How Sweet It Is to Be Loved by You: The Role of Perceived Regard in the Terror Management of Close Relationships

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Drawing from terror management theory, the present research examined whether people turn to close relationships to manage the awareness of mortality because they serve as a source of perceived regard. Studies 1 and 2 demonstrated that mortality salience (MS) leads people to exaggerate how positively their romantic partners see them and demonstrated that people are more committed to their partners to the extent that their romantic partners serve as a source of perceived regard after MS (Study 3). Study 4 revealed that activating thoughts of perceived regard from a partner in response to MS reduced death-thought accessibility. Studies 5 and 6 demonstrated that MS led high relationship contingent self-esteem individuals to exaggerate perceived regard from a partner, and this heightened regard led to greater commitment to one's partner. Study 7 examined attachment style differences and found that after MS, anxious individuals exaggerated how positively their parents see them, whereas secure individuals exaggerated how positively their romantic partners see them. Together, the present results suggest that perceptions of regard play an important role in why people pursue close relationships in the face of existential concerns.

Keywords: terror management theory, mortality salience, close relationships, perceived regard, relationship self-esteem

When Marvin Gaye first recorded the song *How Sweet It Is (to Be Loved by You)* in 1964, he started with the lyric of needing the shelter of someone's arms. This need for close relationships appears to be exacerbated by confrontations with the fragility of life. News reports show increases in both marriage rates and birth rates after times when there are likely widespread reminders of death (e.g., 9/11, Hurricane Katrina; Scelfo, 2002; Von Fremd, 2006). Online dating services have recently even seen a 56% increase in military members seeking romantic partners (Mitchell, 2009), a time in which the American death toll has been at its highest in a nearly 10-year war in Afghanistan (Reid, 2010).

Extensive research pioneered by Mikulincer, Florian, and Hirschberger (2003) provides an empirical backdrop to such observations, showing in convergent ways that people use close relationships to protect themselves from the awareness of death. However, what is less clear is the extent to which such existential leanings on close relationships are fueled by the perceptions of regard that relationships afford. Why would perceived regard be a critical factor in the existential reliance on close relationships? Perceived regard refers to how people believe their romantic partners see them and contributes to both the individuals' own feelings of self-worth and the sense of security they are able to derive from the relationship (Murray, Holmes, & Collins, 2006). Terror management theory (TMT) research indicating that people manage the awareness of mortality by enhancing the value of the self so as to obtain psychological security (see Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004) thus suggests perceived regard may be a promising candidate for informing an existentially motivated reliance on relationships. Given the relevance of perceived regard to both relationship functioning and terror management, in the present studies we examine whether one reason close relationships are important in the face of existential fear is because of the perceived regard they provide.

Terror Management Theory (TMT) and Close Relationships

TMT (Solomon, Greenberg, & Pyszczynski, 1991; also see Greenberg, Solomon, & Arndt, 2008) posits that existential fear rooted in awareness of death plays a central role in human motivation and behavior. The theory suggests that people manage this fear by securing self-esteem within a worldview that provides a sense of enduring significance to those who meet the worldview's prescriptions of value. Whereas TMT initially focused on cultural worldviews and self-esteem, additional lines of research have specifically focused on how people manage the awareness of death by investing in close relationships. Evidence shows, for example, that reminders of death lead people to initiate interactions with other people (Taubman-Ben-Ari, Findler, & Mikulincer, 2002) and increase people's desire for intimacy and commitment in romantic relationships (Florian, Mikulincer, & Hirschberger, 2002). Furthermore, death-related primes increase the accessibility of attachment constructs (Mikulincer, Florian, Birnbaum, & Malishkevich,

2002), and having participants imagine a separation from a romantic partner increases the accessibility of death-related thoughts and instigates defensive behaviors (i.e., worldview defense; Florian et al., 2002). Whereas a majority of research has focused on people's relationships with their romantic partners, more recent evidence has shown that parents also provide a terror management resource for their adult children (Cox et al., 2008).

One of the interesting and unresolved puzzles of this work, however, is why are people motivated to form and maintain close relationships when confronted with mortality awareness? Mikulincer et al. (2003) posit that part of the reason people pursue close relationships is because they provide protection from existential fear through a basic emotional attachment mechanism (Bowlby, 1969/1982; Taylor, 2006). They also note that close relationships are an important source of meaning and value, an idea that also follows from Becker (1973) as well as TMT's developmental analysis that the capacity of self-esteem and cultural worldviews to manage the awareness of death develop out of people's relationships with close others (for a more thorough discussion, see Pyszczynski et al., 2004; Solomon et al., 1991). Although theory and research emphasize an interplay between close relationships and other terror management defense mechanisms, there is no evidence for any particular answer as to why people turn to close others following reminders of death or for the mechanism that may link the different elements of this functional analysis. The present research was designed to provide the first such evidence and inform whether people turn toward their relationships as a basis of perceived regard when mortality concerns are salient.

Perceived Regard as a Candidate for the Existential Function of Close Relationships

In theory and research, it has long been recognized that the way people feel about themselves is based in part on how they think other people feel about them. Perhaps most famously introduced with the symbolic interactionists and the theory of the *looking glass self,* individuals see themselves from the perspective of others and integrate these perceptions into their existing self-concept (Cooley, 1902; Mead, 1937). This sets the stage for the perceptions of close others' regard (i.e., perceived regard) to be a prime candidate for understanding why reminders of mortality inspire greater relationship commitment.

First, as previously mentioned, because significant others are often the vehicles that transmit important elements of the worldview, perceiving that one is valued by those close others places one more firmly within the security of one's cultural beliefs. Second, perceived regard from close others may also be incorporated into an individual's personal feelings of self-worth (e.g., Baldwin & Holmes, 1987; Crocker & Wolfe, 2001; Leary & Baumeister, 2000; Solomon et al., 1991) and thus contribute to the individual's sense that he or she is a significant player in the social world. Third, perceived regard is a vital contributor to the experiential security of a given relationship. Research derived from Murray and colleagues' (Murray et al., 2006) risk regulation model shows that to feel secure in relationships, people need to believe that their partners see qualities in them worth valuing, especially ones that cannot easily be found in others (Tooby & Cosmides, 1996). Believing that a partner perceives these hoped for selves leads to greater confidence in that partner's love and continued commitment, which in turn, enhances relationship satisfaction.

Although perceived regard may influence individuals' self-esteem and relationship commitment, research suggests that they are separate perceptions that are often more useful than are private, more general feelings of self-worth in monitoring and adjusting behaviors in close relationships (e.g., Endo, Heine, & Lehman, 2000; Murray et al., 2006). Research also shows that people in dating and married relationships report wanting their partners to see them as more physically attractive (Swann, Bosson, & Pelham, 2002) and interpersonally competent (e.g., warm, kind, affectionate; Murray, Holmes, & Griffin, 2000) than they see themselves. Thus, a focus on perceived regard, while connected to self-esteem and relationship commitment, may help to explain why previous research focusing on general self-esteem effects in the terror management of close relationships has tended to provide little insight. For instance, several studies have shown that reminders of death increase people's strivings for close relationships even after controlling for self-esteem (as assessed with Rosenberg's [1965] Self-Esteem Scale; Hart, Shaver, & Goldenberg, 2005; Mikulincer & Florian, 2000; Taubman-Ben-Ari et al., 2002). This global self-esteem measure, however, has been found to have little or no relationship with self-esteem derived from interpersonal relationships, as people derive self-esteem from a variety of sources (e.g., Crocker, Luhtanen, Cooper, & Bouvrette, 2003; Williams, Schimel, Hayes, & Martens, 2010). In addition to controlling for self-esteem, research has examined the activation of relational defenses under conditions that purport to endanger self-esteem maintenance. Specifically, Hirschberger, Florian, and Mikulincer (2003) found that MS increased people's desire for intimacy even after participants imagined that their romantic partner had severely criticized them. However, the heightened seeking for emotional closeness after MS may reflect striving for regard if one views the perceived regard that one gets from the maintenance of a romantic relationship as especially valuable. This suggests that perceived positive regard may offer a more complete understanding of the interpersonal management of existential fear, providing insight into why people turn to close relationships following reminders of death.

The Present Research

Drawing from work by Murray et al. (2006), the present research examined whether one reason close relationships are important is because they serve as a source of perceived regard following reminders of death. It is important to note that we are not suggesting that feelings of self-esteem and positive relational regard are synonymous. Rather, we suggest that an important question is whether close relationships are a source of perceived regard that functions, in part, to provide protection against the awareness of death.

To test this idea, we assessed three basic hypotheses. First, to the extent that close relationships offer a source of perceived regard that can help manage mortality concerns, people should report more positive regard from their romantic partners following reminders of death. Studies 1 and 2 thus examined whether reminders of death lead people to exaggerate how positively their romantic partners see them. As an extension of this work, Study 3 used mediational analyses to examine whether perceived regard from one's partner influences the extent to which reminders of death increase people's commitment to their romantic partners. It was

hypothesized that people should be more committed to their romantic partners to the extent that their romantic partners serve as a source of perceived regard following thoughts of death.

Further, if close relationships are important because they serve as a basis of positive regard that functions to buffer death-related concerns, then rendering salient thoughts of perceived regard should reduce the consequences of reminders of death. Following previous research assessing whether activation of a terror management buffer reduces the accessibility of death-related thoughts after MS (e.g., Harmon-Jones et al., 1997), in our second line of research, we examined whether activating thoughts of perceived regard from a romantic partner would attenuate MS induced death-thought accessibility (Study 4).

