

THE ASSOCIATIVE LINK BETWEEN DEATH CONCERNS, RELATIONSHIP MEANING,
AND PARTNER SATISFACTION

by

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Submitted to the Graduate Faculty of the
College of Science and Engineering
Texas Christian University
in partial fulfillment of the requirements
for the degree of

Master of Science

May 2020

ACKNOWLEDGEMENT

I would like to thank my friends and family for their support in completing this degree, without their encouragement this would not be possible. I would also like to thank my advisor Dr. Cathy Cox for providing guidance and advice while completing this work. Thank you to my lab mates: Robert Arrowood, Alex Darrell, and Julie Swets for their friendship during my time at Texas Christian University. Finally, thanks go out to the other members of my committee: Dr. Naomi Ekas and Dr. Sarah Hill who provided invaluable guidance regarding both the theoretical and statistical aspects of this research.

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Introduction

Researchers have long been interested in determining the factors that impact the construct of meaning, as well as the extent to which it plays a role in personal well-being. From a terror management theory perspective (TMT; Greenberg, Pyszczynski, & Solomon, 1986), individuals often turn to relationships with close others when death concerns are salient to derive value and self-worth to transcend the threat of possible mortality (Mikulincer, Florian, & Hirschberger, 2003). Building on an attachment theory perspective (Bowlby, 1969), TMT research has demonstrated that close relationships are important given that they serve as a source of comfort and security following mortality salience (Mikulincer et al., 2003). In support, research has found that reminders of death increase people's desire for closeness (Ben-Ari, Findler, & Mikulincer, 2002), relationship satisfaction (Hirschberger, Florian, & Mikulincer, 2002) and commitment (Van Tongeren et al., 2013). However, what is less clear is the potential mechanism(s) that may account for these effects. The purpose of the proposed research was to explore the extent to which relationship-specific MIL (i.e., meaning in life) mediates the association between death concerns and relationship satisfaction and commitment.

Terror Management Theory

According to TMT (Greenberg et al., 1986), although humans are similar to other species in our drive for continued existence and reproduction, we are unique in that we have enhanced cognitive abilities. Unlike other species, we have the capability of producing sophisticated, abstract, and symbolic thought, which increases our capacity for survival. However, this advanced cognition facilitates awareness of our inevitable mortality, and creates the potential for overwhelming anxiety related to death. Thus, in order to continue living without experiencing crippling fear, humans must keep existential anxiety under control by constructing a cultural

worldview, self-esteem, and close relationships. Cultural worldviews provide individuals with an explanation of human existence, a set of standards and values to live by, as well as a promise of immortality (i.e., literal or symbolic) for those who live up to the standards and values of the worldview (Solomon, Greenberg, & Pyszczynski, 1991). Consequently, self-esteem is contingent upon the extent to which an individual feels he/she is a valuable member of a meaningful cultural worldview. Together, an individual's worldview and self-esteem serve as protection from fear of death.

Given that strengthening one's self-esteem and cultural worldview serves to buffer against existential threat, persons tend to demonstrate positive responses to those who hold worldviews similar to their own. Alternatively, individuals tend to show more negative responses to those who threaten their worldview. Studies examining the mortality salience hypothesis (MS; Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989; Greenberg, Pyszczynski, Solomon, Rosenblatt, Veeder, Kirkland, & Lyon, 1990) have demonstrated that MS is associated with harsher judgments of moral transgressions (Florian & Mikulincer, 1997), greater aggression toward those who derogate one's worldview (McGregor et al., 1998), and increased support for extreme violence at the expense of innocent lives (Pyszczynski et al., 2006). Additionally, MS is associated with self-esteem striving through greater identification with traits that bolster self-esteem (Goldenberg, McCoy, Pyszczynski, Greenberg, & Solomon, 2000), as well as risky behaviors such as smoking (Hansen, Winzeler, & Topolinski, 2010), tanning (Cox et al., 2009), and reckless driving (Ben-Ari, Florian, & Mikulincer, 1999) when those behaviors enhance self-worth.

In addition to manipulating mortality awareness (i.e., a state), it is also possible to measure it (i.e., as a trait). Death-thought accessibility (DTA) is typically assessed with a word-fragment completion task or a lexical decision task. For the word-fragment completion task,

participants are provided a series of incomplete word stems (e.g., DE __), which they are asked to fill in for completion (e.g., DEAD or DEAR). Greater mortality-related word completions are indicative of higher DTA. Within the lexical decision task, participants are asked to respond as quickly and accurately as possible whether the letter string that appears on the screen is or is not a word. During the task, death-related, neutral, and non-words are presented. Reduced latency for mortality words as compared to neutral words is indicative of greater DTA. The association between mortality awareness and terror management defenses are one in which compromised beliefs, low self-esteem, and relationship problems can heighten existential anxieties. For example, research has shown an increase in DTA among highly nationalistic individuals after reading an essay that criticizes one's country (Schimel et al., 2007), as well as greater DTA among atheists following an essay supporting intelligent design (Hayes et al., 2015). Further, it has been revealed that individuals report greater DTA after recalling instances in which they failed to live up to the standards of their cultural worldview (Ogilvie, Choen, & Solomon, 2008). Conversely, when cultural worldview and self-esteem are validated, DTA is lessened.

Terror Management and Close Relationships

Although much research has been done to tests the tenets of TMT and its derived hypotheses, recent work has explored the importance of close relationships from a terror management perspective. There are several reasons *why* close relationships may help to assuage existential anxieties. First, according to evolutionary theory, close relationships help to increase individuals' capacity for survival and reproductive fitness (Buss & Schmitt, 1993). That is, through the development and maintenance of close relationships, persons heighten their security as well as the likelihood of attaining resources (e.g., food) to aid with survival. Engaging with close relationships also increases the chance of an individual passing his/her genes to offspring. Second, according to attachment theory (Bowlby, 1969), close relationships are important as

they serve as a source of security and comfort during times of need (e.g., threat). Although the attachment system addresses a broad range of threats individuals may experience across the lifespan (e.g., separation, stress), a TMT analysis is distinctive in that it addresses mortality concerns directly (Mikulincer, Hirschberger, Machmias, & Gillath, 2001). Third, close relationships buffer against the fear of mortality in that they provide individuals with a sense of symbolic immortality. This may include being remembered after one's death, having children, and/or being part of a larger group (i.e., couples, groups, & communities). Fourth, close relationships allow individuals to experience passionate love and peak experiences, which are connected to the sense of being fully alive (Maslow, 1968). As such, close relationships provide a means to create a lasting memory of one's identity after death, in that close others will carry on memories after one's biological demise. Finally, by initiating and maintaining close relationships, individuals live up to the standards and values set by the worldview, as well as enhance their self-esteem.

