Managing terror when self-worth and worldviews collide: Evidence that mortality salience increases reluctance to self-enhance beyond authorities ☆

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ABSTRACT

Terror management theory posits that one's self-esteem and worldview operate jointly to manage mortality concerns. Accordingly, past research shows that mortality salience (MS) increases self-enhancement and worldview defense. The current research is the first to examine MS effects when self-enhancement threatens to undermine aspects of the worldview, in this case the credibility and status of worldview-representative authorities. MS led to reluctance to self-enhance following positive personality test feedback when the test was judged negatively by institutional authorities (Study 1a), as well as unwillingness to contradict self-esteem threatening feedback sanctioned by authorities (Study 1b). Mortality salient participants also rated themselves higher on valued dimensions unless it meant viewing themselves more positively than their parents (Study 2) and admired political icons (Study 3). Taken together, these results show that MS increases self-enhancement unless doing so challenges important representatives of the worldview. Theoretical and practical implications are discussed.

The emergence of new vitality always to some extent breaks the existing customs and beliefs, and is thus threatening and anxiety-provoking to those in power as well as to the growing person himself. Rollo May (1953, p. 160)

Imagine a person who, as a child, invariably lost to his father in chess, but who finally defeats dad while home from college. This person may experience an awkward and even painful pull of conflicting feelings. The long-sought victory brings a sense of personal accomplishment, but it also calls into question the special status of dad, someone he's looked up to as a model of competence and source of secure knowledge of the world. This scenario portrays the psychological conflict people may experience when their efforts to enhance self-esteem threaten to undermine faith in the revered status of authorities that represent their worldview. Terror management theory (TMT) helps us to understand why this conflict can be distressing, because it proposes that both self-esteem and a meaningful worldview serve a more distal psychological function of protecting the individual from the potential for anxiety resulting from the awareness of personal mortality (Greenberg, Pyszczynski, & Solomon, 1986). Furthermore, self-esteem and worldviews function jointly to buffer anxiety, in that people deny

that death entails annihilation by perceiving themselves as living up to worldview-prescribed routes to death-transcending significance.

Despite this integrative view of self-esteem and worldview motives, however, empirical assessments of TMT have tended to examine how increasing the salience of mortality intensifies efforts to secure either self-esteem or faith in the worldview. One consequence of this research strategy is that little attention has been given to the potential for conflict between these defensive motives. In the current article we address this issue by examining how mortality salience influences people's responses to situations in which bolstering self-esteem threatens to undermine the credibility and status of worldview-representative authorities.

TMT

TMT addresses the motivational underpinnings of people's need to perceive themselves as valuable members of a meaningful world. Building on the existential psychodynamic tradition cogently summarized by Becker (1971), Becker (1973, Becker (1975), the theory posits that the uniquely human awareness that death is inevitable conflicts with motivational systems geared toward continued life and thereby threatens the individual with anxiety. People assuage the potential for existential anxiety through a dual-component anxiety-buffer consisting of a cultural worldview and self-esteem. Cultural worldviews are internalized versions of

the culture's beliefs about reality that convey a sense that the world is meaningful, stable, and permanent, and that offer opportunities for symbolic immortality (e.g., by amassing a great fortune) and literal immortality (e.g., by the promise of an afterlife) to those who meet the cultural standards of value. Self-esteem is attained by believing that one is a valuable participant in a meaningful world and therefore eligible for death-transcending significance.

The most prominent line of empirical support for TMT comes from tests of the mortality salience hypothesis, which states that if the worldview and self-esteem function to provide protection against death-related concerns, then heightening the salience of mortality (mortality salience; MS) should intensify reliance on and defense of these psychological structures. A growing body of research, to date consisting of over 300 separate experiments, provides support for this broad hypothesis (see Greenberg, Solomon, & Arndt, 2008, for a review). These studies have used multiple operationalizations of MS, such as open-ended questions designed to focus thoughts on one's own death (e.g., Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989), exposure to subliminal death-related stimuli (e.g., Arndt, Greenberg, Pyszczynski, & Solomon, 1997), and interviews in front of a funeral home (Pyszczynski et al., 1996). Research also shows that MS effects are specific to thoughts of death (they are not elicited by control inductions that prime aversive topics other than death, such as physical pain, social rejection, and uncertainty) and are unmediated by subjective arousal or emotion, heightened self-awareness, or high cognitive load (e.g., Greenberg, Simon, Harmon-Jones, et al., 1995); rather, they are mediated by the potential for anxiety signaled by the heightened accessibility of death-related thoughts (Greenberg et al., 2003; Pyszczynski, Greenberg, & Solomon, 1999)[1].

Multiple studies testing variants of the MS hypothesis support the claim that cultural worldviews serve a terror management function. For example, MS increases attraction to those individuals and constructs (e.g., nationality, religious ideology, sports teams) that uphold or embody aspects of the worldview and decreases attraction to those who criticize or transgress against the worldview (e.g., Florian & Mikulincer, 1997; Greenberg et al., 1990). MS also heightens more general tendencies to seek and prefer structured and benevolent conceptions of the social world, including an increased preference for information supporting the belief in a just world (Hirschberger, 2006; Landau et al., 2004) and increased aversion to seemingly meaningless art (Landau, Greenberg, Solomon, Pyszczynski, & Martens, 2006). Research also supports the claim that diverse efforts to attain and defend self-esteem serve a terror management function (see Pyszczynksi, Greenberg, Solomon, Arndt, & Schimel, 2004, for a review). For example, MS leads to more self-serving attributions after a performance outcome, and increases risky driving behavior (both self-reported and on a driving simulator), identification with the body, and displays of physical strength among those who value these domains as sources of self-esteem.

When terror management defenses collide: Insights from Otto Rank

TMT sheds light on why people are motivated to uphold valued aspects of the worldview and strive for self-esteem, and why they defend those psychological structures against threats. However, TMT research has so far examined MS effects on the defense of either the worldview or self-esteem, and has not yet considered

the possibility that there may be situations in which these terror management defenses exert opposing motivational pulls on the individual. To examine this possibility, we referred to the works of Sigmund Freud, Abraham Maslow, Irvin Yalom, and especially Otto Rank, who converged on the notion that the individual's efforts to assert her individuality, although often beneficial, can potentially undermine central sources of security. Addressing this dynamic from an existential perspective, Otto Rank (1932), Rank (1945) proposed that people carry a primal anxiety that manifests at times as a fear of "standing out" and surpassing others, and other times as a fear of having one's individuality extinguished through dissolution into the whole.

One interpretation of Rank's analysis is that the individual manages existential fears by maintaining an optimal balance between asserting her individuality and immersing herself in the security of the crowd, a point which converges with Brewer's (2003) optimal distinctiveness theory. Indeed, Simon et al. (1997) showed that MS increases efforts to maintain such a balance. Specifically, they told some participants they were very similar to their peers and told other participants they were very different from their peers. After MS those given feedback that they were conformists reported opinions very different from the average person, whereas those told they were deviants reported opinions very similar to the average person. These results suggest that existential concerns play a role in the complementary needs for uniqueness and similarity to others.

For our current purposes, we can glean a more specific idea from Rank's analysis: the conflict between "standing out" and "fitting in" may manifest as a conflict between bolstering one's self-esteem and preserving faith in valued aspects of the worldview. We don't believe this idea is inconsistent with TMT's claim that maintaining faith in the worldview typically operates in concert with self-esteem striving to manage mortality concerns. Rather, it suggests that there may be situations, such as the opening vignette, in which a person can enhance self-esteem in a way that calls into question aspects of the worldview that she looks to for meaning and security. The current research aims to determine how people resolve these potential conflicts.

