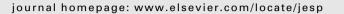
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# Does peace have a prayer? The effect of mortality salience, compassionate values, and religious fundamentalism on hostility toward out-groups

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# ABSTRACT

Religious fundamentalism has been shown to be associated with higher levels of prejudice, ethnocentrism, and militarism, in spite of the compassionate values promoted by the religious faiths that most fundamentalists believe in. Based on terror management theory, we hypothesized that priming these compassionate values would encourage a shift toward less support for violent solutions to the current Middle Eastern conflict, especially when they are combined with reminders of one's mortality. Study 1 demonstrated that among Americans, religious fundamentalism was associated with greater support for extreme military interventions, except when participants were reminded of their mortality and primed with compassionate religious values. The combination of mortality salience and compassionate religious values led to significant decreases in support for such interventions among high but not low fundamentalists. Study 2 replicated this finding and showed that it depends on the association of the compassionate values with an authoritative religious source; presentation of these values in a secular context had no effect on fundamentalists. Study 3 replicated these effects in a sample of Iranian Shiite Muslims: although a reminder of death increased anti-Western attitudes among participants primed with secular compassionate values, it decreased anti-Western attitudes among participants primed with secular compassionate values, it decreased anti-Western attitudes among those primed with compassionate values from the Koran.

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"they shall beat their swords into plowshares, and their spears into pruning hooks: nation shall not lift up sword against nation, neither shall they learn war any more" (Isaiah 2:4)

Throughout history, religion has played an influential and sometimes destructive role in human affairs (Juergensmeyer, 2003). For centuries, fundamentalists of diverse religious creeds have been prominent supporters of, and sometimes active participants in, sectarian violence, terrorism, and international warfare (Sacks, 2003). Research has shown religious fundamentalism to be positively associated with racial prejudice (e.g., Altemeyer & Hunsberger, 1992; Wylie & Forest, 1992), religious ethnocentrism (Altemeyer, 2003), and support for militarism (e.g., Henderson-King, Henderson-King, Bolea, Koches, & Kauffman, 2004). The antagonistic and often violent tactics supported by many fundamentalists seem paradoxical, in that they run contrary to the sacred texts that they revere, which prescribe compassion, kindness, and tolerance as central values (e.g., Laythe, Finkel, & Kirkpatrick, 2001; Winters, 2006). Some have noted that because religious meaning systems often include justifications for both violent and peaceful actions (Appleby, 2000), individuals can be

moved towards violent or peaceful activism by leaders who selectively emphasize certain religious messages over others (e.g., Gopin, 2000; Lewis 2003).The research reported here used terror management theory (TMT; Greenberg, Pyszczynski, & Solomon, 1986) to understand conditions under which compassionate religious values might decrease support for violence against threatening out-groups. In accordance with TMT, if fundamentalists rely on adherence to their religious belief systems to alleviate death anxiety, then priming compassionate religious values should reverse the tendency of fundamentalists to derogate out-groups and support violent solutions to international conflicts, especially when paired with reminders of mortality.

## **Religious fundamentalism**

Altemeyer and Hunsberger (1992) define religious fundamentalism as the belief that there is a single set of religious teachings that provide absolute truths that, if followed, lead to a special relationship with the deity, and that must be vigorously defended against evil oppositional forces. Rather than reflecting specific doctrinal beliefs, religious fundamentalism entails an underlying attitude *towards* one's beliefs. Silberman, Higgins, and Dweck (2005) describe how individuals who relate to their religious system in

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a fundamentalist way tend to be more likely to use religion to justify hostility and violence against out-groups. Research has documented the authoritarianism, ethnocentric attitudes, in-group bias, and aggressiveness of fundamentalists (e.g., Altemeyer, 2003; Altemeyer & Hunsberger, 2005). Despite the ubiquitous compassionate teachings espoused by most religions, religious fundamentalists, in prototypic authoritarian fashion, tend to take negative and often violent postures towards out-group members (e.g., Henderson-King et al., 2004).

To understand this paradox, some theorists posit a dual-component conceptualization of fundamentalism (e.g., Kirkpatrick, Hood, & Hartz, 1991; Laythe et al., 2001). The first component, central to the religious fundamentalism (RF) scale, is the authoritarian structure of the fundamentalist's belief system, which represents, "the way in which religious beliefs are held" (Laythe et al., 2001, p. 6). The second component, unrelated to authoritarianism, but of great importance to fundamentalists, is the *content* of the religious beliefs. The structure of the fundamentalist's belief system is ideologically authoritarian because it starts with the assumption that an inerrant text demands complete unquestioning submission (Hood, Hill, & Williamson, 2005). This accounts for findings of prejudice (Altemeyer & Hunsberger, 1992; Wylie & Forest, 1992), support for violence (Altemeyer & Hunsberger, 2004; Henderson-King et al., 2004) and the "fortress mentality" of fundamentalists. However, measures of belief content, such as the Christian Orthodoxy (CO) scale (Fullerton & Hunsberger, 1982), which correlate highly with religious fundamentalism, are often negatively related to violent and prejudicial attitudes (e.g., Laythe et al., 2001).

In support of this dual-component theory of fundamentalism, Laythe et al. (2001) found that whereas religious fundamentalism was positively related to racial prejudice, after controlling for right-wing authoritarianism (RWA) religious fundamentalism became inversely related to prejudice. This effect was also found using implicit measures (Rowatt & Franklin, 2004). Henderson-King et al. (2004) found that whereas religious fundamentalism was positively related to support for military force in response to 9/11, after controlling for RWA religious fundamentalism became uncorrelated with support for military force and negatively related to support for attacking terrorists. They labeled this the "Jimmy Carter Effect" because it revealed the content of the compassionate religious values without the authoritarianism, a tendency many associate with former President Carter.

If religious fundamentalism entails two distinct opposing components, which force will determine fundamentalists' behavior? Although there is a great deal of evidence concerning situations in which authoritarian attitudes determine fundamentalist responses to out-groups, less is known about if and when compassionate aspects of fundamentalists' religious beliefs might override these influences. To address this question, we used TMT to shed light on the function of the fundamentalists' "frame of orientation and devotion" (Fromm, 1950).

# Terror management theory

TMT (Greenberg et al., 1986) posits that a wide range of human behavior is motivated by the largely non-conscious potential for anxiety that results from awareness of the inevitability of death. This potentially debilitating anxiety is managed, in part, by belief in shared meaning systems, referred to as cultural worldviews, which provide a sense of purpose, value, and permanence within a greater conception of reality. By believing in and living up to the standards of value espoused by their worldviews, people attain self-esteem, which manages this potential for anxiety. Symbolic immortality, which is provided by all types of worldviews, is obtained by being part of something greater and more enduring than oneself. Religious worldviews, which are especially important to fundamentalists, also provide a more literal escape from the finality of death through afterlife beliefs that exchange the dread of death for the hope of blissful eternal life (Lifton, 1979/1983).

In support of TMT, empirical studies have found that when reminded of mortality (mortality salience; MS) people typically reaffirm or defend faith in their protective ideologies by derogating and sometimes supporting violent action against those who do not share their beliefs and values (for a recent review, see Greenberg, Solomon, & Arndt, 2008). Pyszczynski, Solomon, and Greenberg (2003) suggested that the behavior of Americans after the terrorist attacks of September 11th, 2001 reflected these processes. Research has also shown that after death reminders, people bolster their self-esteem by conforming more closely to the standards of their worldviews (see Pvszczvnski, Greenberg, Solomon, Arndt, & Schimel, 2004 for a review). Other studies have shown that threats to one's worldview or self-esteem increase the accessibility of death-related thoughts; furthermore, enhancing self-esteem or validating one's worldview decreases death-thought accessibility and nullifies the usual defensive effects of death reminders (e.g., Harmon-Jones et al., 1997). The presentation of supposed scientific evidence supporting the existence of an afterlife also eliminates worldview defense and self-esteem striving following a death prime (Dechesne et al., 2003).

Of particular relevance to the fundamentalist paradox, TMT notes that cultural worldviews typically contain a diverse array of compartmentalized and sometimes contradictory beliefs. For example, a religious fundamentalist might agree with the commandment "thou shalt not kill," but nonetheless actively support violent military tactics. Although many early terror management studies have shown that thoughts of death often lead to hostile reactions to those with different worldviews, TMT does not posit that violence and hostility are inevitable responses to MS. Because a worldview's ability to provide existential security hinges on the belief that one is living up to important worldview values, and because most worldviews contain some core compassionate principles, there is always room for a more compassionate response to existential threats. Research shows that situational context affects which of the various elements of one's worldview are used to fend off the threat of death reminders (Galliot, Stillman, Schmeichel, Maner, & Plant, 2008). For example, Greenberg et al. (1992) found that although MS increases individuals' derogation of out-group members in defense of their worldview, priming the widely shared value of tolerance eliminates this effect. Walsh and Smith (2007) provided additional evidence of the effect of situational primes on which aspect of gender roles women use for protection.

