

LITERAL VS. SYMBOLIC IMMORTALITY: EXPLORING THE RELATIVE
STRENGTHS OF RELIGIOUS PATHS TO DEATH-TRANSCENDENCE

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Literal vs. Symbolic Immortality: Exploring the Relative

Strengths of Religious Paths to Death-Transcendence

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ABSTRACT

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According to terror management theory, religious worldviews provide protection from mortality concerns by providing feelings of literal immortality (conscious life after death) and symbolic immortality (the essence of one's self or identity living after death). Although research has shown that both feelings of literal and symbolic immortality provide protection from mortality concerns, no studies have sufficiently compared the relative strength of these forms of immortality. To investigate their relative strengths as death anxiety buffers, three studies made mortality (MS) or a control topic salient and then made salient aspects of religion that provide symbolic or literal immortality (or social affiliation—Study 3). Subsequently, religious worldview defense (Study 1) and search for meaning (Studies 2-3) were measured. In Study 1, results revealed that compared to the salience of literal immortality (and neutral condition), the salience of symbolic immortality increased religious worldview defense after MS. Studies 2 and 3 revealed that compared to the salience of literal immortality (Study 2) or the social aspects of religion (Study 3), the salience of symbolic immortality mitigated MS-engendered search for meaning. Taken together, these studies suggest that feelings of symbolic immortality generally provide a better defense against mortality concerns.

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INTRODUCTION

Religion... means immortality, and nothing else. –James (1902, p.524)

Terror management theory (TMT; Greenberg, Pyszczynski, & Solomon, 1986) states that in order to overcome the debilitating terror that would otherwise result from humans' unique awareness of the inevitability of death, people invest in personalized cultural worldviews that provide a sense of symbolic and/or literal immortality. The sense of symbolic immortality refers to feelings or beliefs that the essence of, or some part of, the self lives on after death (e.g., one's name, accomplishments, or social groups). The sense of literal immortality refers to feelings or beliefs that one will live on consciously after death in an afterlife.

In support of TMT, many studies have shown that secular worldviews (e.g., nationalistic beliefs) mitigate death anxiety by offering a sense of symbolic immortality (Greenberg et al., 1990). Other studies demonstrate that religious worldviews also mitigate death anxiety (e.g., Greenberg, Simon, Porteus, Pyszczynski, & Solomon, 1995); however, religious worldviews can provide both a sense of symbolic and literal immortality (Lifton, 1979/1983; Greenberg, Landau, Solomon, & Pyszczynski, in press), and thus it is not clear whether perceptions of symbolic or literal immortality are most responsible for mitigating concerns about death. Although some research has focused solely on literal immortality, showing that beliefs in the afterlife help manage death anxiety (e.g., Dechesne et al., 2003), no research has directly compared the relative efficacy of literal and symbolic immortality

in managing mortality concerns. The present research investigates whether the sense of symbolic or literal immortality is a more effective means to buffer death anxiety.

Terror Management Theory

Rooted in the work of Earnest Becker (1973), TMT (Greenberg et al., 1986) presupposes that, like all living beings, humans are motivated to preserve and protect their lives. That is, all species have evolved mechanisms or features (e.g., beak shape, fin size, protective cover, behavioral patterns) that allow them to successfully secure the necessary resources to stay alive. Humans, however, have uniquely evolved superior cognitive capacities that afford the ability to think about the self in time, learn from that past, make predictions about the future, and coordinate behavior to attain shared goals; and there is no doubt that these abilities have helped humans survive and prosper. Ironically, however, these same intellectual capacities also facilitate the awareness that death is certain, unpredictable, and often uncontrollable. According to the theory, this awareness of mortality juxtaposed with strivings for self-preservation creates the potential for debilitating anxiety.

However, on a day-to-day basis people are not constantly fretting about death. According to TMT (Greenberg et al., 1986), people are able to avoid the anxiety that death-awareness may engender by maintaining a sense of self-transcendence that is facilitated and sustained with faith in personalized cultural worldviews. Specifically, cultural worldviews are humanly constructed and socially validated sets of beliefs about the nature of reality (see Berger & Luckmann, 1967 for an extended discussion of the social creation of reality). Furthermore, cultural worldviews provide a set of ostensibly objective behavioral and attitudinal standards for what is valuable, worthy, and moral, and, critically,

they provide a sense of self-transcendence in the form of literal or symbolic immortality to those who perceive themselves to be living up to these standards. In short, as anthropologists and social theorists have long noted (e.g., Douglas, 1970), the reality and rituals of cultural worldviews differ greatly from society to society; however, cultural worldviews all serve a similar function. Specifically, in line with the writing of Paul Tillich (1952), Otto Rank (1931/1961), and Earnest Beck (1971), TMT emphasizes that worldviews function in large part to help people manage the anxiety or distress that could manifest as a result the knowledge of their mortality.

In order to test the core assertion of TMT that transcendence-providing worldviews buffer the potential for death anxiety, numerous studies have employed the mortality salience hypothesis (Rosenblatt et al., 1989), which states that if culturally derived structures and sources of worth provide a sense of self-transcendence and thus buffer death anxiety, then conditions that render salient death-related cognition (mortality salience or MS) should increase the degree to which people bolster and defend these structures. In support of this general hypothesis, MS inductions have increased liking of those who share important cultural beliefs and traditions and decreased liking for those who do not share the same beliefs (Greenberg et al., 1990); decreased the likelihood of irreverently using sacred cultural icons (e.g., American flag, crucifix; Greenberg et al., 1995); increased aggression towards those perceived as threats to important cultural beliefs (McGregor et al., 1998); increased efforts to deny similarities to other biological (non-cultural) organisms (Goldenberg, Pyszczynski, Greenberg, Solomon, Kluck, & Cornwell, 2001); increased beliefs that culturally-derived social groups are real entities (Castano, Yzerbyt, Paladino, & Sacchi, 2002); increased stereotypic thinking and preferences for stereotype-confirming

individuals (Schimel et al., 1999); increased efforts to perceive the cultural world as highly structured and orderly (Landau et al., 2004); and increased desire for material wealth when wealth is culturally valued (Kasser & Sheldon, 2000). These studies have induced MS in a number of ways (e.g., writing about one's own mortality, being primed with death-related imagery or words, standing in front of a funeral home, engaging in death-related health screenings) and have been compared to other threatening and aversive inductions (e.g., uncertainty, failure, public speaking, social exclusion, paralysis, dental pain), thus demonstrating that MS effects are above and beyond the effects of other bodily, self, and social threats. Furthermore, analyses have shown that participants' current affective states do not account for the effects of MS (for more extensive reviews see Solomon, Greenberg, & Pyszczynski, 2004; Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004). In sum, numerous studies have demonstrated that people invest in cultural worldview-related structures in response to conditions that heighten the awareness of mortality.

Religion as a Means to Manage Death Anxiety

Religious worldviews in particular have received considerable amount of attention as a means to face the inevitability of death (Greenberg et al., in press; Landau, Greenberg, & Solomon, 2004; Vail et al., 2010) and many theorists have asserted that religion functions to assuage anxiety concerning death (e.g., Allport, 1950; Feuerbach, 1843/1980; Groth-Marnat, 1992; James 1902; Kierkegaard, 1843/1955; Lifton, 1979/1983; Rank, 1931/1961; Unamuno, 1921/1954; Wheeler, 1971). Bronislaw Malinowski's statement that "Death... is perhaps the main source of religious belief," (1965, p. 71) echoes throughout the literature. Supporting these claims, a large body of research demonstrates that religion does reduce concerns about death. At the core of this research is a bulk of studies,

conducted across numerous religions, cultures, and age groups, showing that increased religiosity and religious involvement are associated with reduced fear and anxiety about death (Feifel & Nagy, 1981; Gibbs & Achterberg-Lawlis, 1978; Spilka, Stout, Minton, & Sizemore, 1977; Swenson, 1961; Templer, 1972, Wittkowski & Baumgartner, 1977; see also Gartner, Larson & Allen, 1991 for a review of similar findings).

More recent experimental work derived specifically from TMT has more directly shown that death concerns motivate religious attitudes and behavior. Specifically, compared to control conditions, MS: increased Christian participants' affinity for another Christian person and decreased their affinity for a Jewish person (Greenberg et al., 1990); increased investment in core religious symbols (crucifix; Greenberg et al., 1995); and increased self-reported religiosity and increased belief in religiously caused supernatural occurrences (Norenzayan & Hansen, 2006). Similarly, research has shown that challenging participants religious beliefs increases death thoughts (Freidman & Rholes; 2007; Schimel, Hayes, Williams, & Jahrig 2007). Taken, together, this work demonstrates that religion helps people manage death concerns. However, these studies do not empirically specify why religion serves this existential function.

