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Creativity and Terror Management: Evidence That Creative Activity Increases Guilt and Social Projection Following Mortality Salience

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The present research, based on the ideas of O. Rank (1932/1989) and E. Becker (1973), was designed to test the hypotheses that engaging in creative expression after personal mortality has been made salient will lead to both increased feelings of guilt and a desire to enhance social connectedness. In Study 1, the authors used a 2 (mortality salience vs. control) × 2 (creative pretask vs. noncreative pretask) between-subjects factorial design and measured self-report guilt. Results indicated that participants who were reminded of their death and completed the creative pretask expressed more guilt than all other participants. In Study 2 this effect was replicated with a modification of the creativity treatment. In Study 3, the same conditions leading to increased guilt also led mortality-salient creative-task participants to express higher levels of social projection, an index of perceived social connectedness. Implications of these results for creativity, the interpersonal nature of guilt, and terror management theory are briefly discussed.

Contemporary social psychological discourse reflects a burgeoning interest in the topics of creativity, guilt, and the awareness of death. For example, researchers have been exploring the dispositional and contextual factors that affect creativity and intrinsic motivation (e.g., Amabile, 1983; Csikszentmihalyi, 1991; Deci & Ryan, 1985; Eisenberger & Armeli, 1997). Recent theoretical and methodological developments have advanced our understanding of factors relating to guilt as well (e.g., Higgins, 1987; Jones & Kugler, 1993; Tangney, 1990; Tangney, Miller, Flicker, & Barlow, 1996). Additionally, studies have revealed a variety of psychological defenses used to manage the potential for terror engendered by the uniquely human awareness of mortality (e.g., Florian & Mikulincer, 1997; Greenberg et al., 1990; McGregor et al., 1998). Despite this attention, creativity, guilt, and terror management are currently nonoverlapping areas of social psychological inquiry, and empirical work connecting these topics has yet to be done. Interestingly, Otto Rank (1929/1978) posited an intimate relationship among these constructs 70 years ago; specifically, he theorized that intimations of mortality render creative action a source of guilt. Drawing from Rank (1932/1989) and Becker (1971, 1973), the present research was designed to test the hypotheses that engaging in a creative action under conditions of mortality salience (MS) would lead both to increased feelings of guilt and, as a result, to a desire to enhance social connectedness.

The Bright and Dark Sides of Creativity

Creativity has long been viewed in a very positive light by both lay people and academics. The idea that creative action represents "man's need to actualize himself, to become his potentialities" (Rogers, 1961, p. 354) is central to humanistic psychology and the many theories generated by this perspective. This focus on the bright side of creativity continues to inspire contemporary conceptions of the construct and has generated a wide body of research (for a review, see Amabile, 1996). For example, according to Deci and Ryan's (e.g., 1995) self-determination theory, the "self develops through the ongoing synthetic resolution of the interaction between the active, integrative organism and the challenges of the environment" (p. 34). Under optimal circumstances, this resolution results in an autonomous, intrinsically motivated, and creative individual.

Amabile and colleagues have also hypothesized and demonstrated a link between intrinsic motivation and creativity (e.g., Amabile, 1983). From this and other related perspectives, it is the environment that constricts the individual and stifles his or her creativity. Research has shown that factors adversely affecting creativity include evaluation expectation (Amabile, 1979), competition (Amabile, 1982a), restricted choice (Amabile & Gitomer, 1984), and reward for the task (Amabile, Hennessey, & Grossman, 1986). One recent direction of this research program has been to examine not just what influences creativity but also the effects of creative task engagement on other aspects of behavior. Conti,

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Amabile, and Pollak (1995) induced participants to write creatively or not creatively about a passage they just read. Results indicated that participants who engaged themselves creatively showed enhanced long-term retention of information from the reading passage. Like most of the studies in the literature, however, this research focused on the positive and actualizing consequences of creative engagement, whether they be fostering autonomy (Deci & Ryan, 1987), reflecting intrinsic motivation (Amabile, 1983), or enhancing learning (Dweck, 1986). One important qualification to the view that creativity is undermined by extrinsic contingencies is offered by the work of Eisenberger and colleagues. From their perspective, under certain conditions, the presence of a salient reward may not only fail to adversely affect creativity (e.g., Eisenberger & Armeli, 1997; Eisenberger & Cameron, 1996) but may also increase creativity (Eisenberger, Armeli, & Pretz, 1998; but for a discussion of issues associated with this research see Eisenberger & Cameron, 1998; Hennessey & Amabile, 1998; Lepper, 1998; Sansone & Harackiewicz, 1998). This suggests that creativity may not always be motivated by a purely intrinsic desire for personal growth.

Rank (1932/1989) offered a complex view of creativity in the early part of the 20th century. Rank recognized the central importance of creativity as a positive expression of the life force and actually helped inspire the humanistic psychology movement (Kramer, 1995). However, he also explored the dark side of creativity. He was deeply concerned throughout his career with the relation between creativity and an individual's construction of a unique personality, and he viewed the creative expression of the artist as the primary metaphor through which to understand the creation of a unique identity:

> They must ultimately . . . carve their own individuality out of the collective ideology that prevails and that they themselves have accepted, like the sculptor who carves his figures out of raw stone. (1932/1989, p. 368)

Indeed, MacKinnon's research on architects in the early 1960s suggested that there was a link between the integration of personality (as described by Rank) and creativity. However, as MacKinnon (1962) noted, Rank recognized not only the actualizing potential of personal development and creative expression but also the insecurity that it might generate. Thus, forces restricting individuation emanate not only from controlling social contexts but from the individual as well.

Rank, heavily influenced by the philosophy of Nietzsche, presented his ideas in the context of a developmental framework in which the child struggles to differentiate himself or herself from the primary caregivers (i.e., the parents) by a process of individuation manifested psychologically through the development and function of the creative will. As Nietzsche (1885/1961) wrote,

> The spirit . . . wants to capture freedom and be lord . . . it will struggle for victory with the great dragon. . . . What is the great dragon which the spirit no longer wants to call lord and God? The great dragon is called "Thou shalt." But the spirit . . . says "I will!" To create freedom for itself and a sacred No even to duty . . . a sacred Yes is needed, for the sport of creation: the spirit now wills its own will, the spirit sundered from the world now wins its own world. (p. 55)

Consequently, Rank proposed that we become individuals initially by an act of negation (i.e., by refusing to constantly conform to the demands of our parents—e.g., "No, I will not wear that shirt that you want me to") that is eventually transformed into an act of affirmation ("I will do this myself"). Similarly, Rank argued that all creative activity is initiated by an act of negation (in that creative individuals refuse to accept socially agreed-upon reality in its current form—just say no to reality!) that is eventually transformed into an act of affirmation through a creative act that renders the world in accordance with the individual's imaginative sense of how it should be.