In support of the idea that close relationships following MS are important, research has found that partner commitment mitigates the threat of death concerns, along with the disruption of close relationships increasing the accessibility of mortality-related thought. For example, Florian, Mikulincer, and Hirschberger (2002) examined the effects of MS on commitment across a series of studies. Specifically, in Study 1, Israeli undergraduate students who were involved in romantic relationships completed either a MS (i.e., thinking about death), negative (i.e., thinking about physical pain), or neutral (i.e., thinking about TV) condition, followed by a measure of relationship commitment. The results of Study 1 showed that participants in the MS condition demonstrated greater commitment as compared to participants in the negative and neutral conditions. Further, no differences were found between the negative and neutral conditions, which provided additional support for the idea that the effects of MS on commitment are specific

to death-related concerns. In Study 2, Florian et al. (2002) examined whether thoughts about relationship commitment influence the activation of other cultural worldview defenses following MS. Specifically, a factorial design was used in which participants first completed either a MS or neutral condition, followed by either a commitment (i.e., think about the commitment they felt in a romantic relationship) or non-commitment condition (i.e., think about a radio program). After completing both manipulations, participants were asked to complete a measure of judgments on moral transgressions. The results showed that participants in the MS condition revealed harsher judgments on moral transgressions as compared to participants in the neutral condition. Further, these effects were moderated by relationship commitment in that the effects of MS on judgments of moral transgressions were only significant among participants who completed the commitment manipulation vs. those who completed the non-commitment manipulation. Finally, in Study 3, Florian et al. (2002) investigated the effects of thinking about problems within a romantic relationship on DTA. Specifically, participants were randomly assigned to a relationship condition (i.e., think about problems in a romantic relationship), an academic condition (i.e., think about problems experiences in academic studies), or neutral condition (i.e., think about a TV program). Following the manipulation, participants completed a word-fragment completion task to measure the accessibility of death-related thoughts. The results showed that participants in the relationship condition revealed greater DTA on the word-fragment completion task as compared to participants in the academic and neutral conditions.

In order to extend the findings of Florian et al. (2002), Mikulincer, Florian, Birnbaum, and Malishkovitz (2002) sought to examine the relationship between separation from a significant other and death-related concerns. Specifically, it was hypothesized that thoughts of long-term or final separation from a close relationship would lead to greater DTA as compared to thoughts of a brief separation. In Study 1, Mikulincer et al. recruited undergraduate students and

assigned them to one of three conditions: a separation condition, a partner death condition, or a neutral condition. In each of the three conditions, participants were asked to write about their thoughts and feelings, which was followed by the completion of a word-fragment task to assess DTA. The results did not support the hypothesis, but instead, showed that participants in the separation and partner death conditions revealed greater DTA as compared to the neutral condition. Further, there was no significant difference between the separation and partner death conditions, demonstrating that bringing awareness to a threat to the close relationship was enough to heighten DTA. In Study 2, Mikulincer et al. also used three conditions including the relationship separation condition, an acquaintance separation condition, and an academic failure condition followed by a word-fragment completion task to assess DTA. The results revealed that participants in the relationship separation condition showed greater DTA as compared to those in both the acquaintance separation and academic failure condition. In Study 3, Mikulincer et al. explored whether the length of separation from a romantic partner influenced DTA. Specifically participants were assigned to one of four conditions: a final separation condition, a long-term separation condition, a brief separation condition, and a neutral condition. The manipulation condition was followed by a word-fragment completion task. The results showed that participants in the final separation condition revealed greater DTA as compared to those in the long-term separation condition. Further, those in the long-term separation condition showed greater DTA than those in the brief separation condition. Finally, those in the brief separation condition showed greater DTA compared to those in the neutral condition.

Overall, the results of the studies reviewed above demonstrate that close relationships serve a terror management buffering function. Specifically, mortality salience resulted in a strengthened sense of commitment to the close relationship. Further, reminding individuals of their close relationships following MS led to less activation of other worldview defenses such as

harsh judgment of moral transgressions. Finally, the disruption of close relationships resulted in greater accessibility of death-related thoughts, wherein the severity of separation influenced the extent to which DTA was heightened.

Meaning in Life

Although much research has been done on the intersection between TMT and close relationships, no work to-date has identified any mediating variables as to *why* these results may occur. One possibility is that relationships are important following thoughts of mortality to the extent that people derive meaning and value from them. Meaning in life involves many elements – biological, psychological, social, and spiritual features (Wong, 2012) – thus philosophers, theologians, sociologists, and psychologists alike have studied the importance of the construct (e.g., Aristotle, 1975; Baumeister, 1991; Frankl, 1985; Steger, 2009). Even though MIL has been defined in different ways, the majority of researchers currently agree that presence of meaning consists of coherence, purpose, and significance in one’s life (Martela & Steger, 2016). Coherence involves making sense of the world around us, purpose concerns setting valuable goals in life, and significance revolves around feeling a sense of satisfaction following goal attainment (Heintzelman & King, 2014).

