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TERROR MANAGEMENT AND MEANING: EVIDENCE THAT
THE OPPORTUNITY TO DEFEND THE WORLDVIEW IN RESPONSE
TO MORTALITY SALIENCE INCREASES THE MEANINGFULNESS
OF LIFE IN THE MILDLY DEPRESSED

by

Linda Simon

A Dissertation Submitted to the Faculty of the

DEPARTMENT OF PSYCHOLOGY

In Partial Fulfillment of the Requirements
For the Degree of

DOCTOR OF PHILOSOPHY

In the Graduate College

THE UNIVERSITY OF ARIZONA

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entitled TERROR MANAGEMENT AND MEANING: EVIDENCE THAT THE
OPPORTUNITY TO DEFEND THE WORLDVIEW IN RESPONSE
TO MORTALITY SALIENCE INCREASES THE MEANINGFULNESS
OF LIFE IN THE MILDLY DEPRESSED

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ABSTRACT

Previous terror management research has shown that mildly depressed subjects show a greater increase in worldview defense in response to reminders of their mortality than do nondepressed subjects. Because the function of the cultural worldview is to provide a meaningful conception of life, it was hypothesized that mildly depressed subjects who defend their worldview in response to mortality salience would increase their perception that the world is a meaningful place. To test this hypothesis, mildly depressed and nondepressed subjects contemplated their own mortality or a neutral topic and then evaluated two targets, one who supported and one who threatened aspects of their worldview. The formats of these evaluations were constructed such that some subjects could defend their worldview and others could not. Following these treatments, all subjects completed a scale designed to assess the perception of meaning in life, the Kunzendorf No-meaning Scale. As predicted, mildly depressed subjects who had the opportunity to defend their worldview in response to mortality salience reported greater meaning in life than mildly depressed subjects who did not have the opportunity to defend their worldview, or mildly depressed subjects not exposed to mortality salience. Implications for understanding and treating depression are briefly discussed.

INTRODUCTION

Depressed individuals tend to be dissatisfied with life, have little faith in either themselves or the world in which they live (e.g., Beck, 1967; Becker, 1964), and be unable or unwilling to distort their perceptions to meet their psychological needs (e.g., Alloy & Abramson, 1979, 1988; Alloy & Ahrens, 1987; Coyne & Gotlib, 1983; but see e.g., Barbaree & Davis, 1984; Beck, 1967; Campbell & Fehr, 1990, for opposing viewpoints that argue negative distortions). Perhaps as a consequence of this general malaise, depressed individuals dwell on existential concerns and the possibility that life is not meaningful (Emmons, 1992, Kunzendorf & Maguire, 1995, Crumbaugh, 1968). It seems likely that these thoughts then exacerbate the state of depression. Although the existential concerns of depressed individuals has been commented on by many clinical observers (e.g., Beck, 1967; Becker, 1964; Yalom, 1980), with just a few exceptions, these concerns have been all but ignored in empirically based research.

According to Terror Management Theory (Greenberg, Pyszczynski, & Solomon, 1986; Solomon, Greenberg, & Pyszczynski, 1991-a), people find meaning in life by maintaining faith in their individualized versions of the cultural worldview. From this perspective, depression is associated with the ineffective functioning of the individual's cultural worldview. Specifically, mildly

depressed individuals are posited to have tenuous faith in their cultural worldviews, and consequently have difficulty finding meaning in their existence. Lacking a clear picture of what is meaningful makes mildly depressed individuals particularly prone to contemplate the abstract problems of existence that having a stronger belief in the cultural worldview would otherwise address; questions such as "what does it all mean?" and "why are we here?".

This tenuous faith in the meaningfulness of life renders mildly depressed individuals more in need of protection from concerns about their own mortality. Two recent studies supported this notion by demonstrating that mildly depressed subjects exposed to mortality salience responded in a more worldview defensive manner than both nondepressed subjects exposed to mortality salience and subjects not exposed to mortality salience (Simon, Harmon-Jones, Greenberg, Solomon, & Pyszczynski, in press). Considering that the function of the cultural worldview is to imbue the world with meaning, we hypothesized that mildly depressed subjects encouraged to defend their worldview by exposure to mortality salience would also increase their perception that life is meaningful. The present study was designed to test this hypothesis.

Terror Management Theory and Supporting Evidence

Terror Management Theory (for a more thorough presentation see Greenberg et al., 1986; Solomon et al.,

1991-a) is based on the premise that humans share with other animals an instinctive drive for self-preservation. This instinct, when juxtaposed with the uniquely human capacity for abstract and temporal thought and the consequent awareness of mortality, creates the potential for paralyzing terror. This terror is managed by believing in a cultural anxiety-buffer which has two components: (a) an individualized version of the cultural worldview that imbues the world with meaning, order, and permanence, provides standards for valued behavior that when fulfilled provide the individual with a feeling of personal significance, and promises either literal or symbolic immortality to those who meet or exceed these prescriptions for value; and (b) self-esteem, the belief that one is meeting the criterion of value espoused by one's worldview. Because of the critical role that these structures play in controlling anxiety, a great deal of social behavior is posited to be directed toward their maintenance and defense.