Literal vs. Symbolic Immortality

From a terror management perspective, religion mollifies death concerns by providing means to self-transcendence. However, religious worldviews are distinct from other (secular) worldviews in that they can provide feelings of literal immortality, in addition to symbolic immortality. Literal immortal refers to literally living forever, even after physical death on earth. The concept of literal immortality is not found among non-religious worldviews and nearly all religions express some belief in the afterlife (Burkert,

1996); however, the form of literal immortality varies between different religions beliefs (Lewis, 1994). Typically, the part of the self thought to live eternally is a mindful or conscious being, such as a soul or spirit. In some cases, this being is believed to reside in non-physical places like heaven, or hell, but other beliefs, such as those in reincarnation, assert that the soul will reside in other physical objects (e.g., animals, other humans, or stars). The sense of literal immortality is attained by adhering to religious beliefs and following standards provided by religious rules. For example, in many Christian perspectives, “sin” is considered a breach of biblical rules (worldview standards), and sin is believed to result in at least temporarily loss of eligibility for literal immortality in Heaven (e.g., see 1 Cor. 6:9-10; Ezek. 18:4; Romans. 6:23). In other words, following the standards of one’s religious worldview instills the sense of literal immortality.

However, as noted, religion, like secular worldviews, may also provide comfort from death concerns by imbuing life with a sense of symbolic immortality. Symbolic immortality refers to one’s symbolic self, or the essence of one’s self and identity living on after death. According to TMT, the sense of symbolic immortality is nurtured by maintaining a sense of self-worth or significance. In other words, the sense of symbolic immortality is sustained to the extent that one feels that s/he is a significant person or a significant contributor to a broader collective that is more enduring than his or her physical self. From this perspective, it is useful to discuss symbolic immortality in two ways: individual and collective. The sense of individual symbolic immortality is gained from feelings that one’s individual self has a significant impact on the world that will continue beyond physical existence. This can be gained through personal achievements and recognition in which one’s name or contributions are widely recognized (and will be

remembered after death), and cultural worldviews provide the criteria to achieve such lasting fame and social influence. For instance, in many cultures, secular worldviews often value those who are athletic and those who can entertain. Likewise, other professional works, such as artistic or scientific contributions, can foster an enduring sense of symbolic self. Religious worldviews also give people the opportunity to be important leaders (e.g., minister, priest) and make notable individual contributions. Additionally, Batson & Stocks, (2004) noted that religious beliefs often emphasize the value and significance that all individuals possess, and they provide additional standards of worth, such as devotion, piety, and service. Therefore it is possible for those who are not well known to have a sense of individual symbolic immortality by simply feeling or believing that their existence has significantly influenced the world or the lives of those around them. In sum, to the extent that people make personal contributions that will endure beyond their own lifetime or feel that their existence will continue to have a significant impact long into the future, they gain feelings of individual symbolic immortality.

Similarly, people can gain a sense of collective symbolic immortality by feeling that they contribute to and are part of larger social groups (e.g., families, nations, religious groups, educational institutions) that transcend any one person's mortal existence. Because it is easy to tangibly conceive social groups as bigger and more lasting than their individual members, participation in social groups can effectively provide a sense of collective self-transcendence. Indeed, research focused on the collective self demonstrates that MS increases ingroup identification and entativity (the perception that groups are real entities; Castano et al., 2002), and perceptions of future collective continuity (the belief that one's ingroup will thrive long into the future; Sani, Herrera, & Bowe, 2009). Members of social

groups also share critical aspects of their worldview, such as shared morals and values. This helps bolster and provide validation for groups' standards of worth and members' personal judgment of self-significance. Thus, as social entities, religious groups attach individuals to a broader structure that transcends the boundaries of time and construing the self at this broader level provides a sense of collective symbolic immortality.

In short, TMT asserts that religion provides security from death anxiety by providing feelings of literal and symbolic immortality. However, feelings of literal and symbolic immortality are clearly different and it is possible that one form of immortality is a more effective terror management strategy. For example, it has been suggested that literal immortality may be a more potent death-anxiety buffer (e.g., Greenberg, et al., in press). Specifically, this position proposes that the sense of symbolic immortality is never satisfactory because it does not actually guarantee a state of consciousness after death. Further, this perspective asserts that those who attain a sense of immortality in only symbolic ways "often feel compelled to strive for more and more and to protect from loss or degradation of one's mundane grounds for immortality" (p. 8). However, those who believe that they will literally live on after death have "compelling means for death transcendence," and "seem to be less intent on denying the fragility and transience of earthly life, and less subject to the fear that accompanies this knowledge" (p. 9). This is good reasoning; if one believes that he or she will never actually experience conscious death, there may be no need to fear death or strive for symbolic immortality.

This position is consistent with that of the Spanish philosopher Miguel de Unamuno (1954) who asserted that striving for literal immortality is at the core of religion. He specifically states that "the longing for the immortality of the soul, for the permanence, in

some form or another, of our personal and individual consciousness, is as much of the essence of religion as is the longing that there may be a God” (p. 221), and “This cult... of immortality, originates and preserves religions” (p. 41). He further implies that symbolic immortality is a consolation prize compared to literal immortality: “I cannot be persuaded that he who has once... cherished the belief in the immortality of the soul, will ever find peace without it,” (p. 101), and that “When doubts invade us and cloud our faith in the immortality of the soul, a vigorous and painful impulse is given to the anxiety to perpetuate our name and fame, to grasp at least a shadow of immortality. And hence this tremendous struggle to singularize ourselves, to survive in some way in the memory of others and of posterity. It is this struggle, a thousand times more terrible ...” (p. 52).

Research does demonstrate that that the sense of literal immortality helps manage death anxiety. For instance, greater beliefs in an afterlife are associated with decreased concerns about death (Alvarado, Templer, Bresler, & Thomas-Dobson, 1995; Jeffers, Nichols, & Eisdorfer, 1961). Additionally, Shoenrade (1989) showed that among participants with strong afterlife beliefs, confronting death thoughts increased positive and negative perspectives of death. This effect, however, was not observed among those with weaker afterlife beliefs. Shoenrade thus suggested that strong afterlife beliefs may allow people to reconcile the negative aspects of death with the positive aspects. Similarly, Osarchuk and Tatz (1973) exposed participants that did and did not believe in the afterlife to a death threat, a shock threat, or a control treatment. Among participants that believed in the afterlife, the death threat increased the extent of their afterlife beliefs. Thus, it appears that people turn toward their afterlife beliefs when threatened by death thoughts. Additionally, across three studies, Dechesne and colleagues (2003) showed that providing

participants with evidence that there is an afterlife buffers the effects of MS on strivings for symbolic immortality. Specifically, before participants completed an MS or a control prime, they read either an article presenting medical evidence that there is an afterlife, or that there is no afterlife (or a neutral article; Study 2). Results showed that participants who read the article providing evidence that there is an afterlife reduced the need to strive for self-worth and defend non-religious sources of symbolic immortality after MS.

Taken together, these studies demonstrate that the sense of literal immortality does help manage death anxiety. However, they do not demonstrate that the sense of literal immortality buffers death anxiety to a greater extent than symbolic immortality. In fact, a multitude of TMT studies have focused only on secular worldviews, thus demonstrating that the sense of symbolic immortality also helps buffer death anxiety (for a review see Greenberg, Solomon, & Arndt, 2008). For example, MS instigates defense of secular worldviews that do not provide literal immortality, such as educational institutions (e.g., Dechesne, Janssen, & van Knippenberg 2000; Juhl & Routledge, in press) and nationalities (e.g. Greenberg et al., 1990, 1995; Routledge & Arndt, 2008). Additionally, studies show that undermining non-religious worldviews also heightens the accessibility of death thoughts (Schimel, et al., 2007). Moreover, Florian and Mikulincer (1998) focused specifically on symbolic immortality and found that participants with a stronger sense of symbolic immortality, as assessed by Mathews and Kling's (1988) symbolic immortality scale, were less fearful of death. In another study, these researchers found that participants with a strong sense of symbolic immortality were less defensive in response to MS. Thus, symbolic immortality is also an effective terror management strategy.

Furthermore, despite the common assertion that literal immortality is the primary means by which religion buffers death anxiety, a compelling argument could be made that symbolic immortality is more primary. This may be what Lifton (1979/1983) meant when stating “the theological mode [of immortality] need not rely on a literal vision of immortal soul or afterlife... And even in the case of Christianity it is probably less fundamental than the quality of spiritual achievement symbolized in the Christ story.” (p. 20). Supporting this is the fact that symbolic immortality is the type of immortality that religious worldviews have in common with secular worldviews and there are plenty of people who do not subscribe to religious worldviews (e.g., atheists) and do not believe there is an afterlife, but still appear to be able to manage death concerns through symbolic routes alone. Thus, like secular worldviews, it is plausible that symbolic immortality may be the primary means that religious worldviews help manage death concerns. Similarly, the example of a psychologically healthy atheist suggests that some people manage death anxiety with the sense of symbolic immortality alone, but because there are no worldviews that only provide the sense of literal immortality (i.e., religion provides both forms of self-transcendence), it is possible that nobody manages death anxiety with the sense of literal immortality alone. Furthermore, it is plausible to attain somewhat tangible evidence of one’s broader sense of symbolic self. That is, one can see the continuity and prosperity of their social groups, and their personal and collective impact on the world. However, evidence for literal immortality is much harder, if not impossible, to come by. Thus, it could be argued that the leap of faith required to have the sense of symbolic immortality is easier to make than the leap of faith required to have the sense of literal immortality. Likewise, it is possible that literal immortality (eternity) may be psychologically harder to understand or grasp than the

continuity of one's group or the lasting impact of one's contributions. Therefore, there are also compelling reasons to predict that symbolic immortality is a more potent terror management strategy than literal immortality.