However, the act of negation is not without cost. In anticipation of both existential psychodynamic theory (e.g., Becker, 1962, 1973) and attachment theory (e.g., Bowlby, 1969), Rank pointed out that the parents are the child's source of protection from vulnerability and death. Therefore, by moving apart from the security-providing parents, individuation through creative willing exposes the child to the insecurity of his or her mortal fragility. Of course, eventually the youngster comes to the realization that the parents cannot protect him or her from all vulnerabilities (Solomon, Greenberg, & Pyszczynski, 1991), and at that point the need for security is transferred to something larger, namely, the child's culture and the social connections that it provides. Yet, the conflict remains fundamentally the same. Throughout life, individuation through creative action is achieved at the expense of the security-providing identification with that which is beyond oneself. This, then, for Rank, is the problem with acting creatively: the threat to social connection. Whereas previous theory and research attests to the positive impact of creativity, Rank's ideas suggest that creative expression does indeed have a dark side. One of the hallmark criteria of a creative work is that it be original (cf. Barron, 1968); that is, it needs to be different from what others have done. When people engage themselves creatively, they are expressing something unique that distinguishes them from others. To the extent that the expression of the creative will is the vehicle through which people engage in the process of individuation, creative engagement may threaten the delicate psychological balance between the needs to stick out and fit in (Becker, 1973; cf. Brewer, 1991). Consistent with this analysis are the many examples of creative artists (e.g., Schubert, Stravinsky, Van Gogh) and scientists (e.g., Copernicus, Galileo, Darwin) whose work was initially widely rejected and often remained so until after they died.[1]

Terror Management Theory, Belongingness, and Creativity

According to terror management theory (Greenberg, Pyszczynski, & Solomon, 1986; Solomon et al., 1991), individuals need to maintain social approval to protect themselves from the potential for terror associated with the juxtaposition of having a biological proclivity for self-preservation and being aware of one's inevitable mortality. From this perspective, the motive to fit in leads to culturally appropriate behavior that consensually validates one's beliefs and is thus likely to increase faith in one's worldview and one's value, which, in turn, affords protection from mortality concerns. Consistent with this analysis, reminding participants of

[1] Certainly there are also examples of creative individuals who have been embraced for their creativity. We return to this issue in the General Discussion section.

their mortality (MS) leads to a variety of efforts on the part of the participants to strengthen faith in the worldview, including increased liking of those who support one's worldview and disliking of those who threaten it (worldview defense; e.g., Greenberg, Simon, Pyszczynski, Solomon, & Chatel, 1992), harsher judgments against those who violate moral principles (e.g., Florian & Mikulincer, 1997), increased aggression toward worldview threateners (McGregor et al., 1998), increased bias in the minimal group setting (Harmon-Jones, Greenberg, Solomon, & Simon, 1996), and increased social consensus estimates for important attitudes (e.g., Pyszczynski et al., 1996). Interestingly, the MS treatment used in these studies does not generally create self-reported negative affect, and these effects are not mediated by self-reported affect. Moreover, MS effects have been obtained by independent researchers in a number of countries (e.g., in Israel by Florian & Mikulincer, 1997; in Canada by Baldwin & Wesley, 1996; in Germany by Ochsmann & Reichelt, 1994; in the Netherlands by Dechesne, Greenberg, Arndt, & Schimel, 1998) using a range of operationalizations of MS (e.g., fear-of-death scales in Greenberg, Simon, Harmon-Jones et al., 1995; fatal accident footage in Nelson, Moore, Olivetti, & Scott, 1997; subliminal death primes in Arndt, Greenberg, Pyszczynski, & Solomon, 1997), and a variety of aversive control conditions have failed to replicate these effects (for a thorough review of terror management theory and research, see Greenberg, Solomon, & Pyszczynski, 1997).

Because maintaining a sense of social connection serves the vital function of protecting individuals from concerns associated with mortality, threatening social connection in situations where such concerns are salient should elicit negative consequences for the individual that might not otherwise manifest themselves. Specifically, Rank argued that creativity may at times lead to feelings of guilt over the disruption of social connection. In summarizing Rank's thinking on this issue, Menaker (1982) wrote,

> Guilt arises in the wake of separation because the creative self-assertion signals opposition to another part of the self which seeks oneness and merging with an internalized parental image. Thus, guilt, as we have said before, arises in the face of the opposition inherent in a duality. (p. 60)

For Rank, therefore, guilt takes on an existential character to the extent that it reflects the insecurity associated with individuation. Because the identification with others provides security in the face of mortality, and because the perception that one has acted creatively implies separation from the collective, we hypothesized that creative action under conditions of MS would cause feelings of guilt. Our first two studies were designed to investigate this idea.

Study 1

The purpose of our initial study was to test the hypothesis that when mortality concerns are aroused, creativity will lead to feelings of guilt. Following a MS or control treatment, participants were encouraged to either be creative or not be creative, and they then completed a self-report measure of guilt. When operationalizing these constructs, we wanted to begin our investigation of creativity in an existential context by using an established manipulation of creativity. A survey of the literature, however, revealed that such manipulations are rare, as creativity more often tends to be assessed as a dependent variable. As previously noted, one recent study that successfully manipulated creative action was Conti et al. (1995). Therefore, we used procedures and materials developed by Conti et al.; specifically, participants read a passage on dreaming and then wrote a story using characters from the passage. Creative engagement was manipulated through pretask instructions: In the creative condition, participants were asked to read a description of a dream, imagine that they will face a panel of experts, and generate the most interesting questions about dreams that they could think of. Conti et al. argued in their research that this pretask led to more creative stories by activating a creative orientation to the tasks. Participants in the control condition simply rewrote the dream while engaging in a word substitution exercise.

To measure feelings of guilt, participants completed the State Guilt scale of the Guilt Inventory (Jones & Kugler, 1993; Kugler & Jones, 1992). If engaging oneself creatively after MS leads to increased guilt, then participants reminded of their death and creatively engaged should report higher levels of guilt relative to those who do not think about death or who contemplate mortality but do not receive the creativity treatment. We had no strong prediction about whether a weaker trend for increased guilt would emerge among non-MS creative-pretask participants. On the one hand, creative action may lead to slight increases in guilt that are augmented when participants have thought about death. On the other hand, guilt may only emerge as a consequence of creativity when mortality concerns are activated. In either case, the key prediction is that after MS and creative engagement, guilt will be significantly enhanced.

Coders also rated the creativity of the stories generated and the pretask responses on the basis of the guidelines proposed by Amabile (1982b) to determine whether creative pretask participants wrote stories that were more creative than those of noncreative pretask participants, as found by Conti et al. (1995). We also had a secondary reason for rating the creativity exercises, which, although tangential to our primary hypothesis, might be interesting. Because of the hypothesized negative consequences of creative expression following MS, participants may show less creativity on the creativity pretask and in their stories following MS.[2]

[2] One might also think that rating the creativity of the pretask and stories would conceivably enable us to assess the mediating role of creativity after MS on guilt. It is important to note, however, that the interpretation of such analyses must be approached with caution as there may be two opposing influences on the manifest relationship between creativity ratings and guilt scores. After MS, people who exhibit high creativity may experience more guilt. However, the same theoretical analysis suggests that people experiencing the most guilt while engaging in the task may choose to show the least creativity. Consequently, this bidirectional influence could result in a correlation between creativity and guilt close to zero. If this were to happen, within-cell correlations would not be expected to show a strong relationship between the variables, and an analysis of covariance would not be expected to reduce the interactive effects of MS and creativity on guilt. As it turned out, across all three studies, analyses of covariance did not compromise the critical interactions, and within-cell correlations did not show consistent or strong relationships between studies. For example, in Study 1, within the MS creative-task condition, there was a moderate, although nonsignificant, correlation between the creativity of participant's stories and guilt, $r(11) = .45$, $p = .15$, suggesting that the more creative participants were, the more guilt they experienced. However, in Studies 2 and 3, this correlation did not even approach significance (all rs $< .14$, ps $> .55$).

Method

Participants and Design

Sixteen male and 31 female introductory psychology students at the University of Arizona participated in the experiment in exchange for partial course credit. Participants were randomly assigned to conditions in a 2 (MS vs. dental pain) × 2 (creative pretask vs. noncreative pretask) between-subjects design. The dependent measure was participants' feelings of guilt as measured by a slightly modified version of the State Guilt scale of the Guilt Inventory (Jones & Kugler, 1993; Kugler & Jones, 1992).