Empirical research derived from terror management theory has been directed toward two general hypotheses (for a review of this research, see Solomon, Greenberg, and Pyszczynski, 1995). The anxiety-buffer hypothesis states that if a psychological structure serves an anxiety-buffering function, then strengthening that structure should decrease anxiety or anxiety-related defenses in response to threat, and weakening that structure should increase such

responses. Consistent with this proposition, a series of studies have shown that when self-esteem is experimentally increased or dispositionally high, subjects exposed to threatening stimuli exhibit less self-reported anxiety, physiological arousal, and anxiety-related defensiveness (Greenberg, Pyszczynski, Solomon, Pinel, Simon, & Jordan, 1993; Greenberg, Solomon, Pyszczynski, Rosenblatt, Burling, Lyon, Pinel, & Simon, 1992). High self-esteem has also been shown to decrease defensive responses to death-related thoughts (Harmon-Jones, Simon, Greenberg, Pyszczynski, Solomon, & McGregor, 1995). In addition to studies assessing the anxiety-buffering function of self-esteem, recent research has illustrated the role of faith in the worldview in assuaging mortality concerns. Relative to subjects who have refuted an important aspect of their worldview, subjects who have affirmed the validity of an important aspect of their worldview are less prone to exhibit physiological and self-report signs of anxiety in response to death-related stimuli (Pyszczynski, Becker, Greenberg, Solomon, Vandeputte, & Stewart-Fouts, 1995).

The mortality salience hypothesis states that reminders of mortality increase the need for faith in the worldview, and thus increase favorable responses to anyone or anything that supports the worldview and unfavorable responses to anyone or anything that threatens it. Support for this proposition has been obtained in a number of studies

demonstrating that, when reminded of their mortality, people become more favorable in their evaluations of those who support their worldview and more unfavorable in their evaluations of those who challenge it (e.g. Florian & Mikulincer, 1995; Greenberg, Pyszczynski, Solomon, Rosenblatt, Veeder, Kirkland, & Lyon, 1990; Ochsman & Reichelt, 1995; Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989). This effect appears to be unique to reminders of one's mortality. Self-awareness, physiological arousal, and thoughts about other aversive events, such as an important exam, public speaking, intense pain, and failure, both real and imagined, do not produce the same biased evaluations (Greenberg, Pyszczynski, Solomon, Simon, & Breus, 1994; Greenberg, Simon, Harmon-Jones, Solomon, Pyszczynski, & Chatel, in press; Harmon-Jones, Simon, et al., 1995; Rosenblatt, et al., 1989).

Terror Management and Mild Depression

From the perspective of terror management theory, depressed individuals have difficulty maintaining the cultural worldview component of their cultural anxiety-buffer (Hamilton, Greenberg, Pyszczynski, & Cather, 1993; Pyszczynski & Greenberg, 1992; Solomon et al., 1991a-b). The notion that mildly depressed individuals have difficulty sustaining faith in their worldviews and are therefore more vulnerable to questions of meaning is consistent with the observations of clinicians from diverse theoretical

orientations (e.g., Beck, 1967; Frankl, 1969; Yalom, 1980). More rigorously controlled research has also demonstrated a strong association between deficit in meaning and depression. Crumbaugh (1968) reported that high scores on the depression subscale of the MMPI are associated with low scores on the Purpose in Life Test, a measure designed to assess faith in a meaningful conception of life. Emmons (1992) has shown that depression is associated with consideration of abstract concerns such as questioning the meaning of life and the value of society. More recently, Kunzendorf and Maguire (1995) found a correlation between depression and a belief that life has no meaning. Additionally, depressed individuals are characterized by morbid thoughts (DSM-IV) and appear less able to repress the dismal cognitions associated with thoughts of death (Kunzendorf & McLaughlin, 1988). Consistent with the terror management perspective on depression, mildly depressed individuals have a less meaningful conception of life than their nondepressed counterparts and have greater difficulty repressing thoughts of mortality.

If, as has been posited, mildly depressed individuals have fragile faith in their worldview which leads them to ponder existential concerns more than nondepressed individuals, then encouraging them to invest in the cultural worldview should attenuate their concerns and therefore lead them to report greater meaning in life. But how can we

get mildly depressed individuals to reinvest in their cultural worldviews? Two recent studies by Simon, Harmon-Jones, et al., (in press) demonstrated that mildly depressed individuals respond to mortality salience with higher levels of worldview defense than do nondepressed controls. In both studies, mildly depressed subjects exposed to mortality salience showed greater levels of worldview defense than either nondepressed subjects exposed to mortality salience or mildly depressed subjects not exposed to mortality salience. Since making mortality salient to mildly depressed subjects seems to lead them to defend their worldview and it is this belief in the cultural worldview that gives life meaning, than mildly depressed subjects exposed to mortality salience who defend their cultural worldview should report greater meaning in life than mildly depressed subjects not exposed to mortality salience or exposed to mortality salience but not given the opportunity to defend their worldview.