A final line of studies examined individual differences that influence these processes. We specifically focused on how relationship contingent self-esteem (RCSE) and attachment style interact with reminders of death to influence perceived regard from close others. Following previous research showing that high RCSE individuals are more likely to pursue and maintain close relationships because such relationships serve as an important source of self-worth (Knee, Canevello, Bush, & Cook, 2008), in Study 5, we examined the extent to which high RCSE individuals report greater exaggerations in perceived regard following reminders of death. Study 6, in turn, assessed the interpersonal consequences of MS and RCSE on individuals' level of commitment to their romantic partners. We hypothesized that high RCSE individuals (compared with low RCSE individuals) would express more commitment to their romantic partners to the extent that their partners serve as a source of positive regard following mortality awareness.

Finally, given that research on RCSE focuses exclusively on people's relationship with romantic partners, we conducted a final study (Study 7) to examine how attachment style interacts with MS to influence which relationships (romantic partners, parents) people might turn to for enhanced regard. Given that attachment style interacts with MS to influence people's preferences for different relationships (Cox et al., 2008), it was hypothesized that secure individuals (those scoring low in attachment anxiety and avoidance) would exaggerate the amount of perceived regard from their romantic partner after MS. However, given that anxious individuals turn toward parental relationships following thoughts of death (Cox et al.), it was hypothesized that for these individuals, exaggeration in perceived regard after MS would be specific to parental relationships and not romantic relationships.

Studies 1–3: Perceived Regard as a Terror Management Resource and Its Effect on Relationship Commitment

Study 1

Our initial study examined whether MS influences the extent to which people exaggerate perceived regard from romantic partners. Drawing upon research by Murray et al. (2000), participants were presented with positive and negative adjective traits and were asked to rate how their partners evaluated them on the traits. If close relationships are important because they serve as a source of perceived regard following thoughts of death, then people should exaggerate how positively their romantic partners see them following an MS manipulation.

To assess the specificity of the effects of perceived regard from relationship partners, we also examined whether parallel effects would manifest with self-perceptions. Although TMT might reasonably predict that reminders of death would enhance the positivity of self-evaluations, there are a number of reasons why enhanced perceptions of regard after MS may emerge for partners but not for self-evaluations. Previous TMT research has generally failed to find MS effects on explicit self-evaluations. Pyszczynski et al. (2004) suggested this may be partly because of dual influences wherein MS both threatens self-worth and provokes compensatory strategies and partly because explicit evaluations require some grounding in reality for them to be sustained. Thus, while people may endeavor to demonstrate their worth after being reminded of death (e.g., driving fast if they value driving ability; Taubman-Ben-Ari, Florian, & Mikulincer, 1999), they may not be able to simply boost explicit self-evaluations in the absence of such demonstrations of worth. Perceptions of regard from others may, in contrast, provide comparatively greater latitude given research showing that with respect to relationship relevant feedback, desires for positive regard from others seem to outweigh desires to receive feedback that is consistent with self-views (Murray et al., 2006; Swann et al., 2002).

Method.

Participants. Forty-three students (28 female, 15 male) participated in exchange for course credit. Ages ranged from 18 years to 25 years ($M = 18.89$, $SD = 1.45$). In all of the studies reported herein, participants were asked to report their reactions toward the study, along with their age, gender, relationship status, and duration.[1,2] Once the participants completed the materials, they were thoroughly debriefed and thanked for their participation.

Materials.

Mortality salience (MS). Following a series of filler questionnaires, participants completed the MS manipulation. Consistent with previous research (see Greenberg et al., 2008), MS was manipulated by having participants answer two open-ended questions about their thoughts and feelings associated with death (e.g., "Briefly describe the emotions that the thought of your own death arouse in you," and "Jot down, as specifically as you can, what you think will happen to you as you physically die and once you are physically dead") versus parallel questions about experiencing an unexpected event. This topic was chosen to contrast thoughts of mortality with thoughts of violating expectations and the associ-

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[1] Analyses (across all studies) showed participants' age and gender did not affect the obtained results ($ps \geq .17$). Given the size of the samples, we combined the results of Studies 1 and 2 and Studies 5 and 6 (due to their methodological similarities) to see if age and gender influenced the effect of MS on exaggerations in perceived partner regard. There was no effect or interaction with gender ($ps \geq .50$) or age ($ps \geq .34$) in any of the analyses.

[2] Additional analyses were performed in the first two studies to see whether the patterns of results varied depending on whether participants were currently involved in a romantic relationship. In Study 1, 46% of the participants indicated that they were in a romantic relationship (ranging from 3 to 36 months, $M_{length} = 12.47$, $SD = 10.18$), whereas in Study 2, 36% of the participants reported being in a current romantic relationship (ranging from 1 to 36 months, $M_{length} = 5.64$, $SD = 10.31$). Across both studies, there were no significant effects of relationship status or interaction with relationship status on any of the analyses ($Fs \leq 1.63$, $ps \geq .20$).

ated uncertainty it is posited to induce (cf. Heine, Proulx, & Charles, 2006).

Delay/distraction. Previous research has shown that MS effects emerge when reminders of death have been removed from conscious awareness by delay, by distraction, or by subliminal presentation of mortality concerns (e.g., Greenberg, Pyszczynski, Solomon, Simon, & Breus, 1994). Therefore, participants were asked to complete the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) and a word search task to provide a 5 min delay. The word search puzzle was a 10 × 10 matrix of letters with instructions asking people to search and circle 10 neutral words (e.g., *book*, *movie*). The PANAS was used in subsequent analyses to determine whether MS influences people's mood, although previous research indicates that it typically does not (e.g., Greenberg et al., 2008).[3]

Perceived regard. The dependent measure consisted of a 23-item measure designed to assess people's perceived regard from others. Specifically, following Murray et al. (2000), participants were presented with positive (e.g., *kind*, *affectionate*, *attractive*) and negative (e.g., *lazy*, *critical*, *controlling*) adjective traits and were asked to rate the extent to which their "current or most recent romantic partner" evaluated them on each trait, using a 9-point scale (1 = *not at all characteristic*; 9 = *completely characteristic*). Participants repeated the task a second time, except they were asked to evaluate themselves on the same 23 traits. Both tasks were counterbalanced to control for any order effects. As in Murray and colleagues (Murray et al., 2000), all negative items were reversed scored, and all items were averaged to form an overall measure of positivity for both tasks (self-regard, α = .79; partner regard, α = .85).

Results and discussion. A 2 (MS: death vs. an unexpected event) × 2 (perceived regard: self vs. romantic partner) mixed-design analysis of variance (ANOVA), with the second factor treated within subjects, was performed on perceived regard scores. The results revealed a significant two-way interaction between MS and perceived regard, $F(1, 38) = 7.92$, $p = .01$, $d = 0.78$, but no main effects, $Fs(1, 38) \leq 1.31$, $ps \leq .26$ (see Figure 1). Simple main effect analyses within each perceived regard condition showed a significant difference between death and unexpected

event conditions for romantic partner scores, $F(1, 38) = 5.23$, $p = .03$, $d = 0.61$, but not self-scores, $F(1, 38) = 0.17$, $p = .68$, $d = 0.07$. That is, people were more likely to exaggerate how positively their partners saw them following thoughts of death. These effects were not moderated by the presentation order of the perceived regard tasks, $Fs(1, 38) \leq 1.53$, $ps \geq .22$.

The present findings show that participants were more likely to exaggerate how positively their romantic partners see them following an MS manipulation. Interestingly, while MS influenced how partners were seen as evaluating the individual, similar effects did not manifest with how people evaluate themselves. As noted earlier, this is consistent with both prior relationship research showing a dissociation between desires for positive regard from relationships and self-views (Murray et al., 2006; Swann et al., 2002), as well as TMT research showing that reminders of mortality do not generally influence explicit self-evaluations (Pyszczynski et al., 2004). The present study thus points to the malleability of perceptions of partner regard and is consistent with the notion that close relationships are important after MS because they serve as a source of perceived regard. However, while these effects did not manifest with self-evaluations, it is unclear whether these effects are specific to romantic partners or whether they generalize to any general social context. Study 2 was designed to address this question.

Study 2

Study 2 assessed whether the exaggeration in perceived regard following MS would be specific to romantic relationships or would occur with even the average person. Although it is reasonable to suggest that people should want anybody and everybody to view them positively after death reminders, regard from a relationship partner should be much more valuable. Indeed, although social exclusions from generalized or unknown others have been found to not influence self-esteem, exclusions from meaningful relationships have (e.g., Leary, Tambor, Terdal, & Downs, 1995).

Similar to the first experiment, participants were randomly assigned to write about death or, in this case, the control topic of intense pain to provide another elicitation of generally aversive cognition. Furthermore, similar to Study 1, participants were given a trait attribute task (Murray et al., 2000) to measure perceived regard from a romantic partner and the self. However, unlike Study 1, participants were also asked to indicate how the average person sees them on the same traits. To the extent that the exaggeration in perceived regard after MS is specific to close relationships, participants should enhance perceptions of regard from their romantic partners following mortality reminders but should not enhance perceptions of regard from an average person.

Method.

Participants. Forty-six students (17 female, 29 male; 1 person did not report his or her age and gender but was included) partic-
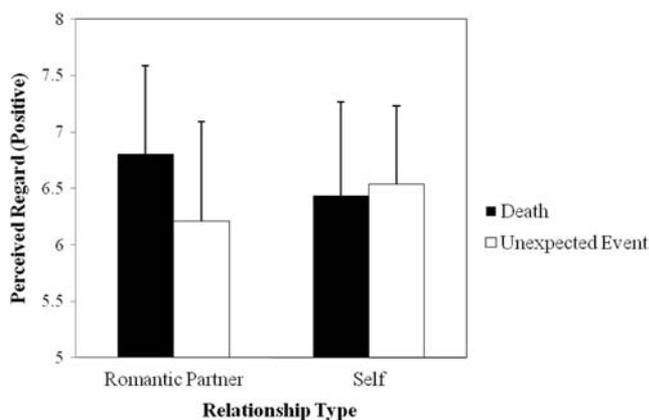

Figure 1. Romantic partner and self-scores as a function of mortality salience (Study 1). A higher score indicates greater perceived regard. Error bars represent standard deviations.

