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Do I Matter: What Protects Individuals From Threats to a Sense of Mattering?

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Do I Matter: What Protects Individuals From Threats to a Sense of Mattering?

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Abstract

Research on a sense of meaning in life has burgeoned in recent years and studies have shown that meaning is associated with many important variables, such as coping, well-being, and physical health. An important research question that has yet to be adequately addressed, however, is what helps individuals maintain a sense of meaning even in the face of situations that challenge meaning. In the current study, we specifically examined a sense of mattering, an important dimension of meaning, and asked, what buffers the impact of threats to individuals' sense that their life matters? Based on previous research, we hypothesized that religiousness/spirituality and breadth of sources of meaning may buffer threats to mattering and help maintain a sense of mattering. We also hypothesized that self-esteem will moderate responses to mattering threats as self-esteem has been found to be a predictor of compensatory responses in the threat-compensation literature. These hypotheses were tested using a mixed experimental design among a sample of 186 undergraduate students. Results of the present study showed a marginally significant moderation by self-esteem, but not by R/S or breadth. However, exploratory analyses of a subset of the sample revealed a possible moderation by breadth even after accounting for self-esteem. Findings are discussed in light of related literature and the limitations of the present study.

Keywords: meaning, purpose, trauma, meaning-making, worldviews

Do I matter? What protects individuals from threats to a sense of mattering?

A sense of meaning in life has been tied to numerous important outcomes such as mental health (Steger, 2012), eudaimonic well-being (Ryan & Deci, 2001), physical health (Hill & Turiano, 2014), and coping (Park, 2010). Theoretical discussions of meaning suggest that gaining and maintaining a sense of meaning is crucial and that individuals are implicitly and explicitly striving for a sense of meaning in their lives (Baumeister, 1991; Frankl, 1959/2006; Greenberg, Pyszczynski, & Solomon, 1986; Proulx & Inzlicht, 2012). Existential perspectives, however, add an interesting backdrop to this desire for meaning, suggesting that there is no inherent meaning to human lives, and that life can perhaps even be seen as entirely meaningless (Becker, 1973/1997; Yalom, 1980).

If meaning is something that people desire and strive to maintain (Baumeister, 1991), and the existential context of human life is such that there are numerous situations that can challenge that sense of meaning (Yalom, 1980), people must experience continuous threats to their sense of meaning. In fact, many existing perspectives see individuals as dealing with threats to their sense of meaning on an ongoing basis. For example, the meaning maintenance model (Heine, Proulx, & Vohs, 2006; Proulx & Inzlicht, 2012), is predicated on the idea that individuals are continuously faced with situations and experiences that challenge their sense of understanding regarding the world, and they engage in various strategies to deal with such challenges and reassert their sense of understanding. Terror management theory (Greenberg et al., 1986) similarly states that individuals are continuously managing a fear of death — an event that can rob their lives of any meaning — and they manage this fear by investing in those aspects of their lives that provide a sense of meaning. The trauma literature also discusses the idea that highly stressful life events threaten our sense of meaning by violating our beliefs regarding the world

(Park, 2010). Thus, many existing perspectives would suggest that the existential context of human life is such that people deal with many threats to their sense of meaning.

Yet, despite the apparent lack of meaning to human life, and the supposed continuous threats to meaning, most individuals report high levels of meaning. In fact, a recent summary of data from multiple epidemiological samples demonstrated the common finding that mean levels of self-reported meaning were well above the mid-points of the response scales, suggesting that people view their lives as "pretty meaningful" (Heintzelman & King, 2014b). Such high ratings on meaning scales bring up an important question, a question that is the focus of the present study: *what helps people maintain a sense of meaning even in the face of situations that threaten a sense of meaning?*

A More Specific Focus: Not Meaning, but Mattering

As the meaning literature is one that is fraught with conceptual and semantic issues (Hicks & King, 2009), it is important to be precise about the construct that is of interest here. In the present study, the focus is not on meaning in life per se, but on mattering. Experts have pointed out that a sense of meaning consists of more than one dimension: it includes comprehension, purpose, and mattering (Heintzelman & King, 2014a, 2014b; Steger, 2012). Out of these three dimensions, the present study will be focused on mattering. Mattering can be defined as the extent to which individuals feel that their lives are of significance and value in the world (George & Park, 2014). To feel mattering is to feel that one's life is consequential in the world, and that one's non-existence would make a difference. In the present study therefore, the research question can be rewritten more specifically as *what helps individuals maintain a sense of mattering in the face of situations that threaten a sense of mattering?* The current study focused specifically on mattering because mattering has received scant attention in the empirical

literature (George & Park, 2014). Although this study focuses specifically on mattering, throughout this paper, we draw on the broader literature on meaning to generate hypotheses and evaluate findings as there is little research to draw on that directly and specifically focuses on mattering.

Factors That may Buffer Threats to Mattering

Two factors stand out in the meaning literature as potential buffers that can help individuals maintain a sense of mattering in the face of threats. One is religiousness/spirituality (R/S) and the other is the number of sources of meaning that individuals have in their lives. R/S has long been implicated in meaning (e.g., Baumeister, 1991; Frankl, 1959/2006; Yalom, 1980). It has been suggested that a fundamental motivation to engaging in religious and spiritual behaviors is to satisfy the need for meaning (Batson & Stocks, 2004; Silberman, 2005; Yalom, 1980). R/S provide ultimate answers to some of the most vexing questions regarding human life such as the point of existence, the meaning of death, and what eternal life looks like (Baumeister, 1991; Park, 2005). Such characteristics of R/S make it particularly suited to help individuals feel that their lives matter even in the face of threats. In the face of information that suggests that one's life does not matter, R/S beliefs may provide solace and help individuals feel that their lives do in fact matter. R/S may help individuals feel that they are part of something larger, more significant, and more everlasting than their own lives (Vail et al., 2010).

