts or reactions about this study?
2 Did you notice anything unusual in the study? If so, what?
3 Did you notice anything unusual or inconsistent about the moral behaviors questionnaire?
4 Why do you think we showed you feedback on the moral behaviors questionnaire?
5 What do you remember your morality score being?
6 Do you think your morality score was accurate?
7 To what extent did you believe the feedback of your morality score relative to all other participants?

Official Debriefing page followed

Appendix J: Study 2 Materials

Recruitment

Study Name: Attributes and Attitudes
Study Duration: 30 Minutes
Study Description: This is an online research study designed to investigate your attributes and task-related preferences. Your participation will involve completing questionnaires in which you answer questions about your beliefs, tendencies, and well-being in addition to completing choice and description tasks. You will also be asked to provide basic demographic information about yourself (e.g., sex, race, age).
Faculty Sponsor: Verena Graupmann, PhD

Informed consent process, in which consenting participants select "I consent to participate, begin the study"

Page capturing Prolific ID

Please advance to the next page.

Your Prolific ID:

Prescreening filter confirmation questions

Before beginning the study, please provide the following information:

Current Country of Residence

United States

I am not currently a United States resident.

Age

18-64

I am not 18-64 years of age.

Nationality

United States

My nationality is not the United States

Fluent languages:

English

I am not fluent in English.

Page signaling study commencement

The study will begin on the next page. Before you begin, please silence electronic devices and minimize distractions.

When ready, you can continue to the next page using the arrow button below.

Main Study Sequence

Morality Survey

Think about your behavior in the past. How many of these behaviors have you ever done? (I have done this – I have not done this)

Low Threat	**Moderate Threat**	**High Threat**
I have been true to my word in an important matter.	I have let down people who were counting on me.	I have let down people who were counting on me.
I have given a stranger directions	I have shifted blame to others because it kept me out of trouble.	I have shifted blame to others because it kept me out of trouble.
I have stood up for someone who was being bullied or harassed	I have stolen something because I was sure I could get away with it.	I have stolen something because I was sure I could get away with it.
I have returned extra money accidentally given to me by a cashier	I have kept extra money accidentally given to me by a cashier.	I have kept extra money accidentally given to me by a cashier.
I have donated money to a charity	I have lied to my parents about something.	I have lied to my parents about something.
I have been kind to someone I knew was having a bad day	I have snuck into a movie theater without paying.	I have lied about my age to receive an age-based discount.
I have taken responsibility for a mistake that I made	I have made an offhanded racist or sexist comment.	I have snuck into a movie theater without paying.
I have volunteered my time to help with an important cause.	I have cursed or used profanity around children.	I have parked in a handicapped parking spot without being handicapped.
I have assisted an older family member with something	I have cheated on a relationship partner.	I have ignored people who had car trouble.
I have returned a valuable item that I found, rather than keeping it for myself	I have done something that went against my values.	I have decided to keep money for myself rather than giving to charity.

I have helped an animal that was injured, lost, or otherwise distressed or in danger	I have physically hurt another person.	I have ignored someone struggling to carry a bag of groceries.
I have given up my seat on public transportation for someone who needed it more.	I have threatened people I know.	I have neglected to offer my seat to an elderly or disabled individual.
I have given a thoughtful gift to a friend.	I have gotten into arguments when people disagreed with me.	I have made an offhanded racist or sexist comment.
I have been supportive of a friend during a difficult time in their life	I have flown off the handle for no good reason.	I have cursed or used profanity around children.
I have helped make sure that a fair outcome was reached in a disagreement.	I have given a stranger directions.	I have cheated on a relationship partner.
I have demonstrated courage in a stressful situation.	I have donated money to a charity.	I have done something that went against my values.
I have been loyal to my friends and family.	I have volunteered my time to help with an important cause.	I have physically hurt another person.
I have been kind to others without thinking of what they might do for me in return.	I have assisted an older family member with something.	I have threatened people I know.
I have been respectful to people whose viewpoints I strongly disagree with.	I have returned a valuable item that I found, rather than keeping it for myself.	I have gotten into arguments when people disagreed with me.
I have handled a frustrating situation in a mature and dignified manner.	I have helped make sure that a fair outcome was reached in a disagreement.	I have flown off the handle for no good reason.

