THE ROLE OF RELIGION IN MANAGING EXISTENTIAL THREAT:

EFFECTS ON OUTGROUP ATTITUDES

by

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ABSTRACT

THE ROLE OF RELIGION IN MANAGING EXISTENTIAL THREAT:

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The increased worldview defense following mortality salience is a robust finding in terror management theory research. In some cases, this defense can take the form of ingroup favoritism, outgroup bias, and prejudice. I predicted that religious affiliation would attenuate the effects of mortality salience on expressions of prejudice. Specifically, I predicted an interaction between religious affiliation and mortality salience to emerge, such that whereas the religiously non-affiliated will exhibit an increase in prejudice scores following mortality salience, the religiously affiliated will not. I further hypothesized that among religiously affiliated participants, the interaction between MS and affiliation will predict outgroup attitudes differently at different levels of religious ingroup identification strength. Neither hypothesis was supported. The interaction between religion and mortality salience was not significant. One simple effect was significant; under mortality salience, the religiously affiliated rated homosexuals more positively than the non-affiliated. Religious ingroup identification strength did not significantly predict mortality salience reactions. Possible explanations for the null effects, study limitations, and future research directions are discussed.

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CHAPTER 1

INTRODUCTION

1.1 Overview

Religion has long occupied an uneasy position within the social psychological literature of intergroup relations. Although many religious teachings prescribe tolerance, encourage humanitarianism, and emphasize compassion, some research has found a significant correlation between religiosity and prejudice (Allport & Ross, 1967; Hall, Matz, Wood, 2010; Hunsberger & Jackson, 2005). Because other investigations of the effects of religion on prejudicial attitudes have resulted in mixed, often contradictory findings (Hunsberger & Jackson, 2005), it behooves social psychologists to attempt to specify the conditions under which religious beliefs will exacerbate or reduce prejudice. The present research is part of that endeavor. I propose that under conditions of increased awareness of death, religiously affiliated individuals, compared to the non-affiliated, will be less likely to report prejudiced attitudes. Thoughts of death have been shown to increase prejudice (e.g., Greenberg, Schimel, Mertens, Solomon, & Pyszcznyski, 2001), compared to control conditions. However, a careful reading of terror management theory leads to the expectation that the belief in death transcendence, generally held by the religious[1], will act as a buffer against threats to mortality, resulting in less need to derogate dissimilar others.

1.2 Terror Management Theory

According to terror management theory (hereafter TMT), evolution has instilled a primal drive for survival in all animals, as well as a complex cognitive framework within humans that allows us to be acutely aware of the inevitability of our own demise (Greenberg, Solomon, &

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[1] The terms religious and affiliated are used interchangeably. The term religious refers to religiously affiliated individuals and non-religious refers to non-affiliated individuals.

Pyszczynski, 1997; Solomon, Greenberg, & Pyszczynski, 2004). This awareness creates a state of anxiety and fear that we are motivated to ameliorate or ignore when possible. As members of a community, our social lives provide distraction from these existential preoccupations, and the hope of continuance. This continuance, or immortality, is often conceptualized as either symbolic (e.g., an individual's culture and their contribution to it remaining after death), or literal (e.g., an afterlife; Burke, Martens, & Faucher, 2010; Dechesne et al., 2003).

The beliefs and values derived from one's social environment are, according to TMT, "cultural worldviews", and individual self-esteem is a measure of one's status within them. When individuals are induced to contemplate their own death (the standard experimental vehicle for inducing mortality salience), they feel an increased need to defend their cultural worldviews and bolster their self-esteem in an effort to reaffirm their sense of immortality (Solomon et al., 2004). Studies within the TMT literature have found that manipulations of mortality salience often result in exaggerated responses, such as highly positive responses to individuals who confirm the participant's worldview and highly negative responses to those who discredited it (Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989).

<center>1.3 Worldview Defense and Prejudice</center>

As cultural worldviews consist of subjective beliefs and values, an individual's worldviews gain credence through social consensus. The presence of others who share our views confirms their validity. As such, dissimilar others threaten the correctness of our worldviews and thereby our link to immortality. Researchers contend that when faced with their own mortality, participants are motivated to more closely align with their ingroup and rebuke anyone who detracts from the group's values (Greenberg & Kosloff, 2008; Niesta, Fritsche, & Jonas, 2008). Greenberg et al. (1990) were the first to demonstrate that mortality salience could lead to enhanced ingroup bias. In their study, Christian students rated a Christian more

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favorably than a Jew only in the mortality salience condition; students not reminded of their own death did not show this increase in ingroup favoritism.

Similarly, Nelson, Moore, Olivetti, and Scott (1997) found that participants who were reminded of their own death exhibited a nationalistic bias in assignment of blame in an automobile accident. Compared to control conditions, American participants experiencing mortality salience assigned more blame to a Japanese car company than to an American car company. In a more extreme example, a mortality salience (hereafter MS) induction resulted in more sympathetic attitudes towards Whites espousing racist beliefs and outright discrimination (Greenberg et al., 2001).

McGregor et al. (1998) demonstrated that individuals under MS are more likely than control participants to aggress against someone who threatens their worldviews. Participants read an essay contradicting their political ideology and were then provided the opportunity to retaliate by administering hot sauce to the author (who ostensibly did not like spicy food). Only participants in the MS condition increased the amount of hot sauce administered.

1.4 Religion as a Buffer

The TMT literature paints a somewhat despairing picture. The bulk of research in the area suggests that our cultural worldviews are a thin veil over our existential terror, which when threatened lead individuals to resort to bias, derogation, and even violence to defend them (Greenberg et al., 1997; Solomon et al., 2004). To counter these rather pessimistic predictions, recent studies investigating the relationship between religiosity and death anxiety suggest there may be another side to terror management. Religion may decrease negative reactions to mortality salience through either decreased need for secular worldviews or through the promotion of compassionate and charitable values that transcend secular biases. Whereas the majority of TMT research has focused on symbolic immortality and the defense of secular worldviews, studies assessing religious beliefs suggest that belief in literal immortality may be a more effective means of coping with existential anxiety. Many religions offer a form of death-

transcendence for members that may take the form of heaven, nirvana, or reincarnation. Religion, and its promise of a literal afterlife, could provide a buffer against existential threats, in which physical death is not seen as the end of the self's existence. This buffering effect could lead to a decreased need to affirm or defend other (e.g., social, secular, symbolic) worldviews in the presence of MS. Religion also provides worldviews that often encourage compassion, charity, and egalitarianism. For religious individuals compassionate values may be highly salient and chronically accessible. Religious individuals may seek to bolster these *religious* worldviews in response to existential anxiety and exhibit decreased prejudice or bias towards dissimilar others.

Research has shown that MS inductions lead to increased support of religious beliefs, including belief in an afterlife (Norenzayan & Hansen, 2006; Osarchuk & Tatz, 1973; Vail, Arndt, & Abdollahi, 2012) among Christians and Muslims, and that threatening the validity of religious beliefs leads to thoughts of death (Friedman & Rholes, 2007). Religious beliefs may influence reactions to MS inductions. Following MS inductions, thoughts of death may be less accessible for religious individuals (Golec de Zavala, Cichocka, Orehek, & Abdollahi, 2012; Jonas & Fischer, 2006). Schoenrade (1989) found that, following MS, individuals with a strong belief in the afterlife reported both positive and negative death associations, whereas those with a weak belief in an afterlife reported only negative associations. Participants who were provided with evidence supporting the existence of a literal afterlife (bogus scientific article providing evidence of the accuracy of "near-death experiences") prior to MS induction did not exhibit the typical defense in the form of increased self-esteem striving (Dechesne et al., 2003). Furthermore, in support of the buffering effect, Jonas and Fischer (2006) found that individuals who scored high in intrinsic religiosity and affirmed their religious beliefs were less likely to negatively evaluate an author who wrote an essay critical of their hometown of Munich. Norenzayan, Dar-Nimrod, Hansen, and Proulx (2009) demonstrated a similar attenuation effect with only non-religious

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participants negatively evaluating the author of an Islamic, anti-western author following MS induction.