#### A terror management view of religious fundamentalism

Hood et al. (2005) described religious fundamentalism as a religious meaning system that centers on the absolute authority of a sacred text, which proclaims the word of a divine creator. Pyszczynski et al. (2003, p. 536) referred to this type of worldview as "the rock" because it is characterized by a "relatively secure, rigid conception that emphasizes absolute good and evil." A growing body of literature supports the idea that fundamentalists' rely on their textually centered belief systems to alleviate death concerns. In one study Friedman and Rholes (2006) found that pointing out conflicting biblical passages increased death-thought accessibility for high but not low fundamentalist Christians. Another study found that high fundamentalist participants reported more positive responses to open-ended MS questions (which could be a sign of their greater use of literal immortality beliefs to cope with the problem of death) but did not show increased secular worldview defense after MS as compared to a control prime (Friedman & Rholes, 2008). These studies illustrate how the religious fundamentalists' absolutist worldview helps maintain existential security. The benefits of a fundamentalist worldview are evident in the RF scale's positive relationship with measures of well-being (Altemeyer & Hunsberger, 2004; Genia, 1996). However, the cost of the fundamentalist worldview is the ongoing threat posed by others who fail to validate the "truth" of one's belief system. If a fundamentalist's source of security is built on a belief in the absolute validity of a single revealed truth (i.e., a sacred text), then because those with different beliefs imply that this worldview may be incorrect; such persons are regarded as evil or dangerously misguided in order to defuse the threat that their divergence poses. TMT construes the fundamentalist's heightened in-group/outgroup bias and support for violence against out-groups as resulting from defensive processes used to protect their inflexible worldviews.

Whereas aggressive reactions to worldview threatening others are consistent with the authoritarian structure of the fundamentalist's worldview, they conflict with the compassionate teachings often contained in the fundamentalist's revered doctrines. Although studies have shown that priming violent religious passages can increase aggressive behavior in believers (Bushman, Ridge, Das, Key, & Busath, 2007) and that subliminal priming of religious concepts can boost charitable behavior in some contexts (Pichon, Boccato, & Saroglou, 2007; Shariff & Norenzayan, 2007), the literature has largely neglected the impact that the compassionate aspects of religious values might have on attitudes towards out-group members. Previous research on prosocial behavior and fundamentalism seems to suggest that fundamentalists will act in prosocial ways, such as by engaging in helping behavior, when the target does not pose a direct threat, but not when the target is seen as a value threat, such as in the case of an out-group member (e.g., Jackson & Essess, 1997). However, many and perhaps most religions teach that one should love all people. If the immortality offered by a fundamentalist's worldview depends on strict adherence to scripturally derived religious values, then priming compassionate religious teachings after a death reminder should motivate adherence to these beliefs and reduce support for aggressive and violent postures, even against threatening out-groups.

We conducted three studies to assess this reasoning. Two studies were conducted in the United States with a predominantly Christian sample and assessed support for the use of extreme military force against terrorists and enemy states. The third study, conducted in Iran on a Shiite Muslim population, assessed aggressive anti-Western attitudes. It was hypothesized that although religious fundamentalists are generally more supportive of aggression against out-groups, when compassionate biblical or Koranic texts are primed, MS should lead fundamentalists to become less supportive of military force (in the US) or display less aggressive anti-Western attitudes (in Iran). This proposed movement away from hostility highlights a situational context in which the motivation to conform to the content component of the fundamentalist's worldview can shape behavior and attitudes in spite of the aggressive authoritarian structural component.

#### Study 1

Study 1 was designed to test the hypothesis that because people cope with existential threat by adhering more to the values that are central to their worldviews, MS would reduce fundamentalists' support for war when the compassionate values of their religion have recently been primed. Biblical verses that do not extol compassion and non-biblical neutral values were used as control conditions. We hypothesized that although high fundamentalists' support for war would not be affected by the mere priming of their religion (with neutral Biblical verses), it would be reduced when Biblical verses that promote compassion are primed and this would be especially true under conditions of MS. In addition, consistent with the dual-component theory of fundamentalism, we expected that the relationship between fundamentalism and support for violence would be reduced or eliminated when controlling for authoritarianism. However, to demonstrate the ability of salient belief content to overpower authoritarian aggression, MS in concert with compassionate primes was predicted to reduce high fundamentalist's support for violence even without controlling for authoritarianism. No specific hypotheses were offered regarding the effects of these variables on participants low in religious fundamentalism.

#### Method

#### Participants

One-hundred and thirteen undergraduate women and 38 men from four Colorado universities participated, with ages ranging from 18 to 50 (M = 22.63, SD = 7.18). The self-reported religious distribution of this sample was: 54.3% Christian, 3.9% Buddhist, 2% Hindu, 1.3% Jewish, 1.3% Muslim, 9.2% other, and 25.5% nonaffiliated. As in previous research examining religious fundamentalism (Rowatt & Franklin, 2004) no participants were excluded on account of their religious affiliation or lack thereof.

# Materials and procedure

Participants were tested in groups of 10–30 per session and were told they were participating in two unrelated studies. The first study was described as an investigation of the relationship between personality and values and the second as a pilot study assessing political attitudes. After obtaining informed consent, participants were randomly assigned to one of six questionnaire packets ( $2 \times 3$  experimental design) that were identical except for the manipulated variables, described below in their order of presentation.

A shortened version of the right-wing authoritarianism scale (RWA; Altemeyer & Hunsberger, 1992, 2005) was presented as a personality measure investigating opinions on a variety of social issues. Participants responded to this 20-item measure by rating their level of agreement on 9-point Likert-type scales (9 = very strongly disagree, 9 = very strongly agree) with statements regarding authoritarian submission, authoritarian aggression and conventionalism (e.g., "The *real* keys to the 'good life' are obedience, discipline, and sticking to the straight and narrow," "What our country really needs is a strong, determined leader who will crush evil, and take us back to our true path"). RWA has been found to be positively related to both prejudiced attitudes and support for the use of violent force (e.g., Winters, 2006).

The religious fundamentalism (RF) scale (Altemeyer & Hunsberger, 1992) was presented as a measure of religious attitudes. Participants rated their level of agreement on 9-point Likert-type scales (1 = very strongly disagree, 9 = very strongly agree) with 20items measuring fundamentalist beliefs across religions (e.g., "God has given mankind a complete, unfailing guide to happiness and salvation, which must be totally followed."), with higher scores indicating higher fundamentalism.

Next, participants were exposed to the two open-ended question MS manipulation used in many previous TMT studies (Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989), presented as a projective attitudes questionnaire. MS participants responded to two open-ended questions: "Please, briefly describe the emotions that the thought of your own death arouses in you" and "Jot down, as specifically as you can, what you think will happen Z.K. Rothschild et al. / Journal of Experimental Social Psychology 45 (2009) 816-827

Table 1 Value guotations.

Riblical compassionate values items (Studies 1 and 2)

1. "Be kind and compassionate to one another, forgiving each other, just as Christ forgave you." - Ephesians 4:32

2. "Do not judge, or you too will be judged. For in the same way you judge others, you will be judged, and with the measure you use, it will be measured to you." - Matthew 7:1-2

3. "So in everything, do to others what you would have them do to you, for this sums up the Law and the Prophets." - Matthew 7:12

- 4. "Love your neighbor as yourself. There is no commandment greater..." Mark 12:31
- Biblical neutral value items (Study 1)
- 1. "Every good tree bears good fruit, but a bad tree bears bad fruit." Mathew 7:17
- 2. "But the one who hears my words and does not put them into practice is like a man who built a house on the ground without a foundation." Luke 6:49

3. "Lazy hands make a man poor, but diligent hands bring wealth." - Proverb 10:4

4. "A man of knowledge uses words with restraint." – Proverb 17:27

Non-Biblical neutral values items (Studies 1 and 2)

1. "If a man begins with certainties, he shall end in doubts; but if he will be content to begin with doubts, he shall end in certainties." - Francis Bacon

2. "A single conversation across the table with a wise man is worth a month's study of books." - Chinese Proverb

3. "Never regret yesterday. Life is in you today, and you make your tomorrow." - L. Ron Hubbard

4. "The man who believes he can do something is probably right. And so is the man who believes he can't." - Anonymous

Non-Biblical compassionate values items (Study 2)

"You should be nice to others and forgive them for their mistakes and misdeeds."

