THE EFFECTS OF SELF-CONSTRUAL AND RELIGIOUS

FUNDAMENTALISM ON TERROR MANAGEMENT MECHANISMS

A Thesis

by

MICHAEL DAVID FRIEDMAN

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

May 2004

Major Subject: Psychology

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Approved as to style and content by:

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ABSTRACT

The Effects of Self-Construal and Religious Fundamentalism on

Terror Management Mechanisms. (May 2004)

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Two experiments were conducted to assess the effects of self-construal and religious fundamentalism on terror management processes. It was found that both interdependent self-construal and religious fundamentalist beliefs offer protection against death-related thoughts and worldview defense following mortality salience. The implications for terror management theory are discussed.

ACKNOWLEDGMENTS

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INTRODUCTION

In the 14 years since its introduction into the social psychological literature, Terror Management Theory (TMT; e.g. Solomon, Greenberg, & Pyszczynski, 1991) has been one of the more widely-investigated topics in the field, spawning over 150 published journal articles and book chapters. This theory is largely based on the works of cultural anthropologist Ernst Becker, who developed a broad theory of human motivation and behavior, based on the notion that the fear of physical death is a large motivator of quotidian cognition and action.

Terror Management Theory, too, proposes that the underlying fear of physical death plays a significant role in everyday human thought and behavior. According to TMT, human beings are unique in their ability to contemplate the fact that they are alive and that one day they will die. This knowledge is at odds with an instinctively-programmed desire for self-preservation. The combination of this drive for self-preservation with the knowledge that one's life is finite has the potential to create paralyzing terror.

Terror management theory posits that humans protect themselves from this terror by means of a dual-component cultural anxiety buffer. This cultural anxiety buffer is comprised of two protective mechanisms: the cultural worldview and self-esteem.

Cultural worldviews are symbolic constructions that reduce the anxiety and terror surrounding death by providing a sense of order, meaning, permanence, standards of value, and the potential of literal and symbolic immortality to individuals' lives. People
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This thesis follows the style and format of *Journal of Personality and Social Psychology*.

can attain a sense of symbolic immortality by identification with and adherence to a cultural worldview, which conveys a sense of belonging to an entity that will carry on long after one's personal death. Religion can provide a sense of literal immortality by promising to reward the faithful with a never-ending afterlife. Even when thoughts of death are not consciously present, people adhere to their cultural worldview because it provides protection from the continual unconscious fear of death that affects all humans.

Self-esteem, within the framework of TMT, is viewed as one's belief in how well one meets the standards and requirements of the cultural worldview. Self-esteem is thus a cultural construction that provides individuals with the sense that they are valuable members of a meaningful society.

To be adequately protected from the threats continuously posed by the awareness of one's mortality, both components of the cultural anxiety buffer must be solid. That is, one must have a relatively firm belief in one's cultural worldview and one must have sufficiently high self-esteem. If either component is lacking, the protection provided by the cultural anxiety buffer will be inadequate. In support of this notion, research has shown that depressed people (who often lack both a solid cultural worldview and high self-esteem) are prone to react more strongly than their non-depressed and high self-esteem counterparts in typical terror management experiments (Simon et al., 1996; Simon, Arndt, Greenberg, Pyszczynski, & Solomon, 1998).

Terror management research has focused on testing two basic hypotheses based on the theory.

Anxiety Buffer Hypothesis

The anxiety buffer hypothesis states that, if a psychological structure protects against anxiety, then bolstering that structure should reduce or eliminate anxiety and anxiety-produced behaviors in response to any number of threats. Conversely, weakening the protective psychological structure should increase anxiety or anxiety-produced behavior in response to threats. Research has shown that induced and dispositionally high levels of self-esteem (Harmon-Jones et al., 1997) and the induced suggestion of an afterlife (Dechesne et al., 2003) all reduce death thought accessibility, worldview defense, and judgment of social transgressions, while induced and dispositionally low self-esteem, and the induced suggestion that there is no afterlife all increase these behaviors.

Mortality Salience Hypothesis

The mortality salience hypothesis states that, if a psychological structure provides protection against the fear of death, then reminding individuals of their mortality should increase their reliance on that structure. Research testing this hypothesis has shown that reminding individuals of their own mortality leads to a wide variety of behavioral and psychological outcomes, including (a) harsher criticism of foreigners who criticize the U.S., (e.g. Greenberg et al., 1992) (b) anxiety and discomfort when engaging in activities that violate cultural standards (Greenberg et al., 1995), and (c) self-esteem striving in personally relevant domains such as driving (Taubman, Florian & Mikulincer, 1999) and body image (Goldenberg et al., 2000). Collectively, all of the studies examining the mortality salience hypothesis support the idea that reminders of death increase striving to

achieve self-esteem by validating the cultural worldview and defending against threats to one's self-esteem.

The Effects Mortality Salience on Group Membership

Mortality salience has been shown to affect personal identification with groups. TMT theorists have speculated that groups are a powerful source of meaning, and thus they can provide protection from mortality concerns (Arndt et al., 2002). Specifically, research on TMT has shown that, following mortality salience, individuals identify more closely with relevant in-groups. For example, Castano, Yzerbyt, Paladino, & Sacchi (2002) showed that mortality salience led Italian participants to identify more closely with their compatriots. Furthermore, following mortality salience, Italians were more likely to see their nationality as having greater entitativity (i.e. they were more likely to see their abstract nationality as being more real and concrete than non-mortality salient participants).

In addition, identification with gender and ethnic group has been found to increase subsequent to mortality salience induction. Arndt et al. (2002) found that, following mortality salience, women were more likely to perceive themselves as being similar to other women, and Hispanics were more likely to perceive themselves as being similar to other Hispanics (provided negative aspects of the ingroup were not salient- we will return to this issue in a moment).

However, there is evidence that the effects of mortality salience on group identification are not entirely straightforward.

In a study conducted in Holland, Dechesne, Jannsen, and van Knippenberg (2000) found that mortality salience lead to greater derogation of a critic of a relevant in-group

among high need-for-closure participants, but greater distancing from the in-group among low need-for-closure participants. Simon et al. (1997) found that, among American participants, mortality salience lead to a greater striving for optimal distinctiveness- leading participants who were led to believe they were conformists to underestimate social consensus for their attitudes, and participants who were lead to believe they were social deviants to exaggerate social consensus for their attitudes. In line with standard terror management theorizing, Arndt et al. (2002) found that women's identification with other women, and Hispanic's psychological distancing from other Hispanics was dependent upon the salient valence of the in-group: mortality salient women identified *more* with other women, except when negative gender stereotypes were salient, and mortality salient Hispanics engaged in more psychological distancing with other Hispanics when negative racial stereotypes were salient. As Arndt et al. acknowledge, "the anxiety buffering function of group identifications derives from the capacity of such identification to provide a sense that one is a valuable contributor to a meaningful reality" (26).