<div align="center">1.5 Mortality Salience, Religion, and Prejudice</div>

Previous studies investigating the effects of religion on worldview defense have assessed derogation of a solitary individual who explicitly challenges a particular secular value held by the participant. For example, Jonas and Fischer (2006) assessed German participants' reactions to a single author espousing either a pro- or counter-attitudinal argument regarding the likelihood of terrorist attacks on Germany. Likewise, Norenzayan et al. (2009) found that religious participants were less likely to derogate the author of an essay attacking Western culture. Whereas religion was assessed and found to impact worldview defense, the specific worldviews manipulated in each of these studies were secular in nature. By contrast, I hypothesize that the buffering effect can extend to defense of worldviews related to an individual's religious beliefs and attitudes. Religious affiliation should provide a buffer against the need to derogate outgroup members, or others who threaten one's religious values.

As has been previously shown, worldview defense can take the form of heightened ingroup favoritism and outgroup bias, resulting in the derogation of an entire group as opposed to a specific threatening individual (Greenberg et al., 2001; Nelson et al., 1997). Previous research has shown that religion can decrease the need to derogate an individual proponent of a counter-attitudinal belief (Jonas & Fischer, 2006; Norenzayan et al., 2009). I predict the buffering effect of religion can likewise decrease derogation of an entire outgroup known to endorse counter-attitudinal beliefs. Recent findings suggest that religious variables do predict outgroup attitudes following MS. Piwowarski, Christopher, and Walter (2011) found that if a literal afterlife was affirmed, MS did not result in increased negative attitudes towards homosexuals. Under MS, high intrinsic religiosity predicted less prejudice among Muslims and less support for aggressive counterterrorism among Americans and Poles (Golec de Zavala et al., 2012). I argue that, in an American sample, general religious affiliation will predict less

outgroup prejudice subsequent to a MS induction. I expect that religiously non-affiliated participants will show the typical increase in prejudice scores following MS induction whereas religiously affiliated participants will not. Attitudes towards religious outgroups, Muslims and Jews, as well as secular outgroups, gays and the homeless, will be measured. The same religion-mortality salience interaction effect is expected for all outgroups.

1.6 Effects of Ingroup Identification

Individuals may self-report a religious affiliation, but this simple self-designation may or may not be subjectively meaningful. Tajfel and Turner (1986) proposed social identity theory, according to which one's self-concept is partially derived from membership in various social groups or categories (e.g., gender, ethnicity, religion; Tajfel, 1978). The degree to which a social group membership is chronically central to an individual's self-definition is measured as ingroup identification strength (Tropp & Wright, 2001; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Tajfel (1978) argues that certain social identities may be chronically salient whereas eithers increase in salience due to situational cues. As such, it may be that protective religious worldviews will only be chronically accessible for those who strongly identify with their religious ingroup. Those who weakly identify do not see their religious group as central to their self-identity may be more likely to call upon other secular worldviews in times of existential anxiety.

Thus, I predict that among religious participants, those who weakly identify with their religion will still exhibit worldview defense following mortality salience. Religious individuals at medium and high levels of religious ingroup identification should not show an increase in worldview defense in response to mortality salience. In addition, I predict that buffering effects will remain even while controlling for individual differences in social dominance and right-wing authoritarianism. Social dominance orientation (SDO) is a personality construct characterized by a belief in ingroup superiority and support of values and policies that maintain inequality and perpetuate systems of hierarchy (Pratto, Sidanius, Stallworth, & Malle, 1994). Right-wing authoritarianism (RWA) is a similar personality often marked by ethnocentrism, submission to

authority, and punitive attitudes (Altemeyer, 1998). Finally, religious fundamentalism (FUN) is characterized by religious ethnocentrism and firmly held convictions that one's own religious beliefs are the only fundamental and inerrant truths (Altemeyer & Hunsberger, 1992). SDO, RWA, and FUN have been shown to predict generalized prejudiced attitudes toward a variety of outgroups, including those based on race, sex, and sexual orientation (Altemeyer & Hunsberger, 2003; Duckitt, 2001; Pratto et al., 1994). The combined effects of SDO and RWA were found to account for 13% of the variance in measures of racism in a New Zealand sample of over 2,000 participants (Sibley, Robertson, & Wilson, 2006). FUN was found to be highly correlated with hostile attitudes towards homosexuals (see Altemeyer & Hunsberger, 1992). However, in the present study I expect religious ingroup identification to override these effects, such that the interaction between MS and ingroup identification will emerge even after controlling for SDO, RWA, and FUN.

1.7 Hypotheses

The study extends research on the buffering hypothesis by investigating the effects of religious identification on the relationship between MS and the derogation of (or attitudes toward) an entire outgroup. The buffering effects are expected to emerge independent of particular religious affiliation/denomination.

H_1: An interaction between religious affiliation and MS will emerge. Specifically, there will be no difference between the affiliated and non-affiliated in the control condition, whereas in the MS condition the non-affiliated will exhibit an increase in prejudice scores but the affiliated will not show this increase.

H_2: Among religiously affiliated participants, strength of religious ingroup identification will interact with condition (MS vs. Control) to predict outgroup attitudes. Specifically, MS should predict outgroup attitudes differently at different levels of religious ingroup identification strength. The effects of MS will be the strongest at moderate to high levels of identification and weaker or absent at low levels. Among religiously affiliated participants, those scoring at one standard

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deviation below the mean on religious ingroup identification will tend to show an increase in mean prejudice scores following mortality salience induction. For those scoring one standard deviation above the mean on ingroup identification, mortality salience should not result in such an increase[2].

CHAPTER 2

METHODS

2.1 Procedure

Participants were obtained using the UTA SONA system. Each participant completed two sessions and received 1.25 total SONA credits to apply towards course requirements or extra-credit. In the first session participants completed an online questionnaire administered through SONA assessing religious affiliation, religious identification, and a variety of religious and social attitudes. Upon completion of the online questionnaire, participants became eligible to participate in the lab portion of the study. In the lab study participants were divided into separate rooms or cubicles to minimize distractions and ensure confidentiality. Participants then completed two questionnaire packets, one containing the MS/control manipulation and an emotion assessment and the other containing the primary dependent measures.

2.2 Premeasure

All religiosity scales and personality measures were administered in a pretest so as to avoid any priming and demand effects. Measures of religious affiliation and identification could both (a) prime tolerance and prosocial values, and (b) suggest to participants the study's purpose. Assessing religious affiliation and identification as a premeasure should reduce the potential for such problematic methodological artifacts. Each measure will be briefly discussed below (see Appendix A for full scales).

2.2.1. Religious Identification

Participant's religious affiliation or religious denomination was assessed using a single self-report item with options for: Protestant, Catholic, LDS/Mormon, Jewish, Muslim, Buddhist, Hindu, Secular, Atheist/Agnostic, or Other. Strength of religious ingroup identification was measured with a series of nine 7-point scales ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Example items include: "Being a member of my religion is an important reflection of who I am" and "I value being a member of my religion" (see Kenworthy, Barden, Diamond, & del

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Carmen, 2011).

2.2.2. Social Dominance Orientation

SDO was measured using the 16-Item Social Dominance Orientation Scale (Pratto et al., 1994). Participants rated how positively or negatively they felt in regards to each item. Responses were measured on 7-point scales ranging from 1 (*very negative*) to 7 (*very positive*). Items 9-16 were reverse coded (see Appendix A). Example items include, "To get ahead in life, it is sometimes necessary to step on other groups" and "It's probably a good thing that certain groups are at the top and other groups are at the bottom."

2.2.3. Right-Wing Authoritarianism

Individual differences in authoritarianism were assessed using the 1997 Right-Wing Authoritarianism Scale (α = .92; Altemeyer, 1998) adapted for a 7-point response format. The measure contained 30 items with response sets ranging from 1 (*very strongly disagree*) to 7 (*very strongly agree*). Example items include, "Women should have to promise to obey their husbands when they get married" and "This country would work a lot better if certain groups of troublemakers would just shut up and accept their group's traditional place in society."

2.2.4. Religious Fundamentalism

The Revised 12-Item Religious Fundamentalism Scale (α = .91; Altemeyer & Hunsberger, 2004) was used to assess individual difference in FUN. The original scale was adapted for a 7-point response format. Participants rated the extent to which they agreed with each statement, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Example items include, "To lead the best, most meaningful life, one must belong to the one, fundamentally true religion" and "When you get right down to it, there are basically only two kinds of people in the world: the Righteous, who will be rewarded by God; and the rest, who will not."