Research has consistently shown that MIL is strongly related to personal well-being (Steger et al., 2009). Specifically, studies have revealed associations between MIL and positive affect (Chamberlain & Zika, 1998), heightened morale (Ryff, 1989), love (Steger et al., 2006), joy (Steger et al., 2008), and vitality (Pinquart, 2002) across the lifespan. Research has also shown that MIL is associated with greater life satisfaction, which is defined as the extent to which individuals perceive their lives through a positive lens (Chamberlain & Zika, 1998; Ryff & Keyes, 1989; Steger et al., 2006). Scoring high on meaning presence can have a positive effect on self-empowering characteristics, including ego resilience (Reid, 1996), internal locus of

control (Ryff, 1989), and personal growth (Steger et al., 2008). As a result, individuals high in MIL are better equipped to manage challenging or negative life events. Specifically, it has been shown that high MIL is associated with decreased avoidance coping and increased emotion-focused coping (Edwards & Holden, 2001). In sum, the literature points to a positive relationship between MIL and personal well-being, with these results being found cross-culturally (i.e., United States, Netherlands, Japan; Ryff & Keyes, 1995; Steger et al., 2009; Steger, Kawabata, Shiami, & Otake, 2008).

Given the strong link between meaning and well-being, it is important to examine the source of individuals' MIL. Fortunately, TMT addresses this question by suggesting that individuals find and maintain MIL in order to buffer death-related anxiety. Stated differently, ascribing to a cultural worldview, enhancing self-esteem, and maintaining close relationships together serve to help individuals feel that they have lived a meaningful life (Florian, Mikulincer, & Hirschberger, 2002; Landau et al., 2004; Vail et al., 2012). Furthermore, when one experiences heightened MIL, existential concerns are reduced following MS (Routledge & Juhl, 2010). Research has also shown that there are nuanced effects of death awareness on MIL in that individuals with low self-esteem experience reduced MIL following MS (Routledge et al., 2010; Ben-Ari, 2011). Therefore, death-related anxiety only reduces MIL to the extent that one's cultural worldview, self-esteem, or close relationships are threatened or not fully secure (Vess, Rogers, Routledge, & Hicks, 2016).

Although there is some evidence within the TMT tradition exploring the associative link between death and MIL concerns, research has focused exclusively on meaning more generally rather than the value derived from individuals' relationships with close others. A goal in the present work was to utilize a scale created by Hadden and Knee (2016) to examine the extent to which people obtain meaning from their relationships with close others. Specifically, Hadden

and Knee were interested in studying the association between relationship-specific MIL and partner well-being using daily diaries. Participants completed a measure of relationship-specific MIL, as well as several measures of motivational states (i.e., autonomy, competence, & relatedness) and relationship quality (i.e., commitment & satisfaction). The results confirmed that relationship MIL was strongly related to both motivation and relationship quality. That is, individuals with greater MIL (i.e., global & relationship-specific) reported heightened relationship satisfaction and commitment. These results are consistent with other research showing increased satisfaction and commitment (Van Tongeren et al., 2015) among high MIL individuals.

The Proposed Studies

Building on the results of Hadden and Knee (2016), the current research was interested in exploring the associative link between mortality awareness, relationship MIL, and partner outcomes (i.e., relationship satisfaction, commitment). Specifically, to the extent that close relationships serve as a source of meaning when death is salient (e.g., Mikulincer et al., 2003), then heightened trait and state mortality awareness should lead to a greater need for meaning from romantic partners. This hypothesis was examined in both studies using a modified relationship MIL that was completed following a MS measure (Study 1; DTA) or induction (Study 2). Second, given that meaning (i.e., general & relationship specific) is linked to well-being, increased emphasis on relationship MIL in the face of death revealed heightened partner well-being. Utilizing statistical mediation models, both studies tested the association between death anxiety and relationship satisfaction and commitment. Specifically, Study 1 examined whether individuals who score high on death-thought accessibility (DTA) reported greater relationship MIL, which in turn, was associated with heightened relationship satisfaction and commitment. Study 2 replicated the first experiment using a MS prime, and similar results were

revealed. Specifically, it was hypothesized that individuals in the MS condition (as compared to the control condition) would report greater relationship MIL, and in turn, increased relationship well-being.

Study 1

Study 1 tested whether relationship MIL acted as a mediator in the association between heightened death concerns and relationship well-being. Given that relationship satisfaction and commitment are important components of well-being in the context of close relationships (Van Tongeren et al., 2013), measures of these constructs were used as the dependent variables. Given the exploratory nature of Study 1, there was no MS manipulation. Rather, individual differences in DTA scores were used as the independent variable. Finally, the mediator was measured using an adapted MIL scale, which focused on relationship-specific MIL.

Method

Participants

Undergraduate psychology students were recruited as participants in Study 1. Participants were given extra credit in a psychology course in exchange for completing the survey. The minimum number of needed participants was based on an a priori power analysis (Gpower: Faul, Erdfelder, Buchner, & Lang, 2009). A total of 129 participants were needed to detect statistical significance for the proposed regression and mediation analyses at $\alpha = .05$ and power = .80 ($d = .80$). The final sample consisted of 293 participants' data (Single: $n = 177$, Partnered: $n = 116$, Male: $n = 65$, Female: $n = 228$; M age = 19.34, $SD = 2.50$, age range = 17-43).

Materials

Death-thought accessibility (DTA). In Study 1, participants were asked to complete a “word decision task” in which letter strings were presented on the screen for 1000 ms. Following each letter string presentation, participants were required to respond with a key press whether the

string is a word (right key) or not a word (left key). In all, participants were presented with 30 non-words (e.g., spenz, dwapped, whamppte, treud, swuynd, voarsed, srepped, sckeused, blaild, flaughing, screnned, cweunned, gnoutz, skwilled, kweude, ghlechte, gnaz, wowste, skroarnd, veened, jocked, thypht, brorced, zawde, srhops, towld, phlapht, gowned, gwilst, philst), 18 neutral words (e.g., tea, chair, restaurant, water, cloak, tree, baseball, radio, quest, cat, desk, express, automobile, bottle, picute, magnet, wall, doormat), 6 negative words (e.g., suffer, wrong, jerk, fight, fail, punish), and 6 death-related words (e.g., buried, dead, skull, killed, grave, coffin). A faster response (in ms) to death-related words as compared to negative, neutral, and nonwords indicated greater DTA.