"You should not judge and evaluate other people because you do not want other people to judge and evaluate you."

"You should always treat others the way that you would like to be treated."

"One of the most important principle is loving other people."

to you as you physically die." Control participants responded to parallel questions about intense physical pain. Participants then completed the positive and negative affect schedule (PANAS; Watson, Clark, & Tellegen, 1988).

The value manipulation was next. Participants were given four quotations presenting 'rules to live by,' (see Table 1) which they rated their agreement with and commitment to on 10-point Likert-type scales (1 = *strongly disagree*, 10 = *strongly agree*). The biblical compassionate condition presented four biblical passages of the compassionate teachings of Jesus. Two control value conditions were used to determine whether obtained effects were due to the content or source of the biblical compassionate values. The biblical neutral control condition presented four biblical neutral quotations. The non-biblical neutral control condition presented four neutral quotations from various non-biblical sources.

Participants were then informed that they had completed the first study and would now be participating in a pilot study measuring political attitudes. Participants then rated their level of agreement on 11-point Likert-type scales (1 = *strongly disagree*, 11 = *strongly agree*) with 12 items dealing with the use of extreme force (e.g., using chemical and nuclear weapons) to defend American interests, used in previous studies by Weise et al. (2008). The study also included a one item measure of political orientation (1 = very conservative, 7 = very liberal; M = 4.34), and a measure where participants rated their level of agreement with the statement that their religious beliefs are very strong (-3 = strongly disagree, 3 = strongly agree; M = 0.73). The study concluded with a short demographics questionnaire and a thorough debriefing.

# Results

#### Preliminary analyses

The military might (M = 4.09, SD = 1.94) and RF (M = 3.76, SD = 1.61) scales were highly reliable (Cronbach's  $\alpha = .90$  and .92). A sequential regression analysis revealed a RF × value prime interaction predicting agreement with the passages, b = -.43, t(1 4 1) = -2.16, p < .05. Simple slope analyses revealed that RF was positively related to agreement with biblical neutral, b = .70, t(1 4 4) = 4.21, p < .05, and biblical compassionate values b = .51, t(1 4 4) = 3.94, p < .05, but not non-biblical neutral values, b = -.01, t(1 4 4) = -0.05, p = .96. Thus, as would be expected, high fundamentalism was associated with greater agreement with both

compassionate and neutral biblical values, but not with non-religious values.

#### Primary analyses

Because our primary interest was in assessing: (1) differences between the effects of MS on the biblical compassionate prime conditions relative to the neutral prime conditions, and (2) differences between the two neutral values conditions that were used as controls, we used an orthogonal coding method which enabled us to test these specific hypotheses. The regression model included the effects of MS, value prime (biblical compassionate vs. biblical neutral vs. non-biblical neutral), RF, and their interactions as predictors of the dependent variable, support for extreme military force. The first step included variables that we wanted to control for, including participant gender, political orientation, positive affect, negative affect, agreement with value passages, and strength of religious belief. The second step included all main effects, the third included the two-way interactions, and the fourth included the three-way interactions. Categorical predictors were coded as described below, and all continuous variables were centered at the mean. To assess the first contrast of interest, biblical compassion was coded as 2 while both neutral values conditions were coded as -1 respectively (Contrast BC). To assess the second contrast of interest, the biblical compassionate value condition was coded as 0 while the biblical neutral and non-biblical neutral value conditions were coded as 1 and -1 respectively (Contrast NV). These regression analyses were conducted both with and without including RWA as a predictor in the first step of the regression.

These predictors accounted for a significant amount of variance in support for military might, adjusted  $R^2 = .35$ , F(17, 128) = 5.49, p < .001 (see Table 2 for individual predictors with and without controlling for RWA). To asses our a priori hypotheses we first looked at the neutral values contrast (NV) and its interactions across all levels of the regression. As predicted, there were no significant main or interaction effects comparing the biblical and nonbiblical neutral values conditions (ps > .50). Therefore, we can assume that the neutral value control conditions did not differ independently or in interaction with any other variables. This finding justifies focusing on the primary interaction of interest (BC). All main effects and two-way interactions were qualified by the predicted significant MS × RF × BC interaction in the final step, b = -.30, t(1 2 8) = -2.45, p < .05 (see Fig. 1). Consistent with the

#### Table 2

Study 1 unstandardized regression coefficients for mortality salience, religious fundamentalism, value prime condition and their interactions on support for military force without and with controlling for right-wing authoritarianism.

Predictors	b	t	b	t
Step 1				
Right-wing authoritarianism	-	-	1.00	7.09**
Gender	.00	0.001	21	-0.72
Strength of religious belief	.15	1.64	08	-0.94
Political orientation	52	$-4.29^{**}$	12	-0.96
Positive affect	.21	1.33	.33	2.26*
Negative affect	.41	1.83	.33	1.67
Passage agreement	.07	0.71	03	-0.33
Step 2				
Mortality salience (MS	38	-1.36	42	-1.66
Biblical compassionate (BC)	23	$-2.16^{*}$	19	$-2.01^{*}$
Neutral values (NV)	.01	0.08	.10	0.62
Religious fundamentalism (RF)	.47	4.08**	01	-0.03
Step 3				
$MS \times RF$	06	-0.34	08	-0.49
$RF \times BC$	18	-3.12**	16	-3.00**
$RF \times NV$	13	-1.10	.01	0.04
$MS \times BC$	.04	0.22	14	-0.77
$MS \times NV$	20	-0.59	55	-1.80
Step 4				
$MS \times RF \times NV$	02	-0.08	02	-0.11
$MS \times RF \times BC$	30	$-2.45^{*}$	25	-2.33 <sup>*</sup>

NV = biblical neutral vs. non-biblical neutral condition.

BC = biblical compassionate vs. neutral value conditions.

\*\* p < .01.

dual-component model of fundamentalism, although RWA was a significant predictor of support for military might, b = .98, t(1 3 7) = 7.09, p < .01, including RWA in the first step of the regression wiped out the main effect of RF on support for violence. Importantly, the inclusion of RWA did not affect the significant three-way interaction of interest.<sup>1</sup>

To dissect the significant three-way interaction,  $MS \times value$ prime simple interactions were tested separately for high and low religious fundamentalists (1 SD above and below the RF mean, respectively; Aiken & West, 1991). These analyses revealed a significant  $MS \times BC$  interaction for both high fundamentalists, b = -1.63, t(1 4 3) = 1.98, p = .05, and low fundamentalists, b = 1.96, t(1 4 3) = 2.89, p < .05. Consistent with the prediction that MS would lead high religious fundamentalist participants to becomes less supportive of violence only in the biblical compassionate value condition, follow-up analyses revealed that for high fundamentalists, MS (as compared to pain) led to decreased support for military might in the biblical compassionate values condition, b = -1.41, t(1 4 4) = -2.26, p = .03, but not in the non-biblical neutral values condition, b = .21, t(1 4 4) = 0.27, p = .79, or the biblical neutral values condition, b = .19, t(1 4 4) = 0.28, p = .78. In contrast, for low fundamentalists, MS did not significantly affect support for military might in any of the values conditions. However, there was a weak trend such that low fundamentalists in the non-biblical neutral condition, b = -1.05, t(1 4 4) = 1.41, p = .16, and biblical neutral condition, b = -.92, t(1 4 4) = -1.49, p = .14, were less supportive of military might after MS whereas low fundamentalists in the compassionate biblical values condition, showed a trend toward reacting to MS in the opposite direction, b = .31, t(1 4 4) = 1.61, p = .12.

# Discussion

Consistent with previous research (Henderson-King et al., 2004; Laythe et al., 2001; Rowatt & Franklin, 2004) although RF was positively related to support for extreme military action against an out-group, this relationship disappeared after controlling for RWA. However, with or without controlling for RWA, participants high on religious fundamentalism evidenced decreased support for military might when reminded of both compassionate Christian values and their mortality. Thus, as TMT would predict, reminders of death led to increased conformity to primed values, and primed values exerted a steering effect on the way people respond to reminders of their mortality. More specifically this suggests that although fundamentalists' hostile out-group attitudes, driven by the authoritarian component of RF, may predispose them to support violent solutions to international problems, under conditions of heightened existential threat salient, compassionate aspects of the fundamentalists' belief system can move them away from supporting violence.