2.2.5. Social Desirability

The Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1984) was used to measure social desirability. The scale consisted of 40 items measured on 7-point scales,

ranging from 1 (*not true*) to 7 (*very true*). The measure included items such as, "I never take things that don't belong to me" and "When I hear people talking privately, I avoid listening." The continuous scoring method will be used (see Stöber, Dette, & Musch, 2002).

<u>2.3 Main Study</u>

Between one and three participants were scheduled for each experimental session. However, all participants were given instructions, informed consent, study materials, and debriefing statements individually. Upon arrival to the laboratory, each participant was taken to individual rooms or cubicles and given an informed consent document and two envelopes. The informed consent document provided the cover story that the purpose of the study was to develop a new projective personality inventory and assess attitudes towards a variety of topics. The participants were further told that the first packet would include the projective personality inventory and the second packet would include randomly assigned items intended to measure various attitudes. After signing the consent form, participants were given the two envelopes. Envelope one contained either the MS or a dental control manipulation (randomly assigned), followed by a measure of current affect. The affect measure provides a delay between the MS manipulation and the primary dependent measure. Previous studies suggest that worldview defense occurs only when thoughts of death are highly accessible but not a part of conscious attention (Greenberg, Arndt, Simon, Pyszczynski, & Solomon, 2000). Further, measures of negative affect can be used to verify that observed differences between the conditions is a result of *death* anxiety and not general negative affect. Envelope 2 contained the primary dependent measures, scales measuring attitudes towards Muslims, Jews, homosexuals, and the homeless. After completing the surveys, all participants were debriefed.

2.3.1. Mortality Salience and Control Manipulations

Participants were randomly assigned to either the mortality salience or control conditions; each group was asked to respond to two items. Items for the experimental condition were modeled after Rosenblatt et al. (1989) and read as follows:

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1.   Please write down what you feel will happen to you as you physically die.

2.   Please write down the emotions that the thought of your own death arouses in you.

Items for the control condition replaced thoughts of death with thoughts of a painful dental procedure. By including the dental pain condition, results are less likely to be attributable to anxiety in general but rather the qualitative difference in death anxiety. The control condition items read as follows.

1.   Please write down what you think will happen to you as you undergo a painful dental procedure.

2.   Please write down the emotions that the thought of experiencing a painful dental procedure arouses in you.

2.3.2. Emotion Assessment

Following the MS induction participants completed a Positive and Negative Affect Schedule (PANAS-X; Watson & Clark, 1994). Participants were asked to indicate to what extent they felt a series of particular emotion states. A total of 20 emotion indices were used, 10 indicating positive emotions and 10 indicating negative emotions. Participants responded using 5-point scales, ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). The PANAS-X provides both a measure of affective response immediately following the experimental manipulation and a delay between the MS induction and attitude measures.

2.3.3. Attitude Measures

The main dependent measures were attitudes towards Muslims, Jews, homosexuals, and the homeless. Presentation of targets was counterbalanced to control for order effects. Attitudes towards each of these groups was measured using a feeling thermometer (see Haddock, Zanna, & Esses, 1993) in which participants rated how favorable they felt towards the group, with lower scores indicating colder feelings and higher scores indicating warmer feelings. Also participants completed a series of bipolar scales of feelings towards the outgroup (see

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Tausch, Tam, Hewstone, Kenworthy, & Cairns, 2007; Wright, Aron, McLaughlin-Volpe, & Ropp, 1997). The scales, anchored from 1 to 7, included six sets of opposing emotions, such as suspicious—trusting, admiration—disgust, etc. Before combining items into an average attitude index, item reversals were computed where appropriate so that a higher average score indicates more positive attitudes.

CHAPTER 3

RESULTS

3.1 Participants

The final sample included 242 participants (males = 77, females = 165). Age ranged from 17 to 57 years with a mean age of 21.25 (*SD* = 4.83). 39.3% of participants were White, 22.7% Asian, 12.0% African American, and 13.6% Other/Multiracial. The sample consisted of 47 self-reporting as Non-denominational Christians, 41 Catholics, 27 Other, 17 Protestants, 10 Muslims, 9 Spiritual, 5 Religious (no affiliation), and 81 atheist/agnostic/secular. In total there were 156 religious participants and 82 non-religious participants.

3.2 First Hypothesis

Descriptive statistics, including means, standard deviations, and Cronbach's alpha reliability estimates for all scales, are presented in Table 1. All scale inter-correlations are presented in Table 2. For Hypothesis 1, I predicted an interaction between religious affiliation (religious versus non-religious) and mortality salience to emerge. Specifically, in the control condition there should be no differences in prejudice scores between religious and non-religious participants, but under mortality salience the non-religious were expected to report more negative outgroup attitudes compared to the religious participants. A 4 (Muslims, Jews, homosexuals, and the homeless) X 2 (MS vs. Control) X 2 (Religious vs. Non-religious) repeated-measures ANCOVA was used to test the first hypothesis. SDO, RWA, religious fundamentalism, and social desirability served as covariates. Two separate analyses were conducted. The first used the feelings thermometers for each of the four outgroups as repeated measures dependent variables. The second analysis used the bipolar composites for each of the four outgroups as repeated measures dependent variables (DVs).

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Table 1

Scale Descriptive Statistics

Variable	N	M	SD	α	N items
Moderators and Covariates:					
Religious Identification	238	4.27	1.70	.95	9
SDO	237	2.48	1.02	.91	16
Religious Fundamentalism	238	3.44	1.86	.96	12
RWA	238	3.15	1.17	.95	30
Social Desirability	238	4.11	.68	.83	14
Positive Affect	234	2.89	.92	.90	10
Negative Affect	234	1.59	.68	.82	10
Dependent Measures:					
Thermometer:					
Muslim	227	59.87	20.21		1
Jew	237	65.44	19.69		1
homosexual	225	66.40	25.82		1
homeless	235	59.02	21.35		1
Bipolar:					
Muslim	228	4.64	1.17	.90	6
Jew	238	5.11	1.15	.89	6
homosexual	225	5.09	1.33	.91	6
homeless	237	4.04	1.01	.84	6

Note: Different sample sizes indicate that participants failed to complete all measures. SDO = social dominance orientation, RWA = right-wing authoritarianism.

Table 2

Inter-Item Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. ID															
2. SDO	-.06														
3. RWA	.61**	.28**													
4. FUN	.77**	.02	.78**												
5. DESIR	.19**	-.07	.17**	.15*											
6. M Deg.	-.05	-.30**	-.22**	-.12	.04										
7. J Deg.	-.01	-.19**	-.10	-.01	.00	.57**									
8. HS Deg.	-.23**	.-.27**	-.40**	-.29**	-.15*	.37**	.37**								
9. HL Deg.	.25**	-.29**	.11	.24**	.14	.30**	.35**	.21**							
10. M Pol.	-.05	-.40**	-.27**	-.12	.05	.73**	.38**	.34**	.25**						
11. J Pol.	-.05	-.34**	-.18**	-.06	-.03	.45**	.68**	.33**	.32**	.54**					
12. HS Pol.	-.26**	-.34**	-.45**	-.34**	-.07	.31**	.29**	.81**	.15*	.44**	.38**				
13. HL Pol.	.18**	-.34**	.00	.14*	.21**	.33**	.27**	.18**	.75**	.43**	.35**	.23**			
14. PA	.18**	-.03	.13	.20**	.27**	.11	.17**	.02	.20**	.03	.08	.01	.17**		
15. NA	.00	.12	.08	.02	-.17*	.05	.07	.15*	-.02	-.03	.02	.10	-.15*	-.20**	
16 Gender	-.15*	.12	-.22**	-.22**	-.14*	-.01	-.06	-.14*	.17**	-.05	-.12	-.16*	-.12	.05	-.05

Note: ID = religious identification, SDO = social dominance orientation, RWA = right-wing authoritarianism, FUN = religious fundamentalism, DESIR = social desirability, M Deg. = Muslim thermometer, J Deg. = Jew thermometer, HS Deg. = homosexual thermometer, HL Deg. = homeless thermometer, M Pol. = Muslim bipolar, J Pol. = Jew bipolar, HS Pol. = homosexual bipolar, HL Pol. = homeless bipolar, PA = positive affect, NA = negative affect. Gender coded as 1 = Male, 2 = Female. * $p < .05$, ** $p < .01$