From a TMT perspective, the worldview is the more fundamental basis of security because self-esteem is predicated on meeting the worldview's standards of personal worth. Consequently, threats to the worldview necessarily entail a threat to the individual's basis for self-esteem, but restricting one's self-esteem strivings does not reciprocally entail a threat to the prevailing worldview. A person who continues to aggrandize themselves in defiance of the worldview would, therefore, undermine both their meaning-conferring understanding of reality and their faith in the enduring value of their personal achievements. In contrast, tempering self-esteem strivings allows the person to continue using the worldview to maintain meaningful conceptions of the world and their experience as well as a basis for current (albeit mitigated) and future self-esteem[2].

The case of self-enhancing beyond revered authority

Although numerous aspects of one's worldview may at times conflict with self-esteem striving, the present research focused

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[1] Also, the effects of explicit reminders of death on worldview and self-esteem defense are greatest following a delay, when death-related thought is highly accessible but outside of focal attention (see Arndt, Cook, & Routledge, 2004).

[2] This discussion focuses on people's responses to threats to their worldview. There is also the possibility that defensively *bolstering* faith in the worldview leads to a self-esteem boost (we thank an anonymous reviewer for raising this possibility). Given our current analysis, we suspect that this is often true. However, people may often bolster faith in the worldview to satisfy their need for a meaningful understanding of reality. Further, bolstering faith in the worldview does not necessarily mean that one perceives the self as currently living up to its standards of personal value. For these reasons, bolstering the worldview may not entail a self-esteem boost.

on perceptions of authority status and righteousness. Building on Freud's (1921/1955; see also Ferenczi (1916) and Redl (1942)) insight that unconscious fears underlie an irrational positive regard for certain others (i.e., *transference objects*), Becker (1973) posited that people assuage mortality concerns in part by transferring power to and investing faith in larger-than-life others—such as teachers, religious leaders, and other prominent cultural figures—who embody the cultural meaning systems that promise literal or symbolic immortality. This analysis is partially supported by evidence that MS heightens affection for charismatic political leaders who promise citizens a role in a grand and enduring mission (Cohen, Solomon, Maxfield, Pyszczynski, & Greenberg, 2004; Landau, Solomon, et al., 2004).

Insofar as regard for revered authorities facilitates terror management, evidence of their inaccuracy or fallibility should be threatening. Indeed, research by Banfield and Kay (2008) showed that individuals whose political worldview has been criticized subsequently downplayed the importance of negative information about their leaders (such as the suggestion that a leader has had an extramarital affair), presumably to maintain the authority's status after an existential threat. For our current purposes, however, we are interested in the possibility that people may elicit such a threat themselves when, in their striving for personal worth, they stand poised either to defy authority opinion or to surpass revered authorities in important domains. In these situations people can opt to bolster self-esteem by asserting their personal worth in defiance of the authority's judgment or over the authority's status, or they can temper self-enhancement so as to preserve the authority's credibility and status. Based on the foregoing analysis, we hypothesized that reminders of death would lead people to uphold the credibility and status of a meaningful authority at the expense of enhancing and defending self-esteem.

We tested this broad hypothesis in four studies. In Studies 1a and 1b we tested whether people enhance and defend self-esteem in defiance of worldview-representative authorities. In Study 1a participants were given positive feedback on a test judged by institutional experts as invalid. We expected mortality salient participants to downplay their achievement in line with authority opinion. In Study 1b, some participants were given self-esteem threatening feedback on a test approved by institutional experts. We predicted that control primed participants would defend self-esteem by downplaying the feedback's validity, whereas mortality salient participants would be reluctant to contradict expert opinion even when doing so would reflect positively on the self. In Studies 2 and 3 we tested whether MS-induced self-enhancement would be mitigated when the gains in personal value diminished the special status of personally revered authorities. We predicted that, in the absence of a potential threat to an authority's status, MS would increase perceptions of self-worth in important domains, but that this effect would be eliminated, and even reversed, if self-enhancement meant asserting superiority over one's parents (Study 2) or admired, culturally-representative political icons (Study 3).

Study 1a

This study was conducted as an initial test of our broad hypothesis that individuals under MS will be reluctant to self-enhance when doing so contradicts worldview-representative authorities. Following a MS manipulation, participants were led to believe that they performed well on an intelligence test that experts in education and government dismiss as invalid. Participants then rated the test's validity. We predicted that MS would increase agreement with expert opinion even when doing so undermines the validity of a personal achievement.

Methods

Participants and design

Thirty-six (15 men and 21 women)[3] psychology undergraduates participated in exchange for course credit and were randomly assigned to MS or uncertain pain priming conditions.

Procedure and materials

An experimenter explained that the study concerned the validity of internet intelligence testing, and that participation would entail completing an internet-based IQ test and some standard personality questionnaires.

Intelligence test. The IQ test was a fabricated assessment consisting of questions assessing logical, deductive, and quantitative reasoning. Background information on the test was then provided ostensibly to help participants interpret upcoming feedback. All participants read that although internet IQ tests are popular and often include difficult puzzles, experts in government and education are unanimous that such tests are not valid indicators of someone's true intelligence.

Mortality salience manipulation. In an ostensibly unrelated study of personality, participants received the MS manipulation following two filler questionnaires. Participants in the MS condition responded to two open-ended questions (used in previous TMT studies, e.g., Greenberg et al., 1990; Rosenblatt et al., 1989): "please briefly describe the emotions that the thought of your own death arouses in you" and "Jot down, as specifically as you can, what you think will happen to you physically as you die and once you are physically dead." To control for the possibility that the effect of this induction is merely a generalized reaction to reminders of any aversive or uncertain experience, participants in the control condition completed parallel questions with respect to the experience of uncertain bouts of severe physical pain: "imagine experiencing bouts of intense physical pain; you are uncertain how long they will last, when they will occur, and how they will affect your activities. Please briefly describe the emotions that the thought of experiencing such bouts of pain arouses in you…Jot down, as specifically as you can, what you think will happen to you as you experience these bouts of pain and once you have experienced them."[4] All participants then completed the Positive and Negative Affect Schedule—Expanded Form (PANAS-X; Watson, Clark, & Tellegen, 1988) self-report mood scale. This scale was included to determine if the MS treatment engendered affect (and if so, to determine if MS effects obtained on the dependent measure were mediated by affect).[5]

Participants were then told that the computer would score their responses to the internet IQ test and provide feedback on their intelligence. All participants received false positive feedback that they scored above the normal range (in the 92nd percentile) of

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[3] In this and the following studies, the analyses were originally conducted with gender as a between-groups factor. There were no main effects or interactions involving gender. Consequently, gender is not reported in subsequent analyses in order to simplify the presentation of results.

[4] One participant's written responses to the open-ended questions about uncertain pain included explicit reference to their own death. When this person's data were removed, we obtained the same significant pattern of results, and so we report our analyses with this person's data included.

[5] For all of the studies reported here, we assessed whether MS affected mood by performing MANOVAs and ANOVAs on the subscales of the PANAS and ANOVAs on the aggregate positive and negative affect scales as well. Consistent with previous TMT research demonstrating that MS does not engender affect, there were no significant differences found for these analyses. To ensure that the MS effects reported here were not mediated by affect, we conducted analyses of covariance (ANCOVAs) with the affect subscale scores (including positive and negative affect) as covariates and the effects of MS remained statistically intact. Thus, we are quite confident that, as in past research, the findings reported in the present studies are not caused by affective differences between MS and control conditions.

intelligence in the general population, indicating a very high level of problem solving skill and potential for success.

