

THE ROLE OF CULTURAL WORLDVIEW TO MORTALITY SALIENCE

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THE ROLE OF CULTURAL WORLDVIEW TO MORTALITY SALIENCE

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ABSTRACT

Despite the magnitude of published research on mortality salience since the inception of Terror Management Theory, notable omissions persist in the available literature. The purpose of this study was to examine those gaps in the literature by assessing the effects of cultural factors, affect, and trauma history on mortality salience in a sample of undergraduate college students ($N = 334$). Measures of cultural worldview, self-construal, affect, trauma history, and death thought accessibility were administered to participants randomly assigned to one of four conditions. Death thought accessibility was not associated with any variable of interest in the current study regardless of whether or not participants received a mortality prime. Participants who reported a more materialistic worldview and an independent self-construal reported more negative affect than participants who reported a spiritual worldview and/or an interdependent self-construal. A significant trauma history was found to be associated with a materialistic worldview and independent self-construal. These findings provide some insight to the role of affect and cultural factors to mortality salience, an area which has largely been ignored in the mortality salience literature.

Keywords: cultural worldview, mortality salience, self-construal, affect, trauma

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Chapter 1

INTRODUCTION

Unique to the human species, there inevitably comes a time when one becomes aware that death is inescapable and our existence is temporary. This awareness of death, or *mortality salience* (MS), can cause existential fear because death cannot be avoided. Terror management theory (TMT; Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989) posits that while mortality salience can create paralyzing fear, this awareness of death can also trigger psychological responses that serve to help one cope with the inevitability of one's own demise. According to TMT, mortality salience is believed to initiate an increase in the need to adhere to one's cultural worldview, which then serves to decrease the accessibility of potentially upsetting thoughts about death (Greenberg, Solomon, & Pyszczynski, 1997; Pyszczynski et al., 2004).

A substantial amount of evidence exists in support of TMT, specifically mortality salience, with over 1,300 published peer-reviewed journal articles since the theory's conception. Despite the magnitude of published research, notable omissions persist in the available literature and perhaps also in how MS is conceptualized. Most notably missing from MS research is a closer examination of how racial/ethnic diversity, independent/interdependent self-construal, affective responses, and past traumatic events influence prevalence of death-related thoughts. Collectively, these "missing pieces" represent important and relevant cultural, demographic, and clinical factors that, if investigated, would not only expand the scientific rigor of mortality salience literature, but would also broaden the applicability of the theory itself and provide a more accurate account of how cultural worldview influences thoughts of death (rather than the reverse). The current study proposes to address these areas of limitation in MS literature.

Cultural Worldview, Self-Construal, and Mortality Salience

One of the most central tenets of TMT is that, in response to the threat one feels when death becomes salient, a psychological response is activated that leads people to affiliate themselves with a cultural belief system for comfort (Greenberg et al., 1994). TMT researchers refer to this belief system as cultural worldview. Cultural worldview has been assigned many vague definitions since the theory's conception. In the most prominently used definition, cultural worldview is described as a set of cultural beliefs and meaningful concepts of reality that "imbue the world with order, meaning, and permanence" (Jonas, Fritzsche, & Greenberg, 2005, p. 130–131). It has also been described as a "culturally derived symbolic world that allows humans to be more than mortal" (Routledge et al., 2010), and a "conception of the universe that provides a set of standards of valued behavior that, if satisfied, promise protection and, ultimately, death transcendence to those who fulfill the standards of value" (Greenberg, Simon, Pyszczynski, Solomon, & Chatel, 1992). Based on these definitions, the exact nature of these worldview belief systems is not clear and is one of the most common critiques of the theory (Jost, Glaser, Kruglanski, & Sulloway, 2003; Nail, McGregor, Drinkwater, Steele, & Thompson, 2009; Tritt et al., 2012; Wicklund, 1997; Leary & Schreindorfer, 1997; Paulhus & Trapnell, 1997). As it stands, the only depiction of cultural worldview comes from these vague definitions because to date, TMT researchers have not yet explicitly measured cultural worldview.