In fact, existing research supports the idea that R/S may buffer the effect of existential threats (Vail et al., 2010). For example, one study found that those with higher R/S did not engage in defensive responses following mortality salience, and that affirming religious beliefs decreased thoughts of death following mortality salience (Jonas & Fischer, 2006). Another study demonstrated that affirming religious beliefs lead to reduced death anxiety (Tongeren, McIntosh,

Raad, & Pae, 2013). Research has also examined R/S more specifically in relation to meaning. A study that examined how R/S moderates the link between positive affect and meaning showed that R/S moderated the effects of induced mood such that individuals high on R/S rated their life as more meaningful regardless of their mood (Hicks & King, 2008, Study 1). A follow-up study showed that positive religious primes exhibited a similar moderating role on the link between affect and meaning (Hicks & King, 2008, Study 2). In addition to such experimental findings, survey research also shows that meaning is often closely associated with R/S (e.g., Diener, Tay, & Myers, 2011; George & Park, 2013).

Although the aforementioned studies lend support to the idea that R/S may buffer the effect of threats to meaning, no study to date has specifically examined the buffering role of R/S in the context of threats to *mattering*. That is, no study has examined if R/S help individuals maintain a sense of mattering in the face of threats to mattering. The current study attempts to extend the existing literature by examining if the buffering role often prescribed to R/S (Vail et al., 2010) applies to the specific dimension of mattering.

The second factor that seems promising as a buffer to threats to mattering is the number of sources of meaning that individuals' have in their lives. Sources of meaning refer to those areas or aspects of life that contribute to individuals' sense that their lives are meaningful (Debats, 1999; O'Connor & Chamberlain, 1996; Schnell, 2011). The sources of meaning literature has attempted to understand from where individuals draw a sense of meaning. Researchers have identified various sources of meaning by asking people explicit questions such as what are the "three most important things that give meaning to your personal life?" (Debats, 1999; p. 37) and "What do you think of as an important source of meaning in your life?" (O'Connor & Chamberlain, 1996, p. 466). Such research has identified as common sources of

meaning life areas such as religious beliefs, service to others, personal achievements, relationship with others, and experiencing pleasure (Debats, 1999; O'Connor & Chamberlain, 1996).

If individuals draw a sense of meaning from various life areas, an important question is, does having a greater number of sources of meaning buffer the effects of threats to meaning or mattering? The term *breadth* has been used in the literature to refer to the number of sources of meaning from which individuals derive a sense of meaning (Reker, 1996). A greater breadth may be associated with a greater sense of meaning (Reker & Wong, 1988). In fact, in a representative German sample it was found that having greater number of sources was strongly related to greater levels of meaning ($\rho = .52$; Schnell, 2011). It may be that individuals with greater breadth are more impervious to threats as their meaning is drawn from a greater variety of sources. The fact that they derive their meaning from multiple life areas may make their sense of meaning more robust. Therefore, in the current study, we hypothesized that breadth may buffer the effect of threats to mattering.

Threatening Mattering in the Present Study

In the current study, an existing manipulation from a previous study could not be used to threaten mattering as most existing studies do not specifically target a sense of mattering. Although numerous studies have been conducted under the guise of "threatening meaning" or "existential threats" (Heine et al., 2006; Greenberg & Arndt, 2012), the manipulations from such studies do not specifically correspond to a mattering threat as conceptualized here. For example, the vast majority of studies on the meaning maintenance model (Proulx & Inzlicht, 2012) use manipulations that violate individuals' basic expectations regarding the world (e.g., displaying nonsense word pairings or visual anomalies; Proulx & Heine, 2008; Randles, Proulx, & Heine,

2011). Similarly, studies on terror management theory (see Greenberg & Arndt, 2012 for a review) often use mortality salience — increasing the awareness of death in participants' minds — as a threat. Although mortality salience may very well threaten a sense of mattering, in terror management theory, it is primarily conceptualized as a manipulation of death anxiety (Greenberg et al., 1986). Thus, most existing manipulations may not specifically threaten mattering as conceptualized in the present study and therefore, a new manipulation had to be devised.

In the present study, mattering was threatened by asking participants to write about why their families may not matter in the grand scheme of things. This manipulation was based on the following rationale. Family is an often cited source of meaning in individuals' lives. In fact, a previous study found that family was ranked number one among 12 other widely reported sources of meaning (Lambert et al., 2010). If a sense of mattering is drawn from one's family, it seemed likely that undermining the value of one's family ought to undermine one's own sense of mattering. That is, it seemed likely that as the perception of significance and value of an important area of life is threatened, the perception of one's own existence as significant and valued would decrease.

Situating Mattering Threats Within the Broader Context of the Threat-Compensation Literature

Over the years in social psychology, a significant body of literature has accrued that repeatedly demonstrates a phenomenon of threat-compensation: after individuals are subjected to experiences that are inconsistent with their beliefs, attitudes, or goals, or experiences that are difficult to make sense of, they exhibit compensatory responses that themselves may have little to do with the original experience (see Heine et al., 2006 for a review). For example, reading a difficult-to-understand statistics passage or writing about ongoing interpersonal problems was

found to be followed by greater religious zeal (McGregor, Nash, & Prentice, 2010). In another study, following exposure to a surrealistic film clip, participants became more punitive towards law breakers (Randles, Heine, & Santos, 2013). In recent years, theorists have attempted to integrate the numerous findings related to this phenomenon into a single theoretical account based around expectancy violation (Proulx, Inzlicht, & Harmon-Jones, 2012). This account suggests that individuals have basic expectancies regarding how things will play out around them. Beliefs, goals, attitudes, and other expectations represent such expectancies. Certain neurophysiological mechanisms monitor for violations of expectancies (i.e., threats), and such threats are associated with a state of aversive arousal. After aversive arousal is evoked, compensatory responses help relieve the arousal (Proulx & Inzlicht, 2012).

One common compensatory strategy that follows threats is affirmation (Proulx & Inzlicht, 2012). In this strategy, following a threat, individuals exhibit an affirmation of related or unrelated beliefs or values — they exhibit a greater commitment to various beliefs, values or goals. For example, following exposure to a visual anomaly, individuals may affirm their moral beliefs (Proulx & Heine, 2008). The compensatory strategy of affirmation that follows expectancy violations poses a challenge for the present study. The present study aims to threaten mattering and to examine the effect of threat on individuals' sense of mattering. The mattering threat in the present study is however likely to also play the role of an expectancy violation (Proulx & Inzlicht, 2012; Proulx et al., 2012). That is, asking participants to write that their families do not matter is likely to violate participants' beliefs regarding the importance of family, and thereby, evoke an affirmatory response. Thus, any measures following such an expectancy violation may be subject to an affirmatory response. In fact, a previous study where meaning was measured highlights this possibility. It was found that after participants subliminally processed

meaninglessness-related words such as valueless, pointless, and nonsense, they endorsed greater levels of meaning in their lives (Tongeren & Green, 2010). For the present study, such results highlight the importance of taking into account the phenomenon of threat-compensation in examining the effect of threats to mattering.