The finding that MS did not significantly increase support for extreme military force among either high or low RF participants in the neutral value conditions is inconsistent with earlier findings of MS increasing support for military might among conservatives (Pyszczynski et al., 2006). This previous study that found increased support for extreme military force in response to MS was conducted in 2003, shortly after the 9/11 attacks and when President G. W. Bush and his policies were much more popular than they were when the present study was conducted in 2006; these divergent results must be understood within the different historical contexts in which the studies were conducted. The present findings are consistent with other more recent findings (e.g., Weise et al., 2008) that thoughts of death no longer consistently produce increased support for aggressive policies in the Middle East among most Americans, even conservatives. These divergent findings may reflect the changing political landscape in America; evident in the 2006 mid-term elections and the growing public belief that engaging in the Iraq war was a mistake ("USA more pessimistic on Iraq War," 2006). Consistent with the notion that this divergence from previous findings reflects changing times, MS caused low fundamentalists to become marginally less supportive of military might in the neutral value condition. The present findings are also consistent with Friedman and Rholes's (2008) study which found the high fundamentalist's did not evidence increased secular worldview defense following MS.

Interestingly, although MS did show a trend towards reducing support for military might among low RF participants in the neutral values conditions, it did not have this effect in the biblical compassionate values condition. What accounts for this reluctance of low RFs to respond to MS by bringing their attitudes more in line with these biblical compassionate values? Low RFs did report less agreement with and support for these compassionate religious values than high RFs. Thus one possibility is that MS did not decrease support for extreme military force because our low RF participants did not agree with these compassionate values. We doubt this is the case, however, because mean agreement for the compassionate Christian values among low RFs (1 SD below the mean) was 7.47, which is well above the midpoint of the scale. Rather, we suspect that the lack of effect of MS in the compassionate biblical values conditions reflects the fact that these values were framed as quotes from the bible, with full citation of chapter and verse, which may have alienated our low RF participants, many of whom were not Christian (17% Christian, 59% Not affiliated).

<sup>&</sup>lt;sup>\*</sup> p < .05.

<sup>&</sup>lt;sup>1</sup> To assess the possibility that the inclusion of non-Christian participants (who would likely be low in RF) may have been responsible for the results, a regression analysis was also conducted after filtering out all participants that were not self-reported Christians (N = 94). This analysis yielded the same significant MS x RF × BC three-way interaction found in the primary regression analysis. Thus these effects remain regardless of whether all participants are considered, as in most prior research on RF, or only Christian participants are considered.

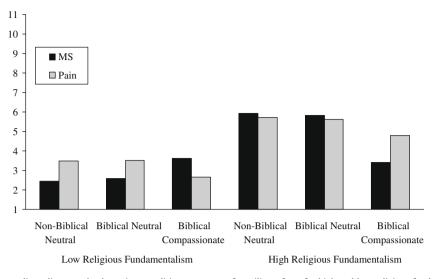


Fig. 1. The effect of mortality salience and value prime condition on support for military force for high and low religious fundamentalism (Study 1).

## Study 2

Study 1 demonstrated that compassionate values from the Bible combine with MS to reduce support for the use of military might among persons high in RF; merely reminding these participants of their religion, with neutral quotes from the Bible did not produce this effect. This leads to the guestion of whether secularized presentations of the same compassionate values would have this effect on high fundamentalists, or if an authoritative religious source is necessary to reduce high fundamentalists' support for violence. Study 2 was designed to address this question. To the extent that fundamentalists do not internalize the compassionate religious values independently of their religious source (Winters, 2006), the non-biblical compassionate value condition should not differ from the non-biblical neutral condition and thus should fail to reduce high fundamentalists' support for military might after a morality reminder. Study 2 also enabled us to assess the possibility that low fundamentalists did not respond to the combination of MS and the priming of compassionate religious values in Study 1 because they were reacting against the authority of the religious text. If this were the case, then low fundamentalist's should react to the non-biblical compassionate value conditions as they responded to the neutral value conditions in Study 1, by showing decreased support for military might after MS, but once again not react to a biblical compassionate prime after MS. Once again, our major prediction was that MS would combine with compassionate religious values to reduce support for military might among high RF individuals. We also predicted that Study 2 would replicate Study 1's support for the dual-component model of fundamentalism, by showing that the relationship between RF and support for military might would be eliminated when RWA is first controlled.

# Method

# Participants

One-hundred and twenty-one undergraduates (90 women and 31 men) from a university in Colorado participated in this study. Participants' ages ranged from 18 to 52 years (M = 22.13, SD = 6.01). The self-reported religious distribution of this sample was as follows: 66.9% Christian, 0.8% Jewish, 0.8% Buddhist, 3.3% atheist, 3.3% agnostic, 5% other, and 19.8% non-affiliated.

## Materials and procedure

The materials and procedure for Study 2 were identical to Study 1, except for the replacement of the biblical neutral values condition with a secularized compassionate values prime condition and a more detailed demographics survey. Participants were randomly assigned to the MS or pain salience control condition and one of the three values conditions. The values conditions included a non-biblical neutral values condition, a biblical compassionate values condition, and a non-biblical compassionate values condition which was comprised of secularized versions of the quotations used in the biblical compassionate values condition (e.g., "You should always treat others the way that you would like to be treated": see Table 1). After the values manipulation participants completed the same measure of support for the use of extreme military force used in Study 1. Also, because such a large percentage of participants rated their religious affiliation under the nondescript category of not affiliated in Study 1, two new category options, atheist and agnostic, were added.

#### Results

#### Preliminary analyses

As in Study 1, a sequential regression analysis revealed a significant RF × value prime interaction predicting passage agreement, b = .36,  $t(1 \ 1 \ 5) = 2.43$ , p < .05. Simple slope analyses revealed that RF was positively related to agreement with compassionate biblical values, b = .39,  $t(1 \ 1 \ 0) = 3.36$ , p < .01, but was not related to compassionate non-biblical values, b = .11,  $t(1 \ 1 \ 0) = 0.80$ , p = .43, or neutral non-biblical values, b = .06,  $t(1 \ 1 \ 0) = 0.58$ , p = .57. This suggests that low RF participants agree less with the religious source but not the compassionate content of these values than high RF participants.

#### Primary analyses

An orthogonal coding method was used to test our two hypothesized contrasts. A sequential regression analysis assessed the effects of MS, value prime (biblical compassionate vs. non-biblical neutral vs. non-biblical compassionate), RF, and their interactions on support for extreme military force. As in Study 1, all continuous variables were centered on the mean and all categorical variables

#### Table 3

Study 2 unstandardized regression coefficients for mortality salience, religious fundamentalism, value prime condition and their interactions on support for military force with and without controlling for right-wing authoritarianism.

Predictors	b	t	b	t
Step 1				
Right-wing authoritarianism	-	-	.49	3.26**
Gender	04	-0.11	15	-0.44
Strength of religious belief	.21	$2.23^{*}$	.09	0.95
Political orientation	53	$-4.26^{**}$	26	-1.73
Positive affect	03	-0.16	.07	0.38
Negative affect	.21	0.86	.15	0.49
Passage agreement	12	-1.08	26	-1.73
Step 2				
Mortality salience (MS)	54	-1.78	42	-1.38
Biblical compassionate (BC)	13	-1.15	15	-1.36
Non-biblical values (NB)	.13	0.68	.18	1.00
Religious fundamentalism (RF)	.28	$2.20^{*}$	.05	0.34
Step 3				
$MS \times RF$	.02	0.16	.11	0.62
$RF \times BC$	.05	0.72	.05	0.79
$RF \times NB$	02	-0.15	02	-0.21
$MS \times BC$	10	-0.45	10	-0.45
$MS \times NB$	43	-1.17	42	-1.17
Step 4				
$MS \times RF \times NB$	08	-0.39	05	-0.24
$MS \times RF \times BC$	36	-3.05**	34	-2.93**

NB = non-biblical compassionate vs. non-biblical neutral.