Thus, we hypothesized that mildly depressed subjects who are given the opportunity to defend the worldview in response to mortality salience should show an increased perception of meaning in life. However, mildly depressed subjects not exposed to mortality salience or not given the opportunity to defend their worldview in response to mortality salience should not show an increase in the perception of meaning; these subjects would be expected to

exhibit lower levels of meaning than their nondepressed counterparts. Nondepressed subjects who have sound faith in the cultural worldview should defend their worldview in response to mortality salience (e.g., Greenberg et al., 1994) but without necessarily showing a subsequent increase in their perception of meaning in life as they are not originally deficient in their perception of meaning.

In order to test these hypotheses, mildly depressed and nondepressed college students were induced to think about either their own mortality or a control topic (watching television), and then read essays that either supported or threatened aspects of their worldviews. After reading the essays, subjects were asked to evaluate them in a manner that either enabled them to defend their worldview, or in a manner that did not provide such an opportunity. All subjects then completed a No Meaning Scale (Kuzendorf & Maguire, 1995) designed to assess the extent to which the world is perceived as a meaningful place.

METHOD

Subjects

Subjects were 28 male and 65 female introductory psychology students at the University of Arizona, who completed the Beck Depression Inventory (BDI; Beck, 1967; See Appendix A) at a mass survey session at the beginning of the semester. Although the use of subclinically depressed college students limits the generalizability of this

research to more severely depressed populations, the BDI has been well validated for use with college students (Beck, Steer, & Garbin, 1988; Bumberry, Oliver, & McClure, 1978). Students scoring 0-3 ($M=1.97$) were considered nondepressed, and students scoring above 14 ($M=18.23$) were considered mildly depressed. The BDI was administered a second time when subjects arrived at the lab. Data from subjects not scoring within the same range as they did during the mass survey session were not included in final analyses. Six mildly depressed and 4 nondepressed subjects were discarded for this reason.¹ For ethical reasons, subjects reporting any suicidal ideation were not recruited for this study, that is those answering anything other than 0 to a question (number 9 on the BDI) regarding their thoughts about suicide and the probability that given the opportunity the subject would take his/her own life.

Procedure

Subjects, randomly assigned to conditions, were run in groups of three to five in a 2 (mildly depressed vs. nondepressed) X 2 (mortality salience vs. television control) X 2 (opportunity to defend the cultural worldview vs. no opportunity to defend) between X 2 (anti-American vs. pro-American target) within subjects design.² The study was set up to appear as two separate short studies. "Study 1" was described as examining what personality traits seem to go together in people, and "Study 2" was described as

examining how Americans react to impressions of the United States held by people from foreign countries. To ensure privacy, subjects worked in individual cubicles in both "studies." The same experimenter ran both studies in the same session under the premise that the subjects were to be there for one hour to get their research credits. In debriefing, no subjects reported seeing any way in which the "two" studies could have been linked.

In the "first study," subjects completed an initial packet of questionnaires, which contained the BDI and a filler personality measure (See Appendix B), followed by either the mortality salience (See Appendix C) or television-control treatment (See Appendix D). The mortality salience treatment (Rosenblatt, et al., 1989) consisted of having subjects 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." Parallel questions were asked with respect to watching television.

After all subjects had finished "Study 1," they were told that "Study 2" consisted of reading two brief essays written by foreign students. Subjects then returned to the cubicles and were given the materials. The essays were the same as those used in several previous mortality salience

studies (e.g., Greenberg, Simon, et al., 1992), one pro- (See Appendix E) and one anti-American (See Appendix F). These essays were hand-written with the country the author was allegedly from blacked out. They were constructed in such a manner that they had the same number of spelling and grammatical errors. All this was done to contribute to the 'authenticity' of the essays. Additionally, the pro and anti-American essays were counterbalanced for order of presentation.

Subjects assigned to the defense of worldview condition responded to the typical evaluation measures (See Appendix G), which consists of five questions: To what extent do you like this person?; How intelligent did you think this person was?; How knowledgeable did you think this person was?; How much did you agree with this person's arguments?; How valid did you think this person's arguments were? Responses were made on 9-point scales, where 1=the negative anchor and 9=the positive anchor. Subjects assigned to the no defense condition responded to four non-evaluative questions (See Appendix H): What gender do you think the author is?; What major do you think the author is?; Approximately how many sentences do you think there were in the essay?; Approximately how many words do you think there were in the essay? These rather bland worldview-irrelevant questions were designed not to provide subjects the opportunity to defend their worldview.

This was followed by a personality questionnaire that the experimenter introduced by saying she forgot to give it to the subjects with the "first study." This questionnaire was the Kunzendorf No Meaning Scale (Kunzendorf and Maguire, 1995; See Appendix I).

The Kunzendorf No Meaning Scale (Kunzendorf and Maguire, 1995) has subjects respond to 18 items concerning whether life is meaningful or not, where 1=strongly disagree and 4=strongly agree; a low score indicates a high level of meaning in life and a high score indicates a low level of meaning in life. Previous research using the scale (Kunzendorf & Maguire, 1995) has revealed that the measure has high internal validity (Cronbach's alpha .892). This measure also does not correlate with basic clinical scales, such as those that assess paranoia, schizophrenia, or social introversion. Items comprising the measure include such statements as "The possibility that death may terminate my awareness of having ever existed at all makes my existence seem meaningless," "Life has no meaning or purpose," "All strivings in life are futile and absurd," "Heroic deeds stem from the delusion that they are meaningful and significant."