Procedure

The procedures and cover story regarding the creativity exercises were based on those developed by Conti et al. (1995). Upon arriving at the laboratory, the participants listened as the experimenter, who was blind to the conditions, introduced the study as one that compared different types of educational materials and how they related to personality characteristics. Three to 5 participants per session were told that they would first complete a packet of personality questionnaires. They were further instructed that because psychology students were participating in this phase of the study, they would read a passage on dreaming that was relevant to psychology, write a story about it, and later answer some questions about it. Before doing this, however, they would complete an exercise on dreaming so that the researchers could get an idea of their thoughts on the subject. Participants were informed that they would also complete some other personality questionnaires that were being pretested for use in future studies. Participants were assured of the anonymity of their responses, and, to ensure their privacy, they completed all materials in adjacent individual cubicles. In addition, participants enclosed all of their responses in blank envelopes and placed the envelopes in a box located in their cubicle.

MS. Participants signed a consent form, were given the first packet of questionnaires, and were asked to complete them with their first, natural responses. The packet of questionnaires contained a filler questionnaire followed by either the MS treatment or the dental pain control treatment. The MS treatment (Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989) consisted of having participants respond to two open-ended questions: "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." The dental pain control treatment consisted of parallel questions with respect to the experience of dental pain. The next questionnaire was the Positive and Negative Affect Schedule—Expanded Form (PANAS–X; Watson & Clark, 1992) self-report mood scale. This scale was included to determine if the MS treatment engendered negative affect independent of the creativity exercise.

Creativity treatment. After finishing the personality questionnaires, participants were given the pretask creativity manipulation, asked to read the instructions, and instructed to complete the assigned task in the next 10 min or so. In the creative condition, participants were presented with a description of a dream, asked to imagine that they had the dream, and told that they would later have the opportunity to ask a panel of experts about the dream and dreams in general. They were then asked to write the three most interesting and unusual questions about dreams they could think of in the space provided. As discussed by Conti et al. (1995), the purpose of this procedure was to induce a creative orientation to the tasks. Participants in the noncreative conditions were presented with the same dream and were asked to rewrite the dream while substituting certain words following a key that was provided (e.g., *zoo* for *pet shop, he* for *she;* cf. Conti et al., 1995).

After the pretask, participants were given the reading passage and told others had found it quite interesting. They were asked to read the passage in whatever way was best for them, and they were informed that we were just interested in what they found interesting and their ideas about it. Participants were given 15 min to complete the reading. The passage was a three-page article from a collection of *The New York Times* articles on psychology (Goleman, 1991). The article was titled "Do Dreams Really Contain Important Secret Meaning?" and it discussed different perspectives on this question as well as compromise positions. Participants were then told that they would now do a story-writing exercise and that they should not worry about spelling or grammar. As with the other materials, participants were asked to read the instructions and were given a blank envelope. The instructions asked participants to write a story using at least two people from the article as characters and stated that it could involve anything they wished as long as it somehow related to dreaming. When they were finished, the participants were told to put their story in the envelope and the envelope in the box with the others.

Guilt measurement. The experimenter returned after approximately 15 min and administered the State Guilt scale of the Guilt Inventory (Jones & Kugler, 1993; Kugler & Jones, 1992). The scale consists of 10 items that participants responded to on 5-point scales with endpoints of 1 = *very untrue of me* or *strongly disagree* and 5 = *very true of me* or *strongly agree* (e.g., "I currently feel calm and worry-free" and "At the moment, I don't feel particularly guilty about anything I have done"). Previous research attests to the scale's reliability (Cronbach's alpha for men and women college students of .82) and discriminant and convergent validity (Jones & Kugler, 1993; Kugler & Jones, 1992; for a review see Jones, Kugler, & Adams, 1995). Scores on this measure are strongly associated with scores on other guilt inventories, such as the Personal Feelings Questionnaire (Harder & Lewis, 1986) and the Perceived Guilt Index (Otterbacher & Munz, 1973), but are not strongly related to most other emotions (Kugler & Jones, 1992). For example, with the exception of guilt, it is not related to any other of Izard's differential emotion scales (Izard, 1977). Jones and Kugler (1993) also found that scores on the Guilt Inventory are strongly associated with adjectives theoretically linked to guilt. For the present purposes, we adjusted questions in the scale that referred to feelings or experiences "in the past week" to refer more specifically to feelings "at the moment."

After completing all materials, participants were thoroughly probed for suspicion, debriefed, thanked for their time, and compensated with experimental credits.

Results

Guilt Inventory

The primary dependent measure was participants' scores on the measure of state guilt. To test the hypothesis that inducing a creative mode after participants thought about their death would increase guilt feelings, we conducted a 2 (MS vs. dental pain) × 2 (creative pretask vs. noncreative pretask) analysis of variance (ANOVA) on scores from the State Guilt scale. Initial analyses included sex as a variable, but no main or interaction effects were found (all Fs < 2.39, ps $> .13$), and thus it is not mentioned further. This analysis revealed a main effect for creativity, $F(1, 46) = 7.34$, $p = .01$, with creative pretask participants reporting more guilt than noncreative pretask participants (Ms $= 30.1$ and 25.3, respectively). This effect, however, was qualified by the predicted interaction between creativity and MS, $F(1, 46) = 6.37$, $p < .02$. Cell means are presented in Table 1.

To more specifically test our hypothesis, we conducted planned contrasts on the guilt scores. In the first contrast we compared MS creative-pretask participants with participants in the other three conditions. Consistent with our predictions, when participants thought about their mortality and then completed the creative pretask, they showed increased guilt relative to all other conditions, $t(46) = 3.32$, $p < .01$ ($M = 32.7$ and collapsed $M = 26.1$,

Table 1
Cell Means for the Two-Way Interaction of Mortality Salience and Creative Pretask on Guilt in Study 1

Pretask	Mortality salient	Dental pain
Creative		
M	32.7	27.5
SD	4.72	4.32
n	12	12
Noncreative		
M	23.7	27.2
SD	7.00	7.10
n	12	11

respectively). A second contrast, in which MS noncreative-pretask participants and dental pain participants were compared, was marginally significant, $t(46) = 1.75, p = .09$ ($M = 23.7$ and collapsed $M = 27.3$, respectively). In a third contrast we found that the creativity pretask had no effect on guilt within the dental pain conditions ($t < 1$), suggesting that it was the unique combination of MS and the creative pretask that led to increased feelings of guilt.[3]

Supplemental Analyses

Creativity. To assess whether the content of what participants wrote during the creative exercises differed as a function of MS or pretask, we had two coders (blind to experimental conditions) rate the creativity of the questions for the creative-pretask participants and the stories for all participants, following the guidelines proposed by Amabile (1982b). Ratings were made on 5-point scales, with 1 being the least creative and 5 being the most creative. The correlations between the coders' ratings were acceptable for both the questions and the stories, $r(24) = .87$ and $r(47) = .75$, respectively, $ps < .001$. A 2 (MS vs. dental pain) × 2 (creative pretask vs. noncreative pretask) ANOVA on the creativity of the stories revealed no effects (all $Fs < 1.44$, $ps > .23$). Interestingly, although the pretask interacted with MS to affect guilt, it did not affect the creativity of the stories written. A pairwise comparison of the creativity of the questions participants generated in the MS and dental pain creative-pretask conditions found that the two did not significantly differ ($t < 1$).