Despite the vague conceptualization of cultural worldview, a substantial amount of evidence exists in support of the theory that MS provokes an increased need to adhere to personal values and beliefs that are in line with the illusive cultural worldview (Hayes et al., 2010; Lambert et al., 2010). Researchers have routinely found that mortality inductions (i.e., the experimental manipulation of MS) increase affiliations with others who share similar "cultural

beliefs” (Greenberg & Kosloff, 2008); the belief that one’s cultural identity will continue to thrive in the future (Sani, Herrera, & Bowe, 2009); in-group bias and prejudice (Greenberg et al., 1990); hostility, aggression, and moral judgments towards those perceived to threaten or violate their core beliefs (McGregor, Zanna, Holmes, & Spencer, 2001; Arndt et al., 2002), and; negativity toward stimuli that undermine perceptions of a meaningful existence (e.g., modern art; Landau, Greenberg, Solomon, Pyszczynski, & Martens, 2006). Adherence to cultural worldview is believed to decrease the accessibility of death-related thoughts and manage the perceived threat. While the literature on worldview strongly supports the notion that variations exist in worldview across cultures (Davis & McKearney, 2003; Akbar, 1979, 1984, 1985; Ani, 1994; Asante, 1988; Diop, 1974; Nobles, 1986; DuBois, 1903; Parham, 2002), what is not clear in the MS literature is *how* cultural variations of worldview affect mortality salience.

Walker, Alibi, Roberts, and Obasi (2010) note that cultural worldviews are shaped by historical and social realities, realities which lead to differences across cultural groups in the way life and death are conceptualized. These differences in conceptions about death extend to exactly what happens once one is dead. Cultures that are more spiritually oriented tend to believe in life after death and view death as another stage of life, while more materialistic cultures tend to view death as the final end of life (Gire, 2014). As such, one would expect fear of death to be a culturally contingent phenomenon, which is not prevalent to the same degree across cultures. The most commonly studied cultural variable, with respect to fear of death, is religion. Available conceptual and empirical studies reveal a strong negative correlation between fear of death and the belief in afterlife (Alvarado, Templer, Bresler, & Thomson-Dobson, 1995; Parsuram & Sharma, 1992). In a sample of 1,176 adults, Roshdieh, Templer, Cannon, and Canfield (1999) found that those who displayed the highest amount of fear when thinking about their death were

those who also had weaker religious beliefs and did not believe in an afterlife. Further, Wink (2006) found that it was the combination of religiosity and the belief in a rewarding afterlife that predisposed individuals to either fear, or not fear, death, rather than religion alone. Although few empirical studies have examined cultural variables other than religion, we can extrapolate from these findings that cultural variations in conceptions of death and dying have significant implications on how people approach death, how they process death, and whether or not they fear dying, all of which could impact death-thought accessibility. However, other culturally relevant factors, such as pre-existing worldview, have yet to be examined concurrently with death thought accessibility in the available MS literature.

Perhaps one of the most important cultural dimensions of worldview is self-construal, or the extent to which the self is defined independently of others or interdependently with others. Maris (1981) notes, “Interpretations of life or ‘the human condition’ are contingent upon [not only] our biographies, but our intrapersonal, interpersonal, and transpersonal (cultural) conditioning and resources (p. 2, para. 2).” Evidence suggests that people who define the self in terms of connections with broader social groups, such as those who have high levels of interdependent self-construal, utilize those social groups as a way to cope with mortality salience (i.e., report more investment in social groups following a mortality induction; Routledge, Juhl, Vess, Cathey, & Liao, 2013). In a follow-up article published the following year, the same authors report that people who are “not protected by a broad and enduring social self (i.e., more independent)” experience more distress following a mortality induction than people who identify as more interdependent (Juhl & Routledge, 2014, p. 375, para. 3). Despite this evidence suggesting that self-construal can serve as a protective factor, in and of itself, it has not been adequately measured in MS literature. Similar to the illusive worldview, self-construal in MS

literature has often been assumed based on ethnicity or geographic location (Halloran, 2001; Kashima, Halloran, Yuki, & Kashima, 2004) rather than scientifically measured as a component of one's worldview. It is true that the distinction between interdependent and independent self-construal was initially derived from the perceived differences in the Eastern and Western cultural self; however, evidence now suggests that self-construal is more fluid than previously believed, and the ratio of independent or interdependent self-construals reported by an individual may shift following a situational prime (Voyer & Franks, 2014; Gardner & Gabriel, 1999; Brewer & Gardner, 1996; Du & Jonas, 2015). Thus, in MS research where participants are receiving a mortality induction as a prime, it becomes especially important to measure self-construal to capture the ratio of inter- and independent self-construals.