Relationship meaning in life. In Study 1, an adapted version of the Meaning in Life Questionnaire (MLQ; Steger et. al, 2006) was used to measure the mediator. Specifically, wording on the 5-item presence subscale was changed to measure relationship-specific MIL. Participants were asked to rate their agreement with each statement on a 7-point Likert scale, where 1 = *Do not agree at all* and 7 = *Agree completely*. Example items include “Close relationships help me understand my life’s meaning,” “Close relationships give my life a clear sense of purpose,” “Through my relationships with others, I have a good sense of what makes my life meaningful,” “Close relationships have helped me discover a satisfying life purpose,” and “Close relationships make my life have no clear purpose.” Scale reliability for this measure was high (Chronbach’s α R-MIL presence = .84).

Relationship satisfaction. Participants completed a 5-item measure of global relationship satisfaction (Rusbult, Martz, & Agnew, 1998). They were asked to rate their agreement with each statement on a 9-point Likert scale, where 1 = *Do not agree at all* and 7 = *Agree completely*. Example items include, “I feel satisfied with our relationship,” “My

relationship is close to ideal,” and “Our relationship makes me happy.” Scale reliability was high (Chronbach’s $\alpha = .94$).

Commitment. For Study 1, participants completed a 7-item measure of relationship commitment (Rusbult, Martz, & Agnew, 1998). Participants were asked to rate each item on a 9-point Likert scale, where 1 = *Do not agree at all* and 7 = *Agree completely*. Example items include, “I want our relationship to last a very long time,” “I am committed to maintaining my relationship with my partner,” and “I want our relationship to last forever.” Scale reliability was high (Chronbach’s $\alpha = .91$).

Procedure

Participants completed Study 1 online by taking a Qualtrics survey. Once participants selected the study on SONA, informed consent was provided. Participants first completed the DTA measure using an Inquisit task. Next, they were asked to complete the relationship MIL, satisfaction, and commitment measures. Finally, participants were debriefed, thanked, and granted extra credit for participation.

Results

First, correlational analyses between the variables of interest were performed ($N = 293$), which confirmed that statistically significant relationships exist between DTA, relationship MIL, and relationship satisfaction and commitment. Specifically, the results of the Pearson correlations revealed that relationship MIL was significantly correlated with DTA ($r(291) = -.12$, $p = .04$), where having higher relationship MIL was associated with lower response times on the DTA measure (i.e., greater DTA). Relationship MIL was also significantly correlated with relationship satisfaction ($r(291) = .27$, $p \leq .01$), where greater relationship MIL was associated with higher relationship satisfaction. Finally, relationship MIL was significantly correlated with

relationship commitment ($r(291) = .29, p \leq .01$), where higher relationship MIL was associated with greater relationship commitment.

Next, two separate mediational models utilizing the PROCESS macro (Model 4) in SPSS (Hayes, 2018) were run, which examined whether relationship MIL mediated the relationship between DTA and relationship satisfaction and commitment, respectively (see Figures 1 & 2). The results showed a significant negative effect (*a* path) of DTA on relationship MIL when examining both relationship satisfaction, $b = -.001, (SE \leq .01), t = 2.09, p = .04$, and commitment, $b = -.001, (SE \leq .01), t = 2.09, p = .04$, where individuals who scored higher in DTA expressed higher presence of meaning in close relationships as compared to those who scored lower in DTA. While controlling for other variables in the model (*b* path), a significant positive effect of relationship MIL on relationship satisfaction, $b = .34, (SE = .07), t = 4.23, p \leq .01$, and commitment, $b = .51, (SE = .10), t = 5.07, p \leq .01$, were revealed, where greater relationship MIL was related to higher partner well-being. There was a significant positive total effect (*c* path) of DTA on relationship satisfaction, $b = .34, (SE = .07), t = 4.79, p \leq .01$, and commitment, $b = .51, (SE = .10), t = 5.07, p \leq .01$, through relationship MIL where greater DTA was related to increase relationship MIL, which in turn, was associated with higher partner well-being. However, there was no significant direct effect (*c'* path) of DTA on relationship satisfaction, $b = .0001, (SE \leq .01), t = .10, p = .92$, or commitment, $b = -.0001, (SE \leq .01), t = .13, p = .90$. Given that the *c'* path was non-significant while the *c* path was significant, these patterns of results indicate full mediation. Finally, 5,000 bootstrap resamples were performed with the 95% confidence intervals indicating statistical significance. They did not contain zero for relationship satisfaction ($b = -.001, (SE = .0002), CI: -.001 to -.0001$) or commitment ($b = -.001, (SE = .0004), CI: -.0016 to -.0001$).

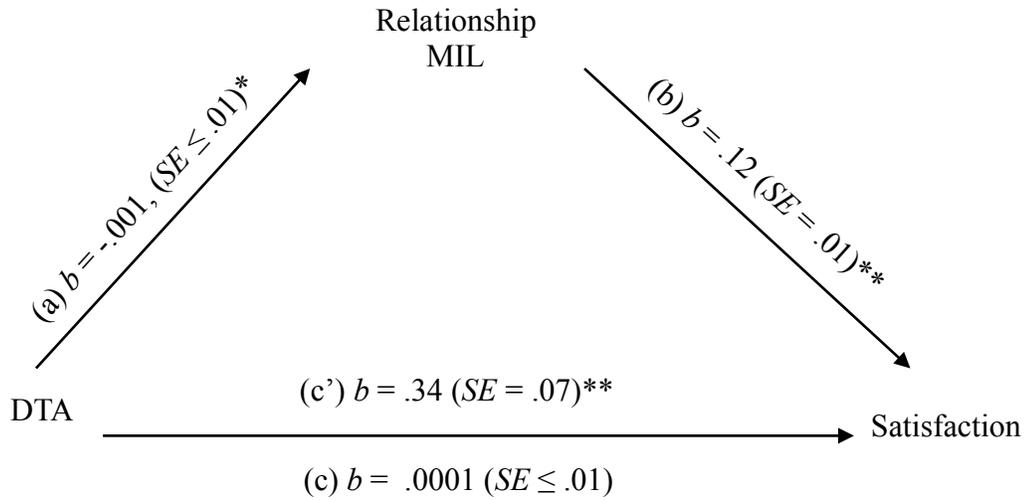


Figure 1. The indirect effect of DTA on satisfaction. In all path models, * indicates significance at $p \leq .05$ and ** indicates significance at $p \leq .01$