PANAS–X. The PANAS–X (Watson & Clark, 1992), which followed the MS or dental pain treatment but preceded the creativity manipulation, is a self-report adjective checklist that contains 13 subscales for positive and negative affect, guilt, fear, shyness, happiness, hostility, self-assurance, sadness, serenity, surprise, attentiveness, and fatigue. Because the scales for positive and negative affect contain many of the items for the other subscales, separate one-way (MS vs. dental pain) ANOVAs were performed on positive and negative affect, and a multivariate analysis of variance (MANOVA) was conducted on the remaining 11 subscales. All analyses revealed no significant effects (all $Fs < 1$). It is interesting to note specifically that the guilt subscale of the PANAS–X, composed of such items as "guilty" and "dissatisfied with self," revealed no effects of MS prior to the creativity treatment ($F < 1$).

Discussion

The results of Study 1 supported the hypothesis that creative engagement following MS can lead to guilt. When participants reflected on their death and were given an exercise encouraging creative responses, they reported more guilt than did MS participants who were not encouraged through the pretask exercise to be creative or creative- or noncreative-pretask dental pain participants.

Although this pattern conforms closely to predictions, there were some unexpected findings. The marginally significant trend for MS noncreative-pretask participants to show less guilt than dental pain participants was not anticipated. However, it is important to note that participants in the MS creative-pretask condition showed significantly higher guilt than those in the dental pain conditions, and thus the elevation of guilt in that condition was not only relative to the reduced guilt in the MS noncreative-pretask condition. Speculating about this trend, however, we suggest that perhaps under conditions where participants were reminded of their mortality but not encouraged to be creative, they experienced low levels of guilt because they felt they did what they were told. Simply engaging in the pretask word-substitution exercise and writing a story without being primed with a creative orientation may have led MS participants to feel secure in their social attachments, which, in turn, would lead to decreased guilt. Because this effect was only marginally significant, before speculating further we designed a second study in part to ascertain if it would replicate.

We were also surprised that unlike Conti et al. (1995), we did not find that completing the creative pretask led participants to write stories that were more creative than those of the participants who completed the noncreative pretask. One difference between our research and that of Conti et al. is that in the latter, participants were run through the experiment individually, whereas in our study, participants were run in small group sessions. Perhaps the instructions delivered by the experimenter encouraging engagement in the tasks had a greater impact on the participants when there was only one person in the experimental session, which, in turn, may have boosted the participant's expressed creativity. Another related possibility is that in the present study, not only did we run participants in small group sessions, but we also went to great lengths to assure participants of their anonymity. In contrast, it is likely that participants in Conti et al. did not feel as anonymous given that they were run individually. As a result, participants in the present study may have engaged in social loafing (e.g., Karau & Williams, 1993) and may not have tried as hard to be creative.

Therefore, one issue is whether the guilt observed after MS stems from participants' perceptions of creativity or the extent of their actual creative behavior. On the basis of the ideas and findings of the present research, we argue that perception of creativity is the key construct. In this study, there was no effect of treatment on participants' actual creativity (as rated by judges).

[3] Because we used orthogonal contrasts across all three studies, we did not compare the MS creative-task conditions to the non-MS creative-task conditions. However, it may be worth noting that this comparison was significant in both Studies 1 and 2 ($ts > 2.15$, $ps < .05$), and it just missed conventional significance in Study 3, $t(92) = 1.91, p = .059$.

Moreover, our analysis focuses on the psychology of the individual and how he or she reacts to perceived creative action on his or her part, regardless of how creative the individual actually was. As noted by one of our earlier reviewers, there are, no doubt, many individuals who fancy themselves creative when close inspection of their product by a relevant expert—or even a novice observer—would indicate otherwise. The important point is that the individual feels as if he or she was creative. To ensure that our creativity manipulation was having this effect, in our second study we assessed how creative participants thought they were.

Study 2

Because the manipulation of creative action appeared to be weak in Study 1, we designed a second study to replicate these results but with a creativity manipulation that more sharply distinguishes between the creative and noncreative conditions. Although in Conti et al. (1995), the manipulation from Study 1 increased creativity, it is a rather complicated procedure that may not be best suited for the present questions. Indeed, a part of this procedure even introduces a possible confound to our interpretation. In addition to thinking of questions to promote a creative orientation, participants in these conditions were asked to imagine that these questions would be directed to a "panel of experts." Having participants think of showing their questions to a panel of experts may have engendered evaluation apprehension that interacted with MS to create guilt. To try to reduce this demand, instead of encouraging participants to be creative through a creative set induction as we did in Study 1, in Study 2, after the MS or control treatment, we asked participants either to write a creative story or to copy three paragraphs from the reading passage. Thus, in this study, no mention was made of any evaluation, let alone one by a panel of experts.

We also included questions at the end of the experimental session to assess whether participants' perceptions of their creativity differed between the creative and noncreative conditions. After completing the State Guilt scale from the Guilt Inventory (Jones & Kugler, 1993; Kugler & Jones, 1992), participants answered a question asking them how creative they thought they were during the writing exercise. From the present perspective, the explanation that perceived creative expression following MS leads to guilt would be strengthened were we to find that the creativity manipulation effectively led participants to perceive themselves as being more creative.

Two additional questions were also included to address a different account of these findings. One alternative possibility is that after MS, participants wanted to be creative when faced with that expectation, and it was their failure to achieve the level of creativity they desired that led to guilt. This explanation would be consistent with conceptualizations of guilt that regard it as a private emotional experience resulting form the breach of personal standards (e.g., Ausubel, 1955). However, one aspect of our methodology can be used to argue against this possibility; namely, although it may be an implicit demand of the task, the experimenter and the instructions never explicitly asked participants to be creative in Study 1. Thus, it would have been the participants themselves who made creativity a pertinent standard of the task. Nonetheless, this account remains a possible explanation for the observed pattern of results on guilt. Therefore, in Study 2, after completing the State Guilt scale from the Guilt Inventory (Jones & Kugler, 1993; Kugler & Jones, 1992), participants answered not only the question asking how creative they thought they were but also questions asking how creative they wanted to be and how much they thought about what other people would think of what they were writing. If MS creative-task participants experience increased guilt as a result of falling short of a personal standard, then differences may emerge on the question asking if they were as creative as they wanted to be. Similarly, if the increased guilt occurs because participants are concerned with what others might think of their stories, then MS creative-task participants may report greater concern than their dental pain counterparts. However, if the effect on guilt arises because of the hypothesized consequence of perceived creative expression following MS, then only a main effect should emerge, with creative participants reporting higher self-ratings on creativity than noncreative participants.

Method

Participants and Design

Thirty male and 55 female introductory psychology students at the University of Arizona participated in the experiment in exchange for partial course credit. Participants were randomly assigned to conditions in a 2 (MS vs. dental pain) × 2 (creative task vs. noncreative task) between-subjects design. The dependent measure was again participants' feelings of guilt as measured by the State Guilt scale of the Guilt Inventory (Jones & Kugler, 1993; Kugler & Jones, 1992). The data from 2 participants were discarded: 1 participant entered the laboratory during the debriefing of the previous experimental session and 1 did not follow instructions.

Procedure

The procedure for this study, with a few important exceptions, was identical with that of the first study. Rather than informing participants that they would write a story, the experimenter, who was blind to the conditions, explained that they would complete a writing exercise after they read the passage. Participants then completed the packet of questionnaires containing either the MS or the dental pain control treatment followed by the PANAS–X (Watson & Clark, 1992). In this study, however, participants did not complete the pretask exercise; after completing the questionnaires, they simply read the short passage on dreams. Thus, participants did not read the dream excerpt or complete the pretask question, and no mention was made of an evaluation of any sort. We still had participants read the passage on dreaming to buttress our cover story and to keep the situation the same for all participants before administering the creativity manipulation. After reading the passage, participants were given a piece of paper in a blank envelope. For participants in the creative-task condition, the instructions on the paper were the same as those used in Study 1 with the addition that participants were encouraged to be as creative as they liked. Participants in the noncreative-task condition were given written instructions asking them to copy the first three paragraphs of the dream passage (a length that was comparable with the length of most of the stories generated in Study 1). After the writing exercise, participants completed the State Guilt scale from the Guilt Inventory (Jones & Kugler, 1993; Kugler & Jones, 1992).