3.2.1. Thermometer DVs

I conducted a repeated-measures ANCOVA with the Muslim, Jew, homosexual, and homeless thermometer scores entered as DVs, condition and religion entered as independent variables (IVs), and SDO, RWA, FUN, and social desirability entered as covariates. The assumption of equality of error variance was met; however, the assumptions of equality of covariance and sphericity were violated, Box's M = 46, F (30, 65834) = 1.48, p = .045 and Mauchly's W (5) = .86, p < .001. Pillai's Trace criterion and the Greenhouse-Geisser statistic were used. See Table 3 for independent variables (IVs) and covariate results including all multivariate, within-subjects, and between-subjects effects. Condition, religion, and their interaction did not significantly predict outgroup thermometer scores. Pairwise comparisons revealed significant differences between ratings of the four outgroups. Jews (*M* = 65.22, *SE* = 1.47) were rated more positively than Muslims (*M* = 59.80, *SE* = 1.47) and the homeless (*M* = 58.25, *SE* = 1.49), p = .001 and p = .008, respectively. Homosexuals (*M* = 65.82, *SE* = 1.70) were rated more positively than Muslims and the homeless, p = .008 and p = .001, respectively. No other contrasts were significant.

Post-hoc tests revealed one significant simple effect. Within the mortality salience condition religious participants (*M* = 71.77, *SE* = 2.98) rated homosexuals more positively than did non-religious participants (*M* = 58.92, *SE* = 4.13), p = .019. Because the overall interaction effect was not significant, this simple effect should be interpreted with caution. No other simple effects were significant. Results could not be attributed to gender, order effects, or differences in affect. The addition of these covariates to the model did not meaningfully alter the pattern of results (see Table 4). Hypothesis one was not supported.

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Table 3

Predictor Variables	df	F	p	η^2
Multivariate				
SDO	3, 200	1.44	.232	.021
RWA	3, 200	1.15	.331	.017
FUN	3, 200	2.17	.093	.031
DESIRE	3, 200	2.35	.073	.034
Condition	3, 200	.61	.661	.009
Affiliation	3, 200	2.08	.105	.030
CONDXAFFIL	3, 200	1.55	.202	.023
Within-Subjects				
SDO	2.76	1.09	.349	.005
RWA	2.76	1.43	.235	.007
FUN	2.76	2.74	.047*	.013
DESIRE	2.76	2.84	.042*	.014
Condition	2.76	.659	.565	.003
Affiliation	2.76	2.24	.089	.011
CONDXAFFIL	2.76	1.85	.142	.009
Between-Subjects				
SDO	1, 202	16.67	.000**	.076
RWA	1, 202	3.11	.080	.015
FUN	1, 202	.31	.580	.002
DESIRE	1, 202	.05	.818	.000
Condition	1, 202	.00	1.00	.000
Affiliation	1, 202	.44	.510	.002
CONDXAFFIL	1, 202	.00	.967	.000

ANOVA Predicting Outgroup Thermometer

Note. N = 242. SDO = social dominance orientation, RWA = right-wing authoritarianism, FUN = religious fundamentalism, DESIRE= social desirability, CONDXAFFIL= Condition by affiliation interaction. Affiliation coded as 0 = no religious affiliation and 1 = religious affiliation

* *p* < .05, ** *p* < .01.

Table 4

ANOVA Predicting Outgroup Thermometer with Additional Covariates

Predictor Variables	df	F	p	η^2
Multivariate				
SDO	3, 192	1.50	.216	.023
RWA	3, 192	2.38	.071	.036
FUN	3, 192	1.72	.163	.026
DESIRE	3, 192	3.06	.030*	.046
Gender	3, 192	3.48	.017*	.052
Order	3, 192	.70	.555	.011
Positive Affect	3, 192	.47	.705	.007
Negative Affect	3, 192	1.99	.117	.030
Condition	3, 192	.70	.552	.001
Affiliation	3, 192	2.04	.110	.031
CONDXAFFIL	3, 192	1.95	.123	.030
Within-Subjects				
SDO	2.78	1.11	.343	.006
RWA	2.78	2.90	.039*	.015
FUN	2.78	2.16	.097	.001
DESIRE	2.78	3.25	.025*	.016
Gender	2.78	4.11	.008**	.021
Order	2.78	.66	.568	.003
Positive Affect	2.78	.34	.780	.002
Negative Affect	2.78	2.47	.006**	.013
Condition	2.78	.78	.496	.004
Affiliation	2.78	1.85	.141	.009
CONDXAFFIL	2.78	2.25	.086	.011
Between-Subjects				
SDO	1, 194	17.03	.000**	.081
RWA	1, 194	4.80	.030*	.024
FUN	1, 194	.39	.531	.002
DESIRE	1, 194	1.06	.305	.005
Gender	1, 194	1.99	.160	.010
Order	1, 194	6.12	.014*	.031

Table 4 - continued

Positive Affect	1, 194	12.32	.001**	.060
Negative	1, 194	7.14	.008**	.035
Condition	1, 194	.13	.721	.001
Affiliation	1, 194	.01	.939	.000
CONDXAFFIL	1, 194	.04	.847	.000

Note. $N = 206$. SDO = social dominance orientation, RWA = right-wing authoritarianism, FUN = religious fundamentalism, DESIRE= social desirability, CONDXAFFIL= Condition by affiliation interaction. Affiliation coded as 0 = no religious affiliation and 1 = religious affiliation

$*p < .05$, $**p < .01$.

3.2.2. Bipolar DVs

For the next analysis, the same analysis, IVs, and covariates were used as before. This time, composite scores on the bipolar attitude scales for Muslims, Jews, homosexuals, and the homeless were entered as DVs. Assumptions for equality of covariance and equality of error variance were met; however, the assumption of sphericity was violated (the Greenhouse-Geisser statistic was used for all tests of within-subjects effects). See Table 5 for IV and covariate results including all multivariate, within-subjects, and between-subjects effects. Condition, religious affiliation, and their interaction did not predict outgroup bipolar scores. Pairwise comparisons revealed significant differences between ratings of the outgroups. The homeless ($M = 4.00$, $SE = .07$) were rated lower than Muslims ($M = 4.62$, $SE = .08$), Jews ($M = 5.09$, $SE = .08$), and homosexuals ($M = 5.07$, $SE = .09$), $p < .001$ for all contrasts. Jews and homosexuals were rated more positively than Muslims. No simple effects were significant. Controlling for gender, order, and affect did not alter the pattern of results (see Table 6). Hypothesis one was not supported.

Table 5

ANOVA Predicting Outgroup Bipolar

Predictor Variables	df	F	p	part. η^2
Multivariate				
SDO	3, 203	.08	.971	.001
RWA	3, 203	1.77	.154	.026
FUN	3, 203	1.99	.116	.029
DESIRE	3, 203	3.28	.022*	.029
Condition	3, 203	1.34	.263	.019
Affiliation	3, 203	1.16	.327	.017
CONDXAFFIL	3, 203	.17	.914	.003
Within-Subjects				
SDO	2.88	.06	.976	.000
RWA	2.88	1.89	.132	.009
FUN	2.88	2.42	.067	.012
DESIRE	2.88	3.34	.021*	.016
Condition	2.88	1.09	.350	.005
Affiliation	2.88	1.30	.274	.006
CONDXAFFIL	2.88	.20	.889	.001
Between-Subjects				
SDO	1, 205	33.29	.000**	.140
RWA	1, 205	5.66	.018*	.027
FUN	1, 205	.11	.738	.001
DESIRE	1, 205	1.37	.243	.007
Condition	1, 205	.07	.789	.000
Affiliation	1, 205	.37	.543	.002
CONDXAFFIL	1, 205	.10	.752	.000

Note. N = 242. SDO = social dominance orientation, RWA = right-wing authoritarianism,
 FUN = religious fundamentalism, DESIRE= social desirability, CONDXAFFIL= Condition by
affiliation interaction. Affiliation is coded as 0 = no religious affiliation and 1 = religious
affiliation.