In the present study, in order to take into account the phenomenon of threat-compensation, two steps were taken. One, the control group task was created such that participants in the control group were also exposed to an expectancy violation (Proulx & Inzlicht, 2012). Thus, the control group task involved an expectancy violation but not a mattering threat; in contrast, the experimental group task involved both an expectancy violation and a mattering threat.

The second way in which the phenomenon of threat-compensation was accounted for was by adding an additional moderator alongside R/S and breadth. The moderating role of R/S and breadth were both examined in conjunction with the moderating role of self-esteem. In numerous previous studies, self-esteem was predictive of compensatory responses following expectancy violation. For example, in one study, following mortality threats, individuals with higher baseline self-esteem showed greater nationalistic zeal and zeal for their personal goal pursuits (McGregor, Gailliot, Vasquez, & Nash, 2007). In another study, following an uncertainty threat, participants with higher self-esteem showed more religious zeal (McGregor, Nash, & Prentice, 2010). One study even found higher self-esteem to be associated with greater EEG activity (following uncertainty threats) in areas of the brain associated with compensatory behaviors (McGregor, Nash, & Inzlicht, 2009). Such results, where self-esteem predicts compensatory responses, have prompted researchers to discuss self-esteem as reflecting a dispositional characteristic of approach motivated responses in the face of threats (McGregor et al., 2009; McGregor et al.,

2010; Park, 2010b). That is, individuals high on self-esteem are more likely to engage in strategies such as affirmation of familiar beliefs and goals in order to relieve the aversive arousal associated with threats. In the present study, therefore, we will examine the moderating role of R/S and breadth alongside that of self-esteem. By taking into account the moderating role of self-esteem, we will be able to better take into consideration a more generic effect of expectancy violation causing compensatory responses (Proulx & Inzlicht, 2012). Accounting for such a generic effect will allow us to more effectively tease apart the effects of threat-compensation from those that can be attributed more specifically to the mattering threat and the buffering role played by R/S and breadth.

Present Study: Pulling it All Together

In the present study, we examined whether R/S (Park, 2005) and breadth of sources of meaning (Reker, 1996; Schnell, 2011) buffer threats to a sense of mattering by helping individuals maintain a sense of mattering. Mattering was threatened using a writing task where participants wrote on the topic of how their families do not matter. Such a writing task was expected to lower mattering as undermining a common and valued source of meaning (Lambert et al., 2010) may lower individuals' perception that their own lives matter. To account for possible threat-compensation effects (Heine et al., 2006), the control group task also involved an expectancy violation. Further, the moderation effects of R/S and breadth were examined alongside the moderating role played by self-esteem (McGregor et al., 2009).

Method

Participants were recruited through the psychology department research pool at a large university in the northeastern United States. Participants earned partial course credit for taking part in the study. Interested potential participants were emailed a link through which they could

participate. All data were collected online and data collection occurred in two sessions, with three days in between each session.

Approximately, 202 participants took part in the first session during which data were collected on the moderators (i.e., R/S, breadth, self-esteem) and on baseline mattering. Three days later, 194 of the 202 participants took part in the second session, during which they were randomly assigned to perform either the control task or the experimental task. Following the control or experimental tasks, participants again completed the mattering scale.

Only participants who attended both sessions and who passed the attention check items (see below) were included in the present analyses: 186 individuals met these criteria (control group $n = 91$). Demographic information for these participants was as follows: 31% male, 78% white, and 51% with household income of over \$70,000. The mean age was 19.22 ($SD = 1.16$). The most frequently endorsed religious affiliations were Catholicism ($n = 83$), agnosticism ($n = 30$), atheism ($n = 21$), other ($n = 20$), and Protestant ($n = 16$). The remaining response options such as Buddhism, Hinduism, Islam, and Judaism were chosen by less than 6 participants each.

Materials

R/S was measured using the Daily Spiritual Experiences subscale from the Brief Multidimensional Measure of Religiousness/Spirituality (Fetzer/NIA, 1999). This spirituality subscale was developed to assess an individual's "perception of the transcendent (God, the divine) in daily life and his or her perception of his or her interaction with or involvement of the transcendent in life" (Underwood & Teresi, 2002, p. 23). Sample items include "I feel God's presence" and "I feel deep inner peace or harmony." The six items on the scale are rated on a 6-point scale ranging from 1 (*never or almost never*) to 6 (*many times a day*). Responses were averaged to derive an R/S score, with higher scores indicating greater R/S. In previous research,

the spirituality subscale has demonstrated favorable psychometric properties such as good factor structure, convergent validity, and reliability (Underwood & Teresi, 2002). Cronbach's alpha in the present sample was .95.

The Sources of Meaning Profile-Revised (SOMP-R; Reker, 1996) was used to assess breadth of sources. The SOMP-R was developed based on a review of the available literature on sources of meaning and a list of the 17 most cited sources were included in the measure. Sample items include "service to others", "personal relationships", "personal achievements", "leaving a legacy", and "tradition and culture." Participants rated the extent to which they found each source to be meaningful on a 7-point scale ranging from 1 (*not at all meaningful*) to 7 (*extremely meaningful*). Breadth score was calculated by summing the number of items that participants rated as a five or higher (per Reker, 1996; see also Schnell, 2011). Evidence of favorable psychometric properties including factorial evidence, convergent validity, and test-retest reliability can be found in Reker (1996). In the present sample, Cronbach's alpha was .79.

Following the SOMP-R, participants rated the extent to which they found family to be meaningful on the same response scale used in the SOMP-R. This family item was added in order to assess whether family was, in fact, a highly rated source of meaning in the present sample as it is in others (e.g., Lambert et al., 2010).