We also included an additional set of five questions after the State Guilt scale that were adapted from Conti et al. (1995). Participants were asked to respond on 7-point scales (1 = *not at all* . . . , 7 = *very* . . .) to three questions assessing their perceptions of the writing task and two questions assessing their perceptions of the reading passage. The first three questions asked participants to rate the extent to which during the writing exercise they were as creative as they wanted to be, they thought they were actually

creative, and they thought about what other people would think of what they were writing. The last two questions asked participants to rate the extent to which they found the reading passage interesting and the extent to which they felt pressured while reading the passage.

After completing all materials, participants were probed for suspicion, debriefed, thanked for their time, and compensated with experimental credits.

Results

Before assessing our primary hypothesis, we analyzed the responses to the five questions delivered at the conclusion of the study by means of 2 (MS vs. dental pain) × 2 (creative task vs. noncreative task) ANOVAs. Analysis of the answers to the question asking "During the writing exercise, to what extent were you as creative as you wanted to be?" revealed a main effect for creative task condition, $F(1, 84) = 16.00$, $p < .001$, with creative-task participants ($M = 4.02$) reporting more creativity than noncreative-task participants ($M = 2.52$). A similar effect was found in responses to the question asking "During the writing exercise, how creative do you think you were?" $F(1, 84) = 26.29$, $p < .001$, with creative-task participants ($M = 3.58$) reporting more creativity than noncreative-task participants ($M = 1.93$). Analysis of the answers to the question asking "During the writing exercise, how much did you think about what other people would think of what you were writing?" also revealed a main effect for creativity, $F(1, 84) = 10.38$, $p < .01$, with creative-task participants ($M = 3.42$) reporting greater concern than noncreative-task participants ($M = 2.29$). However, with this question and with the other questions mentioned above, there were no main or interactive effects involving MS (all Fs < 1). There were also no significant effects on the remaining two questions (all Fs < 1). Thus, it appears that our creativity treatment effectively promoted perceived creativity relative to the noncreative treatment.

Guilt Inventory

To determine if we replicated the effect of MS and creativity on feelings of guilt, we conducted a 2 (MS vs. dental pain) × 2 (creative task vs. noncreative task) ANOVA on the Sate Guilt scale. Results of this analysis revealed a significant effect for MS, $F(1, 84) = 6.22$, $p < .02$, with MS participants reporting more guilt ($M = 27.4$) than dental pain participants ($M = 23.7$). This effect, however, was qualified by the predicted MS × Creativity interaction, $F(1, 84) = 3.93$, $p = .05$. Cell means are presented in Table 2.[4]

Table 2
Cell Means for the Two-Way Interaction of Mortality Salience and Creative Task on Guilt in Study 2

Task	Mortality salient	Dental pain
Creative		
M	29.3	22.7
SD	5.89	6.90
n	21	22
Noncreative		
M	25.5	24.7
SD	8.39	5.91
n	21	21

To more specifically assess our predictions that only MS participants would show increased guilt after engaging in a creative exercise, we again conducted a series of planned contrasts. The first contrast provided strong support for our hypothesis. The MS creative-task condition ($M = 29.3$) showed increased guilt relative to the other three conditions (collapsed $M = 24.3$), $t(81) = 2.93$, $p < .01$. In a second contrast we found that the MS noncreative-task condition did not differ from the dental pain conditions ($t < 1$). Thus, unlike in Study 1, there was no indication that MS noncreative-task participants showed less guilt. In a third contrast we compared the dental pain conditions and found no difference ($t < 1$). These findings clearly replicated the predicted effects of MS and creativity on guilt found in Study 1.

Supplemental Analyses

Creativity. Under the same guidelines as in Study 1, two coders rated the creativity of the stories written in the creative-task conditions. The correlation between the two ratings was acceptable, $r(43) = .79$, $p < .001$. To assess whether the MS treatment affected how creative participants were, we conducted a t test between the MS and dental pain creative-task conditions on an average of the two ratings. This comparison revealed that after thinking about their mortality, participants were less creative than they were after thinking about dental pain, $t(42) = 3.06$, $p < .01$ (Ms = 2.80 and 3.57, respectively). Thus, whereas in Study 1 we failed to find effects in this regard, the present results indicate that when presented with the opportunity to write creatively following MS, participants were less creative than they were after contemplating dental pain.

PANAS–X. One-way (MS vs. dental pain) ANOVAs were performed on positive and negative affect, and a MANOVA was conducted on the remaining 11 subscales. All analyses revealed no significant effects (all Fs < 1). It is again interesting to note specifically that the guilt subscale of the PANAS–X revealed no effects of MS prior to the creativity treatment ($F < 1$).

Discussion

The present findings provide a clear replication of the results from Study 1. Specifically, after MS, participants who wrote creatively subsequently expressed more guilt than did participants in all other conditions. Moreover, the assessment of how creative participants thought they were provided a strong check on the effectiveness of our creativity manipulation. As expected, participants who were asked to write a creative story thought they were more creative than participants who were asked to simply copy paragraphs from the reading passage did.

Interestingly, although we found that MS creative-task participants were less creative than their dental pain counterparts, this difference was not paralleled with respect to the question asking

[4] Initial analyses included sex, and we found a marginally significant interaction between sex and creativity, $F(1, 84) = 3.23$, $p = .08$. Although the trend was such that men tended to show more guilt in the noncreative conditions whereas women showed more guilt in the creative-task conditions, none of the conditions differed from each other, all ts < 1.48. Because this effect was weak and did not involve MS, and because sex effects were not found in Studies 1 or 3, it is not discussed further.

participants how creative they thought they were. It is unclear why participants did not report being less creative when content ratings revealed this to be the case. One possibility for this discrepancy is that participants may not have realized that they were indeed being less creative. In addition, participants may have been unwilling to report such a deficiency for self-presentational reasons.

The results of this study also suggest that it is not because MS participants perceived themselves as falling short of a performance standard that they exhibited increased guilt. Specifically, only a main effect for creativity condition was found on the question asking participants if they were as creative as they wanted to be; no effects were found involving MS. Thus, MS creative participants did not feel they were especially low in creativity or especially less creative than they wanted to be. This is consistent with the view that the perceived act of creative expression following MS produced the increased guilt.

However, it would still be helpful to bring data to bear on this question more directly. To more confidently tease apart the plausibility of the explanations based on participants thinking that they were creative or feeling that they were not creative, we conducted a supplemental two-condition study. After MS and completion of the creativity exercise, participants were given feedback indicating that their story was judged, using a validated scoring method, to be either extremely creative or average in creativity. This feedback, however, did not in any way imply social approval or restored social connection. Participants then completed the State Guilt scale (Jones & Kugler, 1993; Kugler & Jones, 1992). If it is the failure to be creative after MS that leads to feelings of guilt, then participants given the average creativity feedback should report more guilt than participants given the extremely creative feedback. From this perspective, participants told that they were extremely creative would be reassured of being creative and would not experience the same amount of guilt as participants who were made to feel as if they did not meet that standard. Note also that the alternative evaluation-apprehension account predicts the same effect. Presumably, receiving positive feedback would reduce apprehension about being evaluated, and thus less guilt would be expected from these participants. If, on the other hand, it is creative engagement after MS that leads to guilt, participants given feedback noting extreme creativity should report more guilt than participants given feedback that their stories are of average creativity. Being told that one's story was only average in this situation would mean, from this perspective, that one was not sticking out too much, and thus it would not entail feelings of guilt. A pairwise comparison between these two MS conditions revealed that participants told their stories were extremely creative showed *more* guilt than participants told their stories were of average creativity, $t(21) = 2.07$, $p = .05$ ($M = 29.6$, $SD = 6.19$, and $M = 24.1$, $SD = 6.61$, respectively). This result is inconsistent with explanations based on the failure to meet standards and evaluation apprehension, instead suggesting that the perceptions of being high in creativity led to increased guilt after MS.