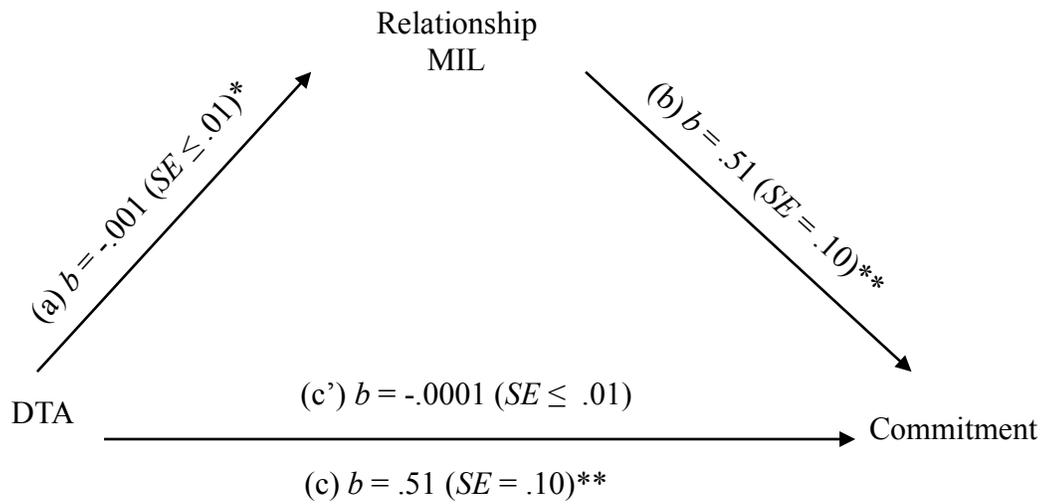


Figure 2. The indirect effect of DTA on commitment. In all path models, * indicates significance at $p \leq .05$ and ** indicates significance at $p \leq .01$

Reverse Mediation

Given the correlational nature of the findings, additional mediation analyses were conducted to examine whether satisfaction and commitment were possible mediators of the association between DTA and relationship MIL. However the results showed that associations between DTA and satisfaction (*a* paths), $b = -.0004$, ($SE = .001$), $t = .47$, $p = .64$, and commitment, $b = -.001$, ($SE = .001$), $t = .72$, $p = .47$, were non-significant, which demonstrated that DTA was not associated with partner satisfaction or commitment. Rather, as proposed by the hypotheses of Study 1, the relationship between DTA and partner satisfaction was mediated by relationship MIL.

Relationship Status

The above results, however, included both individuals in relationships as well as individuals who were single. Given that this study sought to examine relationship-specific MIL as mediator, additional analyses that excluded single individuals were performed. Although the results of these additional analyses including only individuals who reported being in romantic relationships revealed a similar trend, the results revealed that the association between DTA and relationship MIL (*a* path) was non-significant for both satisfaction, $b = -.001$, ($SE = .001$), $t = .94$, $p = .35$, and commitment, $b = -.001$, ($SE = .001$), $t = .94$, $p = .35$. This non-significant result may be caused by the decreased sample size. That is, by only examining the data with individuals who self-reported as being in a relationship, a large portion of the participants were excluded from analyses ($n = 177$). This reduced the sample size beneath the minimum requirement for reaching statistical significance for Study 1. With regard to the reverse mediation analyses including only individuals in relationships, the relationships (*a* paths) were also non-significant between DTA and satisfaction, $b = -.001$, ($SE = .001$), $t = 1.37$, $p = .17$, and

commitment, $b = -.002$, ($SE = .001$), $t = 1.55$, $p = .12$, showing DTA was not associated with partner well-being.

Discussion

The results of the analyses for Study 1 supported the hypothesis that greater DTA would increase individuals' relationship MIL, and in turn increase partner well-being (i.e., relationship satisfaction and commitment). This is consistent with a terror management theory perspective in that close relationships serve as a source of meaning when death is salient (e.g., Mikulincer et al., 2003). Furthermore, the results of Study 1 supported previous MIL research showing relationship MIL is strongly related to partner well-being (Steger et al., 2009). Specifically, individuals who showed greater DTA also reported gaining more meaning from their relationships. Increased relationship-specific meaning predicted an increase in relationship well-being, measured via commitment and satisfaction. Unfortunately, when relationship status was taken into consideration, the aforementioned findings became non-significant. This may have been an issue of power as a total of 129 persons were needed, but only 116 individuals were retained. Adding to this, individual difference variables are associated with declines in power and non-significance (Martin & Kraemer, 1987). Because Study 1 utilized DTA as a personality characteristic of heightened death concerns, the goal of the second experiment was to replicate the previous findings within a MS manipulation.

Study 2

Study 1 provided important initial evidence that relationship MIL acts as a mediator in the association between DTA and relationship well-being. Given the associative nature of Study 1, it was necessary to explore whether a similar pattern emerges with an experimental manipulation. Thus, Study 2 addressed this by replicating and extending the findings of Study 1 using a MS prime. Specifically, it was hypothesized that individuals in the MS condition (as

compared to the control condition) would report greater relationship MIL, and in turn, increased relationship well-being.

Method

Participants

The minimum number of needed participants was based on an a priori power analysis (Gpower; Faul et al., 2009). A total of 163 persons were needed to detect statistical significance for a *t*-test at $\alpha = .05$ and power = .80 ($d = .80$). Amazon's Mechanical Turk (MTurk; www.mturk.com) was used to recruit 212 participants for the proposed study (Single: $n = 37$, Partnered: $n = 175$, Male: $n = 94$, Female: $n = 117$; M age = 31.46, $SD = 9.15$, age range = 18-61). MTurk is an online recruitment system for researchers, which is a reliable method for collecting social psychological research (Casler, Bickel & Hackett, 2013). All participants were paid \$1.00 (USD) in exchange for completing the survey.

