

Original Article:

**INOCULATION OR RESILIENCE:
HOW IDENTITY PRIMING CAN MITIGATE THE NEGATIVE
EFFECTS OF MORTALITY SALIENCE ON STATE ANXIETY**

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Abstract

The purpose of the study was to investigate whether religious, moral, or spiritual identities serve to inoculate against or recover from the negative effects of mortality salience on state anxiety. This study included 578 participants who were randomly assigned to experience mortality salience before or after an identity prime and responded to a state anxiety scale. A 4 (social threat: mortality salience / dental pain / social rejection / no threat control) x 4 (identity: religious / moral / spiritual / no identity arousal) x 2 (order: social threat first / identity arousal first) between-subjects ANOVA was performed on a state anxiety index. It was found that mortality salience causes more state anxiety when experienced before identity rather than after. The experience of personal identities before being exposed to reminders of one's inevitable death helps in inoculating against the negative impact on state anxiety.

Keywords: mortality salience, terror management theory, religious identity, moral identity, spiritual identity, state anxiety

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INTRODUCTION

Approximately 40 million adults experience an anxiety disorder every year in the United States (Anxiety and Depression Association of America, 2019; Kessler et al., 2005) and less than 30% seek treatment (Lepine, 2002). Even though this disorder is so pervasive and mostly goes untreated, there have been many challenges in understanding the link between religious, moral, and spiritual identities and anxiety, including contradictory psychological and theological theories (Jones & Francis, 2004) and a lack of extant research on the topic (Hardy et al., 2013). Therefore, the purpose of the current study is to explore how religious, moral, and spiritual identities can help cope with anxiety that is specifically evoked by mortality salience. Further, research has been limited to studying trait levels of anxiety (e.g., Rosmarin et al., 2009) and the current study will be exploring state levels of anxiety.

Terror Management Theory, Mortality Salience, and Anxiety

Terror management theory (Greenberg et al., 1986; Rosenblatt et al., 1989; Solomon et al., 1989) posits that when humans become aware of their own vulnerability and inevitable mortality, it results in anxiety. This anxiety can be attenuated by reinforcing one's cultural notions of reality, which include "shared, meaningful belief systems that continue beyond death, and thus, provide symbolic immortality" (Heflick & Goldenberg, 2012, p. 386). Consequently, these cultural worldviews serve as a defense mechanism when coping with thoughts of one's inevitable death (Heflick & Goldenberg, 2012). Moral values have been demonstrated to be an integral component of these cultural worldviews and consequently, in reducing the existential anxiety that results from the threat of one's inevitable death (Kesebir & Pyszczynski, 2011). As such, mortality salience has been associated with increased levels of nationalism (Landau et al., 2004), support for those who maintain their cultural values (Florian & Mikulincer, 1997), and to punish those who violate moral codes (e.g., sex workers, Greenberg et al., 1990). Further, affirming secular values prior to mortality salience results in less accessibility to death-related cognitions (Schmeichel & Martens, 2005), but threats to one's symbolic immortality leads to greater accessibility of death-related cognitions (Schimel et al., 2007). Symbolic immortality, which includes one's moral values, serves as a buffer to cope with the anxiety that results from cognitions about one's inevitable mortality.

Terror management theory further suggests that literal immortality, such as believing in the afterlife, is another way of coping with death-related anxiety (Heflick & Goldenberg, 2012). This has been further supported by finding that mortality salience is associated with an increase in beliefs associated with religious, spiritual, and supernatural agents, including God, ancestor spirits, Buddha, Kali, devils, angels, ghosts, and jinns (Norenzayan & Hansen, 2006). Mortality salience has also been found to be associated with increases in identification with one's religious affiliation, beliefs in God, and beliefs

in help from divine forces (Norenzayan & Hansen, 2006). Accordingly, intrinsic religiosity is linked to lowered anxiety about one's inevitable mortality and greater belief in an afterlife (Cohen et al., 2005). Conversely, when religious beliefs are being disputed, such as the truth and validity of the teachings in the Bible, there is a greater occurrence in death-related cognitions (Friedman & Rholes, 2008). Further, it has been found that terminally ill people who are spiritual typically exhibit less concern over death than those who are not spiritual (Edmondson et al., 2008). Therefore, since religious and spiritual values are at the core of literal immortality, what impacts would these identities have on buffering or building resilience against the negative effect of mortality salience on state anxiety, especially in comparison to moral identity?