From a terror management perspective, expressing oneself creatively after pondering the inevitability of one's death leads to increased self-reported guilt because such actions threaten the security associated with seeing oneself as validated by others. Evidence supporting a terror management role in such processes has previously been shown by Simon et al. (1997). In that study, participants contemplated their mortality or taking an important exam; were given false personality feedback that described them either in neutral terms, as socially deviant, or as conformist; and then estimated the degree of social consensus for their attitudes (social projection). Results indicated that participants who thought about their mortality and received feedback describing them as socially deviant estimated a higher degree of social consensus for their attitudes, whereas participants who thought about their mortality and received feedback that they were conformist estimated decreased social consensus, relative to both MS-neutral feedback controls and exam salience counterparts. The explanation for these effects was based on Becker's (1973) analysis of what he referred to as the "twin ontological motives" (p. 150) and Brewer's (1993) optimal distinctiveness theory. Both theories posit that people need to maintain an optimal balance between individuation (being unique) and inclusion (being similar). The two motives operate in a delicate balance such that too much fulfillment of either motive disrupts a necessary psychological equilibrium and instigates increased efforts to attend to the neglected motive and restore equanimity. Supporting the notion that these dual motives serve a terror management function, attention to the neglected motive was augmented under conditions of MS. In the present context, if being creative after MS also threatens the optimal balance by accentuating separation from the collective, then MS participants encouraged to be creative should be motivated to increase their sense of fitting in.

The analysis of guilt as a social phenomenon proposed by Rank (1932/1989) and recently supported in a review of the literature by Baumeister, Stillwell, and Heatherton (1994; see also Tangney, 1995) also fits this reasoning. From this perspective, the emotion of guilt is an indication of social disconnection, and it motivates social reconciliation. When one faces the threat of social exclusion, guilt arises and leads to relationship-enhancing behavior. Consistent with this analysis are the many studies reviewed by Baumeister et al. (1994) showing that "guilty people affirm their social bonds, pay increased attention to their partners, apologize and make amends for transgressions, repair relationship damage, and change their behavior to suit the partner" (p. 260). In conjunction with the findings of Studies 1 and 2, this perspective on guilt leads to a clear prediction regarding the effects of creativity and MS on perceptions of social connection. In this case, because creative expression following MS produces guilt, and guilt is regarded as an indicator of threatened communal relationships, after thinking about death and being creative, participants should be motivated to restore their perceptions of social connectedness.

Study 3

To investigate the idea that creative action after MS would motivate participants to fit in with others, we used the same dependent measure applied by Simon et al. (1997), which was originally developed by Krueger and Clement (1994). This measure is based on previous research, in which researchers found an individual-level index useful for assessing social projection of attitudes (Dawes, 1990; Hoch, 1987; Krueger & Clement, 1994; Krueger & Zeiger, 1993). The social projection index requires participants to indicate their personal endorsements of a variety of attitudinal and behavioral statements and to estimate the percentage of agreement with these statements by a particular group or population. An index of projection is formed by correlating en-

dorsements and consensus estimates for each participant. High projection scores indicate a greater match between endorsements and estimates and thus, in the present context, indicate a greater striving for identification with the collective.

The degree of social projection may be moderated by the social desirability of agreement with the items (e.g., Bramel, 1963; Suls, Wan, & Sanders, 1988), because the extent of match between the self and others may be inflated by the tendency to ascribe socially desirable attributes to both the self and others. In this measure this possibility is typically controlled for by including an item asking participants to also rate the social desirability of agreement with each item. A social projection index is then formed using the partial correlations between endorsements and estimates, while controlling for social desirability ratings (see Krueger & Clement, 1994).

Although in previous terror management research experimenters have found that MS effects do not occur in response to a range of aversive control conditions, because both of our initial studies used dental pain as a control topic, we decided to contrast the effects of MS with a different aversive topic that has yet to be used in terror management research. Thus, half of the participants answered two questions about their thoughts associated with being paralyzed.

If MS participants feel guilty because of the threat to social affiliation of creative action, then MS participants in the creative condition should be motivated to blend into the crowd and therefore should exhibit a higher correlation between their endorsements and consensus estimates than other participants should.

Method

Participants and Design

Forty-eight male and 45 female introductory psychology students at the University of Arizona participated in the experiment in exchange for partial course credit. Participants were randomly assigned to conditions in a 2 (MS vs. paralysis salience) × 2 (creative task vs. noncreative task) between-subjects factorial design. The dependent measure was level of social projection. The data from 5 participants were not included in the data analysis: 1 participant reported suspicion during debriefing, 1 was missing data on the projection measure, and 3 did not follow instructions.

Procedure

The procedure for this study was identical to that of Study 2 with three exceptions. First, we used the prospect of being paralyzed as opposed to dental pain as a control condition. Second, participants completed the social projection measure instead of the Guilt Inventory. Third, we added an additional question at the conclusion of the session that asked participants about the extent to which they were concerned with their level of creativity.

After completing either the MS or the paralysis manipulation and either the creative- or the noncreative-task manipulation, participants were handed a blank envelope containing the social projection measure. These materials were the same as those used in Simon et al. (1997), which were adapted from Krueger and Clement (1994), and contained selected items from the Minnesota Multiphasic Personality Inventory–2 (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989). The 16 items in the measure are neutral with respect to endorsement leading to self-esteem enhancement or threat (e.g., "I like poetry," "I would like to be a singer," and "I like collecting flowers or growing house plants").

Participants rated these items with respect to three dimensions. The first time the items were presented participants reported their endorsement of each item by using a 9-point scale (ranging from 1 = *no agreement with the statement at all* to 9 = *total agreement with the statement*). The items were then presented again, and participants were asked to write down the percentage of the population they thought agreed with each statement, using any percentage from 0% (*no one in the general population agrees with the statement*) to 100% (*everyone in the general population agrees with the statement*). The last time participants saw the items, they were asked to write down how socially desirable they thought it was to agree with each statement using a 9-point scale (ranging from 1 = *not at all socially desirable to agree with the statement* to 9 = *totally socially desirable to agree with the statement*).

After completing these measures, participants completed the same questions as in Study 2, with the additional question of "During the writing task, to what extent were you concerned with your level of creativity?" Participants were then probed for suspicion, fully debriefed, and thanked for their time.

Results

Before testing our primary hypotheses concerning social projection, we subjected the creativity perception questions to 2 (MS vs. paralysis salience) × 2 (creative vs. noncreative task) ANOVAs. These analyses revealed main effects for the creativity condition on the questions asking "During the writing exercise, were you as creative as you wanted to be?" (creative $M = 4.77$, and noncreative $M = 1.98$), "During the writing exercise, how creative do you think you were?" (creative $M = 4.19$, and noncreative $M = 1.58$), and "During the writing exercise, how concerned were you with your level of creativity?" (creative $M = 3.85$, and noncreative $M = 1.85$; all $Fs > 33$, $ps < .001$). There were no other significant effects, including main or interaction effects, associated with MS (all $ps > .18$), except for an interaction on how creative the participants thought they were, which will be discussed later. These results indicate that our creativity manipulation was again effective at promoting different levels of perceived creativity.