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[3] Across all experiments, one-way ANOVAs were conducted on the two subscales of the PANAS to examine whether the MS manipulation had an effect on people's mood, which would affect the dependent variables. Consistent with previous research, the results revealed no significant difference between death and the control conditions on the two subscales ($ps \geq .21$). Further, controlling for affect did not attenuate the reported effects.

ipated in exchange for course credit. Ages ranged from 18 years to 21 years ($M = 18.84$, $SD = 0.91$).

Materials.

MS. Participants completed the same MS and distraction tasks as in Study 1, except that "intense physical pain" was used as the control topic as in previous terror management studies (e.g., Florian et al., 2002).

Perceived regard. Participants were asked to complete the same perceived regard tasks described in Study 1. However, in addition to romantic partner and self-scores, participants were also asked to indicate how the "average person sees you." All items were reported on a 9-point scale ranging from 1 (*not at all characteristic*) to 9 (*completely characteristic*). Following Murray et al. (2000), all negative items were reversed scored and all items were averaged together to obtain a general measure of positivity for the three tasks (self, $\alpha = .70$; partner, $\alpha = .76$, average person, $\alpha = .65$). The three tasks were counterbalanced to control for order effects.

Results and discussion. A 2 (MS: death vs. intense pain) × 3 (perceived regard: self, romantic partner, vs. average person) mixed-factor ANOVA, with the perceived regard measures serving as the repeated factor, was performed on the data. The results revealed a significant effect for perceived regard, $F(2, 82) = 3.40$, $p = .04$, $d = 0.62$, with participants reporting higher perceived regard from their romantic partners ($M = 6.72$, $SD = 0.79$), compared with the average person ($M = 6.47$, $SD = 0.69$) or themselves ($M = 6.45$, $SD = 0.70$), $Fs(1, 42) \geq 4.05$, $ps \leq .05$, $ds \geq 0.50$. There was no significant difference between average person and self-scores, $F(1, 42) = 0.07$, $p = .80$, $d = 0.06$. The results also showed the predicted MS × Perceived Regard interaction, $F(2, 82) = 3.97$, $p = .02$, $d = 0.70$ (see Figure 2). Tests for simple main effects revealed that whereas there was no significant effect of MS within the average person or self-conditions, $Fs(1, 41) \leq .15$, $ps \geq .70$, $ds \leq 0.07$, participants reported higher perceived regard from their romantic partners after MS than after pain salience, $F(1, 41) = 4.72$, $p = .04$, $d = 0.56$.

Consistent with Study 1, people exaggerate how positively their romantic partners see them when intimations of one's death are rendered salient. In replicating this effect, this study also informed

Figure 2. Perceived regard scores (romantic partner, average person, and self) as a function of mortality salience (Study 2). Higher scores reflect greater perceived regard. Error bars represent standard deviations.

whether people would exaggerate perceived regard from even an average person after MS. The results revealed that MS did not influence such perceptions. This is consistent with prior work showing that individuals report a greater desire for perceived regard from their romantic partners than from nonromantic relationships (Swann et al., 2002).

Taken together, these first two studies provide a foundation for suggesting that people pursue romantic relationships following thoughts of death, in part, because of the perceptions of worth they derive from them. Of course, a critical limitation of this research so far is that it does not examine how perceived regard from a romantic partner influences people's attitudes toward romantic relationships following thoughts of death. Specifically, as previously discussed, research demonstrates that thoughts of perceived regard have direct implications on feelings of closeness and satisfaction in close relationships (Murray et al., 2006). Thus, to the extent that people's desire for close relationships after MS is based on the amount of perceived regard that they derive from them, positive regard from a partner should influence the extent to which reminders of death increase people's desire for romantic partners. Study 3 was designed to test this possibility.

Study 3

A number of studies indicate that reminders of death increase people's sense of love of and closeness to their romantic partners (see Mikulincer et al., 2003). For example, Florian et al. (2002) found that people express more commitment (i.e., dedication to, devotion to, and love for a romantic partner; Adam & Jones, 1997) to romantic partners following an MS manipulation. In Study 3, we sought to extend this work and used the Murray et al. (2000) attribute task to examine whether perceived regard from a romantic partner mediates the extent to which reminders of death influence people's commitment to their romantic partner. If people manage death awareness by turning to close relationships in part because of the regard they provide, participants should express more commitment to their romantic partners to the extent that their romantic partners are seen as offering positive perceptions of regard following thoughts of death.

Method.

Participants. Participants were 48 students (19 female, 29 male) who participated in exchange for partial course credit. Ages ranged from 18 years to 23 years ($M = 19.09$, $SD = 1.12$). All participants were involved in a romantic relationship at the time of the study (ranging from 1–48 months; $M_{length} = 16.00$, $SD = 12.67$).[4]

Materials.

MS. Participants again answered the same open-ended questions about death described in Study 1, as well as the same distraction materials. In the control condition, participants were
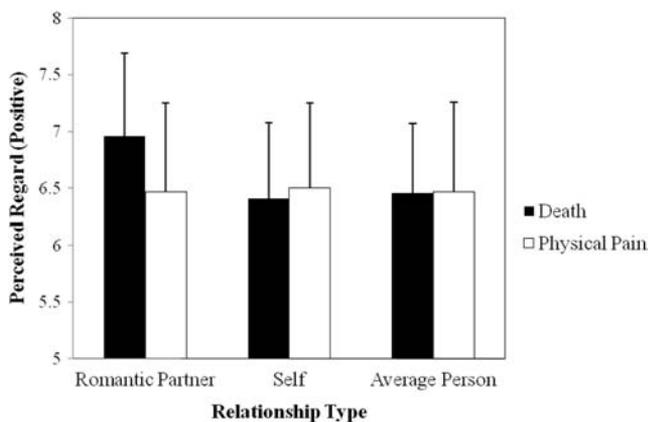
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[4] Additional analyses were performed to see whether amount of time in a romantic relationship moderated any of the results. There were no significant difference in relationship length among the different conditions for the seven studies, and that relationship duration was not a significant covariate. In light of these analyses and other research showing no significant effect of relationship duration (e.g., Mikulincer et al., 2002; Murray et al., 2000), we do not control for relationship duration.

asked parallel questions about dental pain, thus providing a different aversive control group.

Perceived regard. Participants completed the same 23 adjective traits measuring perceived partner regard as described in Study 1 (α = .74).

Commitment. The dependent measure was a modified version of the Dimensions of Commitment Inventory (Adams & Jones, 1997). Following Florian et al. (2002), participants were given 15-items that assess people's romantic commitment to their partner based on attraction, trust, and love toward the romantic partner (e.g., "I'm completely devoted to my partner."). Participants were asked to think about their current romantic relationship and to rate the extent to which each of the items was descriptive of their thoughts and feelings in such a relationship. Ratings for each item were made on a 9-point scale (1 = *not at all*; 9 = *very much*). All items were averaged together, with a higher score reflecting greater commitment to one's romantic partner (α = .92).

Results and discussion. To examine whether perceived regard from one's partner mediated the effect of MS on people's commitment to their romantic partner, the present study followed guidelines for assessing mediation (cf. Baron & Kenny, 1986). Replicating Florian et al. (2002), there was an effect of MS on relationship commitment, $t(46)$ = 3.06, p = .004, d = 0.89, with participants reporting greater relationship commitment following the MS manipulation (M = 7.21, SD = 0.63), compared with the dental pain control condition (M = 6.54, SD = 0.86). There was also a relationship between MS and perceived regard, $t(46)$ = 2.15, p = .04, d = 0.62. Similar to the previous studies, participants exaggerated the amount of perceived regard from their romantic partners following thoughts of death (M = 7.64, SD = 1.14), relative to the control condition (M = 6.73, SD = 1.70). In addition, there was a relationship between perceived regard (the mediator) and relationship commitment (dependent variable; DV) while controlling for MS (β = .34; SE = .35; t = 2.02, p = .05, d = 0.69). Finally, when we controlled for perceived regard, the effect of MS on relationship commitment was no longer significant (β = $-.23$; SE = .52, t = -1.35, p = .19, d = 0.46). A Sobel test supported this reduction (z = 1.92, p = .05; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). A mediation model with standardized betas, standard errors, and significant tests is depicted in Figure 3. Of note, however, the effects of MS on perceived regard remained significant when we controlled for people's level of commitment (β = $-.33$; SE = .24, t = 2.10, p = .04). Our inability to find support for reverse mediation is consistent with Murray and colleagues' research showing that thoughts of perceived regard (either experimentally induced or measured) influence relationship closeness in a causal manner.

Following previous research (Florian et al., 2002), the results of Study 3 revealed that MS increased people's closeness and commitment to their romantic partners. And in accord with the results of the first two studies, MS increased participants' perceived regard from their romantic partners. Perhaps most informatively, the path between MS and relationship outcomes is indirect in that people are more committed to romantic partners to the extent that their romantic partners serve as a source of perceived regard following MS.