Next survey page:

The study will proceed to the next page in one moment.

(5 seconds elapse before automatically proceeding)

Next survey page:

As part of our research, we have calculated your overall moral behavior score based on your answers to the previous questions. The next page displays your score on these questions in the context of all other Prolific participants who have taken part in our research.

Please proceed to the next page to view your results.

Next Survey Page:

(Morality Survey Results: Low Threat)

Compared to the other participants who have taken part in this study, you scored in the *85th percentile* of behaving morally. That is, you scored higher on moral qualities than 85% of Prolific participants.

Please proceed to the next page to continue to the next part of the study.

(Morality Survey Results: Moderate Threat)

Compared to the other participants who have taken part in this study, you scored in the *65th percentile* of behaving morally. That is, you scored lower on moral qualities than 35% of Prolific participants.

Please proceed to the next page to continue to the next part of the study.

(Morality Survey Results: High Threat)

Compared to the other participants who have taken part in this study, you scored in the *40th percentile* of behaving morally. That is, you scored lower on moral qualities than 60% of Prolific participants.

Please proceed to the next page to continue to the next part of the study.

Next component: Participants read about self-description tasks

Next, please choose between the following three options to select what activity you'd prefer to complete if you had a choice. Please choose based on what you most want to do at this time.

Option: True Self Description Activity

This activity involves having you take a few minutes to reflect on and then describe **your true self**:

Which aspects of you are most constant and stable? Who are you deep down?

Option: Flexible Self Description Activity

This activity involves having you take a few minutes to reflect on and then describe **flexibility within yourself**:

Which aspects of you undergo change? How are you as a person different over time?

Option: Everyday Self Description Activity

This activity involves having you take a few minutes to reflect on and then describe **your usual self:**

Which aspects of you do you present to the world and in public? Who are you in everyday life?

Please indicate your activity preference:

- True Self Description Activity
- Flexible Self Description Activity
- Everyday Self Description Activity

"Please rate how much you would like to engage in each activity."

True Self Description Activity

Not At All — Very Much

<----------|----------->

Flexible Self Description Activity

Not At All — Very Much

<----------|----------->

Everyday Self Description Activity

Not At All — Very Much

<----------|----------->

Next Segment: Assignment to self-reflection task

First page:

In this next part of the study, you will be given one of the written description activities to complete; it may not be your top rated activity. Please proceed to the next page to begin.

Next Page:

Performance of assigned self-reflection task:

True self-description writing task

This activity collects your written thoughts on a topic.

Specifically, over the next 5 minutes please reflect on **your true self**.

Which aspects of you are most constant and stable? Who you are deep down?

Describe your true self as thoroughly as possible, reflect on the aspects of you that you feel are most central to who you are at your core, in as much detail as possible.

After 5 minutes, the study will advance to the next component.

[Essay box provided]

Flexible self-description writing task

This activity collects your written thoughts on a topic.

Over the next 5 minutes please reflect on **flexibility within yourself.**

How might important aspects of you be able to undergo change? How might you as a person be different over time?

Describe your self-flexibility as thoroughly as possible, reflect on how even central aspects to who you are can change, in as much detail as possible.

After 5 minutes, the study will advance to the next component.

[Essay box provided]

Everyday self-description writing task

This activity collects your written thoughts on a topic:

Over the next 5 minutes please reflect on **your usual self.**

Which aspects of you do you present to the world and in public? Who are you in everyday life?

Describe your everyday self as thoroughly as possible, reflect on the parts of yourself that you most display publicly on a usual day when you are in usual situations, in as much detail as possible.

After 5 minutes, the study will advance to the next component.

[Essay box provided]

Dependent variables: Each questionnaire appeared on separate pages

(Groups 1 and 2 were randomly counterbalanced, with within-group questionnaire order also counterbalanced.)