Self-esteem was assessed using the Rosenberg Self-Esteem Scale (Rosenberg, 1965), a widely used measure of self-esteem. This scale assesses a global sense of self-esteem and was particularly suited for the present study as it has been used in previous studies where self-esteem was found to predict compensatory responses (e.g., McGregor et al., 2009; McGregor et al., 2010). The scale consists a total of 10 items rated on a 4-point scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). Sample items included "I feel that I have a number of good

qualities" and "On the whole, I am satisfied with myself." After reverse coding the negatively worded items, a total score was created by summing the items. Cronbach's alpha was .91.

Mattering was assessed by the mattering subscale of the Multidimensional Existential Meaning Scale (George & Park, 2014b). The mattering subscale was created to specifically assess the mattering dimension of meaning without conflating it with the other meaning dimensions. The scale consisted of items such as "I am certain that my life is of importance," "My life matters," and "Even a thousand years from now, it would still matter whether I existed or not." In the present study, an 11-item version of the measure was used. The items were rated on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) and an average score was calculated using all of the items. The Multidimensional Existential Meaning scale shows good psychometric qualities such as theoretically consistent factor structure, high reliability, and convergent validity with other meaning measures (George & Park, 2014b). Cronbach's alpha for the mattering subscale in the present sample was .94 at baseline and .96 post-manipulation.

Four attention-check items were dispersed throughout the questionnaires to ensure that participants were adequately attending to the questions. The items asked participants to leave the items blank ("Participant, please leave this question blank"). Those participants that selected a response option for at least two out of the four items were removed from the analyses.

At the second session, participants assigned to the experimental group were asked to write for five minutes in response to the following prompt: *In the next five minutes, make a case for why your family may not be important and may not matter in the grand scheme of things. Make a case for why your family is NOT significant. Try to be as convincing as you can.* The reasoning behind the prompt was that undermining an important and valued aspect of one's life

— family — may cause one to question the value and worth of one's own life. Previous literature shows that family is a highly rated source of meaning in individuals' lives (Lambert et al., 2010).

Participants assigned to the control group received an identical set of instructions with the exception that "your family" was replaced by "you being polite." Thus, participants were asked to write for five minutes about why their being polite may not be important and may not matter. The goal of this control writing prompt was to assign a task that would constitute a threat to participants' expectancies (Proulx & Inzlicht, 2012) but one that would not constitute a threat to mattering. Being polite seemed like an appropriate topic for the control group as being polite is generally considered to be important, and therefore, the writing task can be expected to serve as an expectancy violation (Proulx & Inzlicht, 2012).

Following the writing task, participants completed a filler task (one that took less than a minute to complete) so that the intent behind the experimental task was not immediately apparent to participants. After the filler task, participants completed the mattering subscale of the Multidimensional Existential Meaning scale again.

Results

Independent samples t-tests showed no significant differences between the control and experimental conditions in terms of their baseline R/S, breadth, or self-esteem. Chi-square analyses showed that gender was equally distributed among the control and experimental conditions. An independent samples t-test was conducted to determine if the length of the written responses (calculated based on number of characters) following the writing prompt varied between the control and experimental group. The control group's written responses ($M = 493.98$, $SD = 275.17$) were significantly longer than those from the experimental group ($M = 388.84$, $SD = 244.42$), $t(184) = 2.76$, $p < .01$. The computed intercorrelations between study variables along

with means and standard deviations can be found in Table 1. All study variables were positively correlated with one another, with the highest correlation between mattering and self-esteem ($r = .65, p < .001$).

A mixed 2X2 ANOVA was computed with condition (control, experimental) as the between subjects variable and mattering scores (baseline, post-manipulation) as the within subject variable. Results showed that there was no main effect of condition, $F(1, 84) = .30, p = .58$, no change in mattering scores from baseline to post-manipulation, $F(1, 184) = .18, p = .67$, and no significant interaction, $F(1, 184) = .01, p = .93$. Thus, the means did not show that the experimental task lowered the mattering scores of the experimental group participants (both in comparison to their baseline scores as well as in comparison to the control group scores).

In order to examine the primary study hypotheses — whether R/S, breadth, and self-esteem moderated the effect of the experimental manipulation — three separate regression models were computed predicting a difference score. The difference score was calculated by subtracting baseline mattering scores from post manipulation mattering scores. The difference score had a mean of .02, and a standard deviation of .58, with negative scores indicating the possibility that the manipulation reduced mattering scores and positive scores indicating the possibility that the manipulation increased mattering scores (i.e., compensation). In each model, condition and the moderator were entered in step 1 and the interaction term was entered in step 2. The results (listed in Table 2) showed that for the models examining R/S and breadth, there were no main effects and no interaction effects. Thus, there was no evidence of moderation by R/S or breadth.

The regression model examining the moderation effect of self-esteem showed that the overall model as well as the effect of the interaction term was marginally significant (see Table

2). The plotted interaction effect can be seen in Figure 1. To probe the moderation effect, a correlation was computed between self-esteem and the difference score separately for the control and experimental conditions. In the control condition, there was no relationship between self-esteem scores and the difference scores ($r = -.03, p = .79$), but in the experimental condition, there was a positive relationship ($r = .27, p < .01$). In addition, the moderation effect was also probed using simple slopes analysis where the effect of condition was estimated at different levels of self-esteem: one *SD* below the mean ($b = -.15, t = -1.26, p = .21$), at the mean ($b = .01, t = .16, p = .87$), and one *SD* above the mean ($b = .18, t = 1.50, p = .13$). The results showed that the effect of condition changed from negative to positive as self-esteem became larger, although the effect does not become large enough to be statistically significant. Together, the graph and these analyses showed that the effect of the experimental task varied as a function of self-esteem: at low self-esteem, the task was associated with lower post-manipulation scores whereas at high self-esteem, the task was associated with *higher* post-manipulation scores (although the effect was not statistically significantly lower or higher at one *SD* below and above the mean). Thus, self-esteem appeared to moderate the effect of the experimental manipulation such that higher self-esteem was associated with a compensatory response.

Exploratory Analyses

The planned analyses revealed that contrary to expectations, there were no main effects of condition nor were there moderation effects by R/S or breadth. The following exploratory analyses were conducted to further probe these unexpected findings.