BC = biblical compassionate vs. non-biblical value conditions.

p < .01.

were coded for the analysis, as described below. For the first contrast, to determine if there were differences between the two non-biblical value conditions the biblical compassionate value condition was coded as 0, while non-biblical compassionate and non-biblical neutral conditions were coded as 1 and -1 respectively (Contrast NB). For the second contrast looking at the hypothesized difference between the biblical compassionate condition and the non-biblical conditions, the biblical compassionate condition was coded as 2 while the non-biblical control conditions were coded as -1 (Contrast BC). Participants' gender, political orientation, value passage agreement, positive affect, negative affect and strength of religious belief were entered into the first step of the regression to control for any potential effects. The second step of the regression included all main effects, the third included the two-way interactions, and the fourth included the three-way interactions.

These predictors accounted for a significant amount of variance in support for military might, adjusted  $R^2 = .34$ , F(17, 100) = 4.47, p < .001, (see Table 3 for individual predictors with and without controlling for RWA). Once again, no significant main or interaction effects were found for the non-biblical values (NV) comparison (ps > 53). This tells us that once again there was no difference between the non-biblical values conditions alone or in relation to the other variables of interest. Also, in replication of Study 1, all lower level effects for the BC contrast were qualified by the predicted significant  $MS \times RF \times BC$  interaction in the final step, b = -.36, t(100) = -3.05, p < .01 (see Fig. 2). Once again, as in Study 1 and consistent with the dual-component model of fundamentalism, RWA was a significant predictor of support for military might, b = .49,  $t(1 \ 1 \ 0) = 3.26$ , p < .01, and including RWA in the first step of the regression wiped out the main effect of RF on support for violence. Importantly, the inclusion of RWA did not affect the significant three-way interaction of interest.<sup>2</sup>

 $MS \times Value$  prime simple interactions were tested separately for high and low religious fundamentalists (1 SD above and below the RF mean, respectively; Aiken & West, 1991). These analyses revealed a significant MS  $\times$  BC interaction for high fundamentalists, b = -2.40,  $t(1\ 1\ 0) = -2.85$ , p < .01, but not for low fundamentalists, b = 1.46,  $t(1 \ 1 \ 0) = 1.54$ , p = .13. Once again, consistent with the prediction that MS would lead high religious fundamentalists to becomes less supportive of violence only in the biblical compassionate value condition, simple effects revealed that for high fundamentalists, MS (as compared to pain) led to decreased support for military might in the biblical compassionate values condition, b = -1.82,  $t(1 \ 1 \ 0) = -3.58$ , p < .01, but not in the non-biblical neutral values condition, b = .84,  $t(1\ 1\ 0) = 1.10, p = .28$ , or the non-biblical compassionate values condition, b = .10,  $t(1 \ 1 \ 0) = 0.12$ , p = .90. In contrast, for low fundamentalists, MS did not significantly affect support for military might in any of the values conditions. Consistent with Study 1, however, there was a consistent trend such that low fundamentalists in the non-biblical neutral value condition, b = -.97,  $t(1 \ 1 \ 0) = -1.19$ , p = .24, and non-biblical compassionate value condition, b = -.83,  $t(1 \ 1 \ 0) =$ -1.10, p = .28, were less supportive of military might after MS while low fundamentalists in the compassionate biblical values condition,  $b = .50, t(1 \ 1 \ 0) = 0.80, p = .43, did not show this pattern.$ 

# Discussion

Study 2 replicated the findings of Study 1 and once again illustrates the potential for death reminders to reverse or at least significantly reduce the violence-supportive attitudes of religious fundamentalists when accompanied by compassionate biblical values. Also, as in Study 1, the findings supported the dual-component theory of RF (Laythe et al., 2001) and showed that compassionate belief component of RF can override the hostile authoritarian component under certain circumstances. In addition, Study 2 found that when reminded of death, high fundamentalists responded to the compassionate biblical values with a reduction in support for violence but did not respond in this way to the same compassionate values presented in secularized form. This indicates that for high fundamentalists the compassionate content of the message alone is ineffective in promoting less hostile responses after MS unless coupled with an authoritative religious source, in this case, the Bible. It appears that it is the combination of a compassionate message with religious authority that leads fundamentalists to respond to existential threat with less hostile attitudes toward outgroups or perceived enemies.

For low fundamentalists the trends were in the same direction as Study 1. In the non-biblical conditions, MS tended to decrease support for military might, but not in the compassionate biblical condition. This suggests that if there is an effect here that the present studies lack the power to detect, low fundamentalists may be reacting to the compassionate biblical values after death because of the biblical medium in which they are presented. Although these trends for low RF participants were consistent across Studies 1 and 2, no conclusions can be drawn because they did not reach statistical significance in either study.

# Study 3

Studies 1 and 2 document the potential for compassionate Christian values to reduce support for violence among fundamentalist Christians faced with existential threat. Study 3 was designed to address the question of whether these effects are specific to Christian values and populations, or rather, would generalize to other cultures with religious traditions that value compassion. Thus Study 3 was designed as a replication of Studies 1 and 2 within a Shiite Muslim population in a Middle Eastern country,

<sup>\*</sup> *p* < .05.

 $<sup>^{2}\ \</sup>mathrm{As}$  with Study 1 after removing all participants who were not self-reported Christians (N = 80) the regression analysis revealed the same significant MS  $\times$  RF  $\times$  BC three-way interaction.

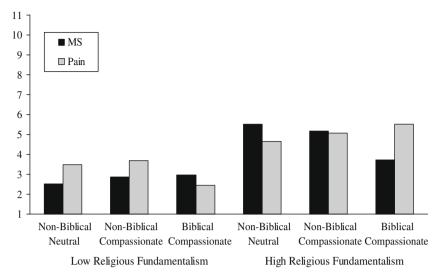


Fig. 2. The effect of mortality salience and value prime condition on support for military force for high and low religious fundamentalism (Study 2).

specifically, Iran. In light of violent conflicts in the Middle East and elsewhere in the world which continue to fuel misconceptions regarding the Islamic faith, it is important to determine if the compassionate values that Islam shares with most world religions have the potential to reduce hostility and support for violence across religious communities. Previous research has replicated many of the basic effects posited by TMT among Iranians (e.g., Abdollahi, 2004; Abdollahi, Pyszczynski, Maxfield, & Luszczynska, submitted for publication), and has shown that, just as in the US and Israel, reminders of death increase support for violent solutions to the current conflict, in this case in the form of martyrdom attacks (Pyszczynski et al., 2006). Study 3 addressed the important question of whether compassionate Islamic values could redirect the effects of MS toward peace, just as compassionate Christian values were shown to do in Studies 1 and 2.

# Method

# Participants

Sixty-six undergraduate women and 54 undergraduate men from two Iranian universities participated in this study, ranging in age from 18 to 31 years (M = 21.69, SD = 3.15). All participants reported their religious affiliation as being Shiite Muslim. Data from three participants were removed prior to analysis due to a failure to complete all necessary measures.

#### Materials and procedure

Participants were tested individually and told that the study was about "personality, values, and social attitudes." They were informed that the study involved two sections: (1) questionnaires and related tasks, and (2) a values discussion. In truth there was no value discussion. This cover story was added to justify the inclusion of the value priming manipulation. Participants were given a packet of materials and were randomly assigned to conditions in a 2 (MS)  $\times$  2 (value prime) factorial design. After completing a few filler questionnaires participants responded to the two openended questions about death (MS condition) used in Study 1 or two parallel questions about dental pain (Control condition). All materials were presented in the local Farsi language.

Following the MS manipulation participants were shown a sample of the values they were led to believe would be discussed later in the study. All participants were presented with three statements that described compassionate values. However, half of the participants read statements described as "Islamic values" taken from the Holy Koran (religiously-labeled values; e.g., "Do goodness to others because Allah loves those who do good."), while the other half read statements described as "general values" which were secularized interpretations of the Koran passages without any label (non-religiously-labeled values; e.g., "Do goodness to others because people love those who do good."). The value statements used in the two conditions are presented in Table 4. All participants then completed the PANAS (Watson et al., 1988) followed by a short word search distraction and delay task. Finally, participants responded to a "social attitudes" guestionnaire, which contained a number of filler items along with five items that served as the dependent measure. These items assessed aggressive anti-Western attitudes towards the United States and its European allies (e.g., "The US and its European allies presence in the Middle East is threatening to our Islamic being. We should fight against them," "We cannot trust the US and its European allies; they are our enemies."). Participants were then thoroughly debriefed. The revised 12-item version of the RF scale (Altemeyer & Hunsberger, 2004) was

#### Table 4

Values passages used in Study 3.