Group 1:

Life Satisfaction

Rate the extent to which you agree with each of the following statements. (-3, *disagree completely* — 0, *neither disagree nor agree* — +3, *agree completely*)

1. In most ways my life is close to my ideal.
2. The conditions of my life are excellent.
3. I am satisfied with my life.
4. So far I have gotten the important things I want in life.
5. If I could live my life over, I would change almost nothing.

Meaning in Life Questionnaire

Rate the extent to which each of the following statements is true.
Ranging from -3 (Completely Untrue) to +3 (Completely True)

1. I am always looking for the purpose of life
2. I am looking for an answer about the significance of life
3. I have no idea what makes my life meaningful
4. I understand the significance of life
5. I'm always looking for something that makes my life meaningful
6. I have a clear purpose in life
7. I am seeking the purpose and mission of life
8. I am looking for significance in life
9. I have a good understanding that makes my life meaningful
10. There is no clear purpose in my life

Group 2:

Subjective Vitality Scale
Please rate the following statements in terms of how they apply to you and your life at the present time.
Ranging from -3 (Completely Untrue) to +3 (Completely True)

1. I feel alive and vital.
2. I don't feel very energetic.
3. Sometimes I feel so alive I just want to burst.
4. I have energy and spirit.
5. I look forward to each new day.
6. I nearly always feel alert and awake.
7. I feel energized.

Psychological Need Fulfillment

Please indicate the number that best represents **your feelings about yourself:**

	not at all				extremely
I feel "disconnected"	1	2	3	4	5
I feel rejected	1	2	3	4	5
I feel like an outsider	1	2	3	4	5
I feel I belong	1	2	3	4	5
I feel positive acknowledgement	1	2	3	4	5
I feel good about myself	1	2	3	4	5
My self-esteem is high	1	2	3	4	5
I feel liked	1	2	3	4	5
I feel insecure	1	2	3	4	5
I feel satisfied	1	2	3	4	5
I feel invisible	1	2	3	4	5
I feel meaningless	1	2	3	4	5

I feel non-existent	1	2	3	4	5
I feel important	1	2	3	4	5
I feel useful	1	2	3	4	5
I feel powerful	1	2	3	4	5
I feel I have control over the current situation.	1	2	3	4	5
I feel I have the ability to determine my actions	1	2	3	4	5
I feel unable to influence the actions of others.	1	2	3	4	5
I feel other people decide on the events in my life.	1	2	3	4	5

Demographic Information

Age (in years): _____

First language: _____

Sex:

- ☐ Female
- ☐ Male
- ☐ Other (Specify: _____)

Race/ethnicity:

- ☐ Asian
- ☐ Black
- ☐ Latino/a
- ☐ Pacific Islander
- ☐ White
- ☐ Other (Specify: _____)
- ☐ Mixed (Specify: _____)

Please mark the point on the scale that best indicates your political orientation.

	very conservative (1)	(2)	(3)	(4)	(5)	(6)	very liberal (7)
I am... (1)	❍	❍	❍	❍	❍	❍	❍

Please indicate how religious you are using the following scale.

	not religious at all (1)	(2)	(3)	(4)	(5)	(6)	very religious (7)
How religious are you? (1)	❍	❍	❍	❍	❍	❍	❍

Which of the following best describes your religious beliefs?

❍ Jewish (1)
❍ Protestant (2)
❍ Hindu (3)
❍ Catholic (4)
❍ Buddhist (5)
❍ Muslim (6)
❍ Spiritual but Not Religious (7)
❍ Atheist/Agnostic (8)
❍ Other (please specify) (9) _____

Funnel Debriefing

1 Do you have any initial thoughts or reactions about this study?
2 Did you notice anything unusual in the study? If so, what?
3 Did you notice anything unusual or inconsistent about the moral behaviors questionnaire?
4 Why do you think we showed you feedback on the moral behaviors questionnaire?
5 What do you remember your morality score being?
6 Do you think your morality score was accurate?
7 To what extent did you believe the feedback of your morality score relative to all other participants?

Official Debriefing page followed