1. *Could self-esteem be playing the role of a suppressor in hiding the relationship between R/S or breadth and mattering scores?* In order to rule out the possibility that once the effect of self-esteem is controlled, a moderating effect may emerge

for R/S or breadth, the moderating effect of both R/S and breadth was examined with self-esteem and its moderation in the regression model. However, the results remained unchanged.

2. *Was family in fact a significant source of meaning in this sample and could the importance of family serve as a moderator?* Responses on a single item where participants rated the extent to which they found family meaningful showed that almost 76 percent of the sample rated family as *extremely meaningful* (the highest possible rating) and 18 percent rated family as *very meaningful* (the second highest possible rating). Thus the vast majority (94 percent) rated family as an important source of meaning. Further, there was not enough variation on this item to warrant examining if importance of family would moderate the effect of the manipulation.
3. *Did participants follow the writing directions and write that their family does not matter?* To ascertain whether participants followed the writing directions, all experimental group participants' written responses were coded on two dimensions by the experimenter. The first dimension pertained to whether the participant did in fact write that family does not matter (responses were coded a 1 if they did and a 0 if they did not). The second dimension pertained to whether they *actively opposed* the writing directions and wrote that family *does matter*. For example, one participant wrote, "family is always important. If you have no family, then whoever is closest to you becomes your family" and another wrote "I do not exactly know how to answer this because I strongly believe that my family is important and significant in my life." On the second dimension, responses that

stated that family *does* matter were coded a 1 and others were coded zero. Out of the 89 writings that could be coded, on the first dimension, 73 people were coded as following the directions and writing that family does not matter; on the second dimension, eight people were coded as going against the writing directions and writing that family *does* matter). Running the original moderation analyses after excluding those participants that 1) did not follow the writing directions or 2) actively opposed the writing direction did not change the original results (total number of excluded participants was 16).

4. *Would participants' use of an existential frame of reference change the outcome of the analyses?* Examining the written responses from the experimental group showed that participants responded to the writing prompts in two ways. Some participants wrote using an existential frame of reference and wrote about why their families do not matter in the *larger scheme of the world, society, or the universe*. Others did not use such an existential frame of reference and instead wrote that their families do not matter, because their families are not important *to them*; they stated that rather, other aspects of their lives are more important *to them*. The latter group appeared to be writing from the vantage point of why *their families are not important to them* whereas the former group wrote why *their families do not matter in the world*. Some sample written responses for both types of responses can be seen in Table 3.

Written responses from the experimental group were coded for use of an existential frame of reference. Out of the 89 responses that can be coded, 27 responses were coded as using an existential frame of reference. After excluding

those participants that did not use an existential frame of reference, the mixed 2X2 ANOVA conducted before was repeated: condition (polite, family) was the between subjects variable and mattering scores (baseline, post-manipulation) was the within subject variable. The results did not change and the analysis showed no main effects or an interaction effect. To examine for a possible moderation by R/S, breadth, or self-esteem, moderation analyses were repeated and three separate regression models were run examining the moderating role of each of the three variables. For R/S, although the overall model was not significant, $F(3, 114) = 1.86, p = .14$, the interaction effect was marginally significant, $b = .17, t = 1.94, p = .06$. For breadth, the overall model was marginally significant, $F(3, 113) = 2.62, p = .05$, and the interaction effect was significant, $b = .15, t = 2.64, p < .05$. For self-esteem, the overall model was not significant, $F(3, 114) = 1.67, p = .18$, but the interaction effect was marginally significant, $b = .04, t = 1.82, p = .07$.

As planned, in order to account for a threat-compensation effect, the moderation of R/S and breadth were both examined with the moderation of self-esteem included in the same models. Results (listed in Table 4) showed that after including moderation of self-esteem in the models, R/S was no longer significant, however, breadth continued to be significant. In fact, the interaction term of breadth was significant even when self-esteem was not. Thus, breadth appeared to be moderating the effect of the experimental task even after accounting for self-esteem. The plotted moderation effect of breadth is shown in Figure 2. In order to probe the moderation effect, a correlation was computed separately for the polite group and the control group. In the control group, there was no relationship

between breadth and the difference score ($r = -.13, p = .23$), whereas in the experimental group, there was a positive relationship ($r = .48, p < .05$). Simple slopes analysis was also conducted and an effect of condition was estimated at one *SD* below the mean ($b = -.35, t = -1.98, p = .05$), at the mean ($b = .09, t = -.66, p = .51$), and one *SD* above the mean ($b = .18, t = .90, p = .37$). Thus, being in the experimental condition appeared to lower mattering scores for those with low breadth, and as breadth scores increased, the effect of condition became smaller and started to move in the opposite direction.

In summary, the results of the present study showed that there were no main effects of the experimental manipulation and the control and experimental groups did not differ in their post manipulation mattering scores. However, moderation analyses revealed that baseline self-esteem marginally moderated the effect of the manipulation such that for individuals with low self-esteem, the manipulation appeared to lower their mattering scores whereas for those with high self-esteem, the manipulation appeared to increase their mattering scores (though not statistically significantly). In contrast to self-esteem, no moderation effects were found for breadth or spirituality. Exploratory analyses, however, showed that excluding participants who do not use an existential frame of reference shows some evidence of moderation by breadth. Once such participants are excluded (experimental group $n = 27$), breadth was a marginally significant moderator even after controlling for the moderating effects of self-esteem. The moderation effect was such that the manipulation lowered mattering scores for those low on breadth and led to a higher scores for those high on breadth.

Discussion

The present study examined whether R/S (Park, 2005) or breadth of sources of meaning (Debats, 1999) may buffer the impact of threats to mattering and help individuals maintain a sense of mattering. Further, the study also examined the moderating role of self-esteem (McGregor et al., 2009) to better account for a more generic threat-compensation effect (Proulx & Heine, 2012), and to better separate threat-compensation effects from effects specific to mattering threats and moderators of mattering threats. Analyses of the overall sample revealed that R/S and breadth did not moderate the impact of the mattering threat, although self-esteem did. The plotted interaction effect of self-esteem showed that the experimental manipulation was associated with lower post-manipulation mattering scores for those with low self-esteem and higher post-manipulation mattering scores for those with high self-esteem. In the experimental group, baseline self-esteem positively correlated with difference scores, indicating that participants with higher baseline self-esteem had higher post-manipulation mattering relative to their baseline mattering. Thus, as expected, self-esteem predicted a compensatory response to the mattering threat (McGregor et al., 2009, 2010).