RESULTS

Defense of Worldview

Before testing our primary hypothesis about the effect of worldview defense on subject's perceptions of meaning, we first needed to ascertain whether, as in previous studies

(Simon, Harmon-Jones, et al., in press), relative to their nondepressed counterparts, mildly depressed subjects did indeed engage in greater worldview defense in response to mortality salience when given the opportunity to do so. As in prior research (e.g., Greenberg, Solomon et al., 1994), we computed one composite measure of worldview defense. All items comprising reactions to the pro-American essay were summed (factor analysis revealed all items loading on one factor $>.88$) then reactions to the anti-American essay were summed (again factor analysis revealed one factor with all items loading $>.83$) then subtracted from the pro-American score, such that higher scores indicate greater pro-American bias. A 2 (mildly depressed vs. nondepressed) X 2 (mortality salience vs. control) between groups ANOVA on this measure was then conducted. Only subjects who were given the worldview defense measures were included in this analysis.

The ANOVA on the bias composite revealed the usual main effect for mortality salience, $F(1,45)=65.27$, $p<.001$, with mortality salient subjects exhibiting greater pro-American bias than control subjects, means of 4.32 and 1.0, respectively. There was also a main effect for depression on the bias composite, $F(1,45)=5.87$, $p<.02$, with mildly depressed subjects exhibiting greater pro-American bias ($M=3.28$) than nondepressed subjects ($M=2.18$).

These effects were qualified by the predicted two-way

interaction on the bias composite, $F(1,45)=5.49$, $p<.05$. Cell means are displayed in Table 1. Pairwise comparisons revealed that in response to mortality salience, both mildly depressed and nondepressed subjects exhibited greater pro-American bias than their control condition counterparts, $t(45)=7.15$, $p<.01$, and, $t(45)=4.19$, $p<.01$, respectively. Pairwise comparisons also revealed that within the mortality salient conditions mildly depressed subjects exhibited greater pro-American bias than nondepressed subjects, $t(45)=3.41$, $p<.01$. There were no significant differences between the mildly depressed and nondepressed subjects within the control conditions, t 's <1.0 . These findings replicate previous findings that mildly depressed subjects respond to reminders of mortality with especially vigorous defense of their cultural worldviews (Simon, Harmon-Jones, et al., in press).

No Meaning Scale

A 2 (mildly depressed vs. nondepressed) X 2 (mortality salience vs. control) X 2 (worldview defense vs. no defense) between groups ANOVA was conducted on the Kunzendorf No Meaning Scale. The ANOVA revealed main effects for depression, $F(1,85)=216.90$, $p<.001$, with mildly depressed subjects ($M=2.43$) reporting lower meaning in life than nondepressed subjects ($M=1.17$); mortality salience, $F(1,85)=30.38$, $p<.001$, with control subjects ($M=2.02$) reporting lower meaning in life than mortality salient

subjects ($M=1.58$); and worldview defense, $F(1,85)=17.06$, $p<.001$, with no defense subjects ($M=1.95$) reporting lower meaning in life than worldview defense subjects ($M=1.65$).

These effects were qualified by two-way interactions for depression X mortality salience, $F(1,85)=24.34$, $p<.001$, depression X defense, $F(1,85)=19.74$, $p<.001$, and for mortality salience X defense, $F(1,85)=15.48$, $p<.001$. Cell means are displayed in Table 2.

These two-way interactions were qualified by the predicted three-way interaction of depression X mortality salience X worldview defense, $F(1,85)=10.21$, $p<.001$. Cell means are displayed in Table 3. A separate two-way ANOVA conducted within the mildly depressed group revealed main effects of both mortality salience, $F(1,38)=22.47$, $p<.001$, and worldview defense, $F(1,38)=14.93$, $p<.001$, as well as a significant interaction of the two, $F(1,38)=10.16$, $p<.003$. Pairwise comparisons revealed that mildly depressed subjects who had the opportunity to defend their worldview following mortality salience reported higher meaning in life than did mildly depressed subjects who did not have that opportunity, $t(38)=4.71$, $p<.01$, or than did control mildly depressed subjects who either could defend their worldview, $t(38)=5.28$, $p<.01$, or could not $t(38)=5.25$, $p<.01$. In fact, although mildly depressed subjects expressed lower levels of meaning than nondepressed subjects in all other conditions (all t 's >3.50 , p 's $<.01$), this difference was eliminated

when mortality was salient and subjects were given an opportunity to defend their worldviews. A two-way ANOVA within the nondepressed group revealed no effects, all F 's < 2.50. Taken together the pattern of results revealed by the separate two-way ANOVAs suggests that worldview defense in response to mortality salience significantly affected the perception of meaning in life of mildly depressed subjects but not of nondepressed subjects.