$* p < .05$, $**p < .01$.

Table 6

ANOVA Predicting Outgroup Bipolar with Additional Covariates

Predictor Variables	df	F	p	part. η^2
Multivariate				
SDO	3, 195	.16	.927	.002
RWA	3, 195	3,27	.022	.048
FUN	3, 195	1.69	.171	.025
DESIRE	3, 195	3.81	.011*	.055
Gender	3, 195	2,57	.055	.038
Order	3, 195	.43	.730	.007
Positive Affect	3, 195	1.01	.388	.015
Negative Affect	3, 195	3,46	.017	.051
Condition	3, 195	1.31	.273	.020
Affiliation	3, 195	.91	.435	.014
CONDXAFFIL	3, 195	.24	.866	.004
Within-Subjects				
SDO	3	.13	.942	.001
RWA	3	3.51	.015	.017
FUN	3	1.93	.124	.010
DESIRE	3	3.74	.011*	.019
Gender	3	2.87	.036	.014
Order	3	.42	.736	.002
Positive Affect	3	.91	.437	.005
Negative Affect	3	3.71	.012	.018
Condition	3	1.12	.339	.006
Affiliation	3	.98	.401	.005
CONDXAFFIL	3	.30	.822	.002
Between-Subjects				
SDO	1, 197	33.27	.000**	.144
RWA	1, 197	7.40	.007**	.036
FUN	1, 197	.21	.649	.001
DESIRE	1, 197	.17	.680	.001
Gender	1, 197	4.19	.042*	.021
Order	1, 197	8.46	.004**	.041

Table 6 - continued

Positive Affect	1, 197	4.41	.037*	.022
Negative Affect	1, 197	1.80	.279	.006
Condition	1, 197	.10	.768	.000
Affiliation	1, 197	.00	.949	.000
CONDXAFFIL	1, 197	.01	.937	.000

Note. N = 242. SDO = social dominance orientation, RWA = right-wing authoritarianism, FUN = religious fundamentalism, DESIRE= social desirability, CONDXAFFIL= Condition by affiliation interaction. Affiliation is coded as 0 = no religious affiliation and 1 = religious affiliation.

*$p < .05$, **$p < .01$.

3.3 Second Hypothesis

For hypothesis 2, I predicted that strength of religious ingroup identification would interact with condition (MS vs. Control) to predict prejudice. Only religious participants were included in all hypothesis 2 analyses. Those low (1 *SD* below the mean) on religious identification strength should not experience the buffering effects of religion and a difference between MS and control conditions should be found, with ratings of the outgroups lower in the MS condition. Those high (1 *SD* above the mean) in religious identification strength should experience the buffering effect and thereby not exhibit more negative ratings of outgroups in the MS condition compared to the control condition. Two separate regression analyses were conducted. A composite of the thermometer scores for all four outgroups served as the DV for the first analysis. A composite of the bipolar scores for all four outgroups served as the DV for the second analysis. SDO, RWA, FUN, and social desirability served as covariates. Religious identification, condition, and their interaction were included on step 2 as independent variables. Religious identification was centered and condition was dummy coded (control = -1, MS = 1) prior to creating the interaction term.

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3.3.1. Thermometer Regression Results

I used a multiple-moderated regression to test hypothesis 2. The covariates, SDO, RWA, FUN, and social desirability, were entered on step 1. Centered religious identification, condition, and the interaction term were entered on step 2. The composite of thermometer scores for all four outgroups served as the DV (α = .64). All thermometer regression results are presented in Table 7. The overall model was significant. Model 2 did not predict above and beyond that of model 1. Hypothesis 2 was not supported. SDO and RWA significantly predicted outgroup ratings. As SDO and RWA increased attitudes towards the outgroups decreased. No other factors significantly predicted attitudes.

Table 7

Regression Predicting Thermometer Outgroup Attitudes

Predictor Variables	*b*	*SE*	*sr*^{2}	*R*^{2}	$\triangle R^2$
Step1					
SDO	-4.71**	1.29	.08		
RWA	-2.39	1.84	.01		
FUN	-.23	1.33	.00		
DESIRE	-2.65	1.76	.01	.16**	
Step 2					
Condition	.10	1.20	.00		
Affiliation	.38	1.32	.00		
CondXAffil	-.53	.83	.00	.16**	.00

Note. N = 154. SDO = social dominance orientation, RWA = right-wing authoritarianism, FUN = religious fundamentalism, DESIRE= social desirability, CondXAffil. = condition by affiliation interaction.

$* p < .05, ** p < .01.$

Although the interaction between religious identification and condition was not significant, post hoc tests were performed to test whether condition predicted outgroup attitudes at different levels of religious identification. I examined the relation between condition and outgroup attitudes at high (+1 *SD*), mean (0 *SD*), and low (-1 *SD*) levels of religious identification. To determine whether condition predicted attitudes at high levels of religious ingroup identification strength a regression was conducted with SDO, RWA, FUN, and social desirability were entered on Step 1. Condition, high religious identification (+1 *SD*), and the interaction term were entered on Step 2. Condition did not predict outgroup attitudes at high levels of religious identification, *b* = -.67, *SE* = 1.71, *p* = .697. To determine if condition predicted attitudes at low levels of religious ingroup identification, Step 1 was entered as before. In Step 2, condition, low religious identification (-1 *SD*), and the interaction term was entered. Condition did not predict outgroup attitudes at low levels of religious identification, *b* = .87, *SE* = 1.70, *p* = .610.

Additional simple slopes analyses were conducted for each of the outgroup thermometer scores separately. To control for chance findings that may result from conducting multiple analyses, a more conservative significance level of .01 was used for all further simple slopes analyses. Condition did not predict Muslim thermometer scores at high or low levels of religious ingroup identification, *b* = -4.78, *SE* = 2.42, *p* = .050 and *b* = .340, *SE* = 2.28, *p* = .882, respectively. Condition did not predict Jew thermometer scores at high or low levels of religious ingroup identification, *b* = 2.86, *SE* = 2.29, *p* = .213 and *b* = -.21, *SE* = 2.26, *p* = .927, respectively. Condition did not predict homosexual thermometer scores at high or low levels of religious identification, *b* = 4.90, *SE* = 3.05, *p* = .110 and *b* = 1.85, *SE* = 3.06, *p* = .546, respectively. Finally, condition did not predict homeless thermometer scores at high or low levels of religious identification, *b* = .70, *SE* = 2.44, *p* = .774 and *b* = -.22, *SE* = 2.46, *p* = .928, respectively.

3.3.2. Bipolar Regression Results

The covariates, SDO, RWA, FUN, and social desirability, were entered on step 1. Centered religious identification, condition, and the interaction term were entered on step 2. The composite of the bipolar scores for each outgroup severed as the DV (α = .90). All bipolar regression results are presented in Table 8. The overall model was significant. Model 2 did not predict above and beyond that of model 1. Hypothesis 2 was not supported. SDO and RWA significantly predicted outgroup ratings. As SDO and RWA increased attitudes towards the outgroups decreased. No other factors significantly predicted attitudes.

Table 8

Regression Predicting Bipolar Outgroup Attitudes

Predictor Variables	b	SE	sr^2	R^2	ΔR^2
Step1					
SDO	-.33**	.07	.00		
RWA	.20*	.09	.02		
FUN	-.03	.07	.00		
DESIRE	-.04	.09	.00	.284**	
Step 2					
Condition	.01	.06	.00		
Affiliation	.05	.07	.00		
CondXAffil.	-.01	.04	.00	.287**	.003

Note. N = 154. SDO = social dominance orientation, RWA = right-wing authoritarianism, FUN = religious fundamentalism, DESIRE= social desirability, CondXAffil. = condition by affiliation interaction.
*p < .05, **p < .01.

Although the interaction between religious identification and condition was not significant, post hoc tests were performed to test whether condition predicted outgroup bipolar attitudes at different levels of religious identification. I examined the relation between condition and outgroup attitudes at high (+1 *SD*), mean (0 *SD)*, and low (-1 *SD*) levels of religious identification. To determine whether condition predicted attitudes at high levels of religious ingroup identification strength a regression was conducted with SDO, RWA, FUN, and social desirability were entered on Step 1. Condition, high religious identification (+1 *SD*), and the interaction term were entered on Step 2. Condition did not predict outgroup attitudes at high levels of religious identification, b = -.01, SE = .09, p = .942. To determine if condition predicted attitudes at low levels of religious ingroup identification, Step 1 was entered as before. In Step 2, condition, low religious identification (-1 *SD*), and the interaction term was entered. Condition did not predict outgroup attitudes at low levels of religious identification, b = .03, SE = .09, p = .774.