Non-religiously-labeled values

Religiously-labeled values items

<sup>1.</sup> The Holy Koran [4:36] says: do good to parents, kinsfolk, orphans, those in need, neighbors who are near neighbors who are strangers, the companion by your side, the wayfarer (you meet) and what your right hands possess

<sup>2.</sup> The Holy Koran, Ghasas (77) says: do goodness to others because Allah loves those who do good

<sup>3.</sup> Mohammad, Allah's messenger says: be kind to others

<sup>1.</sup> People in general believe that one should do good to others (e.g., parents, relatives, strangers, etc.)

<sup>2.</sup> Do goodness to others because people love those who do good

<sup>3.</sup> People in general believe that it is good to be kind to others

administered to all participants in a separate testing session to facilitate comparison with Studies 1 and 2.

#### Results

## Religious fundamentalism

Preliminary analyses found that the dependent measure of hostile anti-Western attitudes had sufficient reliability (Cronbach's  $\alpha$  = .69). It was also found that the mean RF score for the Iranian sample (M = 6.84, SD = 0.56) was nearly double the mean RF score for the American sample in Study 1 (M = 3.79, SD = 1.63). Indeed, the lowest RF score from the Iranian sample (5.42) was equal to the projected mean for high fundamentalists (1 *SD* above the mean) in the American sample. These findings are not particularly surprising considering that, unlike the American samples, the Iranian participants were collected at religious universities. Due to the narrow range of scores on the fundamentalism measure we did not expect religious fundamentalism to moderate the relationship between MS and value prime on anti-Western attitudes.

# Primary analysis

A regression analysis was conducted to test the relationship between MS (MS vs. Pain), value prime (religiously labeled/non-religious labeled compassionate values) and RF on anti-Western attitudes. All categorical variables were coded and all continuous variables were centered on the mean. To control for potential effects of gender, positive affect and negative affect, these variables were entered into the first step of the regression. The second step of the regression included the main effects of MS, RF and value prime, the third step included all two-way interactions, and the fourth step included the three-way interaction.

These predictors accounted for a significant amount of variance in hostile anti-Western attitudes, adjusted  $R^2 = .50$ , F(10, 106) = 12.60, p < .001, (see Table 5 for individual predictors). Consistent with the previous two studies, a significant positive relationship emerged between RF and anti-Western attitudes, b = .31,  $t(1 \ 1 \ 0) = 1.98$ , p = .05. All other main effects were qualified by a significant MS × Value two-way interaction, b = -1.89,  $t(1 \ 0 \ 3) = -6.49$ , p < .01 (see Fig. 3). The three-way interaction in the fourth step of the regression did not reach significance (p > .30).

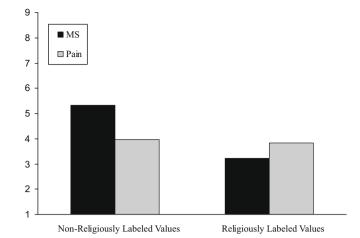
To illuminate the significant MS  $\times$  value interaction, MS vs. Pain control comparisons were conducted in each value condition.

#### Table 5

Study 3 unstandardized regression coefficients for mortality salience, religious fundamentalism, value prime condition and their interactions on anti-Western attitudes.

Predictors	b	t
Step 1 (controlling for)		
Gender	.37	1.83
Positive affect	19	-0.69
Negative affect	.15	0.64
Step 2		
Mortality salience (MS)	.37	2.14*
Value label	-1.16	$-6.76^{**}$
Religious Fundamentalism (RF)	.31	$1.98^{*}$
Step 3		
$MS \times RF$	30	-1.07
$RF \times value \ label$	-0.10	-0.38
$MS \times value \ label$	-1.89	$-6.49^{**}$
Step 4		
$MS \times RF \times value \ label$	.57	1.04

<sup>\*\* </sup>p < .01.



**Fig. 3.** The effect of mortality salience and religiously and non-religiously-labeled compassionate prime conditions on anti-Western attitudes (Study 3).

These analyses revealed that within the non-religiously-labeled value condition MS led to more aggressive anti-Western sentiments compared to the dental pain group, b = 1.35,  $t(1 \ 1 \ 0) = 6.62$ , p < .01, whereas in the religiously-labeled value condition MS led to significantly *less* anti-Western sentiments as compared to the pain control group, b = -.61,  $t(1 \ 1 \ 0) = -2.99$ , p < .01.

# Discussion

Although the high and narrowly distributed fundamentalism scores did not allow for a sensitive test of the potential moderating role of fundamentalism, Study 3 found that whereas MS exposure led participants to become more aggressively anti-Western in the non-religiously-labeled compassionate values condition, when they were exposed to similar religiously-labeled compassionate values, MS led to a significant decrease in anti-Western sentiments. This study adds cross-cultural generality to the findings of Studies 1 and 2 by replicating the pacifying effect of compassionate religious values after reminders of death among Iranian Shiite Muslims. Although reminders of death have been shown to be capable of increasing anti-Western attitudes and support for martyrdom missions (Pyszczynski et al., 2006), the present findings show that such increased hostility and support for violence is not an inevitable response to existential threat, and that compassionate religious values can play an important role in redirecting individuals toward more peaceful means of coping in both Christian and Muslim cultures.

The findings of Study 3 further illustrate the importance of both the value itself and its source in steering people away from confrontational responses to existential fear. Although priming compassionate Islamic values led participants to respond to reminders of mortality with less anti-Western attitudes, when these same values were presented without connection to Islam, reminders of death increased anti-Western attitudes. Similarly, in Study 2, compassionate values had little effect among American fundamentalists unless they were linked to an authoritative Biblical source. Studies 1 and 2 demonstrated that these same compassionate religious values when presented in their Biblical context have no effect on Americans low in religious fundamentalism. This suggests that the source of the values must be congruent with the individual's cultural worldview in order for them to have this directing effect. Unfortunately, we were unable to adequately assess this hypothesis within our Iranian sample due to the high levels of fundamentalism reported; even the lowest fundamentalists

in the Iranian sample showed levels of RF equivalent to the mean level of RF of the high fundamentalists in the American studies.

# **General discussion**

The purpose of these studies was to determine whether activating compassionate religious values after a mortality threat would shift attitudes in line with those values, especially among religious fundamentalists who are theorized to rely especially heavily on their religious beliefs to mitigate mortality concerns. This hypothesized shift for fundamentalists was of particular interest because of the high levels of in-group bias and support for violence that such individuals have demonstrated in past research (e.g., Altemeyer & Hunsberger, 2004; Henderson-King et al., 2004). Whereas Pyszczynski et al. (2006) demonstrated that MS increases support for extreme military measures among conservative Americans and martyrdom attacks among Iranians, the present studies show that these MS effects can be reversed among both groups when they are reminded of compassionate values that are part of their religious faith.

Although many previous TMT studies have shown that people often respond to reminders of their mortality with increased hostility toward out-groups, the present findings show that this is by no means an inevitable response to existential fear. Together with the earlier findings of Greenberg et al. (1992) that priming the value of tolerance eliminates the effect of MS on negative attitudes toward attitudinally dissimilar others, and the more recent findings of Weise et al. (2008) that priming secure attachments can reverse the tendency to respond to MS with increased support for extreme military measures in the war on terror, the present studies point to the importance of the situational context in determining responses to death concerns. In all of these cases, increasing the salience of values that promote peaceful co-existence played an important role in determining how participants responded to reminders of mortality. The fact that these findings emerged in all three studies after controlling for positive and negative affects shows that affective reactions to the MS or value primes does not mediate these effects. These findings support the TMT proposition that people deal with death-related fears by attempting to live up to the standards of value that are central to their worldview. They also clarify the importance of situational factors in determining which aspects of one's worldview will be used to defend against such threats.

Unlike many previous TMT studies which have shown that aggression-supportive MS effects can be reduced or eliminated by boosting self-esteem, attachment, or belief in literal and symbolic bolstering strategies (e.g., Dechesne et al., 2003; Harmon-Jones et al., 1997), the present studies demonstrated a significant reversal of fundamentalist's aggressive and violent anti-out-group attitudes. This effect does not represent a reduced need on the part of fundamentalists to defend against existential threat, but instead, represents an alteration in the attitudes and behavior that fundamentalists use to defend against death anxiety. As TMT predicts, the religious fundamentalists in the present studies are coping with mortality concerns by conforming to the values of their worldview that have been made salient. Similar to Greenberg et al.'s (1992) tolerance study, the present study shows that after MS, a stricter adherence to salient humanitarian values can provide a more prosocial coping mechanism – in this case, within the context of a very pressing and real international conflict.