Thus, the standard TMT position is that identification with groups provides the potential for increasing self-esteem, and so after MS, people identify more closely with groups in order to bolster their self-esteem. In their recent book, Pyszczynski, Solomon, and Greenberg (2003) go so far as to state that "although social connections are important means of terror management, their importance depends on their value for sustaining the individual's self-worth" (91).

One recently published study, however, seems to contradict some of the thinking that posits self-esteem motivation as the primary drive behind enhanced identification

with groups following mortality salience. Wisman and Koole (2003) showed that, following mortality salience, Dutch students were more willing to affiliate with others, even if the other individuals belonged to a worldview-threatening group, or if affiliation with others would require the participants to attack their own worldviews (which would, according to TMT, *decrease* one's self-esteem). The authors postulate that affiliation concerns (the need to associate with others in times of duress) take precedence over self-esteem concerns, at least in some circumstances, after mortality salience.

Individualism and Collectivism, Conceptualized as Relating to Group Identification

Group membership can be understood to refer to membership in a particular group (e.g., a family, a university, a political party), or more abstractly to people in general. One abstract conceptualization of group identification has been the much-studied cultural dimension of individualism-collectivism (e.g. Markus & Kitayama, 1991). According to this approach, individualists see themselves as distinct entities, existing apart from and independently of other people. Conversely, collectivists see themselves as more closely linked to other members of their society.

It is hypothesized that collectivists (Easterners), conceive of themselves (on average) as more connected with other members in their cultures. Conversely, it is likely that individualists (Westerners), conceive of themselves (on average) as less connected with other members of their cultures (Markus & Kitayama, 1991). If a sense of connection to others offers protection against mortality concerns, the nature of Easterner's collectivist tendencies might provide protection against mortality salience, and the nature of Westerner's individualist tendencies of the self might make these individuals more vulnerable to mortality concerns. Furthermore, the fact that collectivist

cultural groups have been found to place greater emphasis on the strength of and deference given to relevant in-groups (Iyengar, Lepper, & Ross, 1999), seems to provide support for the notion that having collectivist tendencies might provide one with the sense of a more cohesive ingroup, thus strengthening the cultural worldview component of the cultural anxiety buffer, reducing the effects of mortality salience.

It is important to understand that feeling connected does not necessarily mean that one is extraordinarily patriotic or nationalistic. Rather, collectivism tends to be viewed as a general feeling of closeness to others, and as including other individuals in one's self-concept. Simply put, the closeness to others one would feel in a collectivist culture is a more general feeling of interconnectedness that is independent of patriotic or nationalistic tendencies.

On the basis of this conceptualization, it seems likely that that individualism and collectivism would be related to terror management practices. However, though many terror management studies have been conducted in Western, individualistic countries-- the U.S., Israel (e.g. Taubman, Florian & Mikulincer, 1999), Germany (e.g. Pyszczynski et al., 1996), Canada (e.g. Baldwin & Wesley, 1996), and Holland (e.g. Dechesne, Janssen, & van Knippenbert, 2000)-- only two studies have examined the functioning of terror management within an Eastern culture (Heine, Harihara, & Niiya, 2002; Kashima, Halloran, Yuki, & Kashima (in press)).

The first study (Heine, Harihara, & Niiya, 2002), conducted in Japan, found mixed support for terror management within this cultural context. Assessing only derogation of an anti-Japan essay, Heine and his colleagues found that mortality salient subjects viewed the anti-Japanese author more negatively than an author of a neutral

topic essay. Strangely, this study did not assess evaluation of a pro-Japan author. In the traditional terror management experiment, reactions to both pro and anti country essays are assessed (Greenberg, Solomon, Pyszczynski, 1997). Perhaps a pro-Japan essay was excluded because previous studies have shown that the Japanese are traditionally focused on negative, rather than positive, traits and outcomes (e.g. Kitayama, Markus, Matsumoto, & Norasakkunkit, 1997; Heine, Lehman, Markus, & Kitayama, 1999). Regardless, it seems that one terror management result, the basic worldview defense finding, is replicable in collectivist cultures. However, Heine et al.'s experiment tested and failed to show increased preference for high-status products following mortality salience, a result that has been found in Western cultures (Mandel & Heine, 1999).

One other study has investigated terror management in an Eastern cultural context. Kashima, Halloran, Yuki, and Kashima (in press) investigated terror management in Australians and Japanese. The authors had two different mortality salience inductions- one focusing on the individual's death (personal mortality) and one on the death of the self and all of one's compatriots (collective mortality). A control group which completed no death-related questions was also included. The dependent measure of this study was the extent to which participants endorsed individualist values and behaviors following the experimental manipulation. The results indicated that Australians endorsed items relevant to an autonomous self and individualist behavior more in the personal mortality condition than in the collective mortality condition. The Australian control group endorsed these individualist-themed items less than both Australian mortality salient groups, suggesting that the effect of any mortality salience induction for Australians was associated with greater acceptance of individualism.

However, the Japanese decreased endorsement of items relevant to an autonomous self and individualist behavior more in the collective mortality condition than in the personal mortality condition. The Japanese control group endorsed the individualist items more than did either mortality salient group, suggesting that the effect of any mortality salience manipulation for Japanese was associated with rejection of individualist values. However, this pattern emerged only for individuals low in self-esteem.

The results of these studies suggest that at least some of the effects of mortality salience are evident in one collectivist culture (Japan). However, it is not clear whether the strength of the effect is the same, or whether other basic TMT findings would replicate to the same degree, if at all, in other collectivist nations. More importantly, these studies were not designed to test the impact of individualistic and collectivistic tendencies on terror management mechanisms. Because individualistic and collectivistic tendencies were not measured in these studies, we cannot conclude whether, at the level of the individual, individualism/collectivism impacts the functioning of terror management mechanisms. It is clear that there is still much to be learned about the impact of collectivist tendencies on mortality salience.

It is possible to conceptualize two different processes which might take place when Easterners are confronted with thoughts about death. The first possibility is that the inherent terror they feel will be the same as that which a Westerner would feel. However, the "built-in" protective mechanism of their collectivistic tendencies would serve as a more effective buffer against such terror, and thus Easterner's reactions to mortality salience would be less severe. An alternative possibility is that Easterner's inherent connections to others would serve as a blocking mechanism, which would prevent them

from feeling any terror in the first place.   However, given that Heine, Harihara, and Niiya (2002) and Kashima, Halloran, Yuki, and Kashima (in press) were able to replicate some terror management effects in Japan, this second explanation seems unlikely.