In sum, empirical evidence shows that literal immortality and symbolic immortality can help buffer death anxiety and that faith in religious worldviews helps keep death anxiety at bay. However, it is not clear whether the facets of religion that provide the sense of literal immortality or the facets that provide the sense of symbolic immortality provide a stronger defense against death anxiety, and no research has directly compared the two forms of immortality as buffers of existential threat. There are theoretically and empirically compelling reasons to predict that the sense of literal immortality is a more effective death-anxiety buffer, but there are also perhaps equally compelling reasons to predict that the sense of symbolic immortality is a more effective death-anxiety buffer. Thus, the current research was designed to directly compare the death-anxiety buffering power of these distinct forms of self-transcendence.

The Present Research

As a means to directly compare the effectiveness of literal and symbolic immortality as terror management strategies three studies were conducted in which the features of religions that provide symbolic or literal immortality (or social affiliation—Study 3) were made salient after death thoughts (or a control topic) were activated. Subsequently, aggressive religious worldview defense (Study 1) and search for meaning in life (Studies 2-3), were assessed. It was hypothesized that the salience of the type of immortality that is a more effective death-anxiety buffer would increase aggressive

religious defense after MS and reduce MS-engendered search for meaning in life to a greater extent than the less effective type of immortality.

PILOT STUDY A AND B

Because religion is the only worldview domain that provides both the sense of literal and symbolic immortality, these forms of immortality were made salient by having participants read an essay that highlights the ways in which religion provides literal immortality or the ways it provides symbolic immortality. However, it is important to demonstrate that these essays heighten participants' feelings of literal immortality or symbolic immortality relative to one another. To establish this, two pilot studies were conducted in which participants read either the literal immortality essay or the symbolic immortality essay. In Pilot Study A participants subsequently completed a measure which assessed the extent to which the essay they had read heightened a sense of literal immortality, while participants in Pilot Study B subsequently completed a measure which assessed the extent to which the essay they had read heightened a sense of symbolic immortality. In Pilot Study A, it was predicted that those who read the literal immortality essay would have a greater sense of literal immortality than those who read the symbolic immortality essay. In Pilot Study B, it was predicted that those who read the symbolic immortality essay would have a greater sense of symbolic immortality than those who read the literal immortality essay.

Pilot Study A Method

Participants and Design

Fifteen Introductory Psychology students (3 female, 11 male, 1 unknown) from North Dakota State University (NDSU) participated in exchange for course credit.¹

¹ Participants were not preselected for type or degree of religiosity in the Pilot Studies, or in Studies 1-3, because we wanted to see how the salience of literal and symbolic immortality affected people of all faiths and of all degrees of religiosity, not just those who are particularly devout. Also, other studies conducted with this population by the current researchers indicate that typically over 90 percent of potential participants

Participants were randomly assigned to one of two immortality salience conditions (literal vs. symbolic) and the extent to which the essay they read heightened a sense of literal immortality was measured. All measures and conditions were administered in a laboratory, which consisted of partitioned cubicles to allow for privacy. This lab space was used for all remaining studies.

Materials and Procedure

Participants were first told that they would read an essay, ostensible written by another student at NDSU, that was being pretested for future research. However, the essay was designed to manipulate the salience of the aspects of religion that provide literal immortality or the aspects of religion that provide symbolic immortality. These essays were written in a manner to be generally applicable to almost any faith and they did not criticize or undermine any religious traditions. Participants in the literal immortality condition read an essay that made salient and affirmed the ways in which religion provides literal immortality. Specifically it stated:

As a person who has always attended church, I have been interested in what makes religious faith important. Religion, of course, does a number of important things. However, I think that the most important thing about religious faith is that it makes us realize that our life on Earth is only part of our existence and that there will be an afterlife. For example, as a Christian, I know that my soul will keep living after my body dies. On Earth I am just a physical being, but as a Christian, I have a soul and I am part of a world that will last forever. My faith helps me realize that part of me will continue to exist eternally because my spirit will be preserved. Thus, the current life is just a very small phase of life which marks the start of a much greater journey. In sum, to me, this is why religion is so important. Many things come and go, but religious beliefs help me to understand that there is more to life than this world.

identify with a religious doctrine (particularly Christianity), thus limiting the influence of non-religious participants on the observed effects. Additionally, we did not measure religiosity because we did not want participants to have religious-related thoughts, other than those instigated by the experimental conditions that manipulate the salience of literal and symbolic immortality.

Participants in the symbolic immortality condition read an essay that made salient and affirmed the ways in which religion provides symbolic immortality. Specifically it stated:

As a person who has always attended church, I have been interested in what makes religious faith important. Religion, of course, does a number of important things. However, I think that the most important thing about religious faith is that it gives us the opportunity to be an essential part of an important group that goes beyond the boundaries of time. For example, as a Christian, I am part of a bigger group of people that will continue to thrive and make important contributions to society for centuries to come. I am just an individual, but as a Christian, I am part of something larger, more significant and, most importantly, more lasting. My faith has been around for thousands of years and is still going strong. Since I am part of this group, part of me will continue to exist because my Christian community will be preserved. In sum, to me, this is why religion is so important. Many things come and go, but our religious beliefs continue to prosper, and thus so do its members.

After reading one of these essays, all participants completed 4 items that assessed the extent to which the essay they read heightened a sense of literal immortality. Specifically, they indicated, on a 9 point scale, the extent to which they agreed (1 = *totally disagree*, 9 = *totally agree*) that the essay made them feel 1) that their soul will live on after their death, 2) that their conscious thoughts will live on after their death, 3) that there is an afterlife, and 4) comforted because they will continue to live after they have died. This measure demonstrated good reliability $\alpha = .97$, and was averaged to yield literal immortality scores ($M = 6.62$, $SD = 1.45$).

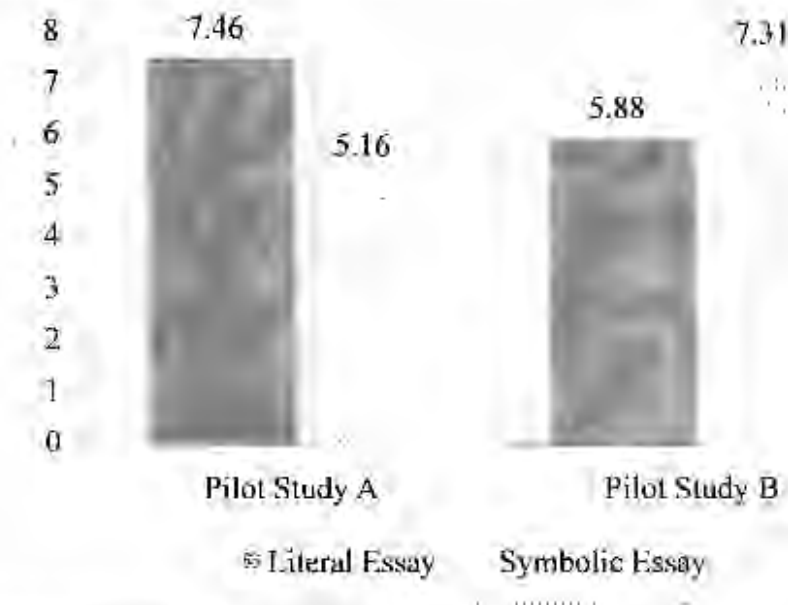
Results

To test the hypothesis that those who read the literal immortality essay would have a greater sense of literal immortality than those who read the symbolic immortality essay, literal immortality scores were submitted to an ANOVA (immortality salience: literal vs. symbolic). As predicted, those who read the literal immortality essay had a significantly

higher sense of literal immortality than those who read the symbolic immortality essay

$F(1, 13) = 4.56, p = .05$ (see Figure 1 for means).

Figure 1: The Effects of the Literal and Symbolic Immortality Essay on Feelings of Literal and Symbolic Immortality



Note: Higher scores reflect increased feelings of immortality

Pilot Study B Method

Participants and Design

Sixteen Introductory Psychology students (8 female, 6 male, 2 unknown) from NDSU participated in exchange for course credit. Participants were randomly assigned to one of two immortality salience conditions (literal vs. symbolic) and the extent to which the essay they read heightened a sense of symbolic immortality was measured.

Materials and Procedure

With one exception the materials and procedure were identical to Pilot Study A. Specifically, after reading the literal or symbolic immortality essay, participants completed

4 items that assessed the extent to which the essay they read heightened a sense of symbolic immortality. Specifically, they indicated, on a 9 point scale, the extent to which they agreed (1 = *totally disagree*, 9 = *totally agree*) that the essay made them feel 1) that their social groups will live on after their death, 2) that their contributions will live on after their death, 3) that the things that are important to them (e.g., traditions, institutions) will live on after their death, and 4) comforted because part of their identity will live on after their death. This measure demonstrated good reliability $\alpha = .84$, and was averaged to yield symbolic immortality scores ($M = 6.23$, $SD = 2.26$).