Since the framework of one's identity consists of cultural worldviews, could one's identity serve as a buffering agent for the anxiety induced by mortality salience? The tenets of inoculation theory (McGuire, 1961) provide a basis for the conceptualization of identity's potential buffering abilities against the negative effects of mortality salience. Inoculation theory (McGuire, 1961), founded on principles related to medical inoculation, described a model of protection against attitude change. In medical inoculation, a person is exposed to a weakened form of the virus via vaccination in order to prevent or inoculate against a virus in the future. Similarly, initial exposure to a weak counterargument can create resistance against future, stronger counterarguments because exposure to the weaker argument strengthens or inoculates the preexisting attitude (McGuire, 1961; Pfau, 1997).

Could the resiliency framework (Yates & Masten, 2004) also explain how the cultural worldviews consistent with identity help someone cope with the negative effects of mortality salience on anxiety? Resilience can be defined as "protective factors which modify, ameliorate or alter a person's response to some environmental hazard that predisposes to a maladaptive outcome" (Rutter, 1987, p. 316). Based on the resiliency model (Richardson, 2002; Richardson et al., 1990), a person experiences complete balance when they achieve a biopsychospiritual homeostasis, but an imbalance in this can occur when one is exposed to a threat that they are not equipped to handle because of a lack of appropriate resources. Resilience is then being able to positively adapt to adversity (Fletcher & Sarkar, 2013) and could serve as a paradigm in understanding how identity can help a person positively adapt to the anxiety experienced when thinking about one's inevitable death.

Currently, the research linking terror management theory and identity is limited. Related research suggests that mortality salience increases one's desire to elucidate and consolidate self-relevant knowledge (Landau et al., 2009) by creating meaningful connections to personal events and well-defined personal characteristics. As such, mortality salience's effects on identity have been explored, but what impact can identity have when dealing with the detrimental impact mortality salience has on one's level of anxiety? Can identity serve to inoculate or build resilience against the increase in anxiety that is typically associated with reminders of one's own unavoidable death?

The Relationship Between Identity and Anxiety

A review of current literature on the relationship between religion and anxiety reveals inconsistent findings, such that religion has been linked negatively, positively, and not at all with anxiety (Shreve-Neiger & Edelstein, 2004). This could be attributed to research focusing on specific aspects of religion and ignoring other key dimensions of this multifaceted construct. Further, some dimensions of religion could differentially impact anxiety (Ellis, 2000), which might account for the inconsistencies in the literature (Hill & Pargament, 2003). Rosmarin et al. (2009) stated that “because religion has such widespread significance to members of our society, it is necessary to identify functional and maladaptive aspects of religion and provide a clinically useful analysis of how various religious constructs differentially predict mental health and illness” (p. 55).

Further difficulties exist in explicating the link between spirituality and anxiety because the research does not always create clear distinctions between religiosity and spirituality. These concepts have been used synonymously, as demonstrated by such terms as “religiousness/spirituality” and “religiosity/spirituality,” and as such, being measured without distinction (e.g., Berry & York, 2011; Brown et al., 2013; Bush et al., 2012; Desrosiers & Miller, 2007; Lamba & Ellison, 2012; Miller et al., 2012; Stanley et al., 2011). In addition, many of the studies on the spirituality-mental health relationship were correlational or ex-post facto (e.g., Bennett & Shepherd, 2013; Gonzalez-Celis & Gomez-Benito, 2013; Lynch et al., 2012; Park & Roh, 2013; Skolarus et al., 2012), mirroring similar issues that existed in the religiosity literature. The current study will be distinguishing between the concepts and separately studying their effects on anxiety by utilizing an experimental design.

Similarly, the consequences of moral identity on mental health outcomes, like anxiety, are an understudied domain in psychological literature because moral identity research is typically focused on morality-related outcomes (Hardy et al., 2013). Further, since morality, like religion, is a multifaceted concept, much of the extant research has focused on domains other than identity. In addition, existing literature relating morality to anxiety is limited to exploring it from a correlational perspective. For example, it was found that higher endorsements of identifying with one’s moral identity were associated with lower levels of symptoms related to anxiety (Hardy et al., 2013). However, this study was correlational and the current study will be utilizing an experimental design to explore the consequences of moral, religious, and spiritual identity salience on state anxiety.