One of the inherent problems in all cross-cultural research is that there are likely to be a myriad of differences between and among any and all cultures under study (van de Vijver & Leung, 2000). Often, it is often difficult to say just what component the given cultures is responsible for the observed differences in thought and behavior. One promising method to examine these cultural differences is to perform a within culture investigation of the phenomena under study, enabling one to hold the cultural context stable, while manipulating the psychological construct hypothesized to account for the observed cross-cultural differences (Oyserman, Coon, & Kemmelmeier, 2002).

At the level of the individual, the self-construal is the psychological construct hypothesized to account for many of the differences between individualists and collectivists. Individualists are hypothesized to have independent self-consturals, seeing themselves as disconnected and different from others, while collectivists are hypothesized to have interdependent self-construals, seeing themselves as more closely connected to other people (Markus & Kitayama, 1991).

Several recent studies have successfully manipulated self-contruals of participants in both individualist and collectivist cultures (e.g. Gardner, Gabriel, & Lee, 1999). The following experiments capitalize on this method, holding cultural context stable, while manipulating independent and interdependent self-construals of American participants.

There are several validated experimental techniques for manipulating independent and interdependent self-construals. The first consists of a priming technique pioneered

by Trafimow and his colleagues (Trafimow et al., 1991). In this technique, participants read a short passage describing a general who makes a decision to send a warrior to his king. In the independent version, the general chooses the warrior based on the warrior's individual attributes. In the interdependent version, the general chooses a member of his own family, out of familial duty.

A second technique, also developed by Trafimow and colleagues (Trafimow et al., 1991), involves having participants contemplate the ways they are different from their family and friends (independent priming), or their similarity with their family and friends (interdependent priming). The final empirically validated technique to manipulate self-construal was first employed by Brewer and Gardner (Brewer & Gardner, 1996). Participants complete a word search task, in which they circle all of the pronouns contained in a short passage. In the independent condition, the pronouns are focused on independence (e.g. I, mine), while in the interdependent condition, the pronouns emphasize interdependence (e.g. we, ours).

How does the self-construal priming affect cognition and behavior? To explain the effects of self-construal priming, Kuhnen, Hannover, & Schubert (2001) propose a semantic-procedural interface (SPI) model of the self. In this approach, one's self-knowledge (independent or interdependent) is linked with one's corresponding mode (context independent or dependent) of contextual thinking. Independent self-knowledge is linked to a context independent mode of thinking, and interdependent self-knowledge is linked to a context dependent mode of thinking. The link between self-knowledge contextual modes of thinking is hypothesized to stem from the cognitive efforts used to create independent or independent self-construals. Specifically, independent self-

knowledge is gleaned from combining self-descriptive traits across a wide variety of social contexts, which requires one to ignore social context in favor of internal attributes. Conversely, interdependent knowledge is gleaned from social interactions in specific contexts with certain individuals; the acquisition of this knowledge requires careful attention to one's context and one's partners in the given social interaction. Thus, semantically priming independent self-knowledge should activate a context-independent cognitive processing style, while semantically priming interdependent self-knowledge should activate a context-dependent cognitive processing style. As outlined below, this contention has received a great deal of empirical support.

The effects of self-construal priming have been demonstrated on a wide variety of experimental tasks. Research has shown that independent (interdependent) self-construal manipulation affects participants' preferences for independent (interdependent) values, internal (external) attributions (Gardner, Gabriel, & Lee, 1999), context independent (dependent) cognitive processing in visual search tasks (Kuhnen & Oyserman, 2001; Kuhnen, Hannover & Schubert, 2001), and context independent (dependent) processing of conversational norms (evidenced by participants' taking their recipient's prior knowledge into account when answering questions after interdependent priming, but not after independent priming) (Haberstroh et al., 2002). Finally, both chronic and experimentally manipulated independent self-construals have been shown to increase the tendency to emphasize promotion-focused information, while chronic and experimentally manipulated interdependent self-construals have been shown to increase the tendency to emphasize prevention-focused information (Lee, Gardner, & Aaker, 2000).

Furthermore, when experiments have simultaneously conducted within-culture examinations of self-construal manipulations along with cross-cultural comparisons of participants from individualist and collectivist cultures, the within-culture priming has been shown to elicit collectivist responses from individualists primed with interdependent self-construals, and to elicit individualistic responses from collectivists primed with independent self-construals (Gardner, Gabriel, & Lee, 1999; Lee, Gardner, & Aaker, 2000; Haberstroh et al., 2002). Even in the self-construal priming studies that have not conducted simultaneous cross-cultural replications, the results obtained with subjects who receive self-construal priming mirror observed cultural differences between members of individualist and collectivist cultures. For example, both unprimed individuals in collectivist cultures (e.g. Japan, Malaysia, Russia) and individuals in individualist cultures who receive an independent prime show more context dependency in a variety of experimental tasks (Nisbett, Peng, Choi, & Norenzayan, 2001; Kuhnen et al., 2001; Kitayama, Duffy, Kawamura, & Larsen, 2003).

It is important to note that our approach takes a slight theoretical divergence from the standard terror management position. While other theorists (e.g. Arndt et al., 2002; Pyszczynski, Solomon, and Greenberg, 2003) have contended that the most important aspect of protection-providing groups is the extent to which a group is positively viewed and can thus aid one's self-esteem, we suggest something different. In our view, the anxiety provoked by mortality salience is so jarring to one's conception of the world, that the heightened sense of connection with (non-specific) others provided by an enhanced interdependent self-construal identification is sufficient to protect against mortality concerns. The fact that self-esteem is important to Western individuals has been well-

established, but equally well-established is the notion that Eastern individuals do not place nearly as much value on the importance of bolstering and maintaining self-esteem (see Heine, Lehman, Markus, & Kitayama, 1999 for a thorough review). Given that self-construal priming has been shown to elicit typically Eastern cognitions and behaviors from Western individuals, it is entirely possible that the increased connection to others provided by self-construal manipulation in Western subjects can protect against mortality salience effects, irrespective of the potential for self-esteem enhancement provided by identification with a specific group.

RELIGIOUS FUNDAMENTALISM: AN IMPORTANT PIECE OF THE PUZZLE

As terror management deals explicitly with the inevitability of death (and consequently, and end to life), a discussion of religious worldviews that promise their believers eternal life is extremely relevant to terror management theory. In the context of these studies, I will discuss the impact of religious fundamentalism on terror management mechanisms.