Results

To test the hypothesis that those who read the symbolic immortality essay would have a greater sense of symbolic immortality than those who read the literal immortality essay, symbolic immortality scores were submitted to an ANOVA (immortality salience: literal vs. symbolic). As predicted, those who read the symbolic immortality essay had a significantly higher sense of symbolic immortality than those who read the literal immortality essay $F(1,14) = 5.45$, $p = .04$ (see Figure 1 for means).

These pilot studies demonstrated that the literal essay instigates a sense of literal immortality relative to the symbolic essay and that the symbolic essay instigates a sense of symbolic immortality relative to the literal essay.

STUDY 1

The purpose of Study 1 was to explore the extent to which MS interacts with the salience of literal and symbolic immortality on aggressive religious worldview defense. Specifically, mortality or a control topic was made salient, then using the above essays, the aspects of religion that provide the sense of literal immortality or symbolic immortality were made salient. Also, there was an additional condition in which participants read an essay that discussed a religiously neutral topic. Subsequently, the extent to which participants were willing to aggress against others in order to defend their religious beliefs was measured.

It is hypothesized that after MS, the type of immortality that buffers death anxiety to a greater extent will increase aggressive religious worldview defense more than the other type of immortality. This prediction is based on the contingency hypothesis proposed by Dechesne and colleagues (2003). According to this hypothesis, if information made salient in a study is related to the behavior or attitude being studied (the dependent measure), then the information will enhance the effects of MS on the behavior or attitude. This hypothesis is contrasted with the substitution hypothesis, which states that if the information made salient is not related to the behavior or attitude being studied, then the information will reduce the effects of MS on the behavior or attitude. Because MS typically increases worldview defense and because the information being made salient in the current study (aspects of religion that provide literal or symbolic immortality) is related to the dependent measure (religious defense), it is predicted that the aspect of religion (literal or symbolic immortality) that manages death concerns to a greater extent will increase religious defense after MS. Stated differently, because the essays making literal and symbolic immortality

salient are within the same worldview domain (religion) as the dependent measure, the essay that makes salient the type of immortality that buffers death anxiety to a greater extent (the aspect that is worth defending more) will increase religious worldview defense.

Method

Participants and Design

Seventy Introductory Psychology students (42 female, 28 male) from NDSU participated in a study ostensibly examining the relationship among personality characteristics in exchange for course credit. Participants were randomly assigned to a 2 (MS: MS vs. pain) x 3 (immortality salience: literal vs. symbolic vs. neutral) factorial design and aggressive religious worldview defense was assessed. This cover story was used in all subsequent studies.

Materials and Procedure

Mortality Salience Manipulation. After responding to several filler personality questionnaires designed to boost the cover story, participants completed “The Projective Life Attitudes Assessment”, which was ostensibly another personality questionnaire. However, this questionnaire served as the MS manipulation (Rosenblatt et al., 1989). Specifically, participants in the MS condition answered two open-ended questions: “Please briefly describe the emotions that the thought of your own death arouses in you.” and “Jot down, as specifically as you can, what you think will happen to you as you physically die and once you are physically dead.” Participants in the control condition answered two parallel questions regarding the experience of extreme pain.

Delay. Next, participants completed the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). This measure served as a delay between the

MS manipulation and the depend measure. This delay task was necessary because research supporting the dual defense model of TMT (for a review see Pyszczynski, Greenberg, & Solomon, 1999; Arndt, Cook, & Routledge, 2004), demonstrates that typical MS effects are observed when mortality thoughts are outside of focal attention (when a delay follows MS or subtle MS primes are used). Additionally, this measure was used to examine the effects of MS on positive and negative affect. Specifically, on this measure, participants indicated the extent to which each of 10 positive affect words and 10 negative affect words reflected how they felt right at that moment (1 = *very slightly or not at all*, 5 = *extremely*). Both the positive and negative subscales were reliable and were thus averaged to produce positive affect ($\alpha = .93$, $M = 2.91$, $SD = .95$) and negative affect ($\alpha = .81$, $M = 1.60$, $SD = .57$) scores.

Immortality Salience Manipulation, Dependent Measure. Participants then read either the literal immortality essay or the symbolic immortality essay previously pilot tested, or a religiously neutral essay that discussed the campus bus system. This bus essay contained statements such as “It is important that the university buses have many routes throughout the city so that students have close access to the buses.” Like the literal and symbolic immortality essays, participants were told that this essay was written by another NDSU student.

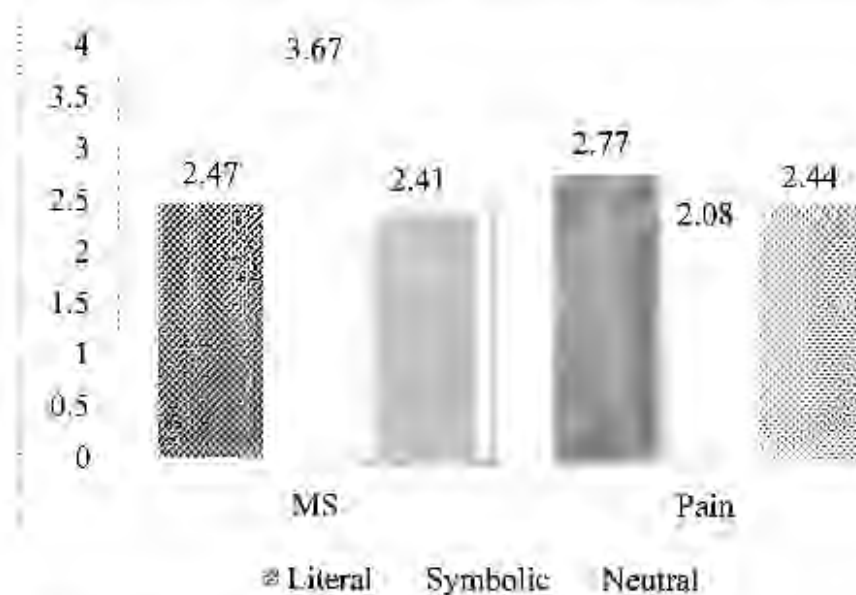
Specifically, participants indicated the extent to which they agreed, on a 9 point scale (1 = *totally disagree*, 9 = *totally agree*), with two statements that they would 1) physically and 2) emotionally hurt someone to defend their religion. After reading one of these essays indicated the extent to which they agreed, on a 9 point scale (1 = *totally disagree*, 9 = *totally agree*), with ten statements that they would

physically and emotionally hurt (e.g., humiliate, insult, scare) someone in order to defend their religion. Responses on these items were average to produce aggressive religious defense scores ($\alpha = .93$, $M = 2.66$, $SD = 1.38$).

Results and Discussion

To explore which type of immortality motivates a greater amount of religious worldview defense after MS, aggressive religious defense scores were submitted to a 2 (MS: MS vs. pain) x 3 (immortality salience: literal vs. symbolic vs. neutral) ANOVA. There were no main effects of MS or immortality, however, there was a significant MS x immortality salience interaction $F(2, 64) = 4.61$, $p = .01$ (see Figure 2 for means).²

Figure 2: The Effects of MS and Immortality Salience on Aggressive Religious Defense in Study 1



Note: Higher scores reflect increased aggressive religious defense

² Gender did not moderate the effects in any studies (all p 's > .54).

To explore the nature of this interaction, pairwise comparison tests were conducted between those who read the literal, symbolic, and neutral essays within the MS and control conditions. Within the MS condition, those who read the symbolic immortality essay expressed significantly more aggressive religious defense than those who read the literal immortality essay $F(1, 21) = 4.21, p = .05$, and those who read the neutral essay $F(1, 21) = 7.30, p = .01$. There was no difference between those who read the literal and neutral essays $F(1, 22) = .01, p = .92$. Within the pain condition there were no differences between those who read the three essays, all $ps > .14$. Additionally, pairwise comparison tests were conducted between the MS and the control condition, within the literal, symbolic, and neutral essay conditions. Within the symbolic essay condition, participants in the MS condition expressed significantly more aggressive religious worldview defense than those in the control condition $F(1, 21) = 11.25, p < .01$. No other effects were significant, all $ps > .36$.³

This pattern of results demonstrates that MS increases the extent to which people are willing to aggress against others as a means to defend their religion when they read the symbolic immortality essay but not when they read the literal immortality essay or the neutral essay. As previously noted, because the information about immortality that was made salient was within the same domain as the measure of defense, it is useful to interpret these results in terms of the contingency hypothesis. This interpretation suggests that the symbolic immortality essay was making salient the features of religion that merit defense, and thus the sense of symbolic immortality is a more potent death-anxiety buffer than the sense of literal immortality. Although this is a useful framework for interpreting the current

³ As in previous research, MS had no effect on positive or negative mood in any studies (all $ps > .15$).

results, there is an alternative explanation. Specifically, the current study only demonstrates that the symbolic immortality essay is responsible for the observed increase in defense after MS and it is possible that the symbolic immortality essay actually undermined religion's value as an existential resource and consequently caused participants to be more defensive. Although this alternative explanation does not follow from the contingency or substitution hypotheses, I conducted another study using this same basic design as a means to rule out this alternative explanation.