The moderating role of self-esteem found here is consistent with numerous previous studies where self-esteem has been found to predict compensatory responses such as nationalistic zeal and religious zeal following threats (McGregor et al., 2007, 2010). Researchers have discussed self-esteem as reflecting a dispositional characteristic of responding to threats with more approach motivated strategies that can relieve the aversive state associated with threats (McGregor et al., 2009; Park, 2010b) — that is, individuals with higher self-esteem are dispositionally more likely to engage in affirmation of beliefs, goals, and attitudes, and thus lessen the aversive arousal associated with threats. Thus, in light of these previous perspectives

regarding self-esteem, and the larger literature on threat-compensation, the moderating effects of self-esteem in the present study may be viewed in the following manner (Proulx & Inzlicht, 2012; Proulx et al., 2012). The mattering threat posed an expectancy violation which generated an aversive state in the participants. This aversive state in turn, motivated the compensatory strategy of affirmation for those with higher self-esteem. As a result, those with higher self-esteem exhibited greater scores on the mattering scale following the threat.

An interesting question to ask is why there were no compensatory responses in the control condition although such responses were present in the experimental condition. Writing that being polite does not matter was designed to be an expectancy violation (Proulx & Inzlicht, 2012), yet, no compensatory effects were seen in the control group. One possible explanation for this discrepancy in compensatory responses is that the writing task in the experimental condition posed a *greater* expectancy violation and therefore, induced a compensatory response. In fact, the meaning maintenance model suggests that the violation of expectancies that are more central to individuals and to which they are more committed are likely to be more impactful (Proulx & Inzlicht, 2012, p. 331). Writing that being polite does not matter was perhaps not as strong of an expectancy violation as writing that family does not matter (Lambert et al., 2010), and hence, there were no compensation effects in the control group.

Another important question in interpreting the present results is whether the experimental manipulation was a successful threat to participants' sense of mattering or was it merely an expectancy violation (i.e., the experimental manipulation violated participant's expectancies but it did not threaten and lower their sense of mattering)? The plotted interaction effects of self-esteem indicated that the manipulation did have negative effects on participants' sense of mattering, as the predicted difference score for those with low self-esteem was in the negative

direction ($\hat{Y} = -.12$). If the predicted difference score was not negative, this would have indicated that the manipulation likely did not lower mattering scores for those with low self-esteem. It is important however to note here that the simple slope analysis did not reveal a significant effect of condition at low self-esteem (or high self-esteem). So overall, it would appear that the manipulation did not work in an ideal manner; at best, the manipulation had weak effects in terms of posing a threat to participants' sense of mattering. If the manipulation had more potent effects, the simple slopes analysis would have revealed a significant effect of condition at low and/or high self-esteem.

It is worth asking what factors may have led to such weak effects of the experimental manipulation, especially when, in previous studies, meaning manipulations have been found to have stronger effects on reports of meaning (e.g., Fahlman et al., 2009). A few potential explanations exist. One, the present study was completed online, and therefore, participant engagement in the writing tasks may have been limited. In fact, the median length of the written responses for the whole sample was approximately 400 characters. Perhaps, if the study was completed in-person in the laboratory, engagement with the task may have been greater and the manipulation would have had a stronger effect. The second possibility pertained to the actual content of the writing task. Perhaps making a case that one's family does not matter may have been too difficult of a writing task for participants to perform — perhaps participants could not even entertain the possibility that family does not matter because they believed strongly that family *does* matter (Lambert et al., 2010). In fact, some written responses hinted at this possibility. One participant wrote: "I cannot make a case for how my family is not significant because I cannot imagine my life without my family." The qualitative codings of the responses also showed that eight participants went against the writing directions and stated that family *does*

matter. Additionally, a t-test of the length of written responses showed that participants in the experimental condition wrote shorter responses than those in the control condition. Such shorter responses hint at the possibility that the experimental group task may have been harder for participants. Finally, the lack of stronger effects may have been because the vast majority of participants did not use an existential frame of reference in their writing. Most participants instead wrote that their families do not matter to them because another aspect of their life is more important to them. If more participants had used an existential frame of reference, we may have seen stronger effects. This possibility was supported by the fact that excluding participants who do not use an existential frame of reference led to stronger effects of condition in the simple slope analyses.

Considering the weak effects of the manipulation in the present study, it is difficult to draw strong conclusions regarding the lack of a significant moderating role of R/S and breadth. The lack of evidence for the moderating role of R/S and breadth in the present study may not be a reflection of a true lack of moderation and may instead be a function of the weak effects of the manipulation. The moderators are likely to only show strong moderating effects if there is a strong manipulation effect — that is, the moderators can only buffer threats if there is a threat to begin with. The exploratory analyses with participants who used an existential frame of reference offered some support for the idea that R/S and breadth may in fact buffer threats to mattering. These analyses showed that the interaction term of spirituality was marginally significant when examined by itself, and the interaction term of breadth was significant even when examined in conjunction with self-esteem. Probing the significant interaction effect of breadth using simple slope analysis showed that the manipulation significantly lowered mattering only for those with low breadth scores. However, due caution is warranted in interpreting the results of these follow-

up analyses. The amount of confidence that can be placed in these exploratory results is limited as those who were excluded from the analyses may have been systematically different from those who were not, which would bias the results. That is, those who used an existential frame of reference in their writing are likely to be systematically different from those who did not.

Another factor that limits the confidence that can be placed in the exploratory results is the small number of participants that remained in the experimental group after exclusions. Since only 27 participants remained, the estimates from the analyses may not be stable.