I take my operational definition of this variable from Altemeyer and Hunsberger (1992), who define religious fundamentalism as:

> the belief that there is one set of religious teachings that clearly contains the fundamental, basic, intrinsic, essential, inerrant truth about humanity and deity; that this essential truth is fundamentally opposed by forces of evil which must be vigorously fought; that this truth must be followed today according to the fundamental, unchangeable practices of the past; and that those who believe and follow these fundamental teachings have a special relationship with the deity (118).

One of the benefits of this definition is that it does not necessarily focus exclusively on Christianity. Though I suspect that my sample will be primarily Christian, I believe that the critical aspects of religious fundamentalism for this project (which I will discuss shortly) do not necessitate a Christian worldview, merely a fundamentalist one.

To measure religious fundamentalism, I will use the Religious Fundamentalism Scale (Altemeyer & Hunsberger, 1992), a 20-item scale with high reliability (α's in the 1992 article ranged from .92 to .95, inter-item correlations ranged between .38 and .48).

This scale has been shown to correlate reliably with authoritarianism and attitudes towards homosexuality in Christian (Altemeyer & Hunsberger, 1992) as well as Muslim, Hindu, and Jewish religious fundamentalists (Hunsberger, 1996). Thus, available

evidence suggests that the scale can be used reliably to measure religious fundamentalism for individuals of many different faiths.

Previous Psychological Investigations of Terror Management and Religion

So far, only one published study (Burling, 1993) has investigated terror management and religion. In this study, participants were made aware of their mortality, and subsequently their religiosity was examined. The study revealed no main effects of mortality salience; thinking about death did not increase one's self-reported level of religiosity.

There has been some other investigation of terror management and religion, but so far this work has not been published.

The first unpublished study on terror management and religious fundamentalism was Casebolt's (1994) dissertation on terror management and attributional derogation of AIDS victims. Casebolt found that high religious fundamentalists made more attributional derogations (by attributing AIDS more to internal-stable causes) of homosexual AIDS victims *only* when their mortality had been made salient.

Ara Norenzayan has conducted several (currently unpublished) studies using religion and religious beliefs as a dependent measure. The results of the first two studies showed that, following mortality salience, participants were more likely to report that they were religious and believed in God. In studies 3 and 4, mortality salient participants were more likely to endorse the idea that Buddha can answer prayers, and that Siberian Shaman ancestral spirits exist, although the latter effect was only found among participants who were religious. In sum, this research suggests that, following mortality salience, people might be more likely to believe in *any* supernatural entity. However, the

fact that this effect emerged only for religious participants in one of Norenzayan's studies, coupled with the fact that Burling (1993) found no effect of mortality salience on self-reported religiosity, suggests that the effect of mortality salience on self-reported religiosity is not yet fully understood.

Religious Fundamentalism and Terror Management

Pyszczynski, Solomon, and Greenberg (2003) state that fundamentalism, which they define as the belief that one religion contains the absolute literal truth about life, might be helpful (and perhaps necessary) for individuals to reap psychological benefits from religion. The authors conclude that, "the safest, most secure system is probably one with rigid, narrow, unquestioned beliefs that include a concrete depiction of the afterlife. This is the type of worldview that until the age of Darwin was prevalent in all cultures…" (197) and that millions of people "are still tucked securely into such belief systems" (197). It is my contention that religious fundamentalists hold such worldviews, and are protected from death concerns by these views.

Pargament (2002), in a review of the psychological implications of religiousness, takes a similar stance. Religious fundamentalism, he points out, provides many advantages to people who hold such beliefs. Religious fundamentalists have "an unambiguous sense of right and wrong, clear rules for living, closeness with like-minded believers… [and] the faith that their lives are sanctioned and supported by God" (172). The implications for terror management mechanisms are obvious. As Pargament writes, this unambiguous, straightforward worldview "may be especially valuable to individuals in search of clear-cut answers to existential questions" (173).

If religious fundamentalism provides individuals with an unambiguous, death-transcending worldview, then it is possible that they might not be as vulnerable to terror management effects. As will be discussed below, I will empirically assess this proposition as part of my thesis.

Thus, my master's thesis will investigate both the effects of self-construal manipulation and the effects of religious fundamentalism on terror management effects.

HYPOTHESES

I hypothesize that participants who are high in religious fundamentalism will show comparable death-thought accessibility regardless of whether they receive an interdependent or independent self-construal prime.

Whether the high religious fundamentalists will show greater or less death-thought accessibility is a question that is theoretically interesting, but difficult to make specific a priori predictions about. If high religious fundamentalists have completely solved the problem of their impending mortality, then one might expect to see any level of death-thought accessibility, because death would not be a problem for them. However, if high religious fundamentalists use their religion as protection against death concerns, then one would expect them to show relatively low death-thought accessibility overall, because death is still problematic to them, but their defenses are strong and ample. Regardless of which process takes place, one would expect high religious fundamentalists to complete equal numbers of death-related words in both priming conditions.

I hypothesize that participants who are low in religious fundamentalism and are exposed to an interdependent self-construal prime will show reduced death awareness (i.e. have the concept of death less cognitively available), compared to mortality salient control groups who receive the independent self-construal priming.

I hypothesize that participants high in religious fundamentalism will not be as strongly motivated to bolster their cultural worldview following mortality salience. Specifically, when evaluating letters to the editor (taken from the Battalion) which espouse moderately positive and negative opinions of A&M traditions, mortality salient

participants who have high levels of religious fundamentalism will show attenuated (or no) pro A&M tradition bias, compared to mortality salient participants who have low levels of religious fundamentalism.

I hypothesize that participants who are low in religious fundamentalism will show the typical terror management effect; after thinking about their own death, they will show more pro-A&M tradition bias than after thinking about dental pain.

STUDY ONE

Method

The aim of this first experiment was to investigate the effects of independent/interdependent self-construal manipulation on death-thought accessibility. There were two levels of self-construal priming: independent and interdependent. The method for this priming consisted of reading a short paragraph and circling either 20 independent (I, me, mine) or interdependent (we, our, ourselves) pronouns contained therein (Brewer & Gardner, 1996). As described earlier, there are numerous ways to manipulate self-construal. Because no method has any clear advantage over the others, I chose the above method because it is easy to administer and simple to verify that the participants have actually completed the task (one can count how many pronouns each participant circles).