Discussion

The findings of the present study suggest that stimulating mildly depressed subjects to defend their cultural worldviews following mortality salience leads them to view life as more meaningful. As in two previous studies (Simon, Harmon-Jones, et al., in press), mildly depressed subjects responded to mortality salience with higher levels of worldview defense than did nondepressed subjects. Although mildly depressed subjects scored higher on the No Meaning Scale than nondepressed subjects in every other condition, this difference was completely eliminated by reminding mildly depressed subjects of their mortality and then giving them an opportunity to defend their cultural worldviews. Simply reminding mildly depressed subjects of their mortality or giving them the opportunity to defend their worldviews did not produce anything approaching the same effect. It appears that it is the increase in worldview defense in depressed subjects that is brought on

by reminders of their mortality that is responsible for this increase in perceived meaningfulness.

Correlational analyses provide evidence consistent with this conclusion. Pro-American bias, our composite measure of extent of worldview defense, correlated negatively ($r(1,12) = -.80$, $p < .01$), with the perception of meaning of life for the mildly depressed subjects who were reminded of their mortality and then given the opportunity to defend their worldviews. This relationship was such that the more subjects defended their worldview, the lower were their scores on the No Meaning Scale (i.e., the more they saw life as meaningful). In the other conditions, the correlation between worldview defense and the perception of meaning in life were all positive and not significant, all r 's $< .16$. These findings are consistent with our contention that the increase in worldview defense in response to mortality salience mediated the increase in perceptions of meaning among the mildly depressed.

From the perspective of terror management theory, the function of the cultural worldview is to offer a sense of meaning that provides protection against deeply rooted existential fears. Reminders of one's mortality produce increased worldview defense because they increase subjects' need for this protection. Mildly depressed subjects show an especially strong response to mortality salience because they are more in need of this protection due to their

tenuous but still present faith in their worldviews. It may be that, due to the losses or other stressful life events that precipitated their depression, such individuals begin to lose faith in their conception of life as meaningful (for a discussion of a process through which this might occur, see Pyszczynski & Greenberg, 1992, Chapter 8). The finding that depressed subjects generally scored higher on the No Meaning Scale in this and other studies (Kunzendorf & Maguire, 1995) is consistent with this contention. Contemplating the inevitability of death may provide a "jumpstart" to the system, reminding mildly depressed subjects of their need for existential protection and stimulating them to defend their worldviews when confronted by the pro- and anti-American authors. This simple act of derogating a person who challenges one's worldview and praising a person who supports it was apparently sufficient to increase their perception that life is meaningful.

Within the context of the present study, responding to the target persons in a worldview defensive manner may have reminded subjects that there are, indeed, things that make life meaningful and worthwhile. Feeling their disdain for the target person who criticized America or their admiration for the target person who praised America may have forcefully reminded subjects that they do, in fact, care about their culture. It may be that this sense of caring is, at least in part, what makes life meaningful and worth

living.

Possible Clinical Implications

The present study raises the intriguing possibility that getting depressed persons to show that they care about something significant in their lives may have the potential to give them the sense of meaning they previously lacked and get them re-engaged in the business of living. The process by which this effect may emerge is unknown at this time and requires further research to elucidate. However, one possible way this effect may arise may be through the level of conceptual analysis at which people, both naturally and in response to mortality salience, define their actions. To this end Vallacher and Wegner present a theory (1985) of action identification that can be very useful in describing this process.

The theory posits that an action's meaning, self-evaluative implications, and causal effects all represent higher level identifications, while basic or physical descriptions of actions represent lower level identifications. Evidence suggests that mildly depressed individuals focus on higher level identifications and question the meaning life more than nondepressed individuals (Emmons, 1992, Kunzendorf & Maguire, 1995). This suggests that mildly depressed individuals interpret actions in terms of their possible meaning (e.g., the act of going to school may be viewed as a contingent reflection of self-esteem and

not just as attending class). Since, in the present context, mortality salience leads mildly depressed individuals to defend their cultural worldview in a way that involves lower level identifications (e.g., circling numbers to indicate how much subjects agreed or disagreed with the arguments being expressed), mortality salience could be interpreted as shifting mildly depressed subjects from high level identifications (e.g., existential questions of meaning) to low level identifications (e.g., circling a number to reflect their liking for the author of a given essay). However, this would not be the case for the mildly depressed subjects not given an opportunity to defend the worldview since that task involved a slightly higher level of action. No defense subjects had to write out words to respond to questions, whereas defense subjects simply circled numbers.

Because the lower level action of circling numbers in response worldview defensive questions addresses the concern of the higher level identification (defense of the cultural worldview), this apparent shift down the hierarchy seems to increase the perception of meaning in life. Again, this seems to only be true for the mildly depressed subjects given the opportunity to defend the worldview on a low level of action identification in response to mortality salience. Mildly depressed subjects exposed to mortality salience who were not given this low level opportunity or to those not

exposed to mortality salience but were given this opportunity did not show the same increase in the perception of the meaning of life. This speculative analysis begs for further research into the question of whether or not mortality salience would lead mildly depressed subjects to defend the worldview in terms of higher action identifications and, if they do indeed defend the worldview in this manner, would it produce the same increase in perception of the meaning of life? These questions aside, it should be noted that the duration of the shift from high to low levels of identification is presently unknown, and the shift may be quite susceptible to other external (or internal) influences. Additionally, at present this is a highly speculative analysis in need of further research. That notwithstanding, the action identification model may prove to be a useful conceptualization for understanding cognitive shifts in the mildly depressed following mortality salience. Such a framework may translate into an expedient and simple clinical intervention for mildly depressed clients.