Overall, these studies provide support for the idea that people's desire for close others as a source of existential protection is based, in part, on the amount of positive regard that they derive from
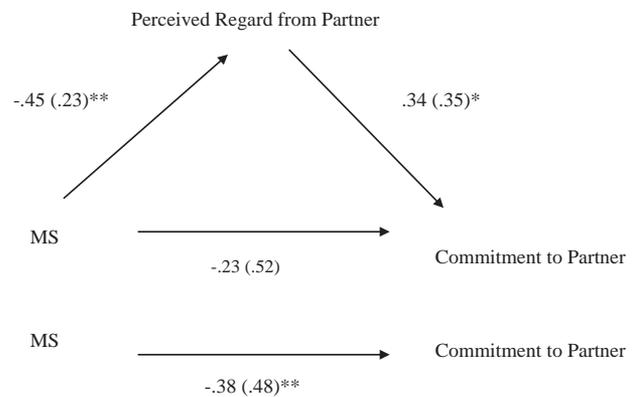
Perceived Regard from Partner

$-.45$ (.23)**   .34 (.35)*

MS   Commitment to Partner

$-.23$ (.52)

MS   Commitment to Partner

$-.38$ (.48)**

Figure 3. Standardized betas (standard errors) as a function of the mediational analysis between mortality salience (MS), perceived regard, and relationship commitment (Study 3). As depicted, when perceived regard was included in the model, the previously significant relationship between MS and relationship commitment was substantially reduced, suggesting a partially mediated effect. * p = .05. ** p ≤ .02.

them. This general analysis, however, suggests another convergent hypothesis that would offer a broader spectrum of support. If perceived regard from relationships helps manage the awareness of mortality, then activating thoughts of positive regard from a romantic partner should reduce the extent to which reminders of mortality increase the accessibility of death-related thoughts. Study 4 was designed to test this possibility.

Study 4: Perceived Regard as a Buffer of Mortality Salience Induced Death-Thought Accessibility

Study 4

Previous research has elucidated the progression of death-thought accessibility following MS inductions as part of a broader dual-defense model (see Pyszczynski, Greenberg, & Solomon, 1999; Hayes, Schimel, Arndt, & Faucher, 2010). This research has shown that following explicit reminders of death, death-thought accessibility is initially low but increases after a delay (Greenberg et al., 1994). However, providing self-esteem or self-affirmation boosts can attenuate this delayed increase in death-thought accessibility (e.g., Harmon-Jones et al., 1997). Cox et al. (2008) similarly found that positive cognitions about one's parents could reduce MS provoked death-thought accessibility. However, the Cox et al. research did not assess the effect of regard derived from one's romantic partner. If romantic relationships help manage the awareness of death because of the positive regard that they provide, activating thoughts of perceived regard from a romantic partner should attenuate the increase in death-thought accessibility that has been found to follow reminders of death. However, undermining relational regard by priming negative cognitive representations of one's partner should result in a heightened accessibility of death-related thoughts. To examine these possibilities, Study 4 measured the accessibility of death-related thoughts following an MS manipulation and instructions that led participants

to think of when they did or did not receive regard from their partners.

Method.

Participants. Fifty-eight students (42 women, 16 men) participated in exchange for course credit. Ages ranged from 18–23 years ($M = 20.29$, $SD = 1.26$). Participants were recruited based on whether they were in a current romantic relationship (length of time in a relationship ranged between 1–48 months; $M_{length} = 15.89$, $SD = 13.26$).

Materials.

MS. Following previous terror management research (e.g., Florian & Mikulincer, 1997; Greenberg et al., 1995), MS was induced by having participants complete a 15-item Fear of Death Scale (Templer, 1970). Specifically, participants responded either "true" or "false" to a series of items designed to assess the extent to which they fear death (e.g., "I am very much afraid to die."). Participants in the control condition were given a similar questionnaire about experiencing dental pain (e.g., "I am very much afraid of dental work."). The MS manipulations were immediately followed by the PANAS.

Perceived regard. The second independent variable consisted of a visualization task based on Baldwin and Sinclair (1996). Participants were asked to imagine a time when their romantic partner held either a positive or negative view of them. In the positive regard condition participants were told, "Please write about a time when your dating/romantic partner made you feel good about yourself," whereas in the negative regard condition, participants were instructed to consider a time when their romantic partner "did not make you feel good about yourself." In both conditions, participants were instructed to visualize being in the presence of this person (i.e., to imagine the person's eye color, hair color, sound of his or her voice) and to express their thoughts and feelings associated with this person by writing for the length of a page.

Death-thought accessibility. The dependent measure consisted of a word stem completion task designed to measure the accessibility of death-related thoughts. This task is similar to those used in other research (e.g., Gilbert & Hixon, 1991; Tulving, Schacter, & Stark, 1982) and presents participants with 25 word fragments, five of which can be completed with a neutral or death-related word. This measure has been used widely in terror management research (see Hayes et al., 2010). The death completions included: *DE _ _* (*dead* or *deed*), *GRA _ _* (*grave* or *grape*), *SK _ _ L* (*skull* or *skill*), *COFF _ _* (*coffin* or *coffee*), and *KI _ _ ED* (*killed* or *kissed*). Death accessibility scores were the total number of death-related word completions.

Results and discussion. A 2 (MS: death vs. dental pain) × 2 (perceived regard: positive partner vs. negative partner) between-subjects analysis of variance (ANOVA) was performed on death-thought accessibility. The results revealed a significant effect for the perceived regard prime, $F(1, 54) = 6.26$, $p = .02$, $d = 0.69$, with participants in the positive regard condition ($M = 1.23$, $SD = 0.90$) reporting fewer death-related thoughts than participants who did not visualize positive regard ($M = 1.79$, $SD = 1.07$). This effect, however, was qualified by the predicted two-way interaction between MS and perceived regard primes, $F(1, 54) = 11.19$, $p = .001$, $d = 0.91$ (see Figure 4).

Tests for simple main effects revealed that when participants did not visualize positive relational regard, participants reported a
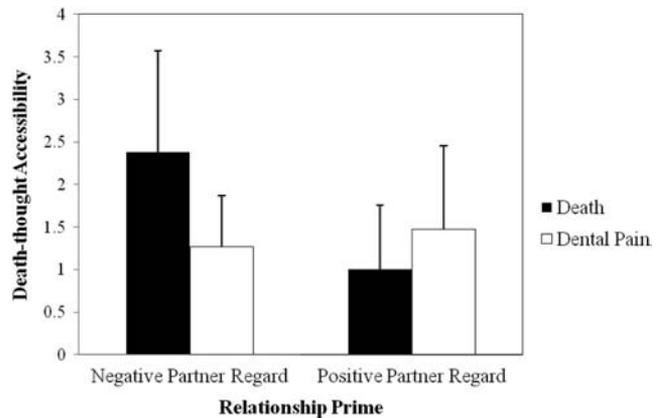

Figure 4. Death-thought accessibility scores as a function of mortality salience and relationship prime (Study 4). Higher scores indicate a higher accessibility of death-related thoughts. Error bars represent standard deviations.

higher number of death-related thoughts after MS than after dental pain, $F(1, 54) = 10.75$, $p = .002$, $d = 0.90$. However, this MS induced increase was eliminated when participants thought about receiving perceived regard from their romantic partners, $F(1, 54) = 2.02$, $p = .16$, $d = 0.29$.

Study 4 indicates that perceived regard from one's partner buffers against the increased accessibility of death-related thoughts produced by reminders of one's mortality. When reminded of death, participants who were asked to recall an instance in which their romantic partner made them feel bad about themselves evidenced higher death-thought accessibility compared with the other conditions. Importantly, however, asking people to recall an instance in which their romantic partners made them feel good about themselves reduced death-related thoughts. This finding builds from Cox et al. (2008) to provide evidence of the functionality of deriving regard from romantic relationships when faced with reminders of mortality. Combined with Studies 1–3, it also offers further support for the broad analysis that romantic relationships provide a basis of perceived regard that facilitates managing the awareness of death.

Despite this range of support, there are of course limitations to the studies reported thus far. For one, we have yet to broach the question of for whom these processes are most likely to emerge. That is, which individuals are most likely to use perceived regard from romantic partners as a terror management strategy? A second limitation is that while Murray and colleagues (e.g., 2006) designed the attribute task to measure the extent to which people derive perceived regard from their romantic partners, there could be ambiguity about whether the attribute task is measuring relational regard or general feelings of closeness in romantic relationships (e.g., acceptance; Leary & Baumeister, 2000; inclusion; Aron, Aron, Tudor, & Nelson, 1991; felt-security; Mikulincer & Shaver, 2007). Fortunately, both questions can be informed by examining these effects among those who base their self-esteem on their close relationships. The hypothesis that people use perceived regard from their relationships to manage awareness of death leads to the clear prediction that such propensities should then be most strongly evident among those who base their self-esteem on their close relationships.

Studies 5–7: The Influence of Individual Differences in RCSE and Attachment Style

Study 5

Contingencies of worth help to guide individuals' behavioral decisions and priorities as people seek to do that which they believe will lead to feelings of value (Crocker & Park, 2004). Thus, an individual who bases his or her self-worth on their close relationships is more invested in forming and maintaining relationships (Sanchez & Kwang, 2007) and is more intensely affected by the threat to and loss of such relationships (Park, Sanchez, & Brynildsen, 2011). Recent work that has refined the measurement of (romantic) RCSE further finds that RCSE is not the same as feeling close to one's partner, feeling committed to one's partner, or feeling satisfied in one's relationship (Knee et al., 2008). Rather, the unique aspect of RCSE is that one's self-worth is invested in one's romantic relationship. Utilizing this measure in the current line of inquiry thus presents an opportunity to inform both which individuals are most likely to turn to relationships when faced with awareness of death and whether such an inclination reflects an effort to extract positive regard from that relational closeness. In this study, we first examined whether individuals with high RCSE would show greater exaggerations in perceived partner regard following reminders of death than would individuals with low RCSE or those not reminded of death.

Method.