STUDY 2

Study 1 established that the symbolic immortality essay increased religious defense after MS. In line with the contingency hypothesis, I propose that this pattern indicates that symbolic immortality is the more potent death-anxiety buffer because when the symbolic immortality benefits of religion were highlighted, people were defensive of their religion after MS. However, in the current study, to rule out the alternative possibility that this heightened defense is merely a compensatory response to the symbolic immortality essay undermining religion's merit, I switched to a dependent measure that is (a) not inherently connected to religion and (b) would allow the assessment of the extent to which the symbolic and literal immortality essays are in fact buffering the effects of MS. Specifically, in Study 2 the extent to which participants are searching for meaning in life (Steger, Frazier, Oishi, & Kaler, 2006) was measured as the dependent variable.

Although no research to date has directly tested the effects of MS on search for meaning, numerous studies (see introduction) demonstrate that people increasingly cling to sources of transcendent meaning when death thoughts are made salient. Additionally, MS has been shown to increase scores on an identity seeking scale (McGregor, Zanna, Holmes, and Spencer, 2001), a construct related to search for meaning. Furthermore, MS has been shown to decrease scores on measures of well-being (Routledge, Arndt, Sedikides, & Wildschut, 2008; Routledge & Juhl, in press; Routledge, Ostafin, Juhl, Sedikides, Cathey, & Liao, 2010), and low well-being scores have been associated with increased search for meaning (Steger, et al., 2006; Steger, Kashdan, Sullivan, & Lorentz, 2008). Thus, it is predicted that MS will increase participants search for meaning as a means to counter existential concerns about mortality, unless an adequate form of self-transcendence is made

salient. If the results of Studies 1 are due to the symbolic essay making salient the aspect of religion critical to managing death concerns then the symbolic essay will buffer the effects of MS-engendered search for meaning to a greater extent than the literal essay. Conversely, if the results of the first study are due to the symbolic essay undermining the value of religion, then the symbolic immortality essay will not buffer the effect of MS on search for meaning to a greater extent than the literal immortality essay.

Method

Participants and Design

Forty-three Introductory Psychology students (24 female, 19 male) from NDSU participated in exchange for course credit. Participants were randomly assigned to a 2 (MS: MS vs. pain) x 2 (immortality salience: literal vs. symbolic) factorial design and search for meaning in life was measured.

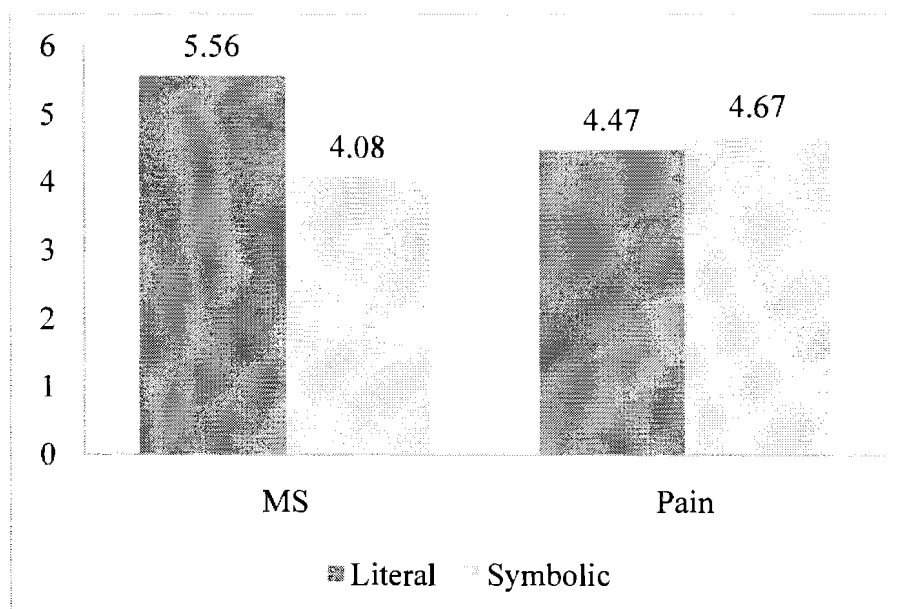
Materials and Procedure

With two exceptions the materials and procedure were identical to Study 1 (positive affect: $\alpha = .88$, $M = 2.84$, $SD = .80$; negative affect $\alpha = .79$, $M = 1.75$, $SD = .62$). First, there was no neutral essay condition. Second, the dependent measure used in this study was the five item Search for Meaning in Life subscale of Steger and colleagues' (2006) Meaning in Life questionnaire. This measure asked participants to indicate the extent to which statements such as "I am looking for something that makes my life feel meaningful" and "I am seeking a purpose or mission for my life" are true on a 7 point scale (1 = *Absolutely Untrue*, 7 = *Absolutely True*). Responses on these items were averaged to produce search for meaning scores ($\alpha = .82$, $M = 4.71$, $SD = 1.08$).

Results and Discussion

To test whether MS increases search for meaning and whether this effect is mitigated by the salience of symbolic immortality, search for meaning scores were submitted to a 2 (MS: MS vs. pain) x 2 (immortality salience: literal vs. symbolic) ANOVA. There was no main effect of MS, but there was a significant effect of immortality salience $F(1, 39) = 4.67, p = .04$, such that those who read the literal immortality essay ($M = 5.02, SD = .91$) expressed higher levels of searching for meaning than those who read the symbolic essay ($M = 4.39, SD = 1.18$). However, this was qualified by a significant MS x immortality salience interaction $F(1, 39) = 8.03, p = .01$ (see Figure 3 for means).

Figure 3: The Effects of MS and Immortality Salience on Search for Meaning in Life in Study 2



Note: Higher scores reflect increased search for meaning in life

To explore the nature of this interaction, pairwise comparison tests were conducted between the literal and symbolic immortality conditions, within the MS and control

conditions. Within the MS condition, those who read the literal immortality essay expressed significantly higher search for meaning than those who read the symbolic immortality essay $F(1, 19) = 11.91, p < .01$. Within the control condition there were no differences between those who read the literal and symbolic immortality essays, $F(1, 20) = .24, p = .63$. Additionally, pairwise comparison tests were conducted between the MS and control conditions within the literal and symbolic essay conditions. For those who read the literal essay, participants in the MS condition had significantly higher search for meaning scores than those in the control condition $F(1, 20) = 12.20, p < .01$. For those who read the symbolic essay, there was no difference between participants in the MS and control conditions $F(1, 19) = 1.34, p = .26$.

This pattern of results shows that MS increased search for meaning when literal immortality was made salient but not when symbolic immortality was made salient. Thus, relative to the literal immortality essay, the symbolic essay buffered the effects of MS on increased search for meaning. This pattern demonstrates that symbolic immortality sufficiently mitigates the need to engage in MS aroused existential strivings but literal immortality does not. Further, this pattern of results suggests that in Study 1, the symbolic immortality essay was making salient the aspect of religion that merits defense.

In sum, after MS, when participants' attention was focused on the elements of religion that provide symbolic immortality, they more aggressively defended their religion (Study 1) but did not need to search elsewhere for existential comfort (Study 2). On the other hand, after MS, focusing participants' attention on the elements of religion that provide literal immortality did not inspire increased defense of religion (Study 1) but it did elevate searching elsewhere for existential security (Study 2).

STUDY 3

Studies 1 and 2 collectively suggest that the sense of symbolic immortality is a stronger death-anxiety buffer. However, a critical component to the sense of symbolic immortality, especially within religious worldviews, is its social and collective nature. Social groups are a meaningful source of and identity (Tajfel, 1982; Tajfel & Turner, 1986) and indeed, MS has instigated defense of ingroup identities (for a review see Pyszczynski, Greenberg, & Solomon, 1997). Thus, it is plausible that in Studies 1 and 2, the effects of the symbolic immortality essay within the MS condition were due to the symbolic immortality essay bolstering a sense of belongingness, and not to the sense of symbolic immortality that is facilitated by group identifications. The pilot data previously presented indicates that the symbolic immortality essay does bolster feelings of symbolic immortality. However, this finding does not rule out the possibility that the effect of the essay is due to its affiliation bolstering nature. As a means to rule out this explanation, I conducted an additional study using the same dependent measure as Study 2 to compare the aspects of religion that provide symbolic immortality to the aspects of religion that provide social identity and affiliation. Based on the findings of Study 2, it was hypothesized that while the salience of the facets of religion that provide symbolic immortality will buffer MS-engendered search for meaning, the salience of the social facets of religion will not.

Method

Participants and Design

Forty Introductory Psychology students (22 female, 18 male) from NDSU participated in exchange for course credit. Participants were randomly assigned to a 2 (MS:

MS vs. pain) x 2 (immortality salience: symbolic vs. social) factorial design and search for meaning in life was measured.