Materials

MS manipulation. In Study 2, half the participants were randomly assigned to the MS condition, in which were asked to respond to a series of 15 statements. Specifically, participants completed the Death Anxiety Scale (DAS; Templer, 1970) and were asked to respond whether each statement is true of them or false. Example items include: "I am very much afraid to die," "I fear dying a painful death," and "The subject of life after death troubles me greatly." The other half of participants completed the control prime, which consists of statements about the anxiety-related (but not death-related) act of public speaking. Example items include: "I am very much afraid to speak in front of large groups," "I fear being embarrassed when giving a speech or presentation," and "I am often distressed when I have to stand up in front of an audience."

Relationship MIL. Study 2 utilized the same relationship meaning measure described in the prior experiment.

Relationship satisfaction. Participants were asked to complete the same satisfaction questionnaire described in the prior study.

Commitment. The commitment measure was the same as utilized in the first experiment.

Procedure

Participants completed Study 2 online through a Qualtrics link. Once participants selected the study on MTurk, informed consent was provided. Participants first completed the MS prime, in which half were randomly assigned to complete either the death-related or control condition. Next, they were asked to complete the relationship MIL, satisfaction, and commitment measures. Finally, participants were debriefed, thanked, and paid for participation.

Results

To analyze the results, the MS variable was dummy coded (i.e., death = 0) and mediational models using PROCESS in SPSS (Model 4; Hayes, 2018) were performed. As in Study 1, relationship MIL was entered as the mediator and commitment and satisfaction were entered as the outcome variables, respectively (see Figures 3 & 4). The first step (*a* path) revealed a significant negative effect of MS on relationship MIL for both satisfaction, $b = -1.86$ ($SE = .11$), $t = 17.12$, $p \leq .01$, and commitment, $b = -1.86$ ($SE = .11$), $t = 17.12$, $p \leq .01$, where individuals in the death condition revealed greater relationship MIL as compared to those in the control condition. While controlling for other variables in the model, a significant positive effect (*b* paths) of relationship MIL on satisfaction, $b = .13$, ($SE = .06$), $t = 2.29$, $p = .02$, and commitment, $b = .80$, ($SE = .08$), $t = 9.58$, $p \leq .01$, were revealed, where greater relationship MIL indicated greater partner well-being. Further, there were significant positive total effects (*c* paths) of MS on satisfaction, $b = -2.74$, ($SE = .09$), $t = 30.42$, $p \leq .01$, and commitment, $b = -4.23$, ($SE = .16$), $t = 27.01$, $p \leq .01$, through relationship MIL, where individuals in the death condition revealed greater partner well-being as compared to those in the control condition.

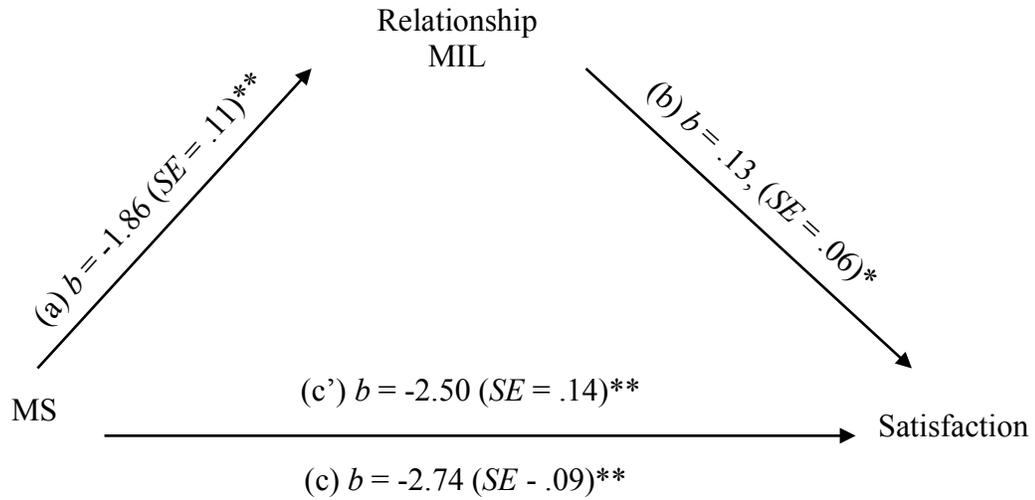


Figure 3. The indirect effect of MS on satisfaction. In all path models, * indicates significance at $p \leq .05$ and ** indicates significance at $p \leq .01$

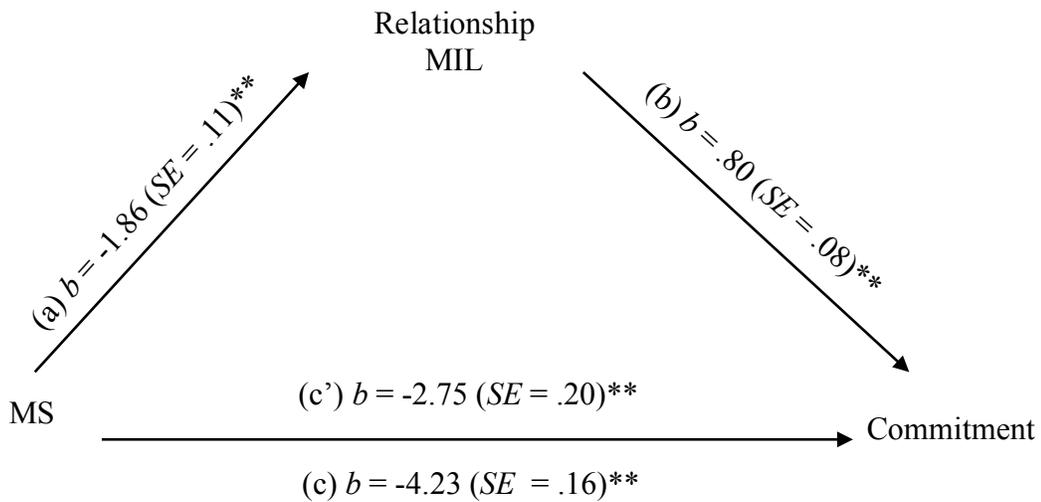


Figure 4. The indirect effect of MS on commitment. In all path models, * indicates significance at $p \leq .05$ and ** indicates significance at $p \leq .01$

Additionally, there was a significant positive direct effect (c' paths) of MS on satisfaction, $b = -2.50$, ($SE = .14$), $t = 18.11$, $p \leq .01$, and commitment, $b = -2.75$, ($SE = .20$), $t = 13.57$, $p \leq .01$, where individuals in the MS condition reported greater partner well-being as compared to those in the control condition. Given that both the c paths and c' paths were significant these results reveal partial mediation. Finally, 5,000 bootstrap resamples were performed and the 95% confidence interval for the indirect effect did not contain zero for satisfaction ($b = -.24$, ($SE = .13$), CI: -2.92 to -2.56) and commitment ($b = -1.48$, ($SE = .18$), CI: -4.54 to -3.92).