Intelligence test validity measure. Finally, participants completed three questions assessing the test's validity: How valid do you think the internet IQ test is at measuring *your* true intelligence? (1 = *not at all valid*, 7 = *very valid*); In your opinion, how accurate is the feedback that you received on the intelligence test? (1 = *not at all accurate*, 7 = *very accurate*); In your opinion, how precise of a measure is this internet IQ test? (1 = *not at all precise*, 7 = *very precise*).

Results and discussion

We averaged responses to the test validity items to form composite scores (α = .91; actual scores ranged from 1 to 6.33). A *t*-test comparing MS and uncertain pain conditions revealed that, as predicted, participants primed with death viewed the test as significantly less valid (*M* = 2.97, *SD* = 1.27) compared to participants primed with uncertain pain (*M* = 4.04, *SD* = 1.32), *t*(34) = 2.35, *p* = .02.

The results of Study 1a support our hypothesis that MS would lead people to endorse the opinion of worldview-representative authority even when it meant discounting the validity of a self-enhancing performance. When told that they excelled on an intelligence test that institutional experts dismiss as invalid, mortality salient participants rated the test's validity below the mid-point of the scale, whereas those primed with uncertain bouts of intense pain were more likely to endorse the test despite expert opinion. These findings suggest that MS increases motivation to preserve the credibility of revered authorities, even if it means discounting self-esteem bolstering achievements. However, because in this study we did not manipulate the valence of the feedback, it's possible that the feedback did not make a difference. Study 1b was therefore designed in part to examine the interaction of MS and feedback type.

Study 1b

In Study 1a, participants did not take an opportunity to self-enhance after MS when doing so would call into question the credibility of institutional experts, suggesting that the worldview has priority in terror management. However, a plausible interpretation of this finding is that MS leads to reluctance to bolster *either* self-esteem or the worldview if doing so threatens the other component of terror management. The question, then, is whether mortality salient participants would be reluctant to defend self-esteem against a threat (in contrast to bolstering it in the absence of threat) if doing so contradicts authority opinion. We conducted Study 1b to assess this possibility. Participants completed a personality inventory purportedly sanctioned by institutional experts as a highly accurate means of assessing a person's true personality. Following a MS manipulation, half the participants received feedback that they were deficient on a personally valued characteristic, whereas the other half received neutral feedback. Finally, as in Study 1a, participants rated the inventory's validity.

In line with prior evidence that people tend to scrutinize self-esteem threatening information even when endorsed by institutional experts such as scientists (Lord, Ross, & Lepper, 1979) and doctors (Ditto, Scepanski, Munro, Apanovitch, & Lockhart, 1998), we expected participants in the control prime condition to discount the validity of threatening feedback. However, if our broad hypothesis is correct that death reminders lead people to temper self-esteem motives in favor of preserving the credibility of worldview-representative authorities, this effect will be eliminated in the MS condition.

Methods

Participants and design

Sixty-one psychology undergraduates (25 men and 36 women) participated in exchange for partial course credit. The design was a 2 (MS vs. uncertain pain) × 2 (self-esteem threatening vs. neutral feedback) factorial design.

Procedure and materials

Personality inventory. Participants first completed the Miller Personality Inventory (MPI), a fabricated personality assessment composed of portions of the regulatory focus questionnaire (Harlow, Friedman, & Higgins, 1997), personal need for structure scale (Thompson, Naccarato, Parker, & Moskowitz, 2001), and the leadership questions described in Study 3. They were then told that the MPI is approved by experts in government, science, and education as an extremely valid measure of a person's true underlying personality.

Mortality salience manipulation. The MS manipulation followed two filler questionnaires in an ostensibly unrelated set of personality questionnaires. Participants were randomly assigned to complete the open-ended questions about either death or uncertain pain used in Study 1a. All participants then completed the PANAS-X as the necessary delay.

Feedback manipulation. Participants were then randomly assigned to receive self-esteem threatening or neutral personality feedback. Participants in the threat condition were told that, based on their MPI responses, they are notably deficient in a personality characteristic that they are personally invested in (as determined by prior mass survey responses collected weeks prior to the session). These characteristics included ambition, extraversion, organizational ability, self-control, and openness to experience. Accompanying the written feedback was a histogram depicting the participants' scores on their self-relevant characteristic as below the range of normal scores. Participants in the neutral feedback condition were told that their MPI responses suggest no signs of maladjustment. The accompanying histogram depicted participants' scores on unidentified characteristics as within the range of normal responses.

Personality inventory validity measure. Finally, participants completed three questions, similar to those used in Study 1a, assessing the MPI's validity: "How valid do you think the Miller Personality Inventory is at measuring *your* true personality? In your opinion, how accurate is the feedback that you received on the personality inventory? How precise of a measure do you think this personality inventory is?" We also included a fourth item—"How important do you think personality characteristics are in the broader scheme of things?"—to examine whether the hypothesized results were due to trivializing the importance of personality characteristics (e.g., Tesser & Paulhus, 1983) rather than accepting threatening feedback as predicted. All responses were made on 7-Point scales.

Results and discussion

We averaged responses to the inventory validity items to form composite scores (α = .90; actual composite scores ranged from 1 to 7) and submitted them to a 2 (MS vs. uncertain pain) × 2 (threat vs. no threat) analysis of variance (ANOVA). Results revealed a main effect for MS, such that participants primed with death rated the inventory as more valid (*M* = 4.5, *SD* = 1.16) than did participants primed with uncertain bouts of intense physical pain (*M* = 3.95, *SD* = 1.23), *F*(1,57) = 3.70, *p* = .05 (the main effect for feedback did not attain significance, *F* = 1.06, *p* = .31). More impor-

tantly, we observed the predicted two-way interaction, $F(1, 57) = 4.60$, $p = .04$. Pairwise comparisons (least significant difference) and the means in Fig. 1 show that, in the uncertain pain condition, participants who received threatening personality feedback discounted the MPI's validity relative to those who received neutral personality feedback, $F(1, 57) = 5.18$, $p = .03$. This replicates a self-serving bias effect demonstrated in previous research. However, this effect was eliminated if participants were primed with mortality ($p = .44$). Also supporting predictions, among participants given threatening feedback, mortality salient participants rated the inventory as more valid than did control participants, $F(1, 57) = 7.43$, $p = .01$.

Secondary analyses

We performed the same 2×2 ANOVA on the item assessing the importance of personality. Somewhat unexpectedly, we observed a main effect for MS, such that mortality salient participants viewed personality as more important in the broader scheme of things ($M = 5.37$, $SD = 1.13$) than did uncertain pain salient participants ($M = 4.58$, $SD = 1.57$), $F(1, 57) = 4.75$, $p = .03$. Neither the main effect for feedback nor the two-way interaction attained significance (both $Fs < 1$, $p > .79$). We also conducted our primary analyses with the perceived importance of personality as a covariate, and the pattern of significant results remained the same. Thus, we can be quite confident that the reported findings are not caused by participants in the MS/threat condition simply discounting the importance of personality characteristics.