Conclusions and Future Directions

The current study aimed to examine whether R/S (Baumeister, 1991; Yalom, 1980) and breadth of sources of meaning (Debats, 1991; Reker, 1996) buffer threats to mattering and help individuals maintain a sense of mattering. Based on previous literature that show a moderating role of R/S in responding to existential threats (Jonas & Fischer, 2006; Tongeren et al., 2013) and literature showing a strong relationship between breadth of sources of meaning and a sense of meaning (Schnell, 2011), we predicted that R/S and breadth will buffer the effects of threats to mattering. The results showed no evidence of such moderation in the primary analyses, although exploratory analyses showed some evidence. The weak effects of the experimental manipulation, and the limitations associated with the exploratory analyses' results makes it difficult to draw strong conclusions in the current study regarding the moderating role of R/S and breadth. Future studies that can address the limitations of the present study and extend on its findings can offer clearer conclusions regarding whether R/S and breadth buffers mattering threats.

One way to build on the current study is to devise the writing manipulation directions such that participants are more explicitly cued to write using an existential frame of reference so that the vast majority of participants write in such a manner. Analyses can then examine whether

the results found here for R/S and breadth replicates. The major limitation with interpreting the results here was that there could be systematic differences between participants who wrote using an existential frame of reference and those who did not. By ensuring that most participants write using an existential frame of reference, such limitations can be eliminated and the results found here can be replicated more rigorously.

A future study may take an alternative approach to threatening mattering than what was taken here. In the present study, the approach was of undermining a source of meaning (Debat, 1999; O'Connor & Chamberlain, 1996) with the rationale that undermining a source would in turn cause one to feel that one's own life matters less. An alternative approach that can be taken, is to directly undermine participants' sense that their own lives matter. For example, Fahlman and colleagues (2009) had participants engage in a visualization task where they recalled a time in their life that was low in meaning and found that doing so led to lower reports of meaning. A more direct approach to undermining participants' sense of mattering may be achieved by the following task: Ask participants to imagine that they will die the next day and to rate the extent to which numerous things may be affected by their demise. The list of items that they rate should mostly contain items that will not be substantially affected by their demise (e.g., the number of times people will laugh in the United States, the number of hours of TV that will be watched in the state of Connecticut, the number of people who will go to work on time that day). Such a manipulation may pose a more potent and direct threat to participants' sense of mattering than attacking a source of mattering.

A similar future study as the one conducted here may also consider more extensive and sophisticated qualitative codings of the written responses to better understand the processes that play out in individuals' writing regarding mattering. For example, when asked to undermine a

particular source of meaning such as family, do participants undermine family but go on to affirm another source such as friends or romantic relationships? That is, participants may say that family does not matter because friends matter more. Such a flexible way of dealing with threats is likely common in people's lives. Individuals likely do not deal with threats passively, but actively make sense of the threat in a way that renders it less threatening (Sedikides, 2012). For example, self affirmation theory (Sherman & Cohen, 2006) suggests that the self-system is flexible in dealing with threats to the self and that people will "compensate for failures in one aspect of their lives by emphasizing successes in other domains" (p. 188). More sophisticated qualitative codings of responses may shed light on the processes by which people respond to mattering threats, and offer more information as to how variables such as R/S and breadth moderates responses to threats.

Finally, another fruitful avenue for future research is to engage in more qualitative studies of the factors that help individuals feel that their lives matter. The present study drew on the sources of meaning literature (Debats, 1999; O'Connor & Chamberlain, 1996) to provide a theoretical context for what contributes to mattering and assumed that sources of meaning would correspond with sources of mattering. Qualitative studies that investigate the most important sources of mattering for individuals, and the factors that threaten their sense of mattering, would help move this research forward.

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Table 1
Means and Intercorrelations

	Mean	SD	Pearson correlations				
			1	2	3	4	5
(1) R/S	2.91	1.47					
(2) Breadth	13.44	2.34	.23**				
(3) Self-esteem	31.50	5.59	.26**	.19**			
(4) Baseline mattering	5.18	1.00	.41**	.34**	.65**		
(5) Post-manipulation mattering	5.21	1.13	.39**	.23**	.65**	.86*	

Note. $N = 186$.

** $p < 0.01$

Table 2
Regression Analyses Examining the Moderating Role of R/S, Breadth, and Self-Esteem in Predicting Difference Scores

	Model Examining Moderating Role of R/S					
	Step 1			Step 2		
	<i>b</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>t</i>	<i>p</i>
Condition	.01	.06	.95	-.11	-.59	.56
R/S	.02	.52	.60	-.01	-.14	.89
R/S X Condition				.04	.69	.49
	$R^2 = .00, F = .14, p = .87$			$R^2 = .00, F = .25, p = .86$		
				$\Delta R^2 = .00, F = .48, p = .49$		
	Model Examining Moderating Role of Breadth					
	Step 1			Step 2		
	<i>b</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>t</i>	<i>p</i>
Condition	.01	.01	.99	-.09	-.18	.86
Breadth	-.03	-1.71	.09	-.036	-1.21	.23
Breadth X Condition				.01	.18	.86
	$R^2 = .02, F = 1.46, p = .23$			$R^2 = .02, F = .98, p = .40$		
				$\Delta R^2 = .00, F = .03, p = .86$		
	Model Examining Moderating Role of Self-Esteem					
	Step 1			Step 2		
	<i>b</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>t</i>	<i>p</i>
Condition	.02	.17	.86	-.93	-1.88	.06
Self-esteem	.01	1.79	.08	.00	-.28	.78
Self-esteem X Condition				.03	1.94	.05
	$R^2 = .02, F = 1.61, p = .20$			$R^2 = .04, F = 2.35, p = .07$		
				$\Delta R^2 = .02, F = 3.77, p = .05$		

Note. *N* = 186. *b* = *b* coefficient (not betas).