The present findings add to the emerging picture of people as using a variety of strategies for keeping their existential fears at bay. TMT posits that people protect themselves from these fears by maintaining faith in their cultural worldviews and defending them against threats, striving for self-esteem by living up to the standards of their worldviews, and maintaining close interpersonal attachments (cf, Mikulincer, Florian, & Hirschberger, 2003). These three general components of the anxiety-buffering system are inter-related and to some extent interdependent in a variety of important ways. Solomon, Greenberg, and Pyszczynski (1991) argued that the anxiety-buffering capacity of self-esteem develops out of the protection provided by early attachment to one's parents and that the attainment of self-esteem depends on living up to the standards of the unique individualized version of the cultural worldview that each person integrates and internalizes over the course of socialization. Faith in one's worldview and self-worth depend heavily on validation from others, and such validation is especially important when it comes from those with whom one is interpersonally attached. However, despite this interdependence of the various components of one's anxiety-buffering system, sometimes they point the person toward dramatically different ways of coping with the problem of death. The present research provides an interesting example of these conflicting guides for thought and behavior.

On the one hand, people in both the United States and Iran are likely to be threatened by each other. These countries have distinct religious traditions and many other aspects of their culture diverge in important ways. Thus the mere existence of each other is likely to pose some level of threat. Recent global events have brought these differences into sharp focus, as has the rhetoric of leaders from both sides, for example, condemning each other as the "Great Satan" or "Axis of Evil." International policies of each nation are likely to further threaten each other's worldview. The occupation of Iraq, the more general role played in the Middle East by the US, and discussion of possible military action against Iran; support for organizations such as Hezbollah; Iran's policy toward Israel, and the emerging Iranian nuclear program provide just a few examples. Such statements and policies are also likely to threaten the self-esteem of persons in both cultures, providing the sort of humiliation and perceived injustice pointed to by many students of terrorism and the Middle East (e.g., Richardson, 2006; Stern, 2003). These and other forces are likely to combine to make Americans and Iranians prone to support aggressive stances against each other. The presented findings, along with those of Pvszczvnski et al. (2006) suggest that, at least at this point in history, the threat posed by each other seems sufficient to make negative and aggressive responses to each other a common, and perhaps currently dominant way that people from these two cultures will respond to each other. This tendency seems especially likely to be found among high fundamentalists because of the more rigid and absolute nature of their belief systems and their tendency to view opposing forces as evils that must be fought (e.g., Altemeyer & Hunsberger, 1992; Henderson-King et al., 2004). The results of Studies 1 and 2 show that such hostile responses to the threat of the other are indeed more likely to be found among high fundamentalists.

However, both American and Iranian cultures also embrace the value of compassion and peaceful co-existence as reflected by the sacred texts of the dominant religions in both countries. Although it appears that these values are often outweighed by the threat posed by the other culture, the three studies reported here consistently show that these values can counter the tendency to respond to the other with hostility when people are reminded of these values. The fact that it was only when these values were linked to the revered sacred texts in Studies 2 and 3, and that they had a peacepromoting effect only among high fundamentalists who likely were most invested in these texts, shows that personal relevance of these values is of great importance to these effects. Nonetheless, when personally relevant values that oppose violent responses are salient, both Americans and Iranians responded to reminders of death with decreased support for violence. These findings document the potential for diverse responses to existential fear among even those deeply embroiled in conflict and prone to respond to conflict with support for violence. They also suggest that there is no single inevitable response to reminders of death and that, as TMT suggests, such responses are guided by salient aspects of persons' cultural worldviews. Given the global conflict in which these two nations are currently embedded, these findings may be of great practical significance

From the perspective of TMT, cultural worldviews are complex multi-faceted constructions that result from an integration of the diverse information and experiences one has over the course of life. This view is highly consistent with the dual-component model of religious fundamentalism, which the present findings support and extend. They show that contextual factors can lead fundamentalists' to align their behavior with the compassionate content of their beliefs when that content is at odds with the defensive, authoritarian structure of their belief system. Study 1 found that the high fundamentalist's attitude reversal depends both on the increased salience of compassionate aspects of their belief content and heightened motivation to adhere to these salient beliefs, brought on by reminders of morality. Study 2 revealed the importance of the source of the compassionate values, such that compassionate values not attributed to a primary religious source failed to produce reduced support for aggression after MS. Study 3 replicated the effects found in Study 1 and 2 in a very different cultural and religious population and again highlighted the importance of the source of the compassionate values. The same compassionate values produced significantly higher levels of anti-Western sentiment in Study 3 when not associated with a religious source held sacred by the participants. Indeed the effect of MS increasing anti-Western attitudes in the non-Islamic compassionate values condition was greater in magnitude than the peace-promoting effect found in the Islamic compassionate values condition. This may reflect the threat posed by the two nations to each other at the time this study was conducted. Because all of the participants in our Iranian sample scored high on the RF measure, we are unable to draw conclusions regarding what effects these variables would have on non-fundamentalist Iranians.

These findings reflect the foundational and dominant protective role that the religious worldview plays for religious fundamentalists. When mortality concerns are heightened, perceived threats to faith in the absolute validity of this system, such as those provided by out-groups with alternate worldviews, are dealt with in an expedient and sometimes aggressive fashion. The price for this increased need to defend one's system of beliefs seems to be the neglect of many of the compassionate values espoused by the very religious doctrine one is attempting to defend. In the current studies, priming the otherwise neglected compassionate religious values in the context of the fundamentalist's sacred text seems to produce alternate defensive strategies in response to MS that entail living up to these standards. The fact that MS increased adherence to the compassionate values of their faith among high RFs is consistent with the role of death-related concerns in religion posited by TMT (Greenberg, Landau, Solomon, & Pyszczynski, 2005) and the particular role that fundamentalism plays in these processes, posited by Friedman and Rholes (2006), Friedman and Rholes (2008).

These findings suggest that goal of reducing religious violence in the world might be facilitated if the religious community emphasizes the core compassionate teachings of love and acceptance shared by Christianity, Islam and most of the world's other religions. Surely, the conflict in the Middle East is a complex one, driven by many factors, including very real concrete grievances and the psychological meanings that people on both sides attach to them, often aided by leaders who construe the conflicts as clashes of culture and religion or between good and evil (for a more thorough discussion, see Pyszczynski, Vail, & Motyl, in press). The present findings, along with those of Pyszczynski et al. (2006) suggest, however, that the United States and Iran have much more in common than many people in either country realize. Although these concrete grievances need to be resolved, the present studies illustrate how shared religious values might be helpful in reducing tensions between the two countries, which might be helpful in encouraging progress toward a resolution of other difficulties. Given the recent comments favoring improving the relationship between the United States and Iran made by the leaders of both countries (Clinton, 2009), the present findings may be especially timely.

# References

- Abdollahi, A. (2004). Effects of mortality salience on judgment, choice, self-esteem and behavior. In Poster session presented at the 18th International Society for the Study of Behavioural Development meeting, Ghent, Belgium (July).
- Abdollahi, A., Pyszczynski, T., Maxfield, M., & Luszczynska, A. (submitted for publication). Anxiety buffer disruption theory: The relationship between dissociation, anxiety-buffer functioning and severity of post-traumatic symptoms.
- Aiken, L. S., & West, S. G. (1991). Multiple regression: Testing and interpreting interactions. Thousand Oaks, CA: Sage Publications.
- Altemeyer, B. (2003). Why do religious fundamentalists tend to be prejudiced? International Journal for the Psychology of Religion, 13, 17–28.
- Altemeyer, B., & Hunsberger, B. (1992). Authoritarianism, religious fundamentalism, quest, and prejudice. International Journal for the Psychology of Religion, 2, 113-133.
- Altemeyer, B., & Hunsberger, B. (2004). A revised religious fundamentalism scale: The short and sweet of it. International Journal for the Psychology of Religion, 14, 47–54.
- Altemeyer, B., & Hunsberger, B. (2005). Fundamentalism and authoritarianism. In C. L. Park & R. F. Paloutzian (Eds.), *Handbook of the psychology of religion and spirituality* (pp. 378–393). New York: Guilford Press.
- Appleby, R. S. (2000). The ambivalence of the sacred: Religion violence and reconciliation. Lahman, MD: Rowman & Littlefield.
- Bushman, B. J., Ridge, R. D., Das, E., Key, C. W., & Busath, G. L. (2007). When god sanctions killing: Effect of scriptural violence on aggression. *Psychological Science*, 18, 204–207.
- Clinton, Ahmadinejad voice hopes for US-Iran talks (2009). Kansas City Star. <a href="http://www.kansascity.com/news/world/story/1028552.html">http://www.kansascity.com/news/world/story/1028552.html</a> Retrieved 16.02.09.
- Dechesne, M., Pyszczynski, T., Arndt, J., Ransom, S., Sheldon, K., van Knippenberg, A., et al. (2003). Literal and symbolic immortality: The effect of evidence of literal immortality on self-esteem striving in response to mortality salience. *Journal of Personality and Social Psychology*, 84, 722–737.
- Friedman, M., & Rholes, W. S. (2006). Successfully challenging fundamentalist beliefs results in increased death awareness. *Journal of Experimental Social Psychology*, 43, 794–801.
- Friedman, M., & Rholes, W. S. (2008). Religious fundamentalism and terror management theory. International Journal for the Psychology of Religion, 18, 36–52.