From the perspective of action identification theory (e.g., Vallacher & Wegner, 1985), such therapy would involve focusing mildly depressed individuals on lower level identifications of actions that they can readily, or with help, engage in that support their cultural worldview. This attention to lower level representations of actions then

could make higher level re-framing of these actions less difficult (Wegner, Vallacher, Macomber, Wood, & Arps, 1984; Wegner, Vallacher, Kiersted, & Dizadji, 1986). For example, an action such as going to the therapist can be viewed as getting in the car and driving (a lower level identification) or the client may see it as "I am a sick person who needs a therapist" (a higher level identification). If the therapist can focus the client on more concrete steps, then according to this model it should be easier to change the implications of these actions from having a negative connotation (e.g., I am a sick, depressed individual who sees no meaning in life) to something with a more positive frame (e.g., I am getting better and am taking steps to improve myself). A therapeutic solution that had such a focus might be successful in "shoring up the lower level pillars on which self-esteem is based" and therefore instill a stronger faith in the cultural worldview (Pyszczynski, Greenberg, Solomon, & Hamilton, 1990, p. 193). "In this way, the individual can embed him-herself back within the security of the cultural anxiety-buffer and end the confrontation with higher level problems" (Pyszczynski et al., 1990, p. 193). Of course this is all highly speculative at this time.

Possible Directions for Future Research

Again, the present study raises the possibility that getting depressed persons to demonstrate that they care

about something significant in their lives may have the potential to give them the sense of meaning they previously lacked. Although in the present study this was done by reminding people of their mortality and then giving them the opportunity to defend their sense of national pride after it had been attacked or supported, there are no doubt many other aspects of the cultural worldview that could be used in a similar manner. Religious beliefs, family, profession, and other group affiliations can all be powerful sources of meaning for people.

For example, a northeast newspaper recently reported a story in which after a rather ferocious fire had burned down a local church, parishioners and community members worked together in its reconstruction. The following quote from one of these parishioners illustrates not only how confrontation with calamity beyond our control can affect the perception of meaning but also how such sources of meaning can be used to confront threatening situations. "This tested your faith and how valuable your faith is to you...we learned that the church, and its heritage, meant a great deal to everyone." This increased sense of meaning in turn had a variety of positive ramifications, such as increased community involvement and an increased sense of fellowship among the parishioners. An interesting question for future research will be the extent to which adhering to these other types of commitments can be used in a similar

way to provide meaning for those who have trouble attaining it.

Another important question for future investigation is the extent to which encouraging defense of the worldview can have a beneficial impact on other significant symptoms of depression. Although a sense of meaninglessness is a common, and we believe, rather central feature of depression, the extent to which the ameliorative effects of encouraging worldview defense would extend to other important features of depression is unclear at this point.

It is also important to point out that at this juncture it would be inappropriate to generalize the present findings to clinical populations of more severely depressed individuals. Although care was taken to ensure that the present subjects could be reliably considered as exhibiting a variety of thoughts, feelings, and behaviors that are associated with the clinical disorder known as depression (as reflected by two BDI scores of greater than 14, $M=18.23$), these subjects have not been diagnosed by a clinician as having a major depressive disorder. Thus, extreme caution should be used when generalizing beyond these samples. On the other hand, there is ample evidence to suggest that substantive conclusions concerning depression-related processes garnered from studies using such self-report inventories are highly similar to those that might be found using clinically diagnosed samples

(Vredenburg, Flett, & Krames, 1993). In addition, Kuzendorf and Maguire (1995) found that the No Meaning Scale used as the dependent measure in the present research is correlated with the depression subscale of the MMPI and not with other clinical subscales such as paranoia and schizophrenia. This suggests that this measure is sensitive to depressive reactions rather than reactions due to other psychological difficulties.

As with the previous findings of Simon, Harmon-Jones et al., (in press), there are conceptual reasons for thinking that more severely depressed subjects may not show as favorable a response to inductions of mortality salience. The present findings are predicated on the assumption that mildly depressed individuals have tenuous but, nonetheless, still present faith in their cultural worldviews as a basis of meaning and value in life. After all, the present subjects were college students who were attending classes, showing up for experiments, holding jobs, etc. It may be that such faith and meaning is all but gone in very severely (psychotically) depressed individuals. If this were the case, reminding such individuals of their mortality may not produce the strong rebound in worldview defense observed among mildly depressed subjects in this study and previous research (Simon, Harmon-Jones et al., in press), and thus have little or no meaning-restoring value. Indeed, confrontation with the problem of death in severely

depressed individuals could even encourage a further loss of meaning. Clearly, the relevance of the present findings for such severely depressed populations can only be addressed by further research, which would be greatly complicated by the ethical problems inherent in encouraging such persons to ponder the problem of death.