Relationship Status

Given that Study 2 focused on relationship-specific MIL, it was important to explore the results excluding single individuals, leaving 174 partnered participants included in analyses. The results revealed a similar pattern to those including single individuals. Specifically, there were significant negative effects (a paths) of MS on relationship MIL through satisfaction, $b = -1.83$, ($SE = .12$), $t = 15.20$, $p \leq .01$, and commitment, $b = -1.83$, ($SE = .12$), $t = 15.20$, $p \leq .01$, where individuals in the MS condition demonstrated greater relationship MIL as compared to those in the control condition. Further, while controlling for other variables in the model, there were significant positive effects (b paths) of relationship MIL on satisfaction, $b = .14$, ($SE = .06$), $t = 2.22$, $p = .03$, and commitment, $b = .83$, ($SE = .09$), $t = 9.02$, $p \leq .01$, where individuals who showed higher relationship MIL also demonstrated greater partner well-being. There were also significant negative total effects (c paths) of MS on through relationship MIL on satisfaction, $b = -2.68$, ($SE = .10$), $t = 26.61$, $p \leq .01$, and commitment, $b = -4.21$, ($SE = .18$), $t = 24.05$, $p \leq .01$, where individuals in the MS condition revealed greater relationship MIL, and in turn, heightened partner well-being. Furthermore, there were significant negative direct effects (c' paths) of MS on satisfaction, $b = -2.42$, ($SE = .15$), $t = 15.90$, $p \leq .01$, and commitment, $b = -2.70$, ($SE = .22$), $t = 12.20$, $p \leq .01$, where individuals in the MS condition revealed greater partner well-being.

Given that both the c and c' paths were significant, this indicated partial mediation of relationship MIL on the association between MS and well-being. Finally, 5,000 bootstrap resamples were performed and the 95% confidence interval obtained for the indirect effect did not contain zero for satisfaction ($b = -.26$, ($SE = .13$), CI: $-.53$ to $-.003$) or commitment ($b = -1.51$, ($SE = .20$), CI: -1.92 to -1.13).

Discussion

Study 2 successfully replicated and extended the findings of Study 1 using a MS prime. Specifically, individuals in the MS condition (vs. control condition) reported greater relationship MIL, and in turn, greater relationship well-being. Similar to Study 1, Study 2 revealed that close relationships serve a terror management buffering function. Specifically, MS resulted in a strengthened sense of relationship MIL, which ultimately increased individuals' reported satisfaction with and commitment to the close relationship. Contrary to Study 1, similar results were found when including both single and committed individuals, revealing that reminiscing on past relationships, or thinking about future relationships, may offer a buffering function that is similar to *currently* engaging in close relationships. Study 2 goes beyond the results of Study 1 given that statistical significance was achieved in a model that focused on partnered persons only, whereas Study 1 failed to do so after excluding single participants. Given that research on MIL has shown it to be strongly related to personal well-being, positive affect, love, and greater life satisfaction (e.g., Chamberlain & Zika, 1998; Steger et al., 2006; Steger et al., 2009), it is not surprising that partner well-being mediated the relationship between death-anxiety and relationship MIL.

General Discussion

The current research sought to explore the associative link between mortality awareness, relationship MIL, and partner outcomes (i.e., relationship satisfaction and commitment). That is,

greater mortality awareness was predicted to be associated with greater meaning derived from close relationships. Relationship MIL, in turn, was expected to be associated with heightened partner well-being. Study 1 used DTA to measure awareness of mortality, whereas Study 2 used a MS manipulation. Utilizing statistical mediation models, both studies tested the association between death anxiety and relationship satisfaction and commitment. The hypotheses for both studies were supported, in that heightened mortality awareness was associated with greater relationship MIL, which was in turn associated with heightened partner well-being.

The results of Study 1 confirmed that statistically significant relationships exist between DTA, relationship MIL, and partner outcomes using correlational analyses. Specifically, higher DTA was associated with higher relationship MIL. Further, higher relationship MIL was associated with greater satisfaction and commitment. Following these findings, mediational models revealed that greater DTA was associated with heightened relationship MIL, which was linked to higher satisfaction and commitment. In digging deeper to further explore the results of Study 1, single participants were excluded from additional analyses. However, the exclusion of those participants reduced the sample size below the minimum number required based on a power analysis, thus the results of those analyses were non-significant. Finally, reverse mediation analyses were performed, however the results were also non-significant.

The results of Study 2 replicated and extended the results of Study 1 using a MS induction. Similar to Study 1, the results revealed that individuals in the MS condition showed heightened relationship MIL as compared to those in the control condition. Further, greater relationship MIL was associated with higher relationship satisfaction and commitment. When excluding single participants, additional analyses also showed a similar set of results. Specifically, partnered individuals in the MS condition showed greater relationship MIL, and in turn greater relationship well-being. Overall, the results of Studies 1 and 2 supported the

predictions made, and these studies not only replicated previous research on TMT (e.g., Mikulincer et al., 2003) and MIL (e.g., Hadden & Kee, 2016), they provided further support that the meaning one derives from close relationships influences their well-being within that relationship.