3.4 Ancillary Analyses

3.4.1. Intrinsic Religiosity as a Predictor

I ran a subsequent regression analysis to determine if intrinsic religious orientation was a better predictor of outgroup attitudes than religious identification strength. The Batson intrinsic religious orientation subscale was used to measure intrinsic religiosity (Batson, Schoenrade, & Ventis, 1993). The scale was included in the online pre-screen and contained nine items measured on 7-point scales ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Reliability was good (α = .93). The standardized composite DV created for hypothesis 2 and including the bipolar and thermometer scales for all four groups was used. SDO, RWA, FUN, and social desirability were entered on step 1. Centered intrinsic religiosity, condition, and their interaction were entered on step 2. Only religious participants were selected for regression analyses. The overall model was significant, R^2 = .352, F (7, 102) = 8.90, p < .001. Model 2 did not predict above and beyond that of model 1, ΔR^2 = .044, F (3, 95) = .08, p = .080. Intrinsic religiosity did

significantly predict outgroup attitudes, b = .14, SE = .06, p =.026, sr^2 = .032. As intrinsic religiosity increased, attitudes towards outgroups became more positive. The expected interaction was not significant, b = -.01, SE = .03, p = .706, sr^2 = .000.

3.4.2. Analysis of First Position Effects

It is possible that fatigue or order effects may have contributed to non-significant results. To further examine this possibility, I conducted four separate one-way ANOVAs to examine the effects of religion, condition, and their interaction on attitudes towards only the first outgroup rated. To control for spurious effects due to the number of analyses conducted, a more conservative significance level of .01 was adopted. SDO produced the strongest and most reliable effects in previous analyses. All other covariates were dropped in the following analyses to conserve degrees of freedom. SDO, religion, and condition were entered as predictors and the composite DVs (composed of the scores on the thermometer and bipolar scales) for each of the outgroups served as the dependent factors. Only participants (N = 53) that had been randomly assigned to rate Muslims as the first outgroup measure were selected for the first analysis. Only SDO predicted attitudes towards Muslims, F (1, 50) = 19.49, p < .001, part η^2 = .29. The interaction between religion and condition did not predict attitudes, F (1, 50) = 4.37, p = .042, part η^2 = .08. Next, only participants (N = 54) who had rated Jews first were selected. Again, only SDO predicted attitudes, F (1, 49) = 14.66, p < .001, part η^2 = .23. The interaction did not predict attitudes towards Jews, F (1, 50) = .01, p = .939, part η^2 = .00. For the third ANOVA only participants (N = 57) that had rated homosexuals first were selected. The interaction was not significant, F (1, 52) = 1.26, p = .267, part η^2 = .24. For the final ANOVA only participants (N = 62) that had rated the homeless first were selected. Only SDO significantly predicted attitudes towards the homeless, F (1, 57) = 8.13, p = .006, part η^2 = .13. The interaction was not a significant predictor, F (1, 57) = .69, p = .411, part η^2 = .01.

CHAPTER 4

DISCUSSION

It is thought that any meaningful worldview may serve to distract and diminish the threat of death and that through increasing the threat of death or existential anxiety one increases the need for these protective worldviews (see Pyszczynski, Greenberg, Solomon, & Maxfield, 2006). Mortality salience manipulations and increases in death-thought accessibility have been shown to increase prejudice and aggression towards outgroups, derogation of dissimilar others, and support for discrimination. However, it has been proposed that all worldviews may not be created equal. Religion may serve as an especially effective defense through its emphasis on a literal or physical afterlife (e.g., Norenzayan et al., 2009). Moreover, religions provide highly structured and enduring worldviews with strict norms for behavior and self-esteem attainment, often prescribing compassionate or humanitarian values. I predicted that religion would buffer against existential threat and eliminate the typical worldview defense following a mortality salience manipulation. Religion, with its promise of a literal afterlife, may completely eliminate the need for worldview defense or perhaps direct worldview defense toward a more prosocial or outgroup-accepting path.

For hypothesis 1, I predicted that the non-religious would show the typical worldview defense (in the form of more negative outgroup attitudes) following MS inductions, but that the religious would not exhibit this effect. Specifically, I expected no differences in outgroup attitudes between religious and non-religious in the control condition but under MS I expected a significant difference with more positive outgroup attitudes among the religious. Hypothesis 1 was not supported. The interaction between condition (MS vs. dental control) and religion (religious vs. non-religious) was not significant. One simple effect was significant; within the MS condition, religious participants rated homosexuals more positively than did the non-religious.

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This finding was in line with predictions. However, the effect should be interpreted with caution as the overall interaction was not significant. Hypothesis 2 was also not supported. Contrary to predictions, the interaction between religious identification strength and MS manipulation was not significant. Participants who highly identified with their religious group were not more likely to experience the buffering effect and did not differ from low identifiers in reporting outgroup attitudes across conditions.

4.1 Limitations

There are a number of potential explanations for the overall null effects of hypothesis 1 and 2. First, the dichotomization of participants into religious and non-religious groups based on self-reported religious affiliation is a potential limitation. Self-reported religious affiliation could be subject to distortion due to social desirability bias. Texas has a large religious population and therefore, it may be socially desirable to report a religious affiliation as opposed to atheist or agnostic. Further, religious affiliation may be insensitive to individual differences in religiousness. Relatively fringe members may report a religious affiliation yet engage in few religious behaviors (e.g., church attendance, prayer) or even oppose common religious values (e.g., belief in an afterlife). Both distortion and insensitivity may overestimate rates of "religious" participants through the inclusion of individuals better characterized as non-religious. However, ancillary analyses suggest this is an unlikely explanation. A one-way ANOVA indicated no significant differences between religious and non-religious on social desirability scores, F (1, 230) = 1.56, p = .213, η^2 = .007. Participants were grouped according to frequency of church or religious service attendance and scores on a measure of intrinsic religiosity (Batson, 1976). Those high in intrinsic religiosity view their religion as central to their sense of self and perceive religious values as a motivating force behind all activities (Allport & Ross, 1967). Inspection of crosstabs revealed no significant differences between the affiliation grouping and the alternative grouping based on religious attendance and intrinsic religiosity. Self-reported religious affiliation was significantly, positively correlated with religious identification strength, frequency of church

attendance, and intrinsic religiosity. Religious affiliation appears to be an adequate proxy for true religiousness.

Second, the primary hypotheses addressed religious identification as a unitary construct; religious orientations were not differentiated. Golec de Zavala et al. (2012) call for the need to distinguish between different types of religiousness. They found that only an intrinsic orientation toward religion predicted decreased intergroup hostility among Americans. It is possible that identifying with a religion is not sufficient to produce the buffering effect. One may need to view religion as central to their daily life and sense of being. Those possessing a more extrinsic orientation, characterized by a utilitarian approach toward religion, may be less likely to experience the buffering effects of religion. This argument was not supported in the present sample. Intrinsic religiosity did significantly predict more positive outgroup attitudes. However, the interaction between MS and intrinsic religiosity was not significant. In this sample, those high in intrinsic religiosity did not react differently to the MS manipulation.

A number of other theoretical variables were unaccounted for in the current study. Various individual differences between religious and nonreligious participants may have confounded results. For example, it may not be the belief or disbelief in a physical afterlife but rather afterlife uncertainty that differentially predicts reactions to MS. Hohman and Hogg (2011) found that uncertainty about the afterlife predicted stronger reactions to MS in the form of heightened ingroup identification. There were no differences in MS reactions between those that firmly believed or disbelieved in a physical afterlife. Priming afterlife uncertainty had comparable effects. Further, Vail et al. (2012) argue for the need to differentiate between distinct types of religious skepticism. They argue that whereas atheists are clearly against religious belief in the supernatural, agnostics are characterized by doubt and the belief that religious claims are beyond verification. MS increased self-reported religiosity and belief in deities among agnostics but not among atheists. The presence or absence of religious doubts/uncertainties may be a more meaningful distinction than religious versus non-religious.