Regardless of these varying issues, the present findings suggest that, at least under some conditions, confrontation with existential problems such as the inevitability of death may be of some value in encouraging mildly depressed individuals to perceive meaning in their existence. These findings provide general support for Yalom's (1980) suggestion that confrontation with existential issues may be a useful tool for getting subjects invested in the more concrete goals and activities of daily life. Although additional research is clearly needed before the present findings could be applied in a clinical setting, they do suggest that further inquiry into this possibility may be fruitful. By demonstrating the effect of mortality salience and worldview defense on mildly depressed individuals' perception that life is meaningful, the present research provides preliminary evidence of the potentially important linkage between depression, faith in one's cultural worldview, and the existential reality of human mortality.

APPENDIX A: BECK DEPRESSION INVENTORY

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APPENDIX B: CROWNE-MARLOW SOCIAL DESIRABILITY SCALE

Personal Attitudes Questionnaire

Listed below are a number of statements concerning personal attitudes and traits. Read each statement and decide whether it is true or false as it pertains to you personally. If the statement is true as it pertains to you, circle the letter T; if the statement is false as it pertains to you, circle the letter F.

- T F 1. Before voting I thoroughly investigate the qualifications of all the candidates.
- T F 2. I never hesitate to go out of my way to help someone in trouble.
- T F 3. It is sometimes hard for me to go on with my work if I am not encouraged.
- T F 4. I have never intensely disliked anyone.
- T F 5. On occasion I have had doubts about my ability to succeed in life.
- T F 6. I sometimes feel resentful when I don't get my way.
- T F 7. I am always careful about my manner of dress.
- T F 8. My table manners at home are as good as when I eat out in a restaurant.
- T F 9. If I could get into a movie without paying for it and be sure I was not seen, I would probably do it.
- T F 10. On a few occasions, I have given up doing something because I thought too little of my ability.
- T F 11. I like to gossip at times.
- T F 12. There have been times when I felt like rebelling against people in authority even though I knew they were right.
- T F 13. No matter who I'm talking to, I'm always a good listener.

APPENDIX B (continued)

- T F 14. I can remember 'playing sick' to get out of something.
- T F 15. There have been occasions when I took advantage of someone.
- T F 16. I'm always willing to admit when I've made a mistake.
- T F 17. I always try to practice what I preach.
- T F 18. I don't find it particularly difficult to get along with loud-mouthed obnoxious people.
- T F 19. I sometimes try to get even, rather than forgive and forget.
- T F 20. When I don't know something, I don't at all mind admitting it.
- T F 21. I am always courteous, even to people who are disagreeable.
- T F 22. At times I have really insisted on having things my own way.
- T F 23. There have been times I felt like smashing things.
- T F 24. I would never think of letting someone else be punished for my wrongdoings.
- T F 25. I never resent being asked to return a favor.
- T F 26. I have never been irked when people expressed ideas different from my own.
- T F 27. I never take a long trip without checking the safety of my car.
- T T 28. There have been times when I was quite jealous of the good fortune of others.
- T F 29. I have almost never felt the urge to tell someone off.
- T F 30. I am sometimes irritated by people who ask favors of me.

APPENDIX B (continued)

- T F 31. I have never felt like I was punished without cause.
- T F 32. I sometimes think when people have a misfortune they only got what they deserved.
- T F 33. I have never deliberately said something that hurt someone's feelings.

APPENDIX C: MORTALITY SALIENCE TREATMENT

The Projective Life Attitudes Assessment

This assessment is a recently developed, innovative personality assessment. Recent research suggests that feelings and attitudes about significant aspects of life tell us a considerable amount about the individual's personality. Your responses to this survey will be content-analyzed in order to assess certain dimensions of your personality. Your honest response to the following questions will be appreciated.

1. PLEASE BRIEFLY DESCRIBE THE EMOTIONS THAT THE THOUGHT OF YOUR OWN DEATH AROUSE IN YOU.

2. JOT DOWN, AS SPECIFICALLY AS YOU CAN, WHAT YOU THINK WILL HAPPEN TO YOU AS YOU PHYSICALLY DIE AND ONCE YOU ARE PHYSICALLY DEAD.

APPENDIX D: CONTROL TREATMENT

The Projective Life Attitudes Assessment

This assessment is a recently developed, innovative personality assessment. Recent research suggests that feelings and attitudes about significant aspects of life tell us a considerable amount about the individual's personality. Your responses to this survey will be content-analyzed in order to assess certain dimensions of your personality. Your honest response to the following questions will be appreciated.

1. PLEASE BRIEFLY DESCRIBE THE EMOTIONS THAT THE THOUGHT OF WATCHING TELEVISION AROUSES IN YOU.

2. JOT DOWN, AS SPECIFICALLY AS YOU CAN, WHAT YOU THINK WILL HAPPEN TO YOU AS YOU PHYSICALLY WATCH TELEVISION AND ONCE YOU HAVE PHYSICALLY WATCHED TELEVISION.

APPENDIX E: PRO-AMERICAN ESSAY

The first thing that hit me when I come to this country was the incredible freedom people had. Freedom to go to school, freedom to work in any job you want. In this country people can go to school and train for the job they want. Here anyone who works hard can make their own success. In ***** most people live in poverty with no chance of escape. In this country people have more opportunity for success than in any other and success does not depend on the group belong to. While there are problems in any country America truly is a great nation and I don't regret my decision to come here at all.