Following the self-construal manipulation, participants completed a task that measured the extent to which death-related concepts were cognitively accessible to them (Greenberg, Pyszczynski, Solomon, Simon, & Breus, 1994). This was done by means of a "word completion task" which lists 26 word fragments, (e.g. PLA _ _). Each participant filled in the blanks to create words. Eight of the 26 fragments can be completed with death-related words. For example, the fragment DE _ _ can be completed with the word "dead" or "deer."

Subsequent to the dependent measure, participants completed the State Self-Esteem Scale (Heatherton & Polivy, 1991), the Rosenberg (1965) Self-Esteem Scale, and the Religious Fundamentalism Scale (Altemeyer & Hunsberger, 1992). I did not anticipate any differences in self-esteem between conditions. However, given the

importance of self-esteem in Terror Management Theory, having this data allowed us to rule out a compelling alternative explanation for our results.

I hypothesized that participants who are high in religious fundamentalism would show similar levels of death-thought accessibility in both priming conditions. For the reasons mentioned above, I made no specific predictions regarding the number of death related words these participants would complete.

I hypothesized that, for participants low in religious fundamentalism, individuals who received the interdependent self-construal manipulation would show reduced death-thought accessibility (e.g. complete fewer of the fragments with death-related words) than participants who received the independent self-construal manipulation.

Participants

Ninety three participants (26 male and 66 female, one did not report gender) were recruited from the PSYC 107 subject pool. Participants received partial course credit for their participation Forty three participants received the independent prime, and 47 participants received the interdependent prime.

Twelve subjects were excluded from the analysis because they circled less than 17 (out of 20) pronouns, suggesting that they did not receive the full extent of the prime (indeed, some participants neglected to circle *any* pronouns- indicating they did not take the experiment seriously). Including these subjects in the analyses did not significantly change the results; all the analyses reported below remained significant with all participants included.

Scale Reliability

All of the scales used in the study showed acceptable reliability. Cronbach's alphas were as follows: Religious Fundamentalism Scale- .92, State Self-Esteem Scale- .88, Rosenberg Self-Esteem Scale- .82.

Grouping Participants by Religious Fundamentalism Scores

To group participants into high and low religious fundamentalist groups, a median split was conducted on the religious fundamentalism measure. The median score on the measure was 106, out of 180 possible points, and the scores on the measure were normally distributed. All participants scoring below the median were classified as low religious fundamentalists, while all participants scoring above the median were classified as high religious fundamentalists. Using this method, 40 participants were classified as low religious fundamentalists, while 37 were classified as high religious fundamentalists.

Word Completion Task

The number of death-related words completed was subjected to a 2 (interdependent vs. independent prime) X 2 (high vs. low religious fundamentalism) ANOVA. The results indicated no main effects for either self-construal, $F(1, 77) = 1.21$, $p = .28$ or religious fundamentalism, $F(1, 77) = 1.33$, $p = .25$. However, the condition X religious fundamentalism interaction was highly significant, $F(1, 77) = 11.30$, $p = .001$.

Planned comparisons revealed that the low religious fundamentalist group completed fewer death-related words ($M = 2.22$) following the interdependent prime than following the independent prime ($M = 3.18$), $t(38) = 2.60$, $p = .013$ (two-tailed).

However, there was no significant difference in the number of death-related words completed by high religious fundamentalist participants based on self-construal (M

= 2.76 for the interdependent prime, $M = 2.35$ for the independent priming), $t(36) = -1.03$, $p = .31$ (two-tailed).

These results suggest that, as predicted, interdependent self-construal can protect against mortality concerns, at least for low religious fundamentalist participants. For high religious fundamentalist participants, no significant difference emerged between participants primed with either interdependent or independent self-construals.

Self-Esteem Measures

Perhaps these results are caused by differences in self-esteem. Given that high religious fundamentalists are securely embedded in a worldview that provides inherent protection against mortality concerns, it is conceivable that they could have higher chronic or state self-esteem. As high self esteem has been shown to protect against mortality concerns (Harmon-Jones et al., 1997), it is possible that increased self-esteem could have been the cause of the generally low numbers of death-related words completed by the high religious fundamentalist participants.

Another possibility is that the interdependent self-construal resulted in increased self-esteem for the low religious fundamentalist participants. If the inherent feeling of closeness is comforting to people, it is possible that this closeness caused an increase in self-esteem, and it is the increased self-esteem that accounted for the lower numbers of death-related words completed. Along the same lines, if the inherent feeling of separateness engendered by the independent prime is discomforting at some level, it is possible that this resulted in lower self-esteem, and that the lowered self-esteem in turn resulted in higher numbers of death-related words completed.

To test these alternative explanations, two 2 (interdependent vs. independent prime) X 2 (high vs. low religious fundamentalism) ANOVAs were computed, using the Rosenberg Self-Esteem Scale and the State Self-Esteem Scales as dependent variables.

For the Rosenberg Self-Esteem Scale, there was no effect of self-construal, F (1, 77) = 1.78, p = .19, religious fundamentalism, F (1, 77) = .29, p = .60, or the interaction between the two, F (1, 77) = .01, p = .92 on the measure of chronic self-esteem. Thus, there were no differences in chronic self-esteem based on either prime or level of religious fundamentalism, suggesting that the observed differences in the number of death-related words was not due to this variable.

For the State Self-Esteem Scale, there was no effect of self-construal, F (1, 77) = .11, p = .74, religious fundamentalism, F (1, 77) = .002, p = .97, or the interaction between the two, F (1, 77) = .002, p = .96. Thus, differences in state self-esteem likely did not cause the differences in the number of death-related words completed in this study.

Analysis of Religious Fundamentalism Measure

Because the religious fundamentalism measure is so critical to the results of this study, and because this measure was collected after the priming (though well-after-participants completed three other tasks before completing this measure), I thought it prudent to ensure that there were no differences on this measure based on self-construal prime.

A one-way ANOVA was computed, using self-construal as the independent variable, and religious fundamentalism as the dependent variable. The results indicated that there was no effect of condition F (1, 77) = .51, p = .48 on the religious

fundamentalism measure. Thus, I feel confident that this measure was not at all biased by the experimental manipulation.

Discussion

The major hypothesis of this study, that interdependent self-construal would reduce death-thought accessibility, was supported. Moreover, this finding was not due to the effect of the self-construal prime on self-esteem.

The finding that self-construal did not affect state or chronic measures of self-esteem could be seen as surprising in some theoretical frameworks. For example, the both terror management theory and the Markus & Kitayama framework would suggest that priming Western individuals with independent self-construal would increase their self-esteem. In both of these frameworks, living up to the cultural ideal (individualism, in Western contexts) should promote and foster positive feelings about the self. However, in the current study, this was not observed.