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Finally, the current study assessed all religious variables in a separate prescreen so as not to prime religious values or frame of reference. It was thought that one's religious identity would be chronically salient and that when faced with an existential crisis, religious individuals would use their beliefs and values for support. These theories may inaccurately reflect the current sample. Perhaps religion was not a chronically accessible identity and in the absence of religious priming, participants did not spontaneously evoke religious worldviews for comfort. Previous investigations (Golec de Zavala et al., 2012; Jonas & Fischer, 2006; Norenzayan et al., 2009) of the buffering hypothesis have assessed religious affiliation and religious attitudes immediately prior to the MS manipulation or the assessment of the DV. Due to the potential priming of religious cognitions, it is unclear whether effects result from true, chronic differences between the religious and nonreligious or are instead due to methodological artifacts. The buffering effects reported by Golec de Zavala and colleagues (2012) may be due to the temporary accessibility of religious values due to priming rather than chronic differences in terror management. In the study, America and Muslim participants were asked to report their religious affiliation and complete a measure of intrinsic religiosity prior to receiving the MS manipulation and dependent measure. These measures may have artificially heightened the accessibility of religious beliefs and in fact they found (study 3) that intentionally priming intrinsic religiosity produced comparable effects as those found for the individual difference measure. As such, the current study provides the first conservative test of the power of religious worldviews to prevent MS effects. Indeed, many researchers have found that the salience of various norms is an important factor in determining specific reactions to mortality salience. Individuals have multiple and sometimes competing worldviews. The behavior through which worldview defense will manifest itself may depend on the saliency of these various worldviews (Halloran & Kashima, 2004). Reminders of death may increase prosocial behaviors such as egalitarianism or charity but only if these norms are brought to conscious attention (Gailliot, Stillman, Schmeichel, Maner, & Plant, 2008). Further, it may not be accurate to conceptualize the non-

religious as devoid of meaningful worldviews. The non-religious may call upon different (e.g. secular, social, political) but equally valid and protective worldviews. These secular worldviews may serve a similar and comparably effective buffer against existential threat, thereby diminishing differences between the religious and non-religious in response to MS.

4.2 Future Directions

The current null results, in conjunction with previous research, can guide future TMT research. Religious beliefs in a literal afterlife are important theoretical constructs within the original terror management theory (see Norenzayan, 2008). Although interest in the effects of religious belief on TMT processes has increased in recent years, research in the area is sparse and many questions remain. Recent findings suggest the need to distinguish between different ways of being religious and non-religious. Future studies should further investigate MS reactions among different religious orientations (i.e., intrinsic, extrinsic, or quest) or in respect to specific beliefs (e.g., belief in God, heaven, hell). It may also be important to distinguish atheists from agnostics.

Most importantly, a more thorough understanding of the processes that underlie existential anxiety is needed. One recent study (Jong, Halberstadt, Bluemke, 2012) demonstrated the striking resemblance between religious and non-religious on implicit measures following MS. MS increased belief in supernatural agents only among the religious when beliefs were measured explicitly. However, belief in the supernatural increased for both groups when measured implicitly via reactions times in an implicit association test. It may simply be that religious differences do not translate to differences in coping with one's mortality. When faced with threats of mortality, we may each call upon the worldview that will confer the maximum comfort with no singular worldview inherently more effective.

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APPENDIX A

PREMEASURE ITEMS

Death Transcendence Items

Do you believe in a literal afterlife such as resurrection, reincarnation, etc.?

Yes

No

How confident are you that there exists a literal afterlife such as resurrection, reincarnation, etc.?

1 ----------- 2 ----------- 3 ----------- 4 ----------- 5 ----------- 6 -----------7

Not at all confident   Moderately   Very confident

Religious Affiliation

What is your religious affiliation? Please select the option that applies to you best.

Protestant

Catholic

Muslim

Jewish

Non-denominational Christian

No clear affiliation but religious

Spiritual

Atheist/agnostic

Secular

Other

How often do you participate in religious activities (attend church, pray, etc.)?

Never

About once a year

About once a month

About once a week

About once a day

More than once a day

Religious identification scale

"Being a member of my religion is an important reflection of who I am"

"In general, being a member of my religion is an important part of my self-image"

"I see myself as a member of my religion"

"Being a member of my religion is central to my sense of who I am"

"I value being a member of my religion"

"Overall, being a member of my religion has very little to do with how I feel about myself"

(reverse)

"I feel proud to be a member of my religion"

"Being a member of my religion is unimportant to my sense of what kind of person I am"

(reverse)

"I feel strong ties to other people of my religion"

16-Item Social Dominance Orientation Scale

1. "Some groups of people are simply inferior to other groups."

2. "In getting what you want, it is sometimes necessary to use force against other groups."

3. "It's OK if some groups have more of a chance in life than others."

4. "To get ahead in life, it is sometimes necessary to step on other groups."

5. "If certain groups stayed in their place, we would have fewer problems."

6. "It's probably a good thing that certain groups are at the top and other groups are at the bottom."

7. "Inferior groups should stay in their place."

8. "Sometimes other groups must be kept in their place."

9. "It would be good if groups could be equal" (reverse).

10. "Group equality should be our ideal." (reverse)

11. "All groups should be given an equal chance in life." (reverse)

12. "We should do what we can to equalize conditions for different groups.' (reverse)

13. "Increased social equality." (reverse)

14. "We would have fewer problems if we treated people more equally." (reverse)

15. "We should strive to make incomes as equal as possible." (reverse)

16. "No one group should dominate in society." (reverse)

Right-Wing Authoritarianism Scale

1. The established authorities generally turn out to be right about things, while the radicals and protestors are usually just "loud mouths" showing off their ignorance.

2. Women should have to promise to obey their husbands when they get married.

3. Our country desperately needs a mighty leader who will do what has to be done to destroy the radical new ways and sinfulness that are ruining us.

4. Gays and lesbians are just as healthy and moral as anybody else. (reverse)

5. It is always better to trust the judgment of the proper authorities in government and religion than to listen to the noisy rabble-rousers in our society who are trying to create doubt in people's minds.

6. Atheists and others who have rebelled against the established religions are no dowbt every bit as good and virtuous as those who attend church regularly. (reverse)

7. The only way our country can get through the crisis ahead is to get back to our traditional values, put some tough leader in power, and silence the troublemakers spreading bad ideas.

8. There is absolutely nothing wrong with nudist camps. (reverse)

9. Our country needs free thinkers who will have the courage to defy traditional ways, even if this upsets many people. (reverse)

10. Our country will be destroyed someday if we do not smash the perversions eating away at our moral fiber and traditional beliefs.

11. Everyone should have their own life-style, religious beliefs, and sexual preferences, even if it makes them different from everyone else. (reverse)

12. The "old-fashioned ways" and the "old-fashioned values" still show the best way to live.

13. You have to admire those who challenged the law and the majority's view by protesting for women's abortion rights, for animal rights, or to abolish school prayer. (reverse)

14. What our country really needs is a strong, determined leader who will crush evil, and take us back to our true path.

15. Some of the best people in our country are those who are challenging our government, criticizing religion, and ignoring the "normal way things are supposed to be done." (reverse)

16. God's laws about abortion, pornography, and marriage must be strictly followed before it is too late, and those who break them must be strongly punished.

17. It would be best for everyone if the proper authorities censored magazines so that people could not get their hands on trashy and disgusting material.

18. There is nothing wrong with premarital sexual intercourse. (reverse)

19. Our country will be great if we honor the ways of our forefathers, do what the authorities tell us to do, and get rid of the "rotten apples" who are ruining everything.

20. There is no "ONE right way" to live life; everybody has to create their own way. (reverse)

21. Homosexuals and feminists should be praised for being brave enough to defy "traditional family values." (reverse)

22. This country would work a lot better if certain groups of troublemakers would just shut up and accept their group's traditional place in society.

23. There are many radical, immoral people in our country today, who are trying to ruin it for their own godless purposes, whom the authorities should put out of action.