Participants. Seventy-eight women and 18 men participated in exchange for course credit. Ages ranged from 18 years to 34 years ($M = 19.38$, $SD = 2.14$). All participants were in a romantic relationship at the time of the study (ranging from 1–144 months, $M = 20.52$, $SD = 20.43$).

Materials.

RCSE. All packets contained filler questionnaires and a measure of RCSE (Knee et al., 2008). The RCSE scale consists of 11 items, which are reported on a 5-point scale ranging from 1 (*not at all like me*) to 5 (*very much like me*). Previous research attests to the scale's reliability (αs from .88 to .89; test–retest reliability over 2 weeks = .78) and validity (i.e., it is positively correlated with measures of contingent self-esteem [e.g., Contingencies of Self-Worth Scale; Crocker et al., 2003] and negatively correlated with trait self-esteem; Knee et al., 2008). Example items include, "My feelings of self-worth are based on how well things are going in my relationship," and "When my partner criticizes me or seems disappointed in me, it makes me feel really bad (reverse scored)." Items were averaged such that higher scores reflected stronger relationship contingencies ($\alpha = .85$).

MS. Participants completed the same MS (or unexpected event) and delay materials described in the first experiment.

Perceived regard. The dependent variable consisted of the same perceived regard tasks described in Study 1 (self, $\alpha = .71$; partner, $\alpha = .78$), again counterbalanced to control for order effects.

Results and discussion. Separate regression analyses were performed on the perceived regard scores (partner regard, self-regard). For each analysis, MS (dummy coded) and RCSE (centered) were entered simultaneously as predictors in the first step, followed by the two-way interaction in the second step (see Aiken & West, 1991). Whereas there were no effects of MS and RCSE on

participants' self-regard scores (ts ≤ 1.17, ps $\geq .24$), there was an MS $\times$ RCSE interaction on the level of perceived regard from a romantic partner ($\beta = -.45$; $SE = .25$; $t = 3.20$, $p = .002$, $d = 0.67$; see Figure 5).[5] Simple slope tests (Rosenthal & Rosnow, 1985) revealed that after participants were reminded of death, higher RCSE predicted greater perceived regard from a romantic partner ($\beta = .42$; $SE = .18$; $t = 2.95$, $p = .004$, $d = 0.62$). No such relationship was present in the unexpected event condition ($p = 12$). To further elucidate this interaction, we examined the effects of MS (vs. an unexpected event) at ± 1 standard deviation above and below the mean on continuous RCSE scores. At high levels of RCSE, reminders of death led to a greater exaggeration in perceived regard than did reminders of an unexpected event ($\beta = -.34$; $SE = .23$; $t = 2.40$, $p = .02$, $d = 0.50$). Conversely, at low levels of RCSE, MS was associated with lower levels of perceived regard relative to the unexpected event control condition ($\beta = .30$; $SE = .23$, $t = 2.14$, $p = .04$, $d = 0.45$).

The present study provides initial insight into how standards of worth that are tethered to relationships are relevant to the relational management of mortality concerns. High RCSE individuals were more likely to exaggerate perceived regard from a romantic partner following reminders of death, whereas low RCSE individuals were actually even less likely to do so than controls. This latter effect, though not the focus of the present study, may reflect a shift away from those domains that matter less for self-worth.

Study 6

Although Study 5 extends the prior work by providing insight into the characteristics of individuals who derive perceived regard from romantic relationships following mortality awareness, there are some questions yet to be addressed. First, we do not know whether this boost in perceived regard from their partners carries over to augment their commitment to that relationship. Although Study 3 documented this meditational relationship, it has yet to be examined in the context of those who base their self-worth on their relationship. Thus, Study 6 returns to the mediational findings in Study 3 to examine the extent to which MS interacts with RCSE to increase feelings of perceived regard from close others and examines how this perceived regard increases people's level of commitment to their partners.

A second issue is that the current work says little about how perceived regard operates in the context of other close relationships. Although Study 2 found MS induced exaggeration of perceived regard from a romantic partner but not from an average person, such an average person clearly does not constitute an important close relationship. Do those who derive self-esteem from their romantic relationships also seek to garner regard from another important relationship, or are such propensities specific to their romantic partner? Although most attachment research indicates that romantic partners generally occupy the "top rung" in

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[5] Although the main effect of MS was not significant ($\beta = -.11$; $SE = .15$; $t = 1.08$, $p = .28$), the pattern of means were consistent with Studies 1–3. This main effect direction of means also emerged in Study 6 ($\beta = -.17$; $SE = .21$; $t = 1.70$, $p = .09$). It may be that completing the RCSE scale oriented participants to (or away from) certain domains of worth, which may explain why low RCSE participants manifested lower perceived regard following MS (and thus also the weaker main effect of MS).
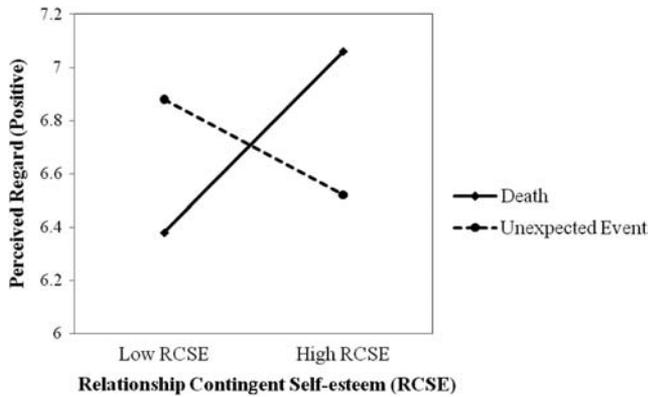
Figure 5. Romantic partner scores as a function of mortality salience and relationship contingent self-esteem (RCSE; Study 5). A higher score indicates greater perceived regard.

young adults' attachment networks, parents nonetheless remain an important relationship (Markiewicz, Lawford, Doyle, & Haggart, 2006; Trinke & Bartholomew, 1997). Thus, in Study 6, we assessed regard from both romantic relationships as well as parental relationships before assessing participants' commitment to their romantic relationship. We hypothesized that participants would be more committed to their romantic partners to the extent that their partners, but not their parents, serve as a basis of perceived regard after MS. Further, we expected that these effects would be specific to high RCSE individuals, given that their self-worth is closely tied to their relationships with others.

Method.

Participants. Participants were 58 women and 43 men who participated in exchange for course credit. Ages ranged from 18 years to 24 years ($M = 19.31$, $SD = 1.23$). All participants were in a romantic relationship ranging between 1–70 months ($M = 14.77$, $SD = 15.18$).

Materials.

MS. Participants completed the same 15-item fear of death scale described in Study 4. In the control condition, participants were asked parallel questions about public speaking (e.g., "I am very much afraid to speak in front of large group"), thus providing a different aversive control group. Participants then completed the previously described PANAS and word search task.

Perceived regard. Participants were asked to complete the same romantic partner task described in the previous studies (Studies 1–3, Study 5). However, in this study, everyone completed the task a second time to indicate how their parent evaluated them on the same traits.[6] The two tasks were counterbalanced to control for order effects. For each task, all negative items were reversed scored, and all items were averaged together for a general measure of positivity (romantic partner, $\alpha = .74$; parent, $\alpha = .86$).

Commitment measure. Participants completed the same commitment measure described in Study 3 regarding their current romantic relationship ($\alpha = .75$).

Results and discussion. Separate regressions were performed on the perceived regard (romantic partner, parent) and commitment measures. For all analyses, MS (dummy coded) and RCSE (centered) were entered simultaneously as predictors in the first

step, followed by the two-way interaction in the second step (Aiken & West, 1991).

Perceived regard. The first hypothesis examined whether the exaggeration in perceived regard after MS is specific to romantic relationships or also occurs with parental relationships. There was a significant two-way interaction between MS and RCSE on romantic partner scores ($\beta = -.46$; $SE = .20$; $t = 3.17$, $p = .002$, $d = 0.64$; see Figure 6), but no significant effect on parent scores ($p = .53$). Simple slope tests revealed that following reminders of death, higher levels of RCSE predicted greater exaggerations in perceived regard from a romantic partner ($\beta = .49$; $SE = .15$, $t = 3.33$, $p = .001$, $d = 0.68$). No such relationship was present in the public-speaking control condition ($p = .32$). We also examined the effects of MS at 1 standard deviation above and below the mean of RCSE. At high levels of RCSE, MS participants reported greater perceived regard from a romantic partner than did their public-speaking control counterparts ($\beta = -.35$; $SE = .23$, $t = 2.52$, $p = .01$, $d = 0.51$). At low levels of RCSE, however, MS led to lower perceived regard scores relative to the public-speaking condition ($\beta = .27$; $SE = .23$, $t = 1.98$, $p = .05$, $d = 0.40$).

Commitment. MS also interacted with RCSE to influence people's commitment to their romantic partner ($\beta = -.42$; $SE = .38$, $t = 3.02$, $p = .003$, $d = 0.61$; see Figure 7). Simple slope tests revealed that higher RCSE led to greater commitment to one's romantic partner following reminders of death ($\beta = .67$; $SE = .28$, $t = 4.79$, $p < .001$, $d = 0.97$). There was no linear relationship in the public-speaking condition ($p = .37$). Further, there was a significant effect of MS at 1 standard deviation above and below the mean on RCSE. High relationship contingent individuals expressed greater commitment to their romantic partners following MS, compared with the public-speaking condition ($\beta = -.27$; $SE = .44$, $t = 2.01$, $p = .05$, $d = 0.41$). Conversely, low RCSE individuals who were exposed to their mortality reported less commitment to their romantic partners, compared with their public-speaking counterparts ($\beta = .30$; $SE = .43$, $t = 2.29$, $p = .02$, $d = 0.47$).