Materials and Procedure

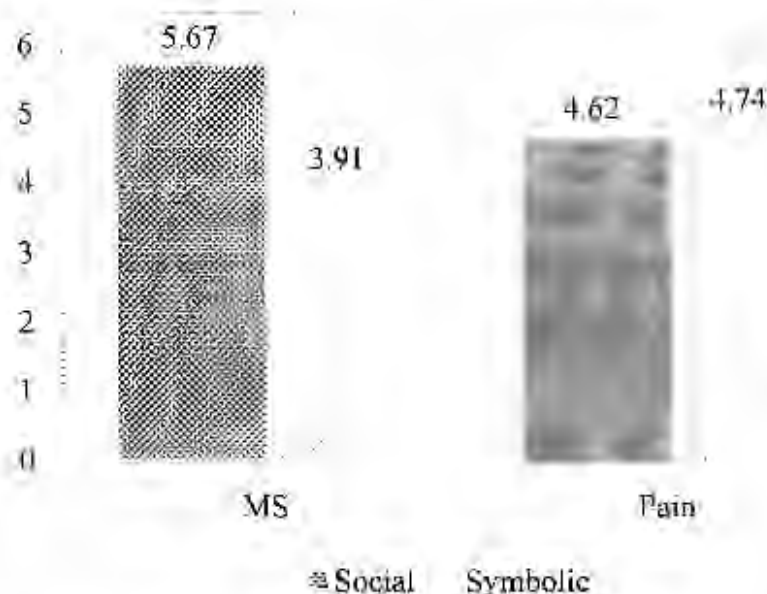
With two exceptions the materials and procedure were identical to Study 2. First, in place of the PANAS, a word search completion task was used as a delay following MS. This task constituted spending a few minutes searching for neutral words embedded in a letter matrix and it has been used as a delay in previous TMT research (Greenberg Arndt, Simon, Pyszczynski, & Solomon, 2000). Second, in place of the literal immortality essay, participants read an essay that emphasized and made salient the importance of relationships and social groups within religious organizations. This social essay contained statements such as “I think that the most important thing about religion is that it gives us the opportunity to create good strong relationships.” The essay, however, never mentioned any literal or symbolic form of self-transcendence. Similar to the literal and symbolic immortality essays, participants were told that this essay was written by another student at NDSU.

Results and Discussion

To test the hypothesis that the salience of the facets of religion that provide symbolic immortality will buffer MS-engendered search for meaning while the salience of the social facets of religion will not, search for meaning scores were submitted to a 2 (MS: MS vs. pain) x 2 (immortality salience: symbolic vs. social) ANOVA. There was no main effect of MS, but there was a significant effect of immortality salience $F(1, 36) = 4.71, p = .04$, such that those who read the social essay ($M = 5.12, SD = 1.10$) expressed significantly higher levels of search for meaning than those who read the symbolic essay ($M = 4.30, SD$

= 1.38). However, this was qualified by a significant MS x immortality salience interaction $F(1, 36) = 6.19, p = .02$ (see Figure 4 for means).

Figure 4: The Effects of MS and Immortality Salience on Search for Meaning in Life in Study 3



Note: Higher scores reflect increased search for meaning in life

To explore the nature of this interaction, pairwise comparison tests were conducted between the symbolic immortality and social conditions, within the MS and control conditions. Within the MS condition, those who read the social essay expressed significantly higher search for meaning than those who read the symbolic essay $F(1, 18) = 8.91, p < .01$. Within the control condition there were no differences between those who read the symbolic and social essays, $F(1, 18) = .064, p = .80$. Additionally, pairwise comparison tests were conducted between the MS and control conditions within the social and symbolic essay conditions. For those who read the social essay, participants in the MS condition had significantly higher search for meaning scores than those in the control

condition $F(1, 17) = 5.31, p = .03$. For those who read the symbolic essay, there was no difference between participants in the MS and control conditions $F(1, 19) = 1.99, p = .17$.

This pattern of results rules out the explanation that the social aspects of symbolic immortality were responsible for the previous effects of symbolic immortality. Specifically, this study demonstrates that the effects of the salience of symbolic immortality are due to feelings of self-transcendence, and not feelings of belongingness.

GENERAL DISCUSSION

The present research is an important investigation of terror management processes. Many theoretical and empirical treatments of TMT have asserted that feelings of symbolic and literal immortality, derived from the perception that one's self is adhering to cultural standards, prevent the awareness of death from turning into debilitating anxiety. Previous research has suggested that both forms of self-transcendence serve to buffer this anxiety. However, no research has examined the relative strengths of these forms of immortality as anxiety buffers. The current analysis focused on religious worldviews to compare literal and symbolic immortality because religion is the only worldview domain that provides both.

Specifically, in three Studies MS or a control topic was induced and then participants read an essay that either made salient the facets of religion that provide literal immortality or symbolic immortality (or social affiliation—Study 3). Pilot data demonstrated that the literal immortality essay bolstered a sense of literal immortality relative to the symbolic immortality essay, and that the symbolic immortality essay bolstered a sense of symbolic immortality relative to the literal immortality essay. Study 1 demonstrated that when death thoughts were activated the salience of symbolic immortality essay, relative to literal immortality essay and a religiously neutral essay, increased the degree to which participants were willing to aggress against others in order to defend their religion. Because the information about immortality was within the same worldview domain as the dependent measure of religious defense (contingency hypothesis), this pattern of results suggests that the symbolic immortality essay was making salient the

features of religion that provided the greatest protection from death concerns and thus triggered the greatest amount of religious defense.

However, additional research was needed to rule out the alternative explanation that the salience of symbolic immortality was undermining the value of religion as a source of self-transcendence, and thus causing participant to be more defensive after MS. To rule out this alternative explanation, Study 2 utilized the same basic design, however, search for meaning in life was the dependent measure because it was not connected to religion and would allow for the comparison of the abilities of literal and symbolic immortality to buffer the effects of MS. Study 2 supported the interpretation of Study 1 provided by the contingency hypothesis by demonstrating that the salience of symbolic immortality, but not literal immortality, eliminated MS-engendered search for meaning. This finding strongly suggests that the symbolic immortality essay was not undermining religion's merit as a terror management strategy, but was providing a sense of self-transcendence that eliminated the need to look elsewhere for existential security. Study 3 subsequently ruled out the alternative explanation that the effects of symbolic immortality were due to the social or relational aspects of symbolic immortality by using the same dependent measure as Study 2 and comparing the features of religion that provide symbolic immortality to those that proved social affiliation.

In sum, the present studies demonstrate that the sense of symbolic immortality is generally a more potent defense against the awareness of mortality. This research has a number of critical theoretical implications and it sets the stage for important future research.

What is Religion?

There has been considerable amount of conversation regarding what “religion” actually is (see; Guthrie, 1996; Hinde 1999, Yinger, 1967). John Wilson and Royce Clark (1989) devote an entire chapter to this issue, asserting that religion is too complex to have only one definition and noting that religion can have different types of definitions (e.g., descriptive, functional). A functional definition is most appropriate in the current context because the presented research attempts to explain religion in terms of its psychological purpose (or function). From this functional perspective Wilson and Clark (1989) define religion as “whatever... human beings have used to meet... existential needs” (p.30). Batson and Stocks (2004) similarly state that “Religion may be broadly defined as whatever a person does to deal with existential questions” (p. 141).

To stress this point further, Wilson and Clark (1989) defined “cryptoreligion” (i.e., hidden religion) as religions that wear secular masks. From this perspective, worldviews such as nationalistic, scientific, political, philosophical, or educational are all considered religious worldviews. Though this broad definition may not always be operationally appropriate, Wilson and Clark (1989) are in line with other scholars (e.g., Becker, 1973; Brown; 1959, Lifton; 1968) who have explicitly asserted that secular worldviews are “religious” because people vehemently cling to them for the same death defying reasons people cling to religious beliefs.

As TMT theorists have asserted (e.g., Greenberg et al., in press), religious worldviews are distinct in that they offer the sense of literal immortality in addition to symbolic immortality. However, the current research suggests that religious worldviews are largely motivated not by what makes them distinct (literal immortality), but by what they

have in common with all secular worldviews (symbolic immortality). Thus, in terms of psychological functioning and terror management, secular worldviews (cryptoreligions) may be more similar to traditional religious worldviews than typically considered; and following Wilson and Clark (1989) it may sometimes be appropriate to use broader and more inclusive definitions of religion.