The Structure of Religious, Moral, and Spiritual Identities

Koenig et al. (2012, pp. 2-3) defined religion as:

A multidimensional construct that includes beliefs, behaviors, rituals and ceremonies that are derived from established traditions that developed over time within a community to facilitate closeness to the

transcendent and to foster an understanding of one's relationship and responsibilities to others in the community.

On the other hand, spirituality has become an increasingly difficult construct to measure because of the debates about its relationship to religion and more fundamentally, how it should be defined (Kapuscinski & Masters, 2010). It was not until the increased secularization of the Western world that religion and spirituality were being conceived as distinct constructs (Zinnbauer et al., 1999). As such, there is evidence to suggest that spirituality can exist in the absence of religiosity. Zinnbauer et al. (1997) found only a weak correlation between one's self-rated religiousness and spirituality. Further, about 27% of adults in the United States self-identify as spiritual but not religious (Pew Research Center, 2017).

Hart et al. (1998) have defined moral identity as "a commitment to one's sense of self to lines of actions that promote or protect the welfare of others" (p. 515). Moshman (2005) has defined it as having "an explicit theory of yourself as a moral agent – as one who acts on the basis of respect and/or concern for the rights and/or welfare of others" (p. 121). Consequently, moral identity can be conceptualized as an amalgamation of the principles of justice, fairness, and beneficence (Blasi, 1984; Colby & Damon, 1992; Hardy & Carlo, 2005; Kohlberg, 1969; Lapsley & Narvaez, 2004; Walker, 2004). However, the connection between morality and identity is still lacking clarity at an empirical level (Hardy & Carlo, 2005) because moral identity has yet to be conceptualized and operationalized in a consistent way (Hardy & Carlo, 2005; Nucci, 2004).

Since the similarities and differences between religion and morality are still being identified (Morgan, 1983), this had led to many variations in how these constructs are defined and relate to each other in both the civic and academic worlds (Black, 1994; Bowers, 1984; Mooney, 2001). However, religion and morality have been theorized as being "divorced" from each other (Bull, 1969), such that they are distinct constructs, without any overlap. For example, Kohlberg (1981) believed that morals developed through maturation from life experiences and were based on rationales of justice, while religious beliefs were learned from religious authorities and the divine. Further, philosophical debates have concluded that the moral fabric of a society does not need to be built on a foundation of religious morals. Based on evidence from millions of atheists and agnostics, it is possible to live a moral lifestyle that is grounded in secular, rather than, religious moral beliefs (Pecorino, 2001). Accordingly, a standard set of moral codes are not shared among the major religions, but followers from these different groups can still lead a virtuous life, irrespective of the various foundations to which their moral beliefs are grounded. Nonetheless, philosophy and science have yet to end their debate and reach a parsimonious understanding of the relationship between morality and religion.

Purpose of the Current Study

Since mortality salience can be conceptualized as an existential pain that one would experience when imagining their own death (Niemiec et al., 2010), the purpose of the current study is to determine if the cultural notions of reality associated with religious, moral, or spiritual identities help in inoculating against or building resilience to the negative effects of mortality salience on state anxiety. It was hypothesized that religiously primed people would be less impacted by mortality salience than those spiritually or morally primed. Further, there was expected to be a difference in the strength of the reduction of mortality salience's impact on state anxiety based on whether the identities are experienced first or second. Therefore, there was expected to be differences in whether the identities can serve to inoculate against or build resilience to the negative effects of mortality salience on state anxiety.

METHOD

Participants

The sample consisted of 578 undergraduate students, including 145 males and 433 females, who participated in return for partial course credit. The ages of the participants ranged from 18 to 29 years old. The religious composition of the sample included 85.5% as a denomination of Christianity, 1% Muslim, .3% Hindu, .2% Jewish, 4.7% as no religious affiliation, and 8.3% as a religious affiliation that was not listed. The racial/ethnic composition of the sample included 93.6% Black, 1% Asian, .9% Latinx, .5% White, .3% Arab, and 3.6% identifying as two or more racial/ethnic groups. Based on a power analysis of the current sample, 99.6% power was attained at a medium effect size ($f = .25$) (Faul et al., 2007; Faul et al., 2009).