Thus, the results of this study diverge from typical terror management theorizing in that connectedness to non-specific others (interdependent self-construal) was shown to provide protection from death awareness, regardless of observed self-esteem or the potential for self-esteem enhancement of a given ingroup.

However, the evidence that religious fundamentalism can protect against mortality concerns was not especially empirically strong in this study. The obtained values for the number of death-related words completed by the high religious fundamentalist participants in both priming conditions were in between those of the low religious fundamentalists primed with interdependent and independent self-construals.

Thus, a second study was conducted to more rigorously test the hypothesis that religious

fundamentalism can protect individuals from standard terror management effects.

STUDY TWO

Method

The second experiment was designed to investigate the impact of religious fundamentalism on worldview defense. Participants were asked two open ended questions; half answered two questions about dental pain, and half answered two questions about their own death (e.g. Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989).

The open-ended questions that follow were presented as part of a "projective personality test:"

-Please briefly describe the emotions that the thoughts of your own death arouses in you.

-Jot down, as specifically as you can, what you think will happen to you as you physically die and once you are physically dead.

The dental pain manipulation followed the same format, with "dental pain" replacing the death related words in the questions.

As a filler task after the mortality salience manipulation, subjects completed the PANAS (Watson, Clark, & Tellegen, 1988), in order to assess their mood states.

Subjects then completed three distracter tasks, because distal terror management effects like those used in this study have been shown to be greatest when there is a delay period between the MS induction and the dependent measure (e.g. Greenberg, Arndt, Simon, Pyszczynski, & Solomon, 2000).

Subjects then completed the dependent measure that consisted of two essays taken almost directly from the editorial page of the Battalion. One essay takes a moderately

positive view towards an A&M tradition (specifically, the tradition of removing one's hat during a yell at A&M football games), and one takes a moderately negative view towards the same tradition. Order of presentation was counterbalanced across subjects.

Following the essay evaluation, participants completed the Religious Fundamentalism Scale (Altemeyer & Hunsberger, 1992) and a brief demographic questionnaire.

Worldview defense was evaluated by subtracting the subjects' opinions of the anti-tradition essay and author from the subjects' opinions of the pro-tradition essay and author.

I hypothesized that highly religiously fundamentalist participants would show comparable levels of worldview defense in both the dental pain and the mortality salience conditions. In other words, the mortality salience manipulation should have no effect on the ratings of individuals high in religious fundamentalism.

However, I hypothesized that the low religious fundamentalist participants would show the traditional terror management pattern of worldview defense following mortality salience. I predicted that these participants would show more pro-worldview bias in the mortality salience condition than in the dental pain condition.

Participants

One hundred twenty one participants (77 females and 44 males) were recruited from the PSYC 107 subject pool. Participants received partial course credit for their participation. Sixty two participants were in the dental salience condition, while 57 were in the mortality salience condition.

Scale Reliability

All of the scales in this study showed acceptable reliability. Per standard terror management studies, the first three items of the essay evaluations (how much do you like this person, how intelligent did you think this person was, and how knowledgeable did you think this person was) were summed together to create an index of person evaluation. Cronbach's alphas for the pro and anti-tradition essays were .84 and .81, respectively. The fourth and fifth items of the essay evaluations (how much did you agree with this person's opinions, from your perspective, how true do you think this person's opinions are) were summed together to create an index of opinion evaluation. Cronbach's alphas for these scales for the pro and anti-tradition essays were .89 and .83, respectively.

Cronbach's alphas for the religious fundamentalism scale and the PANAS were .91 and .87, respectively.

Grouping Participants by Religious Fundamentalism Scores

To group participants into high and low religious fundamentalist groups, a median split was conducted on the religious fundamentalism measure. The median score on the measure was 106.5, almost identical to the first study, suggesting that the level of religious fundamentalism did not differ between the two studies. As in the first study, all participants scoring below the median were classified as low religious fundamentalists, while all participants scoring above the median were classified as high religious fundamentalists. Using this method, 59 participants were classified as low religious fundamentalists, while 60 were classified as high religious fundamentalists.

Essay Evaluation

The total score of each individual's anti-tradition person evaluation was subtracted from his or her pro-tradition person evaluation, to create an index of pro-tradition bias in the person evaluation. Similarly, the total score of each individual's anti-tradition opinion evaluation was subtracted from his or her pro-tradition opinion evaluation to create an index of pro-tradition bias in the opinion evaluation.

The person and bias scores were each submitted to a 2 (dental vs. mortality salience) X 2 (high versus low religious fundamentalism) X 2 (male vs. female) ANOVA.

Person Evaluation

For the person evaluation, there were no significant main effects of mortality salience, $F (1, 119) = .47$, $p = .49$, religious fundamentalism, $F (1, 119) = .87$, $p = .35$, or sex, $F (1, 119) = .85$, $p = .35$. In addition, the following two-way interactions were not statistically significant: religious fundamentalism by sex, $F (1, 119) = .002$, $p = .96$, or mortality salience by sex, $F (1, 119) = .17$, $p = .68$.

However, the two-way interaction between mortality salience and religious fundamentalism on the person evaluations was marginally significant, $F (1, 119) = 3.09$, $p = .08$. The pattern of means was consistent with my predictions; low religious fundamentalists showed much more bias in the mortality salience condition ($M = .46$) than in the dental pain condition ($M = -1.97$). However, the person bias means for the high religious fundamentalists were very close to each other; means for the bias scores in the mortality and dental pain conditions were .38 and .48, respectively.

The three-way interaction among religious fundamentalism, mortality salience, and sex was significant, $F (1, 119) = 4.967$, $p = .028$.

Planned comparisons revealed that low religious fundamentalist males showed greater person bias in the MS condition ($M = 1.08$) than the dental pain condition ($M = -3.92$), $t (22) = -2.12$, $p = .045$ (two-tailed). However, high religious fundamentalist males showed no greater bias in the MS condition ($M = -2.56$) than in the dental pain condition ($M = 1.8$), $t (17) = 1.63$, $p = .12$ (two-tailed).

For the women, there was no difference between conditions for the low religious fundamentalist women, $M = -.74$ in the dental condition and $M = 0.00$ in the MS condition, $t (33) = -.46$, $p = .65$ (two-tailed). Nor was there a significant difference between the person bias scores for the high religious fundamentalism women, $M = -.14$ in the dental pain condition, $M = 1.7$ in the MS condition, $t (39) = -.81$, $p = .43$ (two-tailed).