Table 3

Sample Written Responses of Participants Who Used an Existential Frame of Reference and Those That Did Not

Used Existential Frame of Reference	Did Not Use Existential Frame of Reference
<p>My family may not matter in the grand scheme of things because my family hasn't made any significant impacts on our world as a whole.</p>	<p>My family is not significant because they put too much pressure on me and they are too judgmental. I can't talk to them about all of my problems because I feel I will get in trouble and they will be disappointed in me. Friends are more essential in the grand scheme of things because they know me better and will be around longer than family members as family members start to grow older.</p>
<p>In the grand scheme of things, my family is insignificant. The members of my family do not possess any powerful or controlling jobs, such as being a politician. The things that my family does in their work does not have an effect on the population in such a manner as to be considered important. The only people my family may have an influence on is close friends or other family members, which is just a minuscule portion of the entire human population. As far as outsiders are concerned, my family would not even exist due to the fact that their actions do not affect others.</p>	<p>My family will not be important in the grand scheme of things because it is my life and i should be able to do what I want with it. they are not the ones who have to deal with the decisions that I make and should not have an input in what I do with my life who I share it with, and what I spend my money on</p>
<p>In the grand scheme of things, my family is only a few people out of millions. Protecting them may not be as important as protecting a larger group of people. There are causes which matter more and will save MANY lives instead of only one's family. As people we cannot be selfish in only protecting our loved ones.</p>	<p>My family is not important because I have friends and other people who can help me and support me and guide me throughout life. I have seen a friend go off and support herself and live by herself and have no communication with her family. She never had much support from her family or closeness or a sense of peace at knowing they would be there for her always. Like her, I can be independent and fend for myself and have the support of friends.</p>
<p>In the grand scheme of the universe, my family is insignificant and does not differ from any typical family. Neither of my parents have influential or world-changing jobs, and we do not do anything that will be noted in history books. At best we are average and do little to contribute to society or change the future.</p>	<p>While family may be the people you are surrounded by during childhood and the developing years of one's life, family cannot be chosen and it is ultimately the people you chose to surround yourself with that have the greatest impact on a person's life. Once a person no longer needs their immediate family for basic needs and support, they may become irrelevant. Individuals differ greatly in terms of beliefs and personalities and this way even relatives may diverge and lead a person to seek out others with whom they may feel more compatible. Though they serve a purpose in early years, people grow and go through different stages of life and in the grand scheme of things it is the people who you choose to spend your life with that matter, not simply biological actors that tie people together and have significant impacts.</p>

Compared to the entire world population right now, my family is only 6 people compared to more than 7 billion right now. I'm not even talking about the people who have already lived, or will live in the future. My family lives in a small town in Connecticut, we are not millionaires, none of us is a political figure, none of us will ever change the world in any significant way. To change the world you need an audience, you need to have the opportunity to speak to millions or even billions of people. We are not significantly gifted in any area, whether it be sports, or school, or art, or any other activity. We have absolutely no say in how the world is run, or how it will be changed for the better in the future.

My family may not really be important in the grand scheme of things because in the bigger picture everything that you do in life is on you and nobody else. Only you can change your future and your parents or family cannot do everything for you in life. Many people leave their families behind for various reasons and they turn out fine and can be very successful in life without any family whatsoever. Your family is usually only necessary for moral support and to assist you but in the grand scheme of things you don't really need them to survive or be successful in your own life.

My family is middle class, so they are the least important in the grand scheme of things. The average, the norm - nothing special. We have no major accomplishments out of the ordinary, and live a very typical American lifestyle. If the world was to end tomorrow, we wouldn't be in any record books.

Family may not be important since they do not live life for you. You are the only one that controls what happens in your life. They may be a part of your life but they cannot do things for you so their presence might not mean as much as we perceive it to be.

Table 4
Regression Analyses Examining the Moderating Role of R/S and Breadth After Excluding Participants who do not use an Existential Frame of Reference

Model Examining Moderating Role of R/S						
	Step 1			Step 2		
	<i>b</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>t</i>	<i>p</i>
Condition	-.12	-.93	.36	-1.29	-1.91	.06
R/S	.03	.69	.50	.00	-.07	.94
Self-esteem	.01	.61	.54	.00	-.25	.80
R/S X Condition				.12	1.30	.20
Self-esteem X Condition				.03	1.16	.25
	$R^2 = .02, F = .71, p = .55$			$R^2 = .06, F = 1.42, p = .22$		
				$\Delta R^2 = .04, F = 2.45, p = .09$		
Model Examining Moderating Role of Breadth						
	Step 1			Step 2		
	<i>b</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>t</i>	<i>p</i>
Condition	-.12	-.89	.37	-2.48	-2.81	.01
Breadth	.00	-.12	.90	-.04	-1.20	.23
Self-esteem	.00	.89	.38	.00	-.07	.94
Breadth X Condition				.12	1.94	.06
Self-esteem X Condition				.02	.99	.32
	$R^2 = .01, F = .54, p = .66$			$R^2 = .08, F = 1.81, p = .12$		
				$\Delta R^2 = .06, F = 3.69, p = .03$		

Note. *N* = 186. *b* = *b* coefficient (not betas) .

Figure 1
Moderation Effect of Self-Esteem

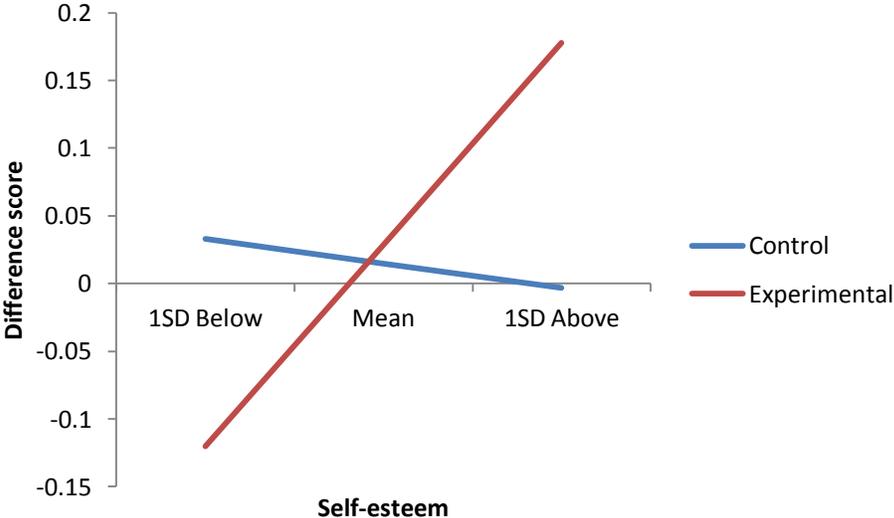


Figure 2
Moderation Effect of Breadth (After Excluding Participants who do not use an Existential Frame of Reference)