Materials

Identity manipulation: Participants' religious, moral, and spiritual identities were manipulated by utilizing a widely used sentence scrambling technique (Srull & Wyer, 1979). Participants were asked to unscramble 10 sentences, each with five words. Each sentence contains an extra word that must be dropped, such that a grammatically correct sentence was made with four words. There were five sentences that contain the target word for the given identity and the other five sentences contained neutral words not related to the given identity (Shariff & Norenzayan, 2007). For the religious identity manipulation, the target words were faith, divine, God, sacred, and prophet. For example, the participant was presented with "dessert divine was fork the" and would be "the dessert was divine" when unscrambled. This manipulation was adapted for the moral (target words included: morals, conscience, fair, honest, and morality) and spiritual (target words included: spirit, mystical, meditate, spiritual, and mysticism) identity conditions. A neutral set of sentences

was also created for the control condition, such that they did not include any religious, moral, or spiritual content and would not be expected to cause change in the dependent variables.

Social threat manipulation: Based on terror management research, the basic paradigm was used to manipulate mortality salience (Greenberg et al., 1990; Greenberg et al., 1994; Rosenblatt et al., 1989). In the mortality salience condition, participants were to respond to two open-ended questions that asked them to write about what would happen to them if they physically die and the corresponding emotions that were provoked in regards to thinking about one's own death. There was a dental pain comparison condition, in which participants responded to questions similarly phrased to that of the mortality salience condition. Another comparison condition was also included, in which participants were socially rejected. The purpose of this was to compare an existential pain, like that experienced with mortality salience, to the effects of a social pain, like that experienced from being ostracized. This condition was manipulated similarly to that of the mortality salience condition, by using a widely used prime in rejection and ostracism research, such that participants were to imagine a situation in which they are socially rejected (Craighead et al., 1979; Molden et al., 2009; Pickett et al., 2004; Williams & Fitness, 2004). Participants in the control condition did not receive a parallel writing task or any open-ended items to respond to. This is based on evidence from Rosenblatt et al. (1989, Experiment 5), in which there was no difference between participants who did and did not respond to a parallel set of questions that were not death related.

Order of manipulations: The order in which participants received the manipulations was counterbalanced. Half of the participants received the identity manipulation first and then the social threat manipulation, while the other half of the participants received the social threat manipulation first followed by the identity manipulation. By counterbalancing the order of the manipulations, identity could be tested to determine if it served as a protective or recovery factor for these social threats.

Anxiety: The State-Trait Anxiety Inventory (STAI) (Spielberger et al., 1983) was used to measure state and trait levels of anxiety and to distinguish them from depressive symptoms. Only state levels were anticipated to change based on the manipulation of the independent variables. STAI included 20 items to assess state levels of anxiety. Items that assessed state levels of anxiety included "I am tense," "I am worried," "I feel calm," and "I feel secure." Participants responded to these items on a 4-point scale from 1 (*not at all*) to 4 (*very much so*). An overall state anxiety index was created, such that items were averaged together after the positive items were reverse coded. Higher ratings indicated greater levels of state anxiety. This inventory has demonstrated high internal consistency (Cronbach's alpha ranging from .86 to .95). There has also been test-retest reliability over a 2-month period ranging from .65 to .72 (Spielberger et al., 1983). STAI has also demonstrated construct and concurrent validity (Spielberger, 1989).

Manipulation Checks: Participants were asked to select which words they remembered from the sentence scrambles that were related to identity salience and which social threat they were asked to write about.

Demographics: Participants were asked their age, the gender they identify with, religion, and race/ethnicity.

Procedure

This study was a 4 (identity: religious / moral / spiritual / no identity arousal) x 4 (social threat: mortality salience / dental pain / rejection / no threat control) x 2 (order of manipulations: social threat first / identity arousal first) between-subjects design. When participants arrived to the research lab for the study, they were randomly assigned to the religious, moral, or spiritual identity manipulation conditions or to the control condition and to the mortality salience, dental pain, rejection, or no threat control conditions. Half of the participants experienced the identity condition first while the other half experienced the social threat condition first. After completing these primes, participants were presented with items about state anxiety and other measures related to a larger study. To conclude the study, participants responded to the manipulation checks, chronic measures, and demographic information. All data was collected on computers using MediaLab software (Jarvis, 2006). Only one item appeared on the screen at a time so the participants' responses were not influenced by the upcoming items. Before leaving the study, participants were thanked and debriefed.

RESULTS

Manipulation checks were performed and the participants overwhelmingly identified themselves as being in the correct identity type (religious / spiritual / moral / control) category, $\chi^2(3, N = 578) = 63.67, p = .000$ and as being in the correct social threat (mortality salience / dental pain / rejection / no threat control) category, $\chi^2(3, N = 578) = 12.22, p < .01$.