24. People should pay less attention to the Bible and the other old forms of religious guidance, and instead develop their own personal standards of what is moral and immoral. (reverse)

25. What our country needs most is discipline, with everyone following our leaders in unity.

26. It's better to have trashy magazines and radical pamphlets in our communities than to let the government have the power to censor them. (reverse)

27. The facts on crime, sexual immorality, and the recent public disorders all show we have to crack down harder on deviant groups and troublemakers if we are going to sace our moral standards and preserve law and order.

28. A lot of our rules regarding modesty and sexual behavior are just customs which are not necessarily any better or holier than those which other people follow. (reverse)

29. The situation in our country is getting so serious, the strongest methods would be justified if they eliminated the troublemakers and got us back to our true path.

30. A "woman's place" should be wherever she wants to be. The days when women are submissive to their husbands and social conventions belong strictly in the past. (reverse)

31. It is wonderful that young people today have greater freedom to protest against things they don't like, and to make their own "rules" to govern their behavior. (reverse)

32. Once our government leaders give us the "go ahead," it will be the duty of every patriotic citizen to help stomp out the rot that is poisoning our country from within.

Balanced Inventory of Desirable Responding

Using the scale below as a guide, write a number beside each statement to indicate how much you agree with it.

1 ----------- 2 ----------- 3 ----------- 4 ----------- 5 ----------- 6 -----------7

Not True   Somewhat True   Very True

_____ 1. My first impressions of people usually turn out to be right.

_____ *2. It would be hard for me to break any of my bad habits.

_____ 3. I don't care to know what other people really think of me.

_____ *4. I have not always been honest with myself

_____ 5. I always know why I like things.

_____ *6. When my emotions are aroused, it biases my thinking.

_____ 7. Once I've made up my mind, other people can seldom change my opinion.

_____ *8. I am not a safe driver when I exceed the speed limit.

_____ 9. I am fully in control of my own fate.

_____ *10. It's hard for me to shut off a disturbing thought.

_____ 11. I never regret my decisions.

_____ *12. I sometimes lose out on things because I can't make up my mind soon

enough.

_____ 13. The reason I vote is because my vote can make a difference.

_____ *14. My parents were not always fair when they punished me.

_____ 15. I am a completely rational person.

_____ *16. I rarely appreciate criticism.

_____ 17. I am very confident of my judgments.

_____ *18. I have sometimes doubted my ability as a lover.

_____ 19. It's all right with me if some people happen to dislike me.

_____ *20. I don't always know the reasons why I do the things I do.

_____ *21. I sometimes tell lies if I have to.

_____ 22. I never cover up my mistakes.

_____ *23. There have been occasions when I have taken advantage of someone.

_____ 24. I never swear.

_____ *25. I sometimes try to get even rather than forgive and forget.

_____ 26. I always obey laws, even if I'm unlikely to get caught.

_____ *27. I have said something bad about a friend behind his or her back.

_____ 28. When I hear people talking privately, I avoid listening.

_____ *29. I have received too much change from a salesperson without telling him or

her.

_____ 30. I always declare everything at customs.

_____ *31. When I was young I sometimes stole things.

_____ 32. I have never dropped litter on the street

_____ *33. I sometimes drive faster than the speed limit

_____ 34. I never read sexy books or magazines.

_____ *35. I have done things that I don't tell other people about.

_____ 36. I never take things that don't belong to me.

_____ *37. I have taken sick-leave from work or school even though I wasn't really

sick.

_____ 38. I have never damaged a library book or store merchandise without reporting

it.

_____ *39. I have some pretty awful habits.

_____ 40. I don't gossip about other people's business.

* items keyed in the false (negative) direction**.**

12-Item Religious Fundamentalism Scale

This survey is part of an investigation of general public opinion concerning a variety of social issues. You will probably find that you agree with some statements, and disagree with others, to varying extents. Please indicate your reaction to each statement ranging from *strongly disagree* (1) to *strongly agree* (7).

1. God has given humanity a complete, unfailing guide to happiness and salvation, which must be totally followed.

2. No single book of religious teachings contains all the intrinsic, fundamental truths about life. (reverse)

3. The basic cause of evil in this world is Satan, who is still constantly and ferociously fighting against God.

4. It is more important to be a good person than to believe in God and the right religion. (reverse)

5. There is a particular set of religious teachings in this world that are so true, you can't go any "deeper" because they are the basic, bedrock message that God has given humanity.

6. When you get right down to it, there are basically only two kinds of people in the world: the Righteous, who will be rewarded by God; and the rest, who will not.

7. Scriptures may contain general truths, but they should NOT be considered completely, literally true from beginning to end. (reverse)

8. To lead the best, most meaningful life, one must belong to the one, fundamentally true religion.

9. "Satan" is just the name people give to their own bad impulses. There is really *no such thing* as a diabolical "Prince of Darkness" who tempts us. (reverse)

10. Whenever science and sacred scripture conflict, *science* is probably right. (reverse)

11. The fundamentals of God's religion should never be tampered with, or compromised for others' beliefs.

12. *All* of the religions in the world have flaws and wrong teachings. There is *no* perfectly true, right religion. (reverse)

Intrinsic Religiosity

This section includes some commonly heard statements about one's religious life. They are very diverse. Your task is to rate your agreement or disagreement with each statement. For each statement there is a scale on which to make your judgment, ranging from strongly disagree to strongly agree. Simply select the number you feel best represents your own agreement or disagreement with each statement. Please try to rate all of the statements, not leaving any blank, unless it does not apply to someone from your religious background. Work fairly rapidly, not brooding over any one statement too long.

1 ----------- 2 ----------- 3 ----------- 4 ----------- 5 ----------- 6 ----------7

Strongly Disagree   Neutral   Strongly Agree

4. My religious development is a natural response to our innate need for devotion to God.

9. God's will should shape my life.

12. It is necessary for me to have a religious belief.

13. When it comes to religious questions, I feel driven to know the truth.

18. Religion is something I have never felt personally compelled to consider. (reverse)

24. Whether I turn out to be religious or not doesn't make much difference to me. (reverse)

28. I have found it essential to have faith.

31. I find it impossible to conceive of myself not being religious.

35. For me, religion has not been a "must." (reverse)

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APPENDIX B

LABORATORY MANIPULATIONS AND DEPENDENT MEASURES

Mortality Salience and Control Conditions

Participants will be randomly assigned to either the mortality salience or control conditions; each group will be asked to respond to two items. Items for the experimental condition will be modeled after Rosenblatt et al. (1989) and will read as the following:

1. Please write down what you feel will happen to you as you physically die.

2. Please write down the emotions that the thought of your own death arouse in you.

Items for the control condition will replace thoughts of death with thoughts of a painful dental procedure. In including dental pain results are less likely to be attributable to anxiety in general but rather the qualitative difference in death anxiety. The control condition items will read as follows.

1. Please write down what you think will happen to you as you undergo a painful dental procedure.

2. Please write down the emotions that the thought of experiencing a painful dental procedure arouse in you.

PANAS-X

This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you have felt this way at this moment. Use the following scale to record your answers:

1	2	3	4	5
very slightly/ or not at all	a little	moderately	quite a bit	extremely

_____afraid _____scared _____nervous _____jittery

_____irritable_____hostile _____guilty _____ashamed

_____upset _____distressed _____active _____alert

_____attentive _____determined _____enthusiastic _____excited

_____inspired _____interested _____proud _____strong

Feelings Thermometer

Please now think about Muslims.

How do you feel about Muslims in general? Please rate this group on a thermometer that runs

from zero (0) to a hundred (100) degrees. The higher the number, the warmer or more favorable

you feel towards this group. The lower the number, the colder or less favorable you feel. If you

feel neither warm nor cold towards them, rate them at 50.

0°   10°   20°   30°   40°   50°   60°   70°   80°   90°   100°

Bipolar Attitude Scales

Please indicate how you feel about Muslims in general by making ratings on the following

scales. Just circle the number on each scale that describes how you personally feel towards this

group:

warm	1	2	3	4	5	6	7	cold
negative	1	2	3	4	5	6	7	positive
friendly	1	2	3	4	5	6	7	hostile
suspicious	1	2	3	4	5	6	7	trusting
respect	1	2	3	4	5	6	7	contempt
admiration	1	2	3	4	5	6	7	disgust

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