Moderated–mediated analysis. To examine whether perceived regard from a romantic partner mediated the effect of MS and RCSE on relationship commitment, we followed conventional guidelines for assessing mediation (cf. Baron & Kenny, 1986). Meeting the first criterion, and as previously mentioned, there was a significant relationship between the predictor variables (i.e., MS × RCSE) and the dependent variable (i.e., relationship commitment). The second step examines the relationship between the predictor variable and the mediator. As noted, this relationship was observed for the interaction between MS and RCSE on perceived partner scores. Our third analysis examined the relationship between the mediator and dependent variable while controlling for the predictor variable(s). There was a significant relationship between perceived regard (the mediator) and relationship commitment (DV) while controlling for MS, RCSE, and the two-way interaction ($\beta = .33$; $SE = .18$; $t = 3.64$, $p < .001$, $d = 0.74$).

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[6] Sixty people based their responses on how their mother would respond, 13 based their responses on how their father would respond, and 28 based their responses on how both parents would respond. Additional analyses found that type of parent did not affect any of the obtained results ($ps \geq .17$).
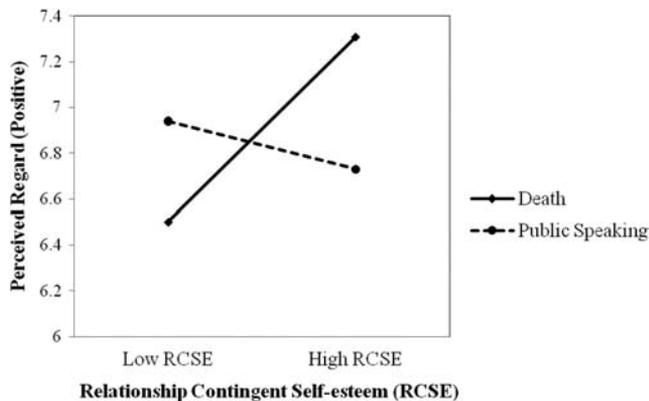
Figure 6. Romantic partner scores as a function of mortality salience and relationship contingent self-esteem (RCSE; Study 6). A higher score indicates greater perceived regard.

Finally, when controlling for perceived regard, the effect of MS × RCSE on relationship commitment was no longer significant ($\beta = -.27$; $SE = .37$; $t = 1.94$, $p = .06$, $d = 0.40$). Although there remained a clear trend in the pattern of commitment, a Sobel test (MacKinnon et al., 2002) indicated that there was a significant attenuation ($z = 2.19$, $p = .03$). Moreover, the effects of MS and RCSE on perceived regard remained significant when commitment was controlled for ($\beta = -.31$; $SE = .19$, $t = 2.15$, $p = .03$). A moderated–mediated model is depicted in Figure 8.

Experiment 6 provides additional support for the role of RCSE in the relationship-related management of existential insecurity. Individuals scoring high on RCSE were again more likely to exaggerate perceived regard from a romantic partner following reminders of death. Further, these effects were specific to romantic relationships in that MS did not affect how positively they perceived their parents saw them. The present results also revealed that high RCSE individuals expressed greater commitment to their romantic partners to the extent that their partners served as a source of perceived regard following mortality awareness.
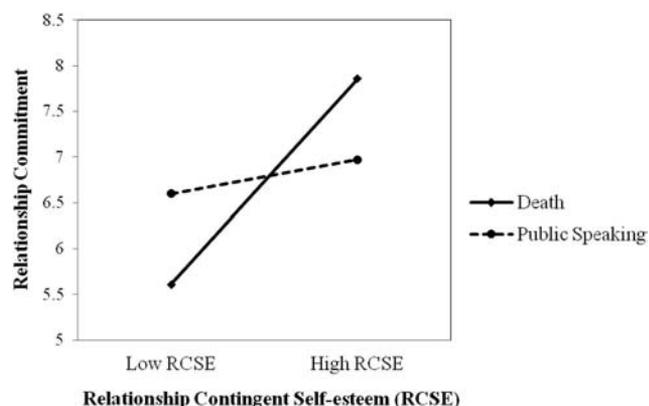

Figure 7. Relationship commitment as a function of mortality salience and relationship contingent self-esteem (RCSE; Study 6). A higher score indicates greater commitment to one's partner.
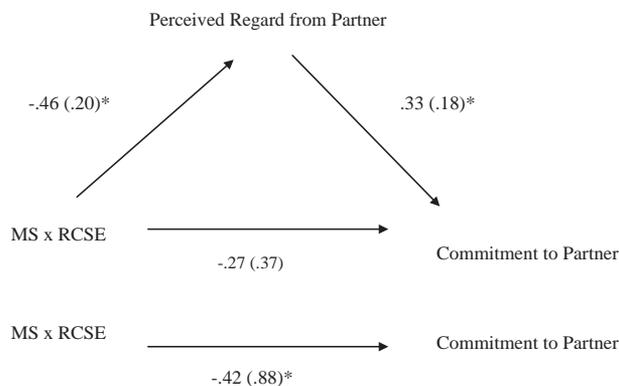

Figure 8. Standardized betas (standard errors) as a function of the moderated–mediated analysis between Mortality Salience × Relationship Contingent Self-Esteem, perceived regard, and relationship commitment (Study 6). As depicted, when perceived regard was included in the model, the previously significant relationship between MS × RCSE and relationship commitment was substantially reduced, suggesting a partially mediated effect.

That MS and RCSE did not interact to affect perceived parental regard makes sense, given that RCSE focuses exclusively on people's relationships with romantic partners and does not generalize to other relationships (Knee et al., 2008). This suggests that other individual differences that are sensitive to investments in more varied relationships may in fact reveal such effects. A prime candidate of course is attachment system functioning, given its broader relational relevance.

Study 7

Although Bowlby (1969/1982) believed that people are born with a repertoire of behaviors aimed at attaining or maintaining proximity to attachment figures, he recognized individual differences in the way people evaluate attachment figures and how they turn to close others as a basis of support in response to threat. In examining such ideas in adulthood, most studies have focused on a person's attachment style (i.e., stable patterns of relational cognitions and behaviors) and originally adopted Hazan and Shaver's (1987) typology of secure, avoidant, and anxious-ambivalent styles. This attachment typology has since been conceptualized in terms of two dimensions, *attachment anxiety* and *attachment avoidance* (e.g., Bartholomew & Horowitz, 1991; Brennan, Clark, & Shaver, 1998).

Within the context of TMT, several studies have examined the role of individual differences in adult attachment in how people respond to reminders of death. For example, securely attached individuals react to MS with increased attachment needs (see Mikulincer et al., 2003), with secure individuals reporting an increased preference for romantic partners (Cox et al., 2008). This is because secure individuals have a history of satisfactory close relationships and hold positive beliefs about the supportiveness and protective functions of relationship partners (Collins & Read, 1990; Hazan & Shaver, 1987). In contrast, attachment insecurity (indicated by relatively high scores on measures of attachment-related anxiety and avoidance) has been linked to greater forms of worldview defense in response to MS (Hart et al., 2005; Mi-

kulincer & Florian, 2000). Research has also shown that anxious individuals express an increased desire for closeness after threat (Hart et al., 2005; Mikulincer, Birnbaum, Woddis, & Nachimias, 2000), with this effect being stronger for parental relationships (Cox et al., 2008). This may occur because anxious individuals often have difficulties transferring attachment processes to extra-familial relations (Mayselessx, 2004), which could explain their increased desire for parents following thoughts of mortality.

Building on this research and the results of our previous studies, Study 7 explored whether attachment style interacts with MS to influence perceived regard from different close others (parents, romantic partners). Overall, the study was guided by the following hypotheses. Given that securely attached persons (i.e., those low in attachment anxiety and avoidance) have in previous research shown an increased preference for romantic partners after MS (Cox et al., 2008), if this relational striving is driven by desires for perceived regard, then MS should increase exaggerations in perceived regard from romantic others for securely attached persons. Preoccupied individuals (i.e., those high on attachment anxiety and low on avoidance), in contrast, have reported an increased preference for parents after mortality reminders (Cox et al.). If such preferences reflected their desires for perceived regard, MS should lead preoccupied individuals to report positive regard from a parent (rather than a romantic partner).

Whereas secure and anxiously attached persons may use different relationships to manage awareness of death, those high in avoidance should be less likely to do so. Indeed, previous research has found that fearful avoidants (i.e., those high in attachment anxiety and avoidance) do not respond to reminders of death with an increased desire for close relationships (Cox et al., 2008; Taubman-Ben-Ari et al., 2002), perhaps because while they express a desire for closeness with others, they are standoffish toward relationships for fear of rejection. Dismissing persons (i.e., those scoring low on attachment anxiety and high on avoidance), in turn, tend to regulate attachment distress by mistrusting others (Feeney & Noller, 1990), distancing themselves from others, and valuing self-reliance and independence more than others' feedback and support (see e.g., Mikulincer & Shaver, 2007). Thus, it was hypothesized that MS would not exaggerate perceived regard for individuals high in either form of avoidance.

While testing the above hypotheses constituted the primary purpose of Study 7, we also sought to examine an alternative explanation for why people turn to relationships after reminders of mortality. The previous studies only measured perceived regard as a potential explanation, and it remains possible that people also turn to relationships because of their capacity to fulfill basic attachment needs independent of perceived regard. Thus, counterbalanced with the perceived regard measures, we also had participants complete the Attachment Features and Functions questionnaire (AFF; Tancredy & Fraley, 2006), which captures whether different relationships (e.g., mother, father, romantic partner) serve the attachment needs of proximity seeking, separation distress, safe haven, and secure base. If attachment needs influence why people turn to relationships after MS, then we should observe differences in perceived attachment needs as a function of attachment style and reminders of death.

Method.