The 20 items from the State-Trait Anxiety Inventory (STAI) were averaged and a 4 (social threat: mortality salience / dental pain / social rejection / no threat control) x 4 (identity: religious / moral / spiritual / no identity arousal) x 2 (order: social threat first / identity arousal first) between-subjects ANOVA was performed on the resulting scale score. There were no significant effects.

Since mortality salience has been historically contrasted with dental pain as a control condition, a 4 (identity type: religious / spiritual / moral / no identity arousal) x 2 (social threat: mortality salience / dental pain) x 2 (order of manipulations: social threat first / identity arousal first) between-subjects ANOVAs was performed on the state anxiety index. These analyses yielded no significant main effects or interactions.

An alternative comparison for mortality salience would be to contrast it to the no threat control condition. Therefore, a 4 (identity type: religious / spiritual / moral / no identity arousal) x 2 (social threat: mortality salience / no threat control) x 2 (order of manipulations: social threat first / identity arousal first) between-subjects ANOVA was conducted. This yielded a significant two-way interaction of the social threat by order of the manipulations effect, $F(1, 278) = 8.12, p = .005, \eta_p^2 = .028$. The Bonferroni correction revealed that when mortality salience was presented before the identity prime ($M = 2.62, SD = .61$), it led to higher levels of state anxiety, when compared to the no threat control condition ($M = 2.33, SD = .50$). Further, this effect was nominally reversed when the identity prime was presented before mortality salience rather than after it. As such, it was found that lower levels of state anxiety were reported when an identity prime was experienced before ($M = 2.37, SD = .55$) the mortality salience manipulation rather than after ($M = 2.62, SD = .61$). This suggested that arousing a personal identity serves as a buffer against subsequent mortality salience threats and its negative impact on state anxiety. Figure 1 illustrates this two-way interaction.

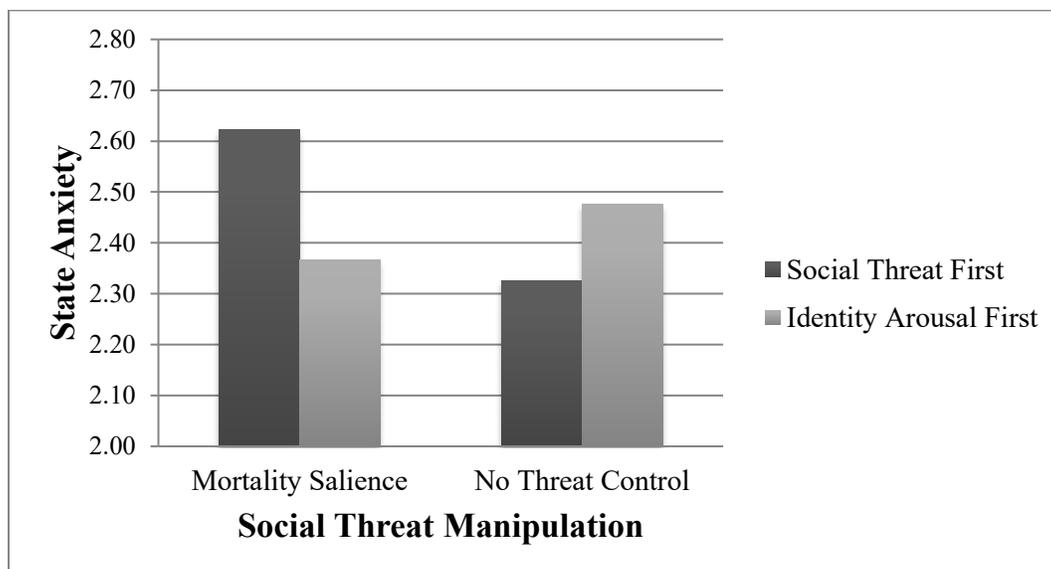


Figure 1. Effects of Mortality Salience by Order of the Presentation of the Independent Variable Manipulations on State Anxiety

DISCUSSION

The purpose of the study was to investigate whether religious, moral, or spiritual identities serve to buffer against or recover from the negative effects of mortality salience on state anxiety. The hypotheses were partially supported because mortality salience had a more negative impact on state anxiety (in comparison to the other social threat conditions)

when it was presented before the identity conditions. This finding is consistent with predictions made by terror management theory, such that being reminded of one's own inevitable death increases awareness of our vulnerability and causes anxiety (Greenberg et al., 1986; Rosenblatt et al., 1989; Solomon et al., 1989).