APPENDIX F: ANTI-AMERICAN ESSAY

When I first came to this country from my home in
*****. I believe it was the "land of opportunity" but
I soon realized this was only true for the rich. The system
here is set up for rich against the poor. All people care
about here is money and trying to have more than other
people. Its all one group putting down others and nobody
cares about the foreigners. The people only let foreigners
have jobs like pick fruit and wash dishes because no
American would do it. Americans are spoiled and lazy and
want everything handed to them. America is a cold country
that is unsensitive to needs and problems of foreigners. It
thinks its a great country but its not.

APPENDIX G: WORLDVIEW DEFENSE MEASURE

1. How much do you like this person?

1	2	3	4	5	6	7	8	9
not at all							totally	
liked							liked	

2. How intelligent did you think this person was?

1	2	3	4	5	6	7	8	9
not at all							totally	
intelligent							intelligent	

3. How knowledgeable did you think this person was?

1	2	3	4	5	6	7	8	9
not at all							totally	
knowledgeable							knowledgeable	

4. How much did you agree with this person's opinion?

1	2	3	4	5	6	7	8	9
not at all							totally	
agree							agree	

5. From your perspective, how true do you think this person's opinion of America is?

1	2	3	4	5	6	7	8	9
not at all							totally	
true							true	

APPENDIX H: NO WORLDVIEW DEFENSE MEASURE

1. What gender do you think the author is?

2. What major do you think the author is?

3. Approximately how many sentences do you think there were in the essay?

4. Approximately how many words do you think there were in the essay?

APPENDIX I: KUNZENDORF NO-MEANING IN LIFE SCALE

Please rate each statement below, by circling one of the ratings 1-4. Circle '1' if you strongly disagree, '2' if you mildly disagree, '3' if you mildly agree, or '4' if you strongly agree.

1. 1 2 3 4 It does not matter whether I live or die.
2. 1 2 3 4 The fact that I shall die and be forgotten makes my life seem insignificant.
3. 1 2 3 4 The possibility that death may terminate my awareness of having ever existed at all makes my existence seem meaningless.
4. 1 2 3 4 My place in the universe is like that of an insignificant speck of dust.
5. 1 2 3 4 Life has no meaning or purpose.
6. 1 2 3 4 Any perceived meaning in life is illusory.
7. 1 2 3 4 All strivings in life are futile and absurd.
8. 1 2 3 4 The likelihood that I shall be remembered by no one in two hundred years makes my current life seem unimportant.
9. 1 2 3 4 All suffering is pointless.
10. 1 2 3 4 Life is a cruel joke.
11. 1 2 3 4 Heroic deeds stem from the delusion that they are meaningful and significant.

APPENDIX I (continued)

12.	1	2	3	4	Life is filled with one absurd loss after another.
13.	1	2	3	4	Taking care of one's health is pointless, as it will not avert one's rendezvous with death.
14.	1	2	3	4	To perpetuate life by having children of one's own is merely to perpetuate absurdity and loss of life.
15.	1	2	3	4	When you really think about it, life is not worth the effort of getting up in the morning.
16.	1	2	3	4	Whenever I have experienced loss (of a deceased relative, or an estranged lover, or a squandered opportunity), I felt that life lost some of its meaning for me.
17.	1	2	3	4	I just don't care about myself any more.
18.	1	2	3	4	There is no sense in feeling hopeful about the future because, in the end, death robs life of all meaning anyway.

Table 1

Cell means for the two-way interaction of mortality salience X depression on the pro-American bias composite.

	<u>Mortality Salient</u>	<u>Control</u>
Mildly Depressed	5.35a (5.35)	1.02b (1.02)
N =	12	11
Nondepressed	3.37c (1.29)	0.98b (1.18)
N =	13	13

Means that do not share a common subscript differ at $p < .05$. Scores could range from 0=no pro-American bias to 9=the most pro-American bias. Standard deviations are presented in parenthesis.

Table 2

Cell means for the three-way interaction of depression X mortality salience X worldview defense on meaning in life.

	<u>Mortality Salient</u>		<u>Control</u>	
	Mildly	Non	Mild	Non
	Depressed	Depressed	Depressed	Depressed
Defended				
the	1.31a (.38)	1.12a (.12)	2.84b (.66)	1.24a (.14)
Cultural				
Worldview				
N =	12	12	10	13
No Defense of				
the	2.68b (.64)	1.16a (.15)	2.96b (.59)	1.14a (.19)
Cultural				
Worldview				
N =	12	12	11	12

Means that do not share a common subscript differ at $p < .01$. Scores could range from 1=high meaning in life to 4=low meaning in life. Standard deviations are presented in parentheses.

Footnotes

1. Preliminary analyses including these subjects still found the predicted effects to be significant.
2. All preliminary analyses included both sex of subject and order of evaluation of targets as independent variables, and neither produced significant effects in any analysis. Therefore, neither variable was used in the primary analyses.

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