Death and the Desire for Immortality

Some researchers have argued that the effects of MS are not actually caused by strivings for immortality (Navarrete & Fessler, 2005). These researchers propose a “coalition psychology”, asserting that the effects of MS reflect basic physical defenses rather than efforts to transcend death. Specifically, they state that death reminders are one among many adaptive challenges that heighten ingroup biases because clinging to a coalition is an adaptive method of protection in the face of a variety of threats. Consistent with coalition psychology, numerous studies have shown that MS instigates defense of ingroup identities or ideologies (for a review see Pyszczynski, et al, 1997). Landau and colleagues (2007), however, reviewed a number of MS and TMT studies that are inconsistent with the coalition psychology criticism and the current research is part of a growing body of evidence showing that it is the transcendental nature of groups that buffers death concerns. Specifically, in Study 3, it was only the essay emphasizing that religion is a social structure that “goes beyond the boundaries of time”, not the essay simply emphasizing religion as a social structure, that buffered the effects of MS. This is consistent with the research showing that MS only causes people to be more willing to make personal sacrifices for a group, if the group will continue into the future (Routledge & Arndt, 2008) and research showing that the perceived continuity of a group mediates the

effect of MS on ingroup identification (Sani et al., 2009). Thus, the current research contributes to research demonstrating that MS is not merely triggering affiliation efforts, but is instead increasing efforts to transcend the mortal self.

The Potential Effects of Differences in Religiosity and Level of Death Awareness on Preferences for Literal and Symbolic immortality

It is important to note that the present research shows that *in general* religion manages death concerns largely by providing the sense of symbolic immortality, not literal immortality. That is, the sense of symbolic immortality seems to be a superior buffer of death anxiety among a population in which 90 percent of participants identify themselves as at least somewhat religious. Thus, on average, the sense of symbolic immortality is generally a more effective terror management strategy.

However, it is possible that this conclusion is not true for all people; individual differences in religiosity or dimensions of religiosity could moderate whether the sense of literal or symbolic immortality is most effective at managing terror. These types of individual differences, however, were not considered in the current analysis for a number of reasons. First, the principal interest in this initial examination of the relative strengths of these distinct types of self-transcendence was to understand whether the sense of symbolic or literal immortality is more effective on average, among people who identify themselves as religious (not just those who are very religious, but also those who are mildly religious). Second, I did not want to measure individual differences in religiosity because it is possible that completing religiosity scales could influence how people responded to the literal and symbolic immortality salience essays. That is, I did not want to arouse any religious thoughts other than those aroused by the experimental conditions. Third, because previous

research has shown that approximately 90 percent of the people in this participant pool identify with some religious faith and believe in an afterlife, it was assumed that the manipulations were appropriate for most of the participants.

The current research, however, sets the stage for research specifically looking at how individual differences in religiosity influence the effectiveness of literal and symbolic immortality. As mentioned above, researchers and philosophers have asserted that literal immortality is a particularly attractive means to counter mortality concerns and the current data does not rule out the possibility that this is true for certain people. While the current results suggest that the sense of symbolic immortality may be more comforting for many people, it is possible that the sense of literal immortality may be more attractive for people who are very religious or those who rigidly cling to their religious beliefs. For instance, recent research has shown that those who score high on a religious fundamentalism scale respond to MS with increased support of prayer as a medical substitute, increased support of religiously motivated medical refusals, and increased willingness to rely on faith alone for medical treatment (Vess, Arndt, Cox, Routledge, & Goldenberg, in press). Thus, it appears that fundamentalists have particularly strong beliefs in the powers of the invisible world and thus, for these people it is possible that the sense of literal immortality may provide more psychological security from death anxiety. In contrast to people who hold rigid and fundamental religious beliefs, Batson and Schoenrade (1991a, 1991b) reviewed research showing that some people approach religion more flexibly. Specifically, people who score high on “religion as a quest” measures are focused on important religious and existential questions, but understand that they may never fully know or understand all

truths. Thus, in contrast to fundamentalists, these individuals may find more comfort in having a symbolic sense of immortality.

Further complicating this issue, research has demonstrated that religiosity is very complex and that there are different types and dimensions of religiosity, some of which are more and some of which are less associated with fears of death. Two of the most notable dimensions are intrinsic and extrinsic religious orientations (Allport, 1966; Allport & Ross, 1967). People who have an extrinsic religious orientation use religion as a utilitarian means to other ends, such as security, solace, sociability, distraction, status, and self-justification. People who have an intrinsic religious orientation, on the other hand, have a mature, sincerely honest, and deeply internalized religious belief, and they value religion and faith as an ultimate end. Numerous studies have shown that increased levels of intrinsic religiosity are associated with reduced fears of death, while increased levels of extrinsic religiosity are sometimes associated with more fear of death (for reviews see Batson, Schoenrade, & Ventis, 1993; Donahue, 1985). Research within the framework of TMT also shows that intrinsic religiosity protects against mortality concerns (Jonas & Fischer, 2006). Specifically, this research demonstrated that giving people who scored high (but not those who scored low) on a measure of intrinsic religiosity the chance to affirm their religious beliefs reduced MS-engendered death thought accessibility and worldview defense. Intrinsic religious orientations are not inherently associated with the sense of literal or symbolic immortality; however, Spilka and colleagues (1977) showed that people with intrinsic and committed religious orientations view death in terms of afterlife rewards. Thus, future research should explore the extent to which individual differences in specific

dimensions of religiosity, such as intrinsic and extrinsic religiosity, may moderate whether the sense of literal or symbolic immortality is most comforting.

In sum, although the current data suggests that religion generally quiets death anxiety by providing the sense of symbolic immortality, this may not be true for everyone and it is important that future research measures the extent to which individual differences in religiosity influence the effects observed in the current studies.

Additionally, as explicated by the dual process model of TMT (Pyszczynski et al., 1999), the types of defenses that are attractive depend on the level of awareness of death cognitions. Typical effects of MS, such as those reviewed in the Introduction, occur when there is a delay between the MS induction and the dependent measurement. According to the dual process model of TMT (Pyszczynski et al., 2005), this is because death thoughts are no longer conscious thoughts, but rather unconscious. Specifically, when death thoughts are unconscious or outside of focal attention, “distal” defenses keep death thoughts out of conscious awareness by using the symbolic constructions of reality and faith in one’s sources self-worth. In contrast, the model predicts that when death thoughts are conscious people display “proximal” defenses that are rational or pseudo-rational ways to remove the threat of death or push it into the future. Supporting this notion, numerous studies have shown that when death thoughts are conscious people try to suppress these thoughts, deny health vulnerabilities, and increase health intentions (for a review see Arndt, Cook, & Routledge, 2004).

The current studies used a delay after MS, and thus only demonstrate that symbolic immortality is a greater death anxiety buffer at the distal level and there are good reasons to predict that while the sense of symbolic immortality may be a more effective distal

defense, literal immortality may be a more effective proximal defense. That is, literal immortality is similar to other proximal defenses (e.g., increased health intentions) in that it is a very direct and straightforward way to deny the inevitability of death. Thus, when confronting death consciously, bolstering a sense of literal immortality may be the more optimal strategy. Schoenrade (1989) similarly suggests that as opposed to investment in symbolic structures, belief in afterlife is a more conscious way to deal with death anxiety. Additionally, research on death row inmates has shown that when directly facing death, their last statements often reference religious and afterlife beliefs (Heflick, 2005). Moreover, in Osarchuk and Tatz (1973; reviewed above) when participants increased their belief in the afterlife after being exposed to blatant death related material, there was no delay between the exposure to death stimuli and the measurement of afterlife beliefs. Therefore, it is possible that afterlife beliefs help manage terror when facing direct death confrontations. Future research should test the hypothesis that feelings of literal immortality are proximal defenses, while feelings of symbolic immortality are distal defenses.

Conclusion

Drawing from TMT, researchers have long asserted that religious worldviews provide protection from debilitating death anxiety because religion extends people's sense of symbolic and literal self beyond the boundaries of the human lifetime. Until now, no research has compared the effectiveness of these two types of self-transcendence as terror management strategies. The current results demonstrated that symbolic immortality is a relatively stronger religious path by which people psychologically transcend death. These results are not only an important investigation of terror management processes and the

psychological underpinnings of religion, they open doors for empirical exploration of a number of important questions regarding religion and its capacity to help humans navigate their unique awareness of their inevitable demise.

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APPENDIX A. INFORMED CONSENT

Consent to Participate in Research

Opinions and Personality

Invitation to Participate

You are invited to participate in a research study related to how personality relates to specific attitudes. This study is conducted by Clay Routledge, Ph.D., a North Dakota State University psychology assistant professor.

Basis for Selection

You have been selected because you are at least 18 years of age and signed up for this experiment with the Department of Psychology SONA System experiment website.

Purpose of Study

This study examines how certain attitudes and beliefs are related to one another and distinct personality traits.

Explanation of Procedures

In this study, you will be asked to respond to a variety of measures. Specifically, you will be asked to complete a variety of questions that assess current feelings and attitudes. This experiment will be conducted in Room 304 of the Graduate Center and should take about 60 minutes. A full debriefing will take place as soon as the study is finished.

Potential Risks and Discomforts

Participation in this study involves thinking about different attitudes and beliefs. Although your reactions to various aspects of this study may be positive or negative, these reactions will be temporary.

Potential Benefits

Your participation will prove instrumental to helping researchers better understand the psychology of certain attitudes and beliefs. Upon completion of the study, the experimenter will discuss briefly some of the recent research related to this topic and why it is important to study.

Alternatives to Participation

Your psychology instructor provides descriptions of alternative ways to earn research credit.