In Study 1b we examined how MS affects people's assessments of self-relevant information that is sanctioned by worldview-representative authorities but that is threatening to self-esteem. In line with a large body of research on self-serving biases (e.g., Lord et al., 1979), we predicted that people would discount the validity of negative personality feedback despite being endorsed by institutional experts, but that MS would lead people to accept the validity of this information. The results were in accordance with this prediction. These results build on Study 1a in suggesting the priority of the worldview in terror management. If self-esteem had priority, we would expect that MS would have led participants who received threatening feedback to discount the inventory's validity more so than control participants. Instead, we found that MS eliminates the tendency to dismiss self-esteem threatening feedback when it is sanctioned by authorities. It appears that terror management concerns with preserving the credibility of worldview-representative author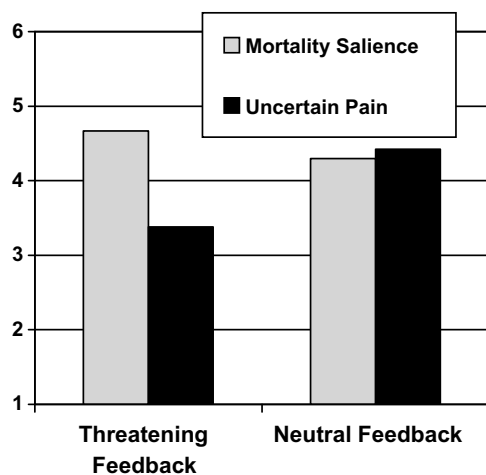ities not only limit self-enhancement but also increase willingness to accept self-esteem threatening feedback. However, in neither Study 1a or 1b did we have a condition in which participants could bolster self-esteem in the absence of a threat to a worldview-representative authority. We address this issue by examining whether people self-enhance when comparing themselves with a parent vs. a friend (Study 2) and when comparing themselves with a worldview-representative political figure vs. a less representative figure (Study 3).

Finally, we point out that in Studies 1a and 1b the effects of MS were distinct from reminders of intense and unpredictable bouts of pain, a highly aversive and highly uncertain future prospect, making an especially strong case for the specific role of mortality concerns in the present effects. Studies 2 and 3 were designed, in part, to separately examine the effects of intense pain and uncertainty inductions.

Study 2

The results of Studies 1a and 1b show that people under MS do not enhance or defend their self-esteem if it means undermining the credibility of culturally-representative authorities, implying that the worldview has priority over self-esteem in terror management. In Studies 2 and 3 we were interested in examining whether people temper their self-esteem strivings when doing so threatens to undermine the exalted status of specific others who represent meaning and protection. Study 2 examined this possibility in the context of people's relationships with their parents. Becker (1975) has claimed that children are ambivalent about becoming more powerful than their parents because of competing desires to assert their autonomy and to maintain the fear-assuaging security provided by the parents' exalted status. Consequently, he argued, the individual can undermine a central psychological defense against mortality concerns by surpassing his or her parents in important domains and thereby exposing their inadequacies (as illustrated in our opening example). Given our findings in Studies 1a and b, it seems plausible that the risk of doing offence to authority will outweigh the potential psychological gain of outperforming a parent.

Study 2 was designed to test these ideas. On the basis of evidence that MS increases self-esteem bolstering, and evidence that inflating one's standing on important dimensions relative to close others can serve to bolster self-esteem (e.g., Tesser, Millar, & Moore, 2000), we predicted that MS would increase self-serving perceptions of one's standing on valued characteristics when rating oneself and a friend. However, according to our current analysis, this self-serving bias should be eliminated when people rated both themselves and their parents on a characteristic that they admire in their parent. In order to test this hypothesis, we had participants rate themselves on a characteristic that they highly admire in their same-sex parent after rating either their same-sex parent or a close, same-age friend on the same characteristic.[6]

To specify, we had participants in the friend condition think of a close friend who excelled on a characteristic that, weeks prior to the experiment, they had indicated they highly admired in their same-sex parent. The friend condition allowed us to test our prediction that MS would heighten self-enhancement in the absence of a worldview threat; although we may value our close friends

Fig. 1. Test validity ratings as a function of mortality salience and self-relevant feedback in Study 1b. *Note.* Higher scores indicate higher perceived test validity. Scale ranged from 1 to 7.

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[6] We decided to ask only about the same sex parent for two reasons. First, assessing both parents would make the design more complex and double the needed sample size, and given that just using one parent would allow us to test the hypothesis, we didn't think these added costs were worth it. Second, theories and research within the psychodynamic tradition and on social comparison and gender roles suggest that both identification and comparison are more likely with the same sex parent, making the same sex parent the better choice to test the primary hypothesis. Of course, it is quite possible similar effects would be found with the opposite sex parent, a question for future research.

very much, we do not typically regard them as exalted sources of meaning and security. In contrast, TMT suggests that people continue to derive security from the special status of their parents well into adulthood, a claim that's been corroborated in recent research demonstrating MS-induced regard for one's parents (Cox et al., 2008).

We also had participants rate their parent or a close friend (as well as themselves) on a characteristic that they did not especially admire in their parent. We suspect that surpassing one's parent is more likely to pose a threat if the parent is surpassed on a characteristic for which he or she is highly esteemed. For example, if a woman admired her mother as especially creative, she may be reluctant to perceive herself as more creative than mom, but not necessarily to perceive herself as relatively more courageous or mechanically skilled.

Our specific prediction was that, compared to a control induction, MS would lead to more favorable self-ratings on personally valued, parent-admired characteristics among participants who had previously rated close friends who excel on those characteristics; however, this effect will be eliminated or reversed if participants first rated a same-sex parent on those parent-admired characteristics. We did not predict a similar interaction if participants rated a friend or a parent on parent-non-admired characteristics.

Methods

Participants and design

Seventy-one psychology undergraduates (30 men and 41 women) participated in partial completion of a course requirement. The design was a 2 (MS vs. pain) × 2 (parent vs. friend comparison) × 2 (self vs. other ratings) × 2 (parent-admired vs. non-admired characteristics) factorial with self vs. other rating and characteristic type serving as within-subjects factors.

Procedure and materials

In a mass survey session approximately 4 weeks before the experimental session, we asked participants to think about their same-sex parents and choose from among 19 characteristics and abilities (e.g., *creativity, scientific knowledge, courage*) which they most admired that parent for. Then we asked them to indicate the characteristic on which their parent was of average standing relative to others. Our prediction that MS would increase self-enhancement is based on the assumption that the parent-admired characteristics are generally held in higher personal value than parent-non-admired characteristics. We performed a pilot investigation to confirm whether this difference exists. We had 38 participants drawn from the same subject pool as in Study 2 indicate which of 19 characteristics (the same used in the mass survey session) they most admired in their same-sex parent and which, relative to most other people, their same-sex parent was most average on. They were then asked to indicate how much, in general, they personally valued the two selected characteristics using a 7-point scale (1 = *not at all*, 4 = *somewhat*, 7 = *extremely*). A paired-samples *t*-test indicated that, as expected, participants rated the parent-admired characteristic as more personally valued (M = 6.24, SD = .85) than the parent-non-admired characteristic (M = 4.4, SD = 1.92), $t(37) = 5.66$, $p < .01$. These results support the idea that the parent-admired characteristic was held in higher general regard than the parent-non-admired characteristic.

Mortality salience manipulation. During the experimental session, participants first completed a packet of questionnaires that included the MS manipulation following two filler questionnaires. Those in the MS condition answered the questions about their own death used in Studies 1a and 1b; participants in the control condition completed parallel questions regarding the experience of intense physical pain.