Participants. One-hundred and seventy-four students (107 female, 67 male) participated in exchange for course credit. Ages ranged from 18 years to 27 years ($M = 18.71$, $SD = 1.20$). It was required that participants be a in a romantic relationship at the time of the study (relationship length ranged from 1–72 months; $M_{length} = 14.70$, $SD = 13.55$).

Materials.

Attachment style. Participants completed Griffin and Bartholomew's (1994a) 30-item Relationship Scales Questionnaire as a measure of attachment. Previous research attests to the scale's reliability and validity (Griffin & Bartholomew, 1994a, 1994b; Kurdek, 2002). Given the present interest in preferences among different relationships, one advantage of this particular scale is that it measures general attachment styles, as opposed to those tied to a specific (e.g., romantic) relationship. Items were presented on a 5-point scale ranging from 1 (*not at all like me*) to 5 (*very much like me*). Separate anxiety (e.g., "I worry about being abandoned," $\alpha = .82$) and avoidance (e.g., "I find it difficult to trust others completely," $\alpha = .73$) scores were calculated based on procedures recommended by Kurdek (2002; also see Simpson, Rholes, & Nelligen, 1992).

MS. Participants in the MS condition completed the same open-ended manipulation (with an unexpected event as the control condition) described in Studies 1, as well as the PANAS and word search puzzle.

Perceived regard. As in Study 1, participants were asked to rate themselves on a series of positive and negative adjective traits. Additionally, following Study 6, they repeated the task two more times, except they were asked to indicate how their romantic partners and parent evaluated them on the same traits. The three tasks were counterbalanced to control for order effects, and all negative items were reversed scored for a general measure of positivity (self, $\alpha = .77$; romantic partner, $\alpha = .72$; parent, $\alpha = .80$).

Attachment features and functions. Participants were also asked to complete the AFF measure (Tancredy & Fraley, 2006) to assess whether parental and romantic relationships are important after MS because they serve an attachment function. The AFF is derived from the WHOTO scale (Fraley & Davis, 1997) and the Attachment Network Questionnaire (ANQ; Trinke & Bartholomew, 1997) and was specifically designed to measure the attachment status of a relationship. Specifically, participants were presented with 16 items and were asked to rate the degree to which a potential attachment figure (mother, father, or romantic partner) served each of four primary attachment functions: *proximity seeking* (e.g., "It is important to me to see or talk with [this person] regularly"; two items; $\alpha s \geq .80$), *separation distress* (e.g., "When I am away from [this person], I feel down"; five items; $\alpha s \geq .90$), *safe haven* (e.g., "[This person] is the first person that I would turn to if I had a problem"; five items; $\alpha s \geq .70$), and *secure base* (e.g., "If I achieved something good, [this person] is the person I would tell first"; four items; $\alpha s \geq .76$). For each statement, participants were asked to rate how much they agreed or disagreed on a 9-point scale ranging from 1 (*strongly disagree*) to 9 (*strongly agree*). Following previous research (Tancredy & Fraley, 2006), scores were calculated by taking the mean response for the four separate subscales for the three different relationships. Importantly, the perceived regard and attachment measures were counterbalanced to control for any order effects. The presentation order of the tasks did not affect the results ($ts \leq 1.41$, $ps \geq .16$).

Results and discussion. For all regression analyses, MS (dummy coded), attachment anxiety, and avoidance (centered) were entered simultaneously as predictors in the first step, followed by all two-way interactions in the second step and the three-way interaction in the third step (Aiken & West, 1991).

Perceived regard from relationships. Separate regression analyses were performed on the perceived regard measures (romantic partner, parent, & self). The results revealed a significant three-way interaction between MS, attachment anxiety, and attachment avoidance on perceived regard from a romantic partner ($\beta = -.28$; $SE = .21$; $t = -2.39$, $p = .02$, $R^2 = .20$). To examine the nature of this interaction, we conducted a series of multiple regressions to assess differences between MS and control conditions at different combination levels of attachment anxiety and avoidance (± 1 SD; see e.g., Pedhazur, 1997). The predicted means from these regression analyses are presented in Figure 9. The results showed that secure individuals (i.e., persons low in anxiety and avoidance) exaggerated the amount of perceived regard from their partner following thoughts of death, compared with their control (unexpected event) condition counterparts ($\beta = -.46$; $SE = .19$; $t = -3.84$, $p < .001$, $R^2 = .18$). There were no significant differences between MS and the salience of an unexpected event for the remaining attachment (preoccupied, fearful, & dismissing) prototypes.

There was also an MS, anxiety, and avoidance interaction on perceived regard from a parent ($\beta = .44$; $SE = .27$; $t = 3.68$, $p < .001$, $R^2 = .18$; see Figure 10 for predicted means). Follow-up tests on the interaction showed that following thoughts of death, preoccupied individuals (i.e., persons scoring high in anxiety [$+1SD$] and low in avoidance [$-1SD$]) were more likely to exaggerate the amount of perceived regard from a parent, compared with the unexpected event condition ($\beta = -.57$; $SE = .39$; $t = -3.01$, $p = .003$, $R^2 = .16$). All remaining comparisons were not significant.

Finally, a three-way regression was also performed on participants' self-evaluation scores. The only effect that emerged was a
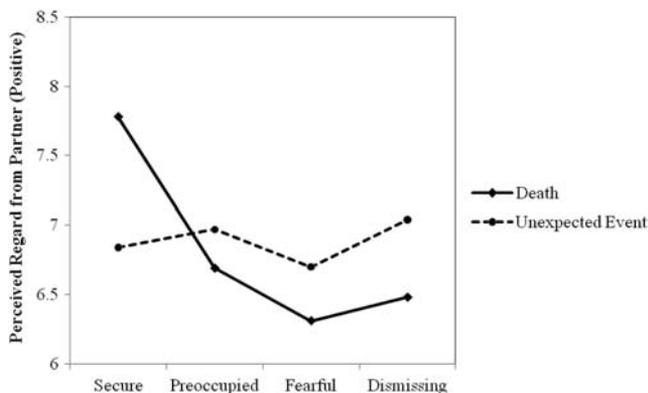

Figure 9. Predicted means of perceived partner regard as a function of mortality salience and attachment style differences (Study 7). A higher score indicates greater perceived regard from a romantic partner. Results are depicted categorically for illustrative purposes only, with secure (low anxiety, low avoidance), preoccupied (high anxiety, low avoidance), fearful (high anxiety, high avoidance), and dismissing (low anxiety, high avoidance) types. Predicted means were obtained by using different combination levels of attachment anxiety and avoidance (± 1 *SD*; see e.g., Pedhazur, 1997).
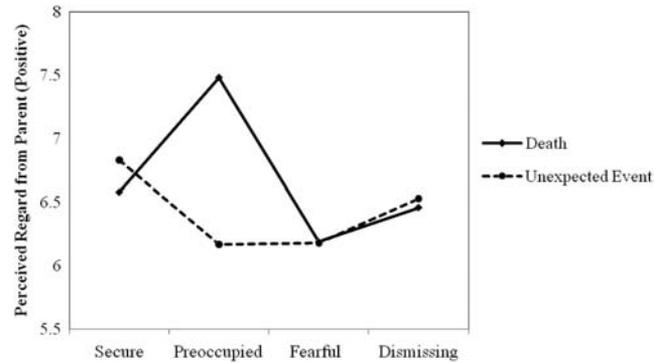

Figure 10. Predicted means of perceived parent regard as a function of mortality salience and attachment style differences (Study 7). A higher score indicates greater perceived regard from a parent. Results are depicted categorically for illustrative purposes only, with secure (low anxiety, low avoidance), preoccupied (high anxiety, low avoidance), fearful (high anxiety, high avoidance), and dismissing (low anxiety, high avoidance) types. Predicted means were obtained by using different combination levels of attachment anxiety and avoidance ($\pm 1SD$; see e.g., Pedhazur, 1997).

main effect of attachment anxiety ($\beta = -.30$; $SE = .07$; $t = -3.79$, $p < .001$, $R^2 = .19$), with more anxiously attached individuals evaluating themselves more negatively on the trait attribute task. All remaining main effects and interactions were nonsignificant ($ps \geq .22$).

Attachment from relationships. Separate regression analyses were also performed on the three subscales of the AFF to determine whether MS interacts with attachment style to increase people's desire for close others (mother, father, or romantic partner) as a basis of support. The results revealed a significant effect of attachment avoidance on proximity seeking ($\beta = -.34$; $SE = .11$, $t = -4.08$, $p < .001$, $R^2 = .11$), separation distress ($\beta = -.25$; $SE = .11$, $t = -2.93$, $p = .004$, $R^2 = .09$), safe haven ($\beta = -.29$; $SE = .15$, $t = -3.60$, $p < .001$, $R^2 = .15$), and secure base ($\beta = -.21$; $SE = .13$, $t = -2.62$, $p = .01$, $R^2 = .13$), for romantic partners. In all cases, highly avoidant individuals were less likely to use their romantic partners to fulfill their attachment needs. All remaining main effects and interactions were nonsignificant ($ps \geq .18$). These results suggest that MS does not influence how people, regardless of attachment style, evaluate different close relationships (mother, father, or romantic partner) in terms of their capacity to fulfill different attachment needs.

Experiment 7 provides initial support that attachment style interacts with reminders of death to influence the derivation of perceived regard from different close others. Secure individuals (i.e., those scoring low on attachment anxiety and avoidance) were more prone to exaggerate how positively their romantic partners see them after MS than were those in the control condition. In contrast, for preoccupied individuals (i.e., those scoring low on avoidance and high on anxiety), MS led to greater perceived regard from a parent. Finally, there was no significant effect of MS for those scoring high in attachment avoidance (i.e., fearful and dismissing persons) on the amount of perceived regard from a romantic partner, parent, or the self.