It also was found that when mortality salience was experienced before an identity prime, it caused a more negative impact on state anxiety than when it was experienced second, after the identity prime, regardless of the type of identity arousal. This demonstrated a primacy effect of mortality salience on state anxiety, such that the arousal of a social identity (religious, moral, or spiritual identities) helped to buffer against or to diminish the negative effects of mortality salience on state anxiety. Therefore, these identities did help protect against the detrimental impact mortality salience has on state anxiety because state anxiety levels decreased when the identity arousal was experienced before mortality salience.

Further, religious, moral, and spiritual identities did not differentially buffer or protect state anxiety against mortality salience when it was experienced before this social threat. This could potentially be because the negative effects of mortality salience on state anxiety were mitigated in similar ways by activating protective facets of the identities that overlapped with each other. For example, it may be that priming religious identity buffers against mortality salience's predictably negative impact of increased anxiety by reducing mortality salience's typically induced negative arousal. The belief and values systems indicative of religious identity may prepare people to cope with their vulnerabilities by providing a sense of literal immortality that will transcend their imminent death (Heflick & Goldenberg, 2012). Perhaps priming religious identity better prepared people to handle the anxiety that typically ensues when being reminded of one's inevitable death by making thoughts associated with the afterlife or other religious protections more accessible. This type of literal immortality may buffer against the anxiety that results from thinking about one's own death by providing some kind of certainty as to what would happen after death. This is supported by intrinsic religiosity being associated with lower levels of anxiety about one's impending death and with greater belief in an afterlife (Cohen et al., 2005). Further, this protective facet of religious identity overlaps with spirituality. This has been demonstrated in terminally ill people who identify as spiritual because they express less concern over death than those who do not identify as spiritual (Edmondson et al., 2008). Therefore, the value systems associated with religious and spiritual identities provided a sense of literal immortality to protect against the anxiety that is typically experienced when being reminded of one's inevitable demise.

While religious and spiritual identities protect against anxiety with notions of literal immortality, moral identity may provide protection with symbolic immortality. Moral values are an integral component of one's cultural worldviews, which will ultimately transcend death. Therefore, moral values have been found to mitigate the existential anxiety that results from the threat that is imposed by one's inevitable death (Kesebir &

Pyszczynski, 2011). To further demonstrate this point, one can protect themselves against the negative effects of mortality salience by affirming their secular values before this threat because it will reduce the accessibility of death-related cognitions (Schmeichel & Martens, 2005). As such, moral identity can buffer against mortality salience by evoking a sense of symbolic immortality.

The current study has demonstrated that the experience of religious, moral, and spiritual identities before the threat of mortality salience can serve to protect against the negative effects it has on state anxiety. Being reminded of one's literal or symbolic immortality by elaborating on the aforementioned identities can buffer against the existential anxiety that would be inevitably experienced when a person is confronted with thoughts of their inevitable death. This could be a particularly useful strategy for coping with death-related cognitions that were very salient during the global pandemic that resulted from the COVID-19 outbreak (Pattee, 2020).

Limitations & Future Directions

One potential limitation of the current study is the type of prime that was utilized for religious, moral, and spiritual identities. The word scrambles used were supposed to implicitly activate religious, moral, and spiritual identities, but the manipulation checks demonstrated that participants were aware of the primes. The strength of this type of implicit activation is also a concern. Therefore, future studies should employ different manipulations to avoid the aforementioned limitations by using explicit primes that require participants to elaborate more on their religious, moral, and spiritual identities. An example of this could be having participants write a short, expressive essay about their beliefs. However, since there is much overlap between these identities, the writing prompts should be very specific in order to avoid participants inadvertently priming more than one of these identities at a time and introducing confounds into the study.

Future studies should continue to explore the impact that other identities, such as racial or ethnic identity, have on moderating the effect of mortality salience on state anxiety. Perhaps there are cultural worldviews associated with those identities that may have an even greater impact in protecting against or building resilience to the negative effects of mortality salience than found here for religious, moral, or spiritual identities. Conversely, it may be that only certain social identities have the capacity to protect us from the terror of mortality salience.

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