Self and other ratings. The next questionnaire assessed participants' perceptions of a close other and themselves. Depending on condition, they were asked to think about either their same-sex parent or a close, same-age friend and then rate them (relative to the average person) on two characteristics by making a dash on a dotted, horizontal line following each characteristic (the line was anchored on the left with *Much less than others* and on the right with *Much greater than others*). In the parent condition, participants rated their same-sex parent on the characteristic that they especially admired in their parent and the characteristic that they felt their parent was relatively average on (as determined by prior mass survey responses). In the friend condition, participants were first asked to think of a same-age friend who excelled on their parent-admired characteristic and was about average on their parent-non-admired characteristic, and then to rate that friend on those same characteristics relative to most others. Participants were not informed that they had received characteristics on the basis of their mass survey responses, and no participants expressed awareness of the connection between the parent-relevant items on the mass survey and the experimental materials.

Lower down on the page, participants were instructed to rate themselves on the same two characteristics, again by making a mark on a dashed line anchored with *Much less than others* and *Much greater than others*. We positioned the four rating lines closely together to make it salient to participants that in rating themselves they could potentially surpass their parent or friend.

Results and discussion

We measured in centimeters where on the line participants rated the other and themselves on the parent-admired and parent-non-admired characteristics. For each characteristic, we created a difference score by subtracting the rating for the other from the rating for self. Higher numbers indicated rating the self as superior to the other (actual scores ranged from −10.60 to 12.5 for the parent-admired characteristic and −10.5 to 9.0 for the parent-non-admired characteristic). We submitted these difference scores to a 2 (MS vs. pain; between) × 2 (parent vs. friend comparison; between) × 2 (parent-admired vs. non-admired characteristic; within) mixed ANOVA.[7] A significant main effect for characteristic indicates that the self was rated as significantly less superior to the other (parent or friend) on the parent-admired characteristic as compared to the parent-non-admired characteristic, $F(1,67) = 27.28$, $p < .001$. This is not surprising given that the other was either a parent who was highly admired for this characteristic or a friend who excelled on this characteristic. There was no interac-

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[7] We report difference scores to simplify presentation and because we are interested in how participants rated themselves relative to a close other. The complete ANOVA including self vs. other ratings along with characteristic type (parent-admired vs. parent-non-admired) as within-subjects factors and MS and parent vs. friend comparison as between-subjects factors finds a significant four-way interaction, $F(1,67) = 4.37$, $p = .04$. Looking only at self-ratings for parent-admired characteristics, we observed a significant MS × comparison other interaction ($F(1,67) = 7.27$, $p < .01$), such that mortality salient participants who rated their friend bolstered their standing on the parent-admired characteristic relative to mortality salient participants who rated their parent and pain salient participants who rated their friend (both $ps < .05$). However, there was no significant interaction for other ratings on the parent-admired characteristic ($F < 1$, $p > .90$). These results show that the difference score in the MS/parent comparison condition is not due to participants rating both themselves and the parent higher on the parent-admired characteristic. Rather, as predicted, the pattern of results was due to mortality salient participants bolstering their standing when rating a friend, but not when rating a parent, suggesting that MS increases self-enhancement in the absence of a potential threat to the parent's status.

tion between comparison other and characteristic type, $F < 1$, suggesting that participants did not have difficulty thinking of a friend who excelled on the parent-admired characteristic. In line with our primary prediction, we observed a three-way interaction, $F(1,67) = 4.37$, $p = .04$. No other interactions attained significance ($Fs < 1$). To interpret the predicted interaction, we performed separate MS × comparison other ANOVAs on the difference scores for each characteristic.

Parent-admired characteristic

An MS × comparison other ANOVA revealed only the predicted two-way interaction, $F(1,67) = 7.53$, $p = .008$ (for all other effects, $Fs < 1.8$, $ps > .18$). Pairwise comparisons (LSD) and the pattern of means presented in Fig. 2 reveal that among those participants who first rated their friend, MS led to increased self-ratings, $F(1,67) = 7.43$, $p = .008$. That is, MS led participants to rate themselves higher on a valued, parent-admired characteristic after first rating a friend that excels on that characteristic. In contrast, participants who had first rated their parent on a parent-admired characteristic did not respond to MS with increased self-ratings, $F(1,67) = 1.10$, $p = .30$. In addition, within the MS condition, participants who first rated their friend rated themselves higher than those who first rated their parent, $F(1,67) = 4.76$, $p = .03$.

Within the pain-salience control condition, there was a trend for people who rated their parent first to rate themselves more positively compared to people who rated their friend first, $F(1,67) = 2.80$, $p = .10$. Although we did not predict a difference between these conditions, this trend minimally suggests that participants were not generally averse to viewing themselves positively after rating their parent.

Parent-non-admired characteristic

An MS × comparison other ANOVA conducted on the parent-non-admired characteristic did not reveal any significant main effects, interactions, or pairwise comparisons, all $Fs < 1$, all $ps > .46$ (see pattern of means in Fig. 3).

In Study 2 we examined how MS affects people's self ratings on valued characteristics that they highly admire in their parents. We predicted that MS would lead people to rate themselves higher on a valued characteristic after they rated a close friend who excelled on that characteristic, but that this effect would be eliminated if participants rated themselves after rating a parent whom they highly admire for that characteristic. The results were in accor-
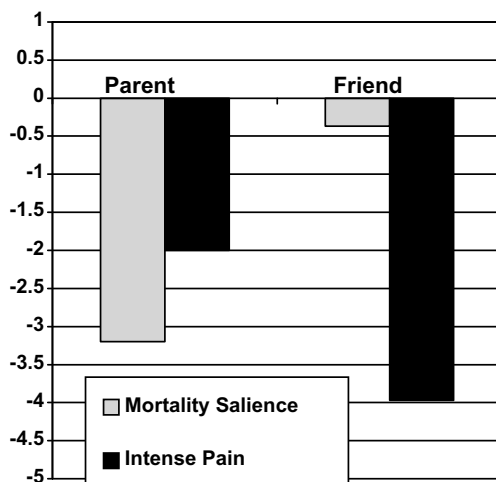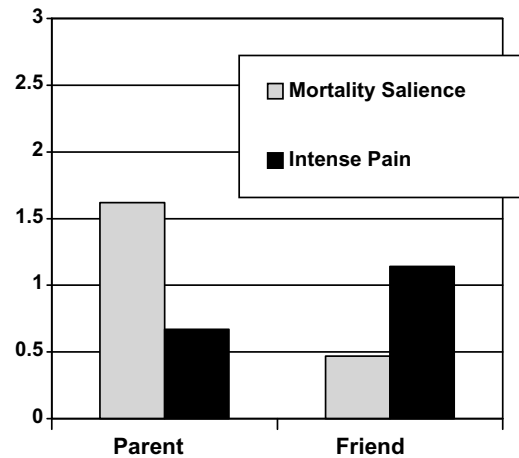

Fig. 3. Relative self-ratings (self minus other) on parent-non-admired characteristic as a function of mortality salience and parent vs. friend ratings in Study 2. *Note.* Higher scores indicate higher relative self-ratings.

dance with this prediction, suggesting that MS leads people to self-enhance unless doing so means threatening the special status of authorities such as one's parents.

It is unlikely that the elimination of the MS effect in the parent condition is due to something about the parent-admired characteristic per se, since MS led participants to bolster their standing on those characteristics that they valued in their parents so long as they had previously rated a friend who excelled on that characteristic (that is, if they did not think of the characteristic in light of their parents). It is also unlikely that the results are simply due to rating oneself after rating another who is known to excel on a characteristic, since participants in the friend condition were explicitly asked to think about a close friend who excelled on the characteristic; the slight trend for pain-salient participants to rate themselves relatively lower after rating a friend compared to a parent minimally suggests that participants did not have difficulty thinking of a close friend who excelled on the parent-admired characteristic. We think that the clearest interpretation of these results is that MS increases self-esteem bolstering unless it means bolstering one's standing beyond a central source of meaning and existential security.