Thus, the overall pattern of results was consistent with my hypotheses. For the males (but not the females), my hypotheses were supported by statistically significant results. To me, this is not problematic. Even in many published TMT experiments, the person evaluation does not always differ between the MS and control conditions (e.g. Greenberg et al., 1994). Furthermore, my study differs from the typical terror management experiments in a very important way: in this study both essay writers are in-group members (A&M students). Most other studies use essays supposedly written by foreign students.

Given that women have been shown to be more attuned to interpersonal concerns (e.g. Cross & Madson, 1997), it is possible that they would be less likely to overtly denigrate an in-group member, even following MS.

Moreover, from the perspective of TMT, the opinion measure (representing a relevant cultural worldview) is the more theoretically critical one.

Opinion Evaluation

The analysis of the opinion bias index revealed no main effects of mortality salience $F(1, 119) = .67$, $p = .42$, religious fundamentalism $F(1, 119) = .01$, $p = .92$, or sex $F(1, 119) = .67$, $p = .42$.

However, as predicted, the religious fundamentalism by mortality salience interaction was significant, $F(1, 119) = 4.04$, $p = .047$. Neither of the other two-way interactions were significant: religious fundamentalism by sex $F(1, 119) = 1.00$, $p = .32$, mortality salience by sex $F(1, 119) = .03$, $p = .87$, nor was the three-way religious fundamentalism by mortality salience by sex interaction $F(1, 119) = 2.17$, $p = .14$.

Planned comparisons revealed that, among low religious fundamentalist participants, the predicted (and traditional) terror management effect was found, $t(58) = -2.189$, $p = .033$ (two-tailed). Low religious fundamentalist participants in the MS condition evidenced more opinion bias ($M = 1.39$) than low religious fundamentalist participants in the dental pain condition ($M = -2.28$).

It is interesting to note that the MS treatment changed the overall valence of the opinion bias score for low religious fundamentalist participants. Under normal conditions, low religious fundamentalists took a relatively unfavorable view towards upholding all A&M traditions, evidenced by their negative bias score (-2.28) in the dental pain condition. However, when their mortality as made salient, low religious fundamentalist participants held *favorable* views towards upholding all A&M traditions, as evidenced by their positive bias score (1.39) in the MS condition.

However, as predicted, high religious fundamentalist participants evidenced no more bias in the MS condition (M = -.86) than high religious fundamentalist participants in the dental pain condition (M = -.06), t (58) = .41, p = .69 (two-tailed). Thus, high religious fundamentalist participants were not affected by the MS manipulation.

PANAS

To determine whether mood was affected by the experimental manipulation, religious fundamentalism, or sex, I conducted 2 (mortality vs. dental salience) X 2 (high vs. low religious fundamentalism) X 2 (male vs. female) ANOVAs, using the positive and negative mood state subscales of the PANAS as dependent variables.

The results indicated that negative mood was not impacted by mortality salience F (1, 119) = .421, p = .625, religious fundamentalism F (1, 119) = .485, p = .488, or sex F (1, 119) = .569, p = 452. For the negative mood subscale, none of the two or three way interactions were significant, all F's < 1.3, all p's > .6.

However, the analysis of positive mood state revealed a significant main effect of religious fundamentalism, F (1, 119) = 6.339, p = .013. None of the other main effects or interactions was significant, all F's < 3, all p's > .05. An examination of the positive mood scores showed that high religious fundamentalists had more positive moods (M = 29.2) than low religious fundamentalists (M = 25.53).

To assure that positive affect was not mediating the relationship between religious fundamentalism and the attenuated person and opinion evaluations for the high RF group, I computed correlations between the raw religious fundamentalism scores, sex, positive affect scores, and the pro-tradition person and opinion bias scores. If the positive affect scores were correlated with the pro-tradition bias indices, then analyses could be

conducted to test for mediation. However, positive affect was not significantly correlated with either the person or opinion bias scores. Thus, the data do not indicate that the attenuated pro-tradition bias of the high religious fundamentalists in the mortality salience condition was mediated by their overall greater positive affect.

Coding of the Mortality Salient Condition Essays

To examine the possible differences in the open-ended death essays written by high and low religious fundamentalists, two different sets of analyses were conducted.

The first analysis involved the number of religious-themed words found in the essays (e.g. Jesus, heaven, faith, etc.). I took photocopies of all of the death essays, and without knowing what group (high or low fundamentalist) the author was in, I counted all of the religious-themed words in each essay, and submitted this to a one-way ANOVA, with religious fundamentalism (high vs. low) as the dependent variable. The results indicated a significant effect of religious fundamentalism, $F(1, 56) = 6.05$, $p = .02$. High religious fundamentalists included an average of 2.41 religious-themed words in their essays, while low religious fundamentalists included an average of 1.29 religious-themed words in their essays. Moreover, a one-way ANOVA revealed that the total number of words written in the essays did not differ between high and low religious fundamentalists, $F(1, 57) = 2.51$, $p = .12$. In fact, low religious fundamentalists wrote on average *more* words ($M = 76.57$) in the essays than their high religious fundamentalist counterparts ($M = 56.62$). Thus, the larger number of religious-themed words in the high religious fundamentalists' essays was not due to their writing longer essays in general.

The second set of analyses involved more subjective coding of the essays. After first agreeing on a coding scheme, five independent coders rated each essay, using 9-

point Likert scales, on the following dimensions: peacefulness, acceptance, calmness, positive affect, anxiousness, scared, uncertainty, sadness, and negative affect. Coders were blind to the group each participant was in (high vs. low religious fundamentalism).

Inter-rater reliability coefficients (α's) for the ratings were acceptably high. The inter-rater reliability coefficients for the dimensions are as follows: peacefulness- .84, acceptance- .90, calmness-.87, positive affect- .85, anxiousness -.89, scared- .97, uncertainty- .86, sadness-.92, and negative affect- .90.

The codings of each rater were summed together, and each composite score was subjected to a 2 (high vs. low religious fundamentalism) X 2 (male vs. female) ANOVA.

Significant main effects emerged for religious fundamentalism on the peacefulness ratings $F(1, 54) = 8.92$, $p = .004$, the positive affect ratings $F(1, 55) = 11.14$, $p = .002$, and on the uncertainty ratings $F(1, 55) = 65.24$, $p < .0001$. High religious fundamentalists' essays were more peaceful ($M = 29.58$), contained more positive affect ($M = 28.67$), and less uncertainty ($M = 9.11$) than low religious fundamentalists (whose M's for peacefulness, positive affect, and uncertainty were 22.96, 20.61 and 26.71, respectively).