Social Projection

To assess our primary predictions concerning social projection, we computed a social projection index for each participant by taking the partial correlation between endorsements and consensus estimates, while controlling for social desirability ratings, on the attitude measures. This correlation was then transformed to Fisher z scores for analyses (see Krueger & Clement, 1994; McNemar, 1962). Higher scores reflect more social projection.

A 2 (MS vs. paralysis salience) × 2 (creative vs. noncreative task) ANOVA on these social projection scores revealed the predicted interaction, $F(3, 92) = 3.71$, $p = .057$. Cell means are presented in Table 3. There were no main or interaction effects involving sex (all $Fs < 1.3$, $ps > .27$).

As with the first two studies, we conducted planned contrast comparisons to assess the merits of our specific predictions. The first contrast showed that MS creative-task participants exhibited higher social projection than all other participants ($Ms = .38$ and collapsed $M = -.12$, respectively), $t(92) = 2.14$, $p < .05$. The two remaining contrasts, one between MS noncreative-task participants and the paralysis participants and the other between the paralysis conditions, were not significant (both $ts < 1$). Therefore, these results support the hypothesis that being creative under conditions

Table 3
Cell Means for the Two-Way Interaction of Mortality Salience and Creative Task on Social Projection in Study 3

Task	Mortality salient	Paralysis
Creative		
M	.38	−.17
SD	1.11	.87
n	23	24
Noncreative		
M	−.23	.01
SD	.91	1.04
n	22	24

Note. Higher numbers reflect more social projection. Standardized scores are reported.

of MS motivates participants to strengthen their perceptions of social consensus for their attitudes.

Supplemental Analyses

Creativity ratings. Once again, under the same guidelines as in the previous studies, coders rated the creativity of the stories participants wrote. The correlation between raters was acceptable, $r(46) = .78$, $p < .001$. Unlike in Study 2, a one-way (MS vs. paralysis) comparison on the creativity of the stories did not reveal a significant difference ($F < 1$). However, it is worth noting that the means indicated that MS participants' stories were rated as slightly less creative than those of paralysis participants' (*M*s = 2.96 and 3.10, respectively).

As noted above, there was a significant interaction between MS and creativity condition on the question asking participants "During the writing exercise, how creative do you think you were?", $F(3, 92) = 5.21$, $p < .05$. Cell means are presented in Table 4. MS creative-task participants reported higher perceptions of creativity than did participants in both noncreative conditions, but they reported less creativity than paralysis salience creative-task participants (all *p*s < .05). Interestingly, although apparently consistent with the idea that MS participants wanted to stifle or deny their creativity, this effect appears to be more accurately interpreted as higher perceptions of creativity after contemplating paralysis relative to other topics. An inspection of the means from Studies 2 and 3 reveals that MS participants are quite similar in their perceptions about their creativity across studies (in Study 2, $M = 3.52$, and in Study 3, $M = 3.61$), whereas paralysis salience participants were higher ($M = 4.75$) in their creativity ratings than were dental pain participants in Study 2 ($M = 3.64$). Perhaps the paralysis topic activated a need for some kind of compensatory defense (cf. Baumeister & Jones, 1978; Greenberg & Pyszczynski, 1985). Although this is a potentially interesting idea, because it is not central to our primary concerns we will not discuss it further.

PANAS–X. A one-way (MS vs. paralysis salience) MANOVA on the 11 subscales of the PANAS–X revealed no effect, and one-way ANOVAs on the positive and negative mood subscales were also not significant (all *F*s < 1).

Discussion

The results of Study 3 supported the hypothesis that following MS, creative action leads to an increase in social projection. After pondering their death and writing a creative story, participants expressed high convergence between their attitudes and those of others, whereas participants in all other conditions did not. However, unlike in Study 2, in this study the stories written were not significantly less creative in the MS condition than in the control condition. An inspection of the means across the two studies reveals that creativity in the control condition was lower in Study 3 than in Study 2. Although at the time the participants wrote their stories the procedures were the same across studies, there were some noteworthy differences. One difference was that the second study was conducted early in the spring semester, whereas the third study was conducted at the end of the spring semester; perhaps the mood or situation of the end-of-semester participants played some role in the divergent results. Specifically, these latter participants may have been less likely to be creative in general because of either dispositional differences or the pressures of upcoming finals. Another difference was the control condition; specifically, control participants in Study 2 contemplated dental pain, whereas those in Study 3 contemplated paralysis. Perhaps the paralysis control stifled creativity in some way. It is interesting to note, however, that when the creativity ratings of the stories for the two studies were combined and subjected to a 2 (MS vs. control) × 2 (Study 2 vs. Study 3) ANOVA, there was not a significant effect of study, but there was a main effect of MS, with MS participants' stories exhibiting less creativity than those of controls, $F(3, 90) = 5.02$, $p < .03$ (*M*s = 2.88 and 3.33, respectively).

General Discussion

In studies 1 and 2 we showed that MS and the perception of creative activity produced increased guilt. This supports Rank's (1932/1989) view that the perception that one has acted creatively poses a threat to the social connections that protect us from our concerns about mortality. Although many theorists have proposed that creativity is of great value to the individual, this threatening consequence may help explain why, though so persuasively preached, creativity is so rarely practiced. As Rank argued so forcefully in *Art and Artist,* true creativity requires courage to separate from the collective and to bear the guilt, rejection, and suffering that often accompanies it.

To the extent that creative action can be seen as threatening prevailing social norms, the fact that it engenders guilt following

Table 4
Cell Means for the Two-Way Interaction of Mortality Salience and Creative Task on the Question "During the Writing Exercise, How Creative Do You Think You Were?" in Study 3

Task	Mortality salient	Paralysis
Creative		
M	3.61_a	4.75_b
SD	1.64	1.85
n	23	24
Noncreative		
M	1.91_c	1.58_c
SD	1.51	1.10
n	22	24

Note. Cell means that do not share a common subscript differ at $p < .05$.

MS is consistent with the body of evidence showing that MS encourages people to conform to such norms. Classic terror management findings indicate that MS increases positive behaviors toward those who uphold social norms and negative behaviors toward those who violate them (for a recent review, see Greenberg et al., 1997). In addition, Greenberg et al. (1992) found that making the value of tolerance salient reduced the derogation of a different other following MS. Greenberg, Simon, Porteus, Pyszczynski, and Solomon (1995) also found that MS led to slower performance and more tension when participants needed to use cultural icons in an inappropriate way to solve problems effectively. Most recently, Schimel et al. (in press) have found that MS increases stereotypical thinking about out-groups. The tenor of all of these findings is that MS increases conformity to social norms. The present Studies 1 and 2 add to this work by showing that following MS, creativity, which may represent a departure from such norms, engenders guilt.

In Study 3, we took the analysis one step further. If the confluence of MS and creativity produces guilt because of the threat to social connection, then it should also motivate action to restore that connection. The results of Study 3 supported this reasoning by showing that MS and creativity increased social projection. These findings also support the general notion that guilt is not only a response to threat to social connection but also a motivator of action to restore social connection (e.g., Baumeister et al., 1994; Rank, 1932/1989; Tangney, 1995). Indeed, Tangney (1995) distinguished between guilt and shame by positing that they differ not so much in the situations or transgressions that give rise to them but in their consequences and the way they are experienced. Whereas shame leads to intentions to avoid interpersonal contact and escape responses, guilt motivates action designed to amend transgressions and restore social relationships. Research has supported this hypothesis. For example, shame proneness is associated with maladaptive responses to anger, and guilt proneness is related to constructive responses that have potentially positive interpersonal consequences (Tangney, Wagner, Hill-Barlow, Marschall, & Gramzow, 1996).