Fromm, E. (1950). Psychoanalysis and religion. Connecticut: Yale University Press.

- Fullerton, J. T., & Hunsberger, B. (1982). A unidimensional measure of Christian orthodoxy. *Journal for the Scientific Study of Religion*, 21, 317–326.
- Galliot, M. T., Stillman, T. F., Schmeichel, B. J., Maner, J. K., & Plant, E. A. (2008). Mortality salience increases adherence to salient norms and values. *Personality* and Social Psychology Bulletin, 34, 993–1003.
- Genia, V. (1996). I, E, quest, and fundamentalism as predictors of psychological and spiritual well-being. *Journal for the Scientific Study of Religion*, *35*, 56–64.
- Gopin, M. (2000). Between Eden and Armageddon: The future of world religion, violence, and peace-making. Oxford, UK: Oxford University Press.
- Greenberg, J., Landau, M. J., Solomon, S., & Pyszczynski, T. (2005). What is the primary psychological function of religion? In D. Wurff (Ed.), Handbook of the psychology of religion. London: Oxford University Press.
- Greenberg, J., Pyszczynski, T., & Solomon, S. (1986). The causes and consequences of the need for self-esteem: A terror management theory. In R. F. Baumeister (Ed.), *Public self and private self* (pp. 189–212). New York: Springer-Verlang.
- Greenberg, J., Solomon, S., & Arndt, J. (2008). A basic but uniquely human motivation: Terror management. In J. Y. Shah & W. L. Gardner (Eds.), Handbook of motivation science (pp. 114–134). New York, NY: Guilford Press.
- Greenberg, J., Solomon, S., Pyszczysnki, T., Rosenblatt, A., Burling, J., Lyon, D., et al. (1992). Why do people need self-esteem? Converging evidence that self-esteem serves an anxiety-buffering function. *Journal of Personality and Social Psychology*, 63, 913–922.
- Harmon-Jones, E., Simon, L., Greenberg, J., Pyszczynski, T., Solomon, S., & McGregor, H. (1997). Terror management theory and self-esteem: Evidence that increased self-esteem reduced mortality salience effects. *Journal of Personality and Social Psychology*, 72, 24–36.
- Henderson-King, D., Henderson-King, E., Bolea, B., Koches, K., & Kauffman, A. (2004). Seeking understanding or sending bombs: Beliefs as predictors of responses to terrorism. *Peace and Conflict: Journal of Peace Psychology*, 10, 67–84.

- Hood, R. W., Hill, P. C., & Williamson, W. P. (2005). The psychology of religious fundamentalism. New York, NY: Guilford Press.
- Jackson, L. M., & Essess, V. M. (1997). Of scripture and ascription: The relation between religious fundamentalism and intergroup helping. *Personality and Social Psychology Bulletin*, 23, 8893–8906.
- Juergensmeyer, M. (2003). Terror in the mind of God: The global rise of religious violence. Berkley, CA: University of California Press.
- Kirkpatrick, L. E., Hood, R. W., & Hartz, G. (1991). Fundamentalist religion conceptualized in terms of Rokeach's theory of the open and closed mind: A theoretical model and its implications for mental health. In M. Lynn & D. Moberg (Eds.), Research in the social scientific study of religion (pp. 318–321). Greenwhich, Conn: JAI press.
- Laythe, B., Finkel, D., & Kirkpatrick, L. E. (2001). Predicting prejudice from religious fundamentalism and right-wing authoritarianism: A multiple-regression approach. Journal for the Scientific Study of Religion, 40, 1–10.
- Lewis, B. (2003). The crisis of Islam: Holy war and unholy terror. New York: The Modern Library.
- Lifton, R. J. (1979/1983). The broken connections: On death and the continuity of life. New York: Basic Books.
- Mikulincer, M., Florian, V., & Hirschberger, G. (2003). The existential function of close relationships: Introducing death into the science of love. *Personality and Social Psychology Review*, 7, 20–40.
- Pichon, I., Boccato, G., & Saroglou, V. (2007). Nonconscious influences of religion on prosociality: A priming study. *European Journal of Social Psychology*, 37, 1032–1045.
- Pyszczynski, T., Abdollahi, A., Solomon, S., Greenberg, J., Cohen, F., & Weise, D. (2006). Mortality salience, martyrdom, and military might: The great Satan versus the axis of evil. *Personality and Social Psychology Bulletin*, 32, 525–537.
- Pyszczynski, T., Vail, K., & Motyl, M. (in press). The cycle of righteous killing: Psychological factors in it's prevention and the promotion of peace. In T. Pick, A. Speckhard (Eds.), Indigenous terrorism in Europe: A NATO conference.
- Pyszczynski, T., Greenberg, J., Solomon, S., Arndt, J., & Schimel, J. (2004). Why do people need self-esteem: A theoretical and empirical review. *Psychological Bulletin*, 130, 435–468.
- Pyszczynski, T., Solomon, S., & Greenberg, J. (2003). In In the wake of 9/11: The psychology of terror. Washington, DC: American Psychological Association.
- Richardson, L. (2006). What terrorists want: Understanding the enemy, confronting the threat. New York, NY: Random House.

- Rosenblatt, A., Greenberg, J., Solomon, S., Pyszczynski, T., & Lyon, D. (1989). Evidence for terror management theory I: The effects of mortality salience on reactions to those who violate or uphold cultural values. *Journal of Personality* and Social Psychology, 57, 681–690.
- Rowatt, W. C., & Franklin, L. M. (2004). Christian orthodoxy, religious fundamentalism, and right-wing authoritarianism as predictors of implicit racial prejudice. *International Journal for the Study of Religion*, 14, 125–138.
- Sacks, J. (2003). Dignity of difference: How to avoid the clash of civilizations. London, UK: Continuum.
- Shariff, A. F., & Norenzayan, A. (2007). God is watching you: Priming God concepts increases prosocial behavior in an anonymous economic game. *Psychological Science*, 18, 803–809.
- Silberman, I., Higgins, E. T., & Dweck, C. S. (2005). Religion and world change: Violence and terrorism versus peace. *Journal of Social Issues*, 61, 761–784.
- Solomon, S., Greenberg, J., & Pyszczynski, T. (1991). Terror management theory of self-esteem. In C. R. Snyder & D. R. Forsyth (Eds.), *Handbook of social and clinical psychology: The health perspective* (pp. 21–40). Elmsford, NY: Pergamon Press.
- Stern, J. (2003). Terror in the name of god: Why religious militants kill. New York: HarperCollins.
- USA more pessimistic on Iraq War (2006). USA Today. <a href="https://www.usatoday.com/news/washington/2006-12-11-iraq-poll\_x.htm">http://www.usatoday.com/news/washington/2006-12-11-iraq-poll\_x.htm</a>> Retrieved 23.10.07.
- Walsh, P. E., & Smith, J. L. (2007). Opposing standards within the cultural worldview: Terror management and American women's desire for uniqueness versus inclusiveness. *Psychology of Women*, 31, 103–113.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54, 1063–1070.
- Weise, D. R., Pyszczynski, T., Cox, C. R., Arndt, J., Greenberg, J., Solomon, S., & Kosloff, S. (2008). Interpersonal politics: The role of terror management and attachment processes in political preferences. *Psychological Science*, 19, 448–455.
- Winters, D. (2006). What would Jesus bomb? Right-wing authoritarianism, Sermon on the Mount values, and support for the war in Iraq. In Paper presented at the annual scientific meeting of the International Society of Political Psychology, Barcelona.
- Wylie, L., & Forest, J. (1992). Religious fundamentalism, right-wing authoritarianism and prejudice. Psychological Reports, 71, 1291–1298.