Previous research in TMT has demonstrated that close relationships help ameliorate existential anxiety. Specifically, close relationships provide security to individuals by providing a sense of symbolic immortality through being part of a larger group (Mikulincer et al., 2001). They also work to relieve anxiety by providing the opportunity for passionate love and peak experiences, which provide meaning (Maslow, 1968). Further, close relationships act as a buffer by allowing individuals to live up to the standards and values set by their cultural worldview, as well as enhancing individuals' self-esteem (Solomon et al., 1991). Terror management research has also shown that MS leads to a strengthened sense of commitment to close relationships (e.g., Florian et al., 2002). The anxiety-buffering effects of close relationships demonstrated in prior studies are consistent with the current results, in that greater mortality awareness was associated with higher relationship MIL, and in turn, greater commitment across both Study 1 and 2. Stated differently, the results of the current studies showed that the extent to which individuals experience greater mortality awareness influenced their need for meaning derived from close relationships. As a result of increased relationship-specific meaning, individuals reported a greater sense of satisfaction and commitment with regard to their relationships (i.e., well-being).

Research in MIL has consistently shown that it is strongly related to personal well-being (Steger et al., 2009). Specifically, studies have shown strong links between MIL, love, and life satisfaction (Steger et al., 2006). Further, research has demonstrated that heightened MIL reduced existential concerns following MS (Routledge & Juhl, 2010). The results of the Studies 1 and 2 are consistent with previous meaning research, in that relationship MIL was associated

with heightened relationship satisfaction and commitment. Only one other study to-date has examined relationship-specific MIL (i.e., Hadden & Knee, 2016), and showed results similar to those of the current studies. Specifically, relationship MIL was strongly related to relationship quality. Given the strong link between meaning in life and well-being found in other research (e.g., Steger et al., 2009), this pattern of results was expected for the current studies.

Given that previous research has shown a robust association between MIL and well-being (e.g., Steger et al., 2006), the current studies sought to more deeply explore this relationship using both hypothesized mediation models as well as reverse mediation analyses. Specifically, the results of Studies 1 and 2 supported the initial hypothesis that the relationship between mortality awareness and well-being is mediated by relationship MIL. However, it was also necessary to explore whether well-being mediated the relationship between mortality awareness and MIL. Although the results of the Study 1 for reverse mediation analyses were non-significant, Study 2 demonstrated that individuals in the MS condition reported greater relationship well-being, and in turn, greater relationship MIL. Overall, the results of Study 2 are consistent with previous MIL research showing a strong link between meaning and personal well-being (Chamberlain & Zika, 1998).

Although Study 1 was successful in supporting the hypothesis, it was not without limitations. Specifically, a large portion of the sample included single individuals. Once those individuals were excluded from analysis, the sample size reduced dramatically, which limited the likelihood of finding statistical significance. Future research should prescreen exclusively for individuals in committed romantic relationships in order to more clearly examine the effects of DTA on relationship well-being through MIL. Further, the sample for Study 1 was obtained from a group of undergraduate students who may have been previously exposed to similar studies. Given participants' possible familiarity with TMT and MIL research, demand characteristics

might have been at play with regard to the results. Therefore, future research should recruit a group of naïve participants using Mturk or social media.

Given the associative nature of Study 1, it was necessary to conduct Study 2 in order to determine if experimentally induced death-related anxiety increased relationship MIL, as well as satisfaction and commitment within the relationship. Similar to Study 1, future research should examine a sample of participants who are currently in romantic relationships rather than including those who are single. Although statistical significance was found for the hypothesized model, it is important to examine these effects among individuals who currently maintain close romantic relationships. Additionally, individuals completed a 15-statement true/false questionnaire as the MS prime. Given that previous research has shown that individuals with certain individual characteristics respond with lower MIL following MS (e.g., Ben-Ari, 2011; Routledge et al., 2010) future research should utilize alternative MS primes (e.g., essay or subliminal priming) in order to determine whether there are nuanced effects of other primes on relationship well-being through MIL.

Overall, the results of Studies 1 and 2 provided support for the notion that individuals are motivated to invest in close relationships to add meaning to life in order to buffer existential anxiety. The current studies also bridged a gap in the literature by utilizing mediational models to explore *how* and *why* close relationships ameliorate death concerns. That is, the results of Studies 1 and 2 showed that, when faced with mortality awareness, individuals invested more meaning in close relationships that resulted in greater relationship benefiting outcomes. Furthermore, reverse mediational models revealed a strong link between relationship meaning and partner well-being. Specifically, the results of Study 2 revealed that individuals bolstered their close relationships (i.e., higher satisfaction and commitment) in order to deal with death-related anxiety. As a result of heightened relationship well-being, individuals derived greater meaning from their close

relationships. Taken together, the current studies provided compelling evidence for the importance of relationship MIL in buffering existential concerns and benefitting relationship well-being.

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VITA

Arielle Cenin was born on August 11, 1991, in Cleveland, Ohio. She is the first daughter of Josip and Zeljka Cenin. After graduating from Ursuline College in 2014 with a Bachelor of Arts studying Psychology, she went on to earn a Master of Arts in Experimental Psychology from Cleveland State University in 2016. In August 2017 she began the Experimental Psychology program at Texas Christian University, where she studied under Dr. Cathy Cox. In May 2020, Arielle will receive her Master of Science degree.

ABSTRACT

THE ASSOCIATIVE LINK BETWEEN DEATH CONCERNS, RELATIONSHIP MEANING, AND PARTNER SATISFACTION

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Meaning in life (MIL) is essential for well-being and is strongly related to relationship satisfaction and commitment. Research has shown that individuals who maintain high quality relationships report greater meaning, whereas social rejection has been shown to stir feelings of meaninglessness. Additionally, close relationships act as existential buffers, providing coherence, purpose, and significance to our lives. Thus, the purpose of this research was to examine whether relationship-specific MIL mediates the relationship between death-related thoughts and relationship well-being. Specifically, in Study 1, participants completed measures of death-thought accessibility (DTA), relationship-specific MIL, and partner satisfaction and commitment. The results showed that individuals high in DTA derived greater MIL from relationships and, in turn, reported greater satisfaction and commitment to their partners. In order to more deeply examine the role of MIL, a mortality salience (MS) manipulation was used for Study 2. That is, participants were randomly assigned to either a MS or control condition, followed by measures of MIL, relationship satisfaction, and commitment. Similar to Study 1, the results of Study 2 revealed that individuals in the MS condition reported greater MIL, which was associated with greater relationship benefiting outcomes.