Study 3

In Study 2 we examined the conflict between self-enhancement and preserving the status of parents, who most people view as exalted figures of meaning and security well into adulthood. However, as Becker (1975) pointed out, reverence for exalted others is not an exclusively family affair. Over the course of socialization, the primary sources of psychological security, those entities that sustain the sense of life as meaningful, shift from one's parents to the iconic figures of power that embody the cultural worldview. By maintaining the special status of their leaders, people can uphold the cultural worldview that imbues life with meaning, order, and permanence (cf. Cohen et al., 2004; Landau, Solomon, et al., 2004). Indeed, this connection between worldview-maintenance and belief in the specialness of leaders was directly established in a study by Kay, Jost, and Young (2005), wherein participants who received a threat to the American worldview became more inclined to rate powerful figures as possessing traits causally related to power.

From this perspective we can understand why people are often distressed when the special status of their revered leaders is undermined: because leaders are seen as the embodiments of the

Fig. 2. Relative self ratings (self minus Other) on parent-admired characteristic as a function of mortality salience and parent vs. friend ratings in Study 2. *Note.* Higher scores indicate higher relative self-ratings.

cultural worldview, exposing their inadequacies challenges the absolute validity of that worldview and thereby threatens to expose the individual to mortality-related fears. Therefore, MS should increase reluctance to undermine leaders who embody the cultural worldview, even when doing so could bolster self-esteem. We assessed this possibility in Study 3 by examining how people respond to feedback that they outperformed a prominent and personally admired leader on a test of leadership potential. This information could bolster one's self-esteem, yet it can simultaneously undermine the leader's status. Would MS lead people to self-enhance and exaggerate the test's validity, or to defend the leader's status and discount the test's validity even if it means downplaying personal achievements?

Based on our foregoing analysis, we predicted that MS would prompt different defensive responses depending on the type of leader that the participants outperformed. Leaders are not equal in their embodiment of the cultural worldview. Some prominent leaders—what we'll call *current* leaders—are still active in the public sphere and have not yet attained canonical status as embodiments of the dominant worldview. Participants led to believe that they surpassed a personally admired current leader were expected to self-enhance in response to MS. In contrast, *canonical* leaders are no longer active or under public scrutiny, and have achieved a canonical status as embodiments of the dominant worldview. Indeed recent research shows that attitudes toward admired dead people are more positive (Allison & Eylon, 2005) and more resistant to change (Eylon & Allison, 2005) than attitudes toward admired people who are still alive. Participants led to believe that they surpassed a personally admired canonical leader should be primarily concerned with preserving the worldview and therefore respond to MS by discounting the test's validity.

To test these hypotheses, we first had participants complete an inventory of leadership potential. Following an MS manipulation, participants received feedback that they outperformed a personally admired or non-admired leader. Lastly, participants assessed the inventory's validity. We grouped participants based on whether the leader they outperformed was canonical or current. To clarify, *all* participants were told that they outperformed a prominent leader; the conditions differed as to whether the outperformed leader was personally admired or non-admired and whether the leader was canonical or current.

Methods

Participants and design

Ninety-four psychology undergraduates (29 men and 65 women) participated in exchange for partial course credit. The design was a 2 (MS vs. uncertainty) × 2 (admired vs. non-admired leader) × 2 (canonical vs. current leader) factorial design.

Procedure and materials
Leader admiration inventory. Approximately 6 weeks prior to the first experimental session, participants were asked to rank-order 12 well-known leaders in terms of how much they personally admired them as leaders. The leaders were: George W. Bush, Bill Clinton, Hillary Clinton, Gandhi, John F. Kennedy, Martin Luther King Jr., Rush Limbaugh, Nelson Mandela, Michael Moore, Lute Olson (the widely known coach of the university basketball team), Ronald Reagan, and Oprah Winfrey. We excluded those who selected Gandhi as their most admired leader because participants were to receive feedback comparing their test performance with that of their admired leader, and we expected a high degree of skepticism that Gandhi would have been alive at the time that the purported leadership test was available. We also excluded those who indicated Limbaugh, Moore, and Hillary Clinton as their most admired leaders because there were too few of them to ensure an

approximately equal representation of leaders in our sample. We recruited approximately equal numbers of participants who indicated current leaders (Mandela, Oprah, Bush, B. Clinton, Olson) and canonical leaders (John F. Kennedy, Martin Luther King Jr., Ronald Reagan) as their most admired. Participants were not informed that they had been recruited on the basis of their responses to the leader admiration inventory.

We conducted a pilot study to test our assumption that canonical leaders are perceived as more representative of the American worldview than are current leaders. Twenty participants recruited from the same subject pool as Study 3 were given the names of the eight selected leaders just mentioned (in one of two fixed random orders) and asked to rate how much he or she represents the beliefs and values of the American worldview (1 = *does not represent American values*; 7 = *completely represents American values*). We averaged the ratings for current (α = .59) and canonical leaders (α = .64) separately and submitted those scores to a 2 (leader type; within-subjects) × 2 (order; between-subjects) ANOVA. We observed the expected main effect for leader type, such that canonical leaders were rated as more representative of the American worldview (M = 5.52, SD = .75) than current leaders (M = 4.28, SD = .80), $F(1,18) = 43.08$, $p < .001$. The leader type × order interaction did not reach significance, $F < 1$, $p = .65$. Because the internal reliability coefficients were relatively small, we performed separate dependent t-tests comparing the ratings of each canonical leader to the current leader mean. As expected, the means for John F. Kennedy (5.62), Martin Luther King Jr. (6.10), Ronald Reagan (4.90) were all significantly higher than the current leader mean (ts ranged from 2.11 to 7.06, ps ranged from .05 to <.001). Given these results, we are confident that participants in the main study viewed the canonical leaders as more representative of their worldview than the current leaders.

Leadership potential test. During the experimental session, participants first completed the Erlwin Leadership Potential Inventory (ELPI), a fabricated assessment of leadership potential composed of questions adapted from various leadership inventories (see Northouse, 2004) and presented in different formats (e.g., open-ended decision scenarios, multiple choice).

Mortality salience manipulation. Participants then completed a packet of personality questionnaires containing two filler questionnaires and the MS manipulation. Participants in the MS condition completed the same open-ended questions pertaining to one's eventual death described above; those in the control condition completed parallel questions with respect to the experience of uncertainty. Specifically, we used van den Bos, Poortvliet, Maas, Miedema, and van den Ham's (2005) uncertainty salience induction, where participants respond to the following open-ended questions: "please briefly describe the emotions that the thought of your being uncertain arouses in you" and "please write down, as specifically as you can, what you think physically will happen to you as you feel uncertain." Using this control induction allowed us to test a possible alternative explanation, proposed by van den Bos (2001) and McGregor, Zanna, Holmes, and Spencer (2001), that an MS effect in this context is not specific to thoughts of death but is due to a general concern with uncertainty. The PANAS-X served as the necessary delay and distraction.