The present research is the first to examine how attachment style influences perceived regard from close others in response to threat.

In doing so, the current work replicates and extends previous studies reported here as well as the prior work of Cox et al. (2008). Specifically, Cox et al. found that intimations of mortality motivated anxious individuals to show increased relative preference for a parent, whereas secure individuals showed increased preference for romantic partners. Whereas Cox et al. focused on people's preference for different relationships, the present work suggests a possible reason for these effects. It appears that people's desire for close relationships after MS is based, in part, on the amount of perceived regard that they derive from them, and these effects are moderated by preexisting levels of attachment anxiety and avoidance.

Interestingly, there were no significant effects on the extent to which MS affects different attachment needs. This may simply reflect an insufficiently sensitive measure or may reflect that in the present context MS is more strongly activating needs for perceived regard than attachment needs. Accordingly, previous research has shown that self-esteem and worldview validation sometimes override the desire to relate or affiliate (e.g., Dechesne, Greenberg, Arndt, & Schimel, 2000; Arndt, Greenberg, Schimel, Pyszczynski, & Solomon, 2002), just as other contexts have suggested that affiliation tendencies may sometime trump those for worldview validation (Wisman & Koole, 2005). These findings thus suggest some interchangeability between terror management mechanisms, with some contextual and personality factors making one mechanism preferred over others.

General Discussion

The present research was conducted to provide insight into why people turn to close relationships to deal with the awareness of mortality. Toward this end, seven studies offered convergent support for the importance of perceived regard. The first series of studies examined whether people use their romantic partners as a basis of perceived regard when reminded of death. Studies 1 and 2 showed that MS led people to exaggerate how positively their romantic partners see them and that these effects were not observed with respect to how people evaluate themselves or how the average person evaluates them. This suggests some potential specificity to deriving self-regard from close relationship figures. Study 3 extended this research by revealing that the path between MS and relationship commitment, as observed in previous research (Florian et al., 2002), is indirect in that people are more committed to their romantic partners to the extent that their partners serve as a source of perceived regard following MS.

An additional question was whether perceived regard from others attenuates consequences otherwise observed in response to reminders of death. Study 4 showed that when reminded of death, visualizing scenarios in which a relationship partner made the participant feel good about him or herself, relative to a scenario in which the relationship did not impart regard, reduced the accessibility of death-related thought. Thus, like previous research establishing the terror management capacities of self-esteem (e.g., Harmon-Jones et al., 1997), perceived regard from a romantic partner also appears to provide a viable defense against the awareness of death.

The final series of studies examined how individual differences moderate the influence of MS on perceived regard from close others. Study 5 pointed to the importance of deriving self-esteem

from relationships, showing that high RCSE individuals were more likely to exaggerate perceived regard from a romantic partner after MS, whereas no such relationship was found among low RCSE individuals. Study 6 extended this finding by showing that high RCSE individuals reported greater commitment to their romantic partners to the extent that their romantic partners served as a source of perceived regard following thoughts of death. Given that RCSE is specific to romantic relationships, we utilized attachment style to ascertain how reminders of death may motivate perceptions of regard from different relationships. Study 7 found that following thoughts of death, securely attached individuals expressed more perceived regard from a romantic partner, whereas anxiously attached individuals expressed perceived regard from a parent. Taken together, the results of seven studies suggest that when faced with the awareness of death, people derive perceived regard from their relationships; their commitment to these relationships is based, in part, on feelings of perceived regard and the extent to which they base their self-worth on the relationship (i.e., RCSE), and finally, that the relational source from which people derive regard varies as a function of the individual's attachment style.

The Functional Interface Between Terror Management and Close Relationships

The present studies highlight some of the many interesting dynamics that exist at the existential intersection between close relationships, self-esteem, and attachment. Previous research has shown that controlling for scores on Rosenberg's self-esteem scale do not alter the effects of MS on relationship strivings, which has led to some speculation that self-esteem needs may not be involved with the use of relational strivings to manage mortality concerns (Florian et al., 2002; Hart et al., 2005; Hirschberger et al., 2003; Mikulincer & Florian, 2000). The present results implicate a more nuanced understanding and suggest that focusing on general feelings of worth may not give us the full picture. Indeed, general feelings of worth represent a distinct construct from deriving regard from close others (e.g., Crocker et al., 2003; Murray et al., 2000; Williams et al., 2010). By utilizing a measure of perceived regard from others, the current findings indicate that people do indeed seek relational closeness to manage the existential awareness of death at least in part because of the regard they derive from those relationships.

The moderation of these effects by RCSE also offers some support for the role of self-esteem dynamics. Although previous research has examined the roles of global self-esteem and specific contingencies in terror management effects (e.g., Arndt et al., 2009; Harmon-Jones et al., 1997; Taubman-Ben-Ari et al., 1999), research has yet to examine how basing one's self-worth on close relationships influences efforts to manage mortality-related concerns. By revealing the influence of RCSE, Studies 5 and 6 provide insight into some of the ways in which the self can both influence and be influenced by people's relationships with close others. In so doing the present work also integrates terror management research with other perspectives on the multifaceted and so often relationally infused nature of bases of self-worth. This may help to advance understanding of how self-esteem strivings occur in close relationships.

The present results, however, do not definitively establish or suggest that people use relationships to manage existential awareness solely for the self-esteem boost they may provide. While perceived regard can contribute to self-esteem, and such may thus be one existential benefit of investing in relationships, perceived regard also enhances the overall psychological security that the relationship offers (Murray et al., 2006). This more encompassing sense of psychological security may then enable the individual to better contend with cognizance of life's finitude. An important task for future research is to more fully unpack what elements of relational security provide effective terror management or what conditions under which different elements do so most effectively. Certainly close relationships serve a number of functions that could be helpful following thoughts of mortality (i.e., attachment, self-esteem maintenance, worldview validation). While Study 7 did not uncover evidence of attachment (i.e., proximity seeking, support) functions in this regard, this remains an important possibility for future studies to examine.

In this light, one possibility may be to explore how different relationships may serve different functions for different individuals. Until recently, researchers have found that securely attached individuals, more than insecure persons, react to MS with an increased desire for close others (e.g., Mikulincer & Florian, 2000). However, this conclusion appears to result from only examining close peer and romantic relationships. Although parents and peers can accomplish the same anxiety-buffering function in young adulthood for secure individuals (e.g., Fraley & Davis, 1997; Trinke & Bartholomew, 1997), more anxious individuals may rely on parents because they have problems transferring attachment functions to extrafamilial figures (e.g., Mayselessx, 2004). In support of this reasoning, Study 7 showed that reminders of death motivated anxious individuals to exaggerate the amount of perceived regard from a parent, whereas secure individuals reported greater perceived regard from a romantic partner. Although these results begin to shed some light on understanding which close relationships help buffer mortality concerns for which individuals, researchers should continue to examine when, where, under what circumstances, and for whom such preferences are more likely to occur.

Future Directions

A number of lines of research pertaining to the self have acknowledged the importance of interpersonal processes in constructing and modifying the self-concept (e.g., Baldwin & Holmes, 1987; Crocker & Wolfe, 2001; Leary & Baumeister, 2000). Similar to these *looking-glass* perspectives, the present studies demonstrate that people pursue close relationships, in part, because of the positive regard people derive from them. However, the extent to which these processes are ultimately beneficial for the individual is likely a complex issue. Tying self-regard to one's relationship might have certain downsides. Obtaining perceived regard from a partner may temporarily assuage existential insecurity but has the potential to produce long-term costs to the self and others. With the recurrent need for psychological defense against mortality as well as other psychological threats, people may end up putting undue pressure on the relationship to serve as their existential shield (Becker, 1973). An important agenda for future research is to

determine when the existential reliance on close relationships for perceived regard is helpful or harmful to both the relationships' and the individuals' overall health and well-being.

It is also important to recognize that these dynamics may shift over the course of a relationship. While the present work offers a generative foundation for examining why relationships help in terror management, the present studies do not inform how such existential motivation may play out over the longevity of a relationship. Since the participants in this research were primarily in dating relationships of 1 month or more, they may have been less committed or may have viewed commitment differently than did married couples. Previous research supports this by showing that relationship commitment is higher for married couples after MS than for individuals in a romantic relationship (e.g., Florian et al., 2002; Strachman & Schimel, 2006).

In addition, perceived regard may vary by relationship status and especially so for early relationships, when perceptions of another's attraction to oneself can serve as a more potent form of love and attraction than this person's qualities per se (Aron, Dutton, Aron, Iverson, 1989; Hazan & Diamond, 2000). Indeed, recent evidence demonstrates that short-term dating opportunities serve terror management by facilitating general feelings of self-worth, while long-term dating opportunities do so by affording prospects for worldview validation (Kosloff, Greenberg, Sullivan, & Weise, 2010). This is because short-terms dating contexts may present opportunities to briefly boost self-esteem by dating an attractive partner, whereas long-term romantic relationships may afford opportunities for getting to know another person and identifying with their beliefs. Future researchers may thus benefit from examining a more diversified relationship portfolio that includes both married and dating couples.

Conclusion

One of the promising implications of the present research is that by looking at the overlap between close relationship and perceived regard concerns after MS, it may be possible to understand some of the reasons why people turn toward their relationships with close others in response to existential threat. Such assessments may be useful in both experimental investigations and clinical application of these and other related ideas. Indeed, the current results are broadly consistent with Yalom's (1980) assumption that reminders of death can be used as a catalyst to identify the pursuits in which individuals invest themselves to make their lives seem more meaningful. By understanding some of the ways in which people experience esteem-enhancing support from relationship figures, it may be possible to help people confront core existential concerns with greater resilience and more constructive strategies.

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