Although previous research attesting to the interpersonal nature of guilt is consistent with our explanation that guilt led to the increased social projection among MS creative-task participants in Study 3, we do not have direct evidence of mediation, and thus we cannot be certain that guilt caused the increased social projection among these participants. It may have been possible to obtain such evidence by including the State Guilt scale of the Guilt Inventory (Jones & Kugler, 1993; Kugler & Jones, 1992) either before or after the projection measure; however, we chose not to do so for two reasons. First, if we included the State Guilt scale after participants completed the projection measure, it is possible that guilt would have been reduced by social projection, and thus we would be trying to interpret a null effect. Similarly, if we included the State Guilt scale before the projection measure, the act of expressing guilt by responding to the questionnaire may have reduced the extent to which participants experiencing high guilt socially projected. Consistent with this possibility is the work of Pyszczynski, Greenberg, Solomon, and Sideris (1993; Schimel, Pyszczynski, Greenberg, O'Mahen, & Arndt, 1999, Studies 3 & 4) showing that emotional expression reduces defensive responses. However, we feel that the explanation of high social projection based on guilt is compelling because the same procedures that led to increased guilt led to increased social projection, and because the relationship between these constructs is grounded in previous theory and research.

It will be desirable in future research to examine these effects with additional manipulations of creativity and also to examine the interactive effects of such manipulations with MS treatments on other forms of negative affect. To the extent that guilt and anxiety are correlated, there may be some effects of the combination of these manipulations on more generalized forms of negative affect. However, the fact that these theoretically predicted effects occurred suggests that guilt may be an important consequence of creative behavior when death concerns are accessible. Moreover, we think the predominant emotional response is guilt because of the prior theory pertaining to this emotion. Specifically, on the basis of Rank's writing and the contemporary conceptualizations of guilt as an emotion sensitive to social disconnection (e.g., Baumeister et al., 1994; Tangney, 1995), we suggest that if creativity threatens social connection and people are in particular need of that social connection following MS, then guilt would be the most adaptive emotion in terms of facilitating efforts to reestablish that connection. In addition, the Kugler and Jones (1992) State Guilt scale of the Guilt Inventory has, in previous research, demonstrated high discriminant validity with respect to other emotions (Jones & Kugler, 1993; Kugler & Jones, 1992).

Creativity and Cultural Norms

An interesting historical example that seems to fit these findings is that of the great Italian Renaissance painter, Botticelli. In the midst of a heavily Christian culture, Botticelli created paintings inspired by mythology, and he was treated harshly because of it. Eventually, he seemed to give into the criticism, and he spent the rest of his life devoted to highly religious paintings. Thus, after a period of astonishing creativity given his time and place, Botticelli brought his attitudes and his work back in line with the prevailing cultural worldview, much as, although far less dramatically, our Study 3 participants increased their perception of social consensus following MS and a creative activity. However, in our research, we cannot be certain that the participants brought their attitudes more in line with the group. They may also have simply altered their perceptions of how well group attitudes fit their own. Both strategies could be used to restore a sense of social connection, but the social projection measure does not allow us to determine which occurred or whether both strategies were used. Conceptually, it is usually easier to shift one's perceptions of others' views than to change one's own attitudes for two reasons. First, people probably generally have more information about their own attitudes; second, changing one's own attitudes may be likely to engender dissonance by altering the relationship between other attitudes and ones that have been changed (Festinger, 1957). However, there can certainly be circumstances, as in historical cases like Botticelli's, in which the dominant view is made crystal clear, and change in one's own attitudes may be the only recourse to reestablishing social connections. Of course, research is needed to assess the conditions fostering the use of one or several of these strategies to restore social ties.

Another issue requiring further research is the specific role of prevailing social norms. Creativity by definition involves doing something other than what is prescribed by prevailing norms.

Thus, threat to one's social standing is a common result. However, will violating social norms always generate guilt? To the extent that guilt is viewed as a purely social phenomenon, it should arise whenever social norms are violated (e.g., Baumeister et al., 1994). However, it seems likely that two factors within the psychology of the individual—his or her internalized worldview in terror management terms—would affect the level of guilt aroused. The first is the extent to which the individual identifies with or derives his or her worldview and self-esteem from the social group that advocates the prevailing social norms. Thus, members of subcultures in which the dominant culture is rejected may have little concern with social ties to the prevailing group. Therefore, they would experience no guilt when acting outside the bounds of the dominant group's social norms, especially if their actions are socially validated by their subcultural group. For example, adolescents who express themselves by dyeing their hair blue, tattooing and piercing various body parts, and riding skateboards may act outside of conventional norms, but they do so within a subculture that admires and values such expression.

The second factor is the extent to which the relevant social norms are actually accepted or internalized by the individual. A person may be heavily identified in general with a certain group, and yet because of values internalized during childhood, the person may completely reject some specific social norms of the group. An interesting question for future research would then be how much guilt does a person feel when engaging in action contrary to an in-group norm that the individual explicitly rejects?

Research is also needed to examine different types of creativity. Certainly all forms of creativity are not equally discrepant from the norm and do not always imply alienation from the group. In fact, in many contexts, creativity of a certain kind—but typically not too much creativity—is explicitly advocated in the prevailing worldview. On a similar note, in some contexts, being creative may be an essential standard by which one may be socially accepted or rejected. An individual who lives and works in an artist's colony, for example, may react quite differently than did the participants in our experiments. Moreover, as much as the lives of people like Botticelli and Van Gogh may reflect the dynamics of creative action that we have been researching, there are no doubt many examples of individuals who have been embraced for their creativity in their lifetime (e.g., Ben Franklin, Thomas Edison, Bill Gates, Pablo Picasso).

An interesting direction of future research would be to explore how and why forms of creativity may differ in their implications for guilt and social disconnection. One important factor may be the extent to which the creative behavior can be justified as for the social good. Indeed, Lifton (1983) has argued that creativity is one mode of symbolic striving for immortality, of contributing something lasting to the culture. As Rank (1932/1989) observed, creative expression before the 19th century was often in the context of religious ideology, and this socially sanctioned framework may have provided an avenue toward social connection that attenuated guilt from individuation. In the 20th century, creative action for the purpose of advancing technology (e.g., the work of Bill Gates) may function similarly. In the present studies, the creative acts of participants may have engendered guilt precisely because they were not oriented toward any broad social good or acclaim. Thus, work is needed on different dimensions and aspects of creativity and social conceptions and judgments of creativity (see, e.g., Kasof, 1995), particularly as they affect the kinds of emotions and actions that creativity engenders in the individual.

Conclusion

The present studies show that following MS, when the need for social validation is particularly great, creative action stimulates both guilt and an effort to reestablish one's social connection. This suggests that creativity stimulates some very potent psychological concerns. Of course, these studies are only a first step in looking at this darker side of creativity; a great many questions regarding the social and emotional ramifications of creative action remain. However, we are hopeful that this work provides some impetus toward further progress in this domain, particularly given the potential value of creativity not only in our individual lives but in our progress as a species as well. Menaker (1982) again summarizes the thoughts of Rank:

> The individual artist is born into a specific culture within a given epoch. This sociohistorical situation, an outgrowth of the cumulative effects of sociocultural evolution, provides him with its characteristic art form or style, with a given cultural ideology, with its store of scientific knowledge. To express something personal—i.e., to satisfy his need for immortality—he uses the given cultural form; but in so doing he also adds or alters something so that his product differs sufficiently from the cultural cliche as to be his own individual creation. Ultimately the expression of his individuality and that of many creative individuals acts upon the whole cultural ideology so as to alter it. This interplay between creative personality and cultural form, ideology, and institutions advances sociocultural evolution. (p. 32)

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