Leader outperformance manipulation. Participants then received feedback on their ELPI performance. The first feedback form compared their performance to their peer group. To minimize suspicion that they outperformed a prominent leader, all participants were told that they performed very well (in the 92nd percentile) relative to their peers. The second feedback form compared their performance with well-known leaders purported to have taken

the ELPI. All participants were told that they have a higher potential for effective leadership than a well-known leader. To manipulate outperformed leader admiration, we randomly assigned participants to receive the name of either the leader that they had ranked 1st in admiration or the leader they ranked between 9th and 11th (out of 12) in admiration weeks earlier on the leader admiration inventory. The last portion of the screen included a score summary: "your ELPI score exceeds the ELPI score of this well-known figure, indicating that you may outperform this individual on the personal qualities and decision making skills characteristic of effective leaders."

To clarify, all participants were told that they outperformed a prominent leader. The conditions differed only as to whether the outperformed leader was personally admired or not, and whether the outperformed leader was current or canonical.

Leadership inventory validity measure. Finally, participants rated the leadership inventory's validity by responding to three questions (similar to those used in Studies 1a and 1b): how valid do you think the ELPI is at measuring *your* true leadership potential? In your opinion, how accurate is the feedback that you received on the ELPI? How precise of a measure do you think the ELPI is? All responses were made on 7-Point scales.

Results and discussion

We averaged responses to the leadership inventory items to form composite scores (α = .87; actual scores ranged from 3 to 7), which were submitted to a 2 (MS vs. uncertainty) $\times$ 2 (admired vs. non-admired leader) $\times$ 2 (canonical vs. current leader) ANOVA. The analysis revealed only the predicted three-way interaction, $F(1,86) = 9.83$, $p = .002$ (all other p's > .22). For ease of presentation, results are reported for different leader types.

Current leaders

The pattern of means presented in Fig. 4 and pairwise comparisons (LSD) revealed that, as predicted, mortality salient participants who received feedback that they outperformed an admired current leader rated the leadership test as more valid than did uncertainty salient participants who outperformed an admired current leader ($F(1,86) = 4.72$, $p = .03$) and mortality salient participants who outperformed a non-admired current leader ($F(1,86) = 3.90$, $p = .05$).

Canonical leaders

Also consistent with predictions, mortality salient participants who received feedback that they outperformed an admired canonical leader (Fig. 5) rated the leadership test as significantly less valid than did uncertainty salient participants who outperformed an admired canonical leader ($F(1,86) = 3.95$, $p = .05$) and mortality salient participants who outperformed a non-admired canonical leader ($F(1,86) = 5.13$, $p = .03$). Within the MS condition, participants who outperformed an admired canonical leader rated the test as less valid than participants who outperformed an admired current leader, $F(1,86) = 10.93$, $p < .001$. No other pairwise comparisons attained significance ($Fs < 1.5$, $ps > .22$).

In Study 3 we were interested in how MS affects perceptions of information that one has surpassed a prominent, admired leader in leadership potential, information that could boost self-esteem or undermine meaning. We predicted and found that MS led to polarized perceptions of the feedback's validity as a function of the outperformed leaders' worldview representativeness. Mortality salient participants who outperformed an admired but currently active, publicly visible leader were significantly more confident that the feedback was valid. In contrast, those led to believe that they outperformed an admired and culturally canonical leader were significantly more doubtful of the feedback's validity. These results strongly support our hypothesis that, in the absence of a potential threat to a worldview-representative authority, MS would lead people to self-enhance by bolstering their accomplishments in valued domains, but that this effect would be reversed when personal accomplishments threaten to undermine the special status of deeply entrenched figures in the cultural worldview.

But why are people willing to self-enhance relative to living but not dead leaders they admire? We believe it is because current leaders, at least at the present time in the U.S., are not as consistently revered as canonical leaders tend to be. Since current leaders remain actively under public scrutiny and do not yet possess finalized legacies handed down by historical judgment, they are perhaps more readily considered as fallible individuals capable of occasional error (such as former president Bill Clinton's adulterous behavior) rather than "larger-than-life" figures whose names have become almost synonymous with certain meaning systems (e.g., Martin Luther King and belief in egalitarian social structure). Indeed, current leaders often refer back to canonical leaders as their own revered authorities (often Reagan for Republicans and figures like King or Kennedy for Democrats). The frozen in time effect
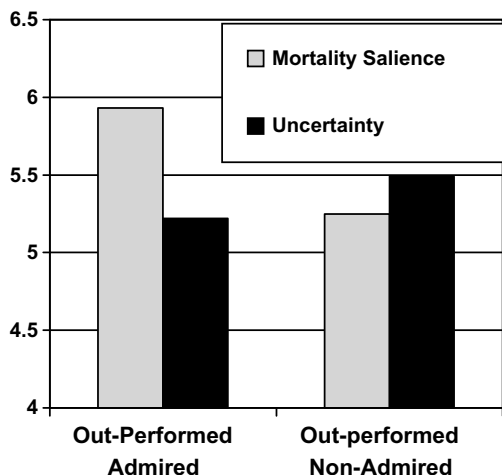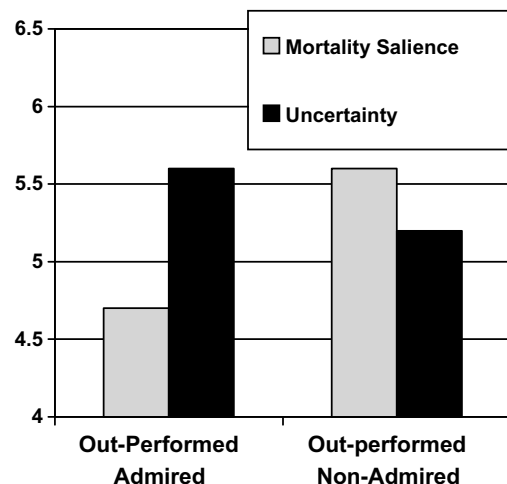
Fig. 4. Test validity ratings as a function of mortality salience and admiration of outperformed current leader in Study 3. *Note.* Higher scores indicate higher perceived test validity. Scale ranged from 1 to 7.

Fig. 5. Test validity ratings as a function of mortality salience and admiration of outperformed canonical leader in Study 3. *Note.* Higher scores indicate higher perceived test validity. Scale ranged from 1 to 7.

(Eylon & Allison, 2005) and death positivity bias (Allison & Eylon, 2005) support the idea that dead leaders might be canonized and idealized in this manner by the public at large, making the transition from public figures to immortalized representatives of certain ideological sources of meaning.

General discussion

According to TMT, the needs for self-esteem and a meaning-conferring worldview jointly operate to assuage mortality concerns. While this may be true most of the time, there may be interesting situations in which enhancing self-esteem threatens to undermine faith in the worldview. We hypothesized that people faced with such a conflict will opt to preserve faith in the worldview, because a threat to the worldview necessarily entails a threat to the standards of value on which people stake their self-esteem, but discounting self-esteem bolstering accomplishments does not reciprocally entail a worldview threat.

Based on this reasoning, we predicted that when an opportunity to bolster or defend self-esteem following mortality salience (MS) would threaten the status or credibility of revered, worldview-representative authorities, our participants would not take advantage of this opportunity. The results provided converging support for this prediction using three different types of authority that conflict with different means of self-enhancement. In Study 1a, mortality salient participants discounted the validity of self-esteem bolstering feedback to comply with institutional experts. In Study 1b, MS increased reluctance to discount the validity of self-esteem threatening information that is sanctioned by institutional experts. In Study 2 MS led people to rate themselves higher on a valued dimension after rating a close friend who excels on that dimension, but not if people first rated a parent who excels on that dimension. In Study 3, MS led participants to judge feedback that they surpassed a current political figure as more valid, but feedback that they surpassed a canonical cultural figure as less valid. Taken together, these findings suggest that heightening mortality concerns generally increases self-enhancement but also increases reluctance to self-enhance when doing so would challenge important aspects of the individual's meaning-providing worldview.