There was a main effect of sex on the sadness ratings of the essays $F(1, 55) = 4.16$, $p = .047$, with women's essays conveying more sadness ($M = 21.8$) than men's essays ($M = 19.64$).

The analysis of overall negative affect revealed a significant interaction between religious fundamentalism and sex $F(1, 55) = 4.39$, $p = .041$. T-tests showed that the high and low religious fundamentalist men showed similar levels of negative affect, (M's for high and low RF's were 20.63 and 19.92, respectively), $t(18) = -.16$, $p = .88$ (two-tailed).

However, low religious fundamentalist women showed a far greater amount of sadness in their essays ($M = 27.88$) than high religious fundamentalist women ($M = 17.42$), t (33) = 3.43, $p = .002$ (two-tailed).

Overall, the patterns of results from the essay ratings suggest that thoughts of death lead high religious fundamentalists to think about their religion, and that these thoughts of death are less disturbing than those of their low religious fundamentalist counterparts. Indeed, the existential dilemma which is seemingly engendered by the traditional mortality salience manipulation does not seem to affect high religious fundamentalists, who respond to the MS treatment with feelings of peacefulness, happiness, and certainty. Perhaps, for such people, their worldview provides them with such protection against mortality concerns, that there is no such thing as an existential dilemma for them.

These analyses suggest an interesting possibility: that the observed levels of peacefulness, positive affect, and uncertainty displayed in the essays mediated the attenuated bias for the high religious fundamentalist participants. To assess this prospect, I computed correlations between all of the nine different dimensions of essay codings and the person and opinion bias scores. None of the essay codings were correlated with either bias score, suggesting that these variables did not mediate the relationship between religious fundamentalism and worldview defense.

Analysis of the Religious Fundamentalism Measure

Finally, as the religious fundamentalism measure is at the heart of all these analyses, I thought it prudent to verify that scores on this measure were not influenced by the experimental manipulation. Although the religious fundamentalism scale was

administered after the death or dental salience manipulation, the amount of time lapsed

between this manipulation and the scale was at least 10 minutes (we timed the length of

our distracter tasks to take at least this long). Also, all participants had a chance to

defend their worldviews. Research has shown that after participants defend their

worldviews, the effects of mortality salience are completely eliminated (Greenberg,

Arndt, Schimel, Pyszczynski, & Solomon, 2001). These two facts made it unlikely, in

my opinion, that the religious fundamentalism measure would be in any way affected by

the experimental manipulation.

The one-way ANOVA revealed no significant effects of mortality salience F (1,

119) = .07, p = .79 on the religious fundamentalism measure. Thus, the data do not

indicate that the religious fundamentalism measure was compromised by the

experimental manipulation.

Discussion

The main hypothesis of this study, that high religious fundamentalists would show

no more pro-worldview bias after mortality salience than after dental pain salience, was

supported.

For the person evaluation, there was a general trend for low religious

fundamentalists to show more pro-worldview bias after MS than after the control

manipulation, and for high religious fundamentalist participants to show no difference in

either the death or dental pain conditions. For the male participants' person evaluations,

my hypothesis was supported; male low religious fundamentalist participants showed

significantly greater person bias after MS than after the control treatment, while male

high religious fundamentalist participants did not.

For the essay evaluation, low religious fundamentalist participants showed significantly more pro-worldview bias after the MS treatment than after the control treatment. However, high religious fundamentalist participants showed no greater bias after MS treatment than after the control treatment. It seems that, in this study, the high religious fundamentalist participants were immune to the typical effects of the mortality salience induction.

It is worth noting again that low religious fundamentalists held relatively unfavorable views towards upholding all A&M traditions in the dental pain condition, but that the valence of this view was reversed in the MS condition. After thinking about their own death, low religious fundamentalist participants evidenced *favorable* opinions about upholding all A&M traditions.

Moreover, though the high religious fundamentalists had greater positive affect overall, this variable did not mediate the relationship between religious fundamentalism and worldview bias.

Coding of the death essays revealed that high religious fundamentalists' essays were more peaceful, contained more positive affect, and less uncertainty than the low religious fundamentalists' essays.

GENERAL DISCUSSION

All in all, the results from these two studies suggest some interesting additions and revisions to terror management theory.

The results of the first study are somewhat in contradiction of standard TMT theorizing. Specifically, self-construal was shown to protect against mortality concerns, irrespective of self-esteem, and irrespective of the delineation of a specific ingroup for participants to identify with.

The results of this study suggest that terror management effects might be attenuated, or that death might be less of a concern to individuals in Eastern countries, who have been shown to have chronic interdependent self-construals. This would seem to contradict the basic idea of terror management theory; that death is a universal problem with the same consequences everywhere. Future cross-cultural research might perhaps address this intriguing possibility.

The results of the second study are more in line with standard terror management theorizing. Pyszczynski, Solomon, and Greenberg (2003) have speculated that fundamentalist orientations might help protect individuals from death concerns. Perhaps this is what draws so many people all over the world to religions with fundamentalist worldviews.

An important, interesting question that remains to be answered is: are religious fundamentalists completely immune to terror management effects under all conditions? In this study, we found that, when writing about their own death, high religious fundamentalists wrote more peaceful, positive, and assured essays. Perhaps, for these participants, this task essentially bolstered their cultural worldview. Thus, when

presented with the essays, high religious fundamentalists had already eliminated the effects of the mortality salience manipulation, and so they felt no need to bolster their cultural worldview.

However, if one were to get high religious fundamentalist participants to think about death, without giving them the opportunity to defend their worldviews, would they then show typical terror management effects? Such an investigation would provide insight into the extent to which religious fundamentalism provides protection from mortality concerns, and this is the next direction that I will take in following up this research.

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Education

B.A. 2001. *Psychology and French*. Washington University in St. Louis, MO.

Research Interests

Culture and the Self, Culture and Cognition, Culture and Personality, Terror Management Theory, Dialectical Reasoning, Universalism-Particularism, Attachment Theory.

Conference Posters

Friedman, M.F, Vaid, J., Chen, H.C., Martinez, F., Choi, H. (2003). Cognitive Vs. Aesthetic Influences in Cultural Differences in Proverb Evaluation. Presented at the 2003 Psychonomics conference in Vancouver, Canada.

Grants, Honors, and Awards

2001, Graduated with College Honors, Washington University in St. Louis.
2003, National Science Foundation- EASI Summer Taiwan Program (postponed until the summer of 2004 due to the SARS outbreak), $3,000.
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Research Experience

1999- Research assistant for Dr. Erik Thompson, Washington University in St. Louis.
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