To better understand how cultural worldview works to protect against mortality salience in a research setting, one might examine pre-existing worldview and self-construal by analyzing the extent to which these cultural factors affect death thought accessibility. However, despite evidence to support that an examination of racial, ethnic, and cultural background is necessary to adequately assess whether the processes used to cope with mortality salience are truly culturally contingent (Greenberg et al., 1990; Ma-Kellums & Blascovich, 2011), little consideration has been given to the methodological importance of cultural diversity and cultural climate.

To date no MS study has measured individual self-construal or cultural worldview, and few studies have considered the impact of race/ethnicity for death thought accessibility, leaving the actual nature and variance of mortality salience processes across culture unknown.

Affective Responses following Mortality Induction

Following the methods outlined by the original TMT researchers, participants in MS research are often explicitly primed to death by asking them to think about their death and what

will happen to them once they are dead. Given the morbid nature of this experimental prime, one might expect participants to have a negative affective response to this request. The founding theorists of TMT made the same assumption, and included a measure of affect to serve as a delay task between the mortality induction prime and the death-thought accessibility task (Greenberg et al., 1990). To their surprise, however, they found no affective response to the mortality prime (Greenberg et al., 1992; Greenberg, Solomon, & Pyszczynski, 1997; Simon, et al., 1997). Recognizing this finding to be counterintuitive (Hayes et al., 2010), the theorists developed an additional tenet of TMT, *the suppression hypothesis*, to explain why affect was not impacted in response to MS. TMT theorists assumed that affect was not impacted by MS because the psychological protection provided by cultural worldview inherently suppressed negative affect (Rosenblatt, 1989, Greenberg et al., 1994).

Affective responses to morality salience remain poorly understood despite *the suppression hypothesis*. It has remained largely unchallenged, notwithstanding the fact that evidence exists to the contrary (Lambert et al., 2014). Further, much of the published MS research (47.7%; Burke et al., 2010) included a measure of affect as a delay task between the mortality induction and death thought accessibility task to replicate the original TMT study, and thus had access to data that would have allowed for a closer inspection of the validity of this assumption, but failed to do so. Lambert et al. (2014) coined this assumption the “Affect-Free Claim” (p. 655, para. 1), and challenged the validity of this claim based on one main premise: if evidence exists that other type of threats unrelated to death have the potential to produce negative feelings (e.g., fear of flying; Tritt et al., 2012) when thinking about those threats, but no changes in self-reported emotion exist when thinking about one’s own death (as assumed in the affect fee claim), then this “would represent an astoundingly counterintuitive finding that surely

sets MS apart from virtually all other threats” (p. 656, para. 4). Lambert and colleagues (2014) reported two important findings that contradicted the affect-free claim. They found that participants in a MS condition report higher levels of fearful affect following mortality induction than participants in a control group (p. 671, para. 4). They also found this to be true in other aversive threat conditions (e.g., “a painful dental exam”; p. 670, para. 5), supporting the notion that MS does not represent an exceptional type of threat that uniquely protects against a negative affective response. Being the first of its kind to challenge a major tenet of MS, the findings in Lambert et al. (2014) warrant replication, which the present study proposes to do.

The Influence of Trauma History on Mortality Salience

Traumatic events, by definition, are events in which one has either experienced loss, threats to their physical safety, or witnessed threat to the physical safety of another person. Available evidence exists that following a traumatic event, specifically in the wake of the death of a loved one or a near-death experience, people often report experiencing posttraumatic growth (PTG; Calhoun and Tedeschi, 1998). The most commonly reported areas of PTG include recognition of a sense of purpose for one’s life, deepening of one’s spiritual beliefs, and a sense of community belonging or membership. From a TMT perspective, a traumatic event is in itself a mortality reminder and should motivate a person to adhere to cultural worldview for protection against the thoughts of their own death. In this way, posttraumatic growth is akin to the mortality salience hypothesis of TMT (Davis & McKearney, 2003). That is, the statements of perceived personal growth following trauma represent an effort to adhere to cultural worldview as a way to cope with, and make sense of, the traumatic event. Greenberg, Pyszczynski, and Solomon (1998) note that people become more vigorous in their defense of cultural worldview once death becomes salient, and those for whom death has not been made salient are less vigorous in their

defense of worldview. Following this logic, participants who have a history of trauma will already have been primed to mortality prior to any experimental mortality induction, leaving them with more time than people who do not have a history of trauma to evaluate their worldview, possibly amend it based on their trauma, and strengthen their faith in their worldview. However, despite compelling evidence that suggests trauma history would be an important variable to control for when studying mortality salience, to date, no study has done so.