The interplay of self-esteem and worldview motives

As emphasized throughout, we agree with the original formulation of TMT that views self-esteem and worldview-maintenance as generally working in concert. Christians try to live up to the standards of worth of Christianity, patriots try to live up to the constitutional tenets of their nation, and scientists try to live up to the principles of science. Being a great Christian, a great patriot, or a great scientist generally works in harmony with the underlying worldview, reinforcing that worldview and one's significance within it. Similarly, merging with worldview-representative authorities and complying with their views is often consonant with self-esteem striving.

Still, as the current studies illustrate, there are situations in which the pursuit of self-worth and faith in the worldview can pull the person in different directions. In the current research we examined situations in which enhancing or defending self-esteem threatens to undermine representatives of the worldview. But converging theoretical insights suggest that people spend their lives in oscillation between the poles of self-assertion and embracing of broader meaning systems. Based on the earlier theorizing of Rank, Becker characterized the individual as balancing "dual ontological motives"—on the one hand, proving oneself a unique individual offering one-of-a-kind contributions to the human endeavor, and, on the other, yielding one's individuality to the secure anonymity of a group identity or omnipotent Other. Rollo May (1983) based much of his psychotherapeutic theory on the premise that two "existential givens" of the individual are a fundamental centeredness in the self that prompts assertive self-expression and the simultaneous need to go beyond this center in interpersonal interaction. Similarly, Arthur Koestler (1968) describes the personality as more or less oscillating between what he called the "self-assertive" and "integrative" tendencies. The self-assertive tendency consists of our individualistic ambition and competitiveness, while the integrative tendency is our desire for immersion in a broader whole. Brewer's (2003) optimal distinctiveness theory also argues that people seek to maintain social identities which serve a balance between perceptions of uniqueness and connections to a larger collective.

These converging insights suggest that there may be occasions in which people proceed to enhance self-esteem at risk to their worldview-derived bases of meaning. Initial evidence for this possibility is provided by Simon et al. (1997) finding that MS leads people to assert either their uniqueness or their similarity to others depending on which perception is threatened. This finding suggests that existential concerns with "emerging"—expressing one's individuality—will sometimes take priority over concerns with "merging" with collective meaning structures. Additional research is necessary to examine this possibility within the currently examined context of striving for self-worth and preserving valued aspects of the worldview. We suspect that people will be more likely to pursue self-esteem motives if the gain in self-worth is large and the extent of the threat to a source of meaning or the centrality of that source of meaning is not so great. Second, there may be important individual differences in people's willingness to aggrandize themselves over the values, norms, and expectations of their worldview. Third, there may be significant cultural variability. We suspect that in the Western cultural context, where the freethinking individualist and unique genius loom as valued archetypes, certain people may be more willing to disregard publicly-endorsed meaning, as embodied in majority or expert opinion, if it threatens to stifle their personal quest for specialness.

Negative implications for personal well-being

Self-defeating tendencies have been observed by numerous psychologists. Freud (1915/1955) labeled the phenomenon the "wrecked by success" syndrome: people at the point of attaining the crowning success for which they have long striven experience a crippling fear that prevents them from succeeding. Rank (1945) described it as life fear: the anxiety associated with facing life as a separate being. Maslow (1971) called it the Jonah complex: we shrink away from our highest possibilities because we cannot bear our personal greatness. TMT and the present findings suggest that people are sometimes reluctant to fulfill their personal potential because excelling can cleave the person from their own meaning-providing worldview. Ironically, it might be those most capable of success who most often experience this conflict, since they continually face the realization that their past and anticipated achievements set them apart from an established order, a realization which in turn signals a discomforting departure from self-defining meaning. More research is necessary to examine how the conflict between self-esteem and meaning plays out in real-life cases, and how it may be moderated by individual and cultural differences.

The present findings converge with lines of research on legitimization of low status and system justification. Major et al. (2002) found that members of disadvantaged groups who experienced rejection by members of higher-status outgroups were less likely to perceive themselves as targets of discrimination if they endorsed the belief that every individual has an equal opportunity

to improve his or her status (a belief that legitimizes their lower status). That is, stigmatized individuals preferred to construe a negative social outcome consistent with a meaningful worldview rather than attribute it to unfair treatment and thereby protect self-esteem (see also Major, 1994). Our analysis suggests that terror management needs for meaning can lead people to avoid opportunities for excellence as well as make self-defeating explanations for their own shortcomings and failures.

Similarly, system justification theorists have empirically demonstrated that individuals are driven to derive vital meaning from the preservation of status quo relationships between social groups, even sometimes at the risk of experiencing personal and in-group derogation (e.g., Jost & Banaji, 1994; Jost & Burgess, 2000). The Ancient Indian caste system provides one of many historical examples of this phenomenon—the "untouchables," poor people on the lowest rung of the Indian social ladder, seemingly willingly spent their entire lives subscribing to negative stereotypes in order to preserve the prevailing cultural worldview. Such an endorsement of worldview over personal status does not necessarily entail less concern with immortality; in fact, ideologies such as the Indian caste system, or the Christian ideology of medieval serfdom, promised a high-status next life in exchange for a lower-status current life (cf. de Botton, 2004). Just as these older worldviews mitigated the death fear of even lower-class individuals, Jost, Fitzsimons, and Kay (2004) have posited that current system justification efforts are partially driven by the need to repress death anxiety through belief in a meaningful and just universe, even a universe in which one's social status is not very high.

This would seem to make system justification and terror management theory quite compatible, yet Jost et al. (2004) saw as an important distinction the fact that TMT research has historically implied that support for one's worldview works in concert with shoring up self-esteem, while system justification theory holds that self-esteem is often sacrificed to shore up the system or worldview. However, we believe that TMT actually converges with system justification theory on this point, because maintenance of worldview is the more fundamental component of terror management. The present studies support this rapprochement by showing that MS does encourage people to sacrifice opportunities to boost self-esteem in order to maintain sources of cultural meaning. This research thus provides one answer within a TMT framework to an important question posed by system justification theorists: "there may be…general ideological processes that operate in defense of the status quo, even at the expense of individual and collective self-esteem…An examination of these processes, we argue, is needed to explain why 'people willingly propagate whole cultural systems that hold them in bondage,' as Becker (1962/1971, p. 86) so eloquently put it" (Jost et al., 2004).

Defensive and growth-oriented pursuit of self-enhancement and meaning

One limitation of the current analysis is that it assumes that the pursuits of self-esteem and meaning are driven by defensive motivations. This assumption is supported by evidence that reminders of mortality lead people to defend existing knowledge structures and positive self-perceptions (see, e.g., Landau, Johns, et al., 2004; Pyszczynski et al., 2004). However, the needs for meaning and personal value can also be driven by less defensive, growth-oriented motivations (see Greenberg, Pyszczynski, & Solomon, 1995; Pyszczynski, Greenberg, & Goldenberg, 2003 for discussion of interacting motive systems). That is, there may be times when efforts to secure a meaningful worldview and a sense of personal worth function primarily to expand the individual's capacities and afford a more intrinsically satisfying engagement with the world. The present research looked at the conflict between two defensive tendencies,

and we noted some of the negative personal and social consequences of this conflict. If we add to this research a deeper understanding of the more intrinsically satisfying, non-defensive means of securing personal worth and meaning, perhaps we can alleviate the maladaptive consequences of this psychological conflict.

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