Compensation for Participation

You will receive 4 points worth of credit (for approximately 60 minutes total time) for your psychology course. That is, 1 research credit point for every 15 minutes.

Assurance of Confidentiality

All of your responses in this study will remain confidential. This consent form will be used as the record by which you shall receive credit, and will be stored in Dr. Routledge's research laboratory. In addition, you will not be asked to provide any identifying information on the actual study packet which makes your data anonymous. The data and records created by this project are the property of the University and the investigator. As a result of the measures in place for this research, confidentiality of responses is assured.

Voluntary Participation and Withdrawal from the Study

Your participation is voluntary. Your decision whether or not to participate will not affect your present or future relationship with North Dakota State University. If you decide to participate, you are free to withdraw your consent without penalty and to discontinue participation at any time.

Offer to Answer Questions

You should feel free to ask questions now or at any time during the study. If you have questions about this study, you can contact Clay Routledge of the Department of Psychology in 105L4 Minard (Phone: 231-7956). If you have questions about the rights of human research participants, or wish to report a research-related problem or injury, contact the NDSU IRB Office at (701) 231-8908 or ndsuirb@ndsu.edu.

Consent Statement

By signing this form, you are stating that you have read and understand this form and the research project, and are freely agreeing to be a part of this study. If there are things you do not understand about the study, please ask the researchers before you sign the form. You will be given a copy of the entire consent form to keep.

Signature of Participant

Date

ID number Class/Section Instructor

Please **PRINT** your name for research/extra credit purposes

APPENDIX B. MORTALITY SALIENCE CONDITION

The Projective Life Attitudes Assessment

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

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

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

APPENDIX C. PAIN SALIENCE CONDITION

The Projective Life Attitudes Assessment

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

1. PLEASE BRIEFLY DESCRIBE THE EMOTIONS THAT THE THOUGHT OF BEING IN INTENSE PHYSICAL PAIN AROUSES IN YOU.

2. JOT DOWN, AS SPECIFICALLY AS YOU CAN, WHAT YOU THINK WILL HAPPEN TO YOU PHYSICALLY AS YOU ARE IN INTENSE PAIN.

APPENDIX D. PANAS

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 *right now*. Use the following scale to record your answers:

1	2	3	4	5
very slightly extremely	a little	moderately	quite a bit	

- | | |
|---------------------|------------------------|
| 1. _____ interested | 11. _____ guilty |
| 2. _____ irritable | 12. _____ determined |
| 3. _____ distressed | 13. _____ scared |
| 4. _____ alert | 14. _____ attentive |
| 5. _____ excited | 15. _____ hostile |
| 6. _____ ashamed | 16. _____ jittery |
| 7. _____ upset | 17. _____ enthusiastic |
| 8. _____ inspired | 18. _____ active |
| 9. _____ strong | 19. _____ proud |
| 10. _____ nervous | 20. _____ afraid |

APPENDIX E. WORD SEARCH DELAY TASK

Word Search Puzzle

Circle as many words as you can in the puzzle below. Please spend 3 minutes on this task.

Book	Computer
Desk	Phone
Movie	Train
Paper	School
Grass	Beer

S R E T U P M O C O
 W P H O N E R E E B
 A M U S I C P Z S N
 B T N R O T C A S K
 B M R K S E D E A O
 R F O A G O L B R O
 E L G V I Z B O G B
 P A N U I N E L W Q
 A G T A B E T G D O
 P S C H O O L N I T

APPENDIX F. LITERAL IMMORTALITY ESSAY

As a person who has always attended church, I have been interested in what makes religious faith important. Religion, of course, does a number of important things. However, I think that the most important thing about religious faith is that it makes us realize that our life on Earth is only part of our existence and that there will be an afterlife. For example, as a Christian, I know that my soul will keep living after my body dies. On Earth I am just a physical being, but as a Christian, I have a soul and I am part of a world that will last forever. My faith helps me realize that part of me will continue to exist eternally because my spirit will be preserved. Thus, the current life is just a very small phase of life which marks the start of a much greater journey. In sum, to me, this is why religion is so important. Many things come and go, but religious beliefs help me to understand that there is more to life than this world.

APPENDIX G. SYMBOLIC IMMORTALITY ESSAY

As a person who has always attended church, I have been interested in what makes religious faith important. Religion, of course, does a number of important things. However, I think that the most important thing about religious faith is that it gives us the opportunity to be an essential part of an important group that goes beyond the boundaries of time. For example, as a Christian, I am part of a bigger group of people that will continue to thrive and make important contributions to society for centuries to come. I am just an individual, but as a Christian, I am part of something larger, more significant and, most importantly, more lasting. My faith has been around for thousands of years and is still going strong. Since I am part of this group, part of me will continue to exist because my Christian community will be preserved. In sum, to me, this is why religion is so important. Many things come and go, but our religious beliefs continue to prosper, and thus so do its members.

APPENDIX H. NEUTRAL ESSAY

As a college student at NDSU, I think that it is important for the university to have a good bus system. The bus system is useful to many people in many ways on and off campus. However, I think the most important function of the bus system is to transport university students and employees to and from campus. For example, many students live quite a ways from campus and they need a dependable way to get to class. It is important that the university buses have many routes throughout the city so that students have close access to the buses. At NDSU this is especially important because Fargo is very spread out and it is hard for many students to walk and ride their bikes these long distances. Also, since Fargo has very long and cold winters it is nearly impossible for students to walk or ride their bikes to campus for much of the year. In sum, to me this is the most important function of the university bus system.

APPENDIX I. SOCIAL ESSAY

As a person who has always attended church, I have been interested in what makes religious faith important. Religion, of course, does a number of important things. However, I think that the most important thing about religion is that it gives us the opportunity to create good strong relationships. For example, as a member of my church, I have become a part of a community that is based on a number of solid relationships. I am just an individual, but as a Christian, I have had the opportunity to be embedded within this network. Church is a place where families congregate and going to church every weekend is something that families always do together. Also, church is where many families connect with other families and church events are always good times for community members. Also, growing up, good friendships are made while in Sunday school and youth groups. Church is also where people get married and often is the foundation of these relationships. In sum, to me, this is why religion is important.

APPENDIX K. SEARCH FOR MEANING IN LIFE

Please take a moment to think about what makes your life and existence feel important and significant to you. Please respond to the following statements as truthfully and accurately as you can, and also please remember that these are very subjective questions and that there are no right or wrong answers. Please answer according to the scale below:

1	2	3	4	5	6	7
Absolutely Untrue	Mostly Untrue	Somewhat Untrue	Can't Say True or False	Somewhat True	Mostly True	Absolutely True

1. ___ I am looking for something that makes my life feel meaningful.
2. ___ I am always looking to find my life's purpose.
3. ___ I am always searching for something that makes my life feel significant.
4. ___ I am seeking a purpose or mission for my life.
5. ___ I am searching for meaning in my life.

APPENDIX L. PARTICIPANT DEBRIEF

Once everyone starts you can go in the other room and complete Log ID. Check on participants from time to time. Once everyone is done, debrief:

The idea for this study was inspired by previous research that has suggested that a variety of human behaviors are influenced by the fact that humans are aware that they are biological beings with physical limitations and that will eventually die. This research has shown that certain behaviors and attitudes help people manage anxiety about the fact they are going to die. Specifically, it has been shown that thinking about death leads people to turn to certain belief systems or sources of identity. For example, after thinking about death, people tend to hang on to their religious beliefs.

In today's study, we are interested in how religion helps people deal with death anxiety. For instance, it might be because religion provides a way for us to literally live on after death in an afterlife (that is, religion provides a sense of "literal immortality"). Or it could also be because religion provides some sort of symbolic immortality. And by symbolic immortality, I mean that religion provides the opportunity to be an essential part of an important group that goes beyond the boundaries of our own life time?

To test this, we randomly assigned you to write about death or pain. Pain is just a control condition that we used to make a comparison. After you wrote about death or pain, you read an essay that emphasized the literal aspects of religion, or the symbolic aspects of religion, [or neutral essay that talked about the campus bus system—Study 1, or an essay that talked about the social aspects of religion—Study 3]. [The social and bus essays were just control essay used for comparison]. After you read one of these essays we had you answer some questions about how much: you would aggress against others as a means to defend your religion [Study 1], you are searching for meaning in life you feel that you life is [Study 2-3].

So as you can see, there is a little more going on in the study than I initially told you. In these kinds of studies it is important that we not explain in detail the predictions we are testing because we do not want to influence your responses. That is, it is only a fair test of the hypotheses if we are able to get your natural responses. Does this make sense?

Also, we asked you some personal questions, especially if you were asked to think about death. We don't want you to feel upset, now or later, so if you're really upset feel free to talk to me.

One last thing, and hopefully it's obvious that we've invested a lot of work into this research, and we take it very seriously, and as I mentioned, if you came in here knowing in detail the predictions being tested in this study then your responses would be unfairly influenced. In other words, I need your word that you won't mention to potential participants in psych classes what the study was about. Can I get your word on that? (Get head nod.) Alright, thanks again for your participation.