In sum, while some strides have been made broaden the applicability of TMT (thinking about one's own death activates thoughts about enjoying one's life as moderated by culture, McKellems & Blascovich, 2012; relationships among self-esteem, death cognition, and psychological adjustment, Routledge, et al., 2013; Self-focused attention and emotional reactivity, Chentsova-Dutton, & Tsai, 2010; questioning cultural script as normative based on TMT alone, Kashima et al., 2014; effects of modesty on MS, Du & Jonas, 2015), some obvious fundamental questions have yet to be examined, and additional significant contributions are crucial to expand the scientific vigor of TMT. The present study approaches MS hypothesis from a clinical psychological perspective, by considering clinical implications of MS, and by examining MS in the traditional manner posed by the authors of the TMT, but addressing several key factors missing from previous research, namely: (a) identification of participants' cultural worldview and self-construal; (b) controlling for past trauma when assessing death-thought accessibility; (c) examining the role of affect in MS manipulations; (d) and utilization of a culturally diverse sample, allowing for with-in group comparisons and more detailed information on the participant cultural climate.

Present Study

Explicit hypotheses for the study were as follows:

- 1) Persons who report their worldview as more spiritual and also report their self-construal as more interdependent will experience less death-thought accessibility (as measured by the word fragment task) following mortality induction than persons who report higher levels of materialism and an independent self-construal (as measured by the WAS and the SCS).
- 2) Persons who receive a mortality prime will express more negative affect than persons in the control group who receive a neutral, non-threatening prime.
- 3) Persons who report higher levels of spiritualism will have less death-thought accessibility (3a), and will express less negative affect following the mortality induction (3b) than persons who report higher levels of materialism.
- 4) Persons who report their self-construal as more interdependent will have less death-thought accessibility (4a), and express less negative affect (4b) following the mortality induction than persons who identify with an independent self-construal.
- 5) After controlling for trauma history, age, and gender, death thought accessibility will differ as a function of cultural worldview (as measured by the WAS and the SCS).

Exploratory research question:

- 6) Does trauma history affect death-thought accessibility?

CHAPTER 2

METHODS

All data were collected from the psychology subject pool at the University of Houston as part of an ongoing study of mortality salience and cultural influences. Students were recruited through the SONA research system, and provided with a brief introductory statement directing interested students to the cover form for more detailed information on the nature of the study, the risks/benefits of participation, and confidentiality. Interested students were then asked to provide consent to participate in the study, and afterwards given a link to complete the online battery of questions via QUALTRICS. Only one 45-minute session was required to complete the battery of questions included in the study.

Sample and Participant Selection

Participants. Participants are university students who were enrolled in a psychology course at a large, culturally diverse university. Participants were awarded extra credit for participation in this research through the University psychology subject pool.

Procedures

Conditions. All participants began the study by completing a personality measure (NEO). Following completion of that measure, each participant was then randomly assigned to 1 of 4 conditions before completing the Word Fragment Task to measure death-thought accessibility. In CONDITION 1 ($n = 86$), the participant was asked to "Briefly describe the emotions that the thought of your own death arouses in you." They were then asked to "Jot down as specifically as you can, what you think will happen to you physically as you die and once you are physically dead". In CONDITION 2 (control condition; $n = 84$), "your own death" was replaced with "watching television," and then participants were asked the same questions,

“Briefly describe the emotions that the thought of watching television arouses in you,” and then “Jot down as specifically as you can, what you think happens to you as you watch television and once you have physically watched television”. In CONDITION 3 ($n = 84$), “your own death” was replaced with “death of a loved one,” and then participants were asked the same questions, “Briefly describe the emotions that the thought of a death of a loved one arouses in you,” and then “Jot down as specifically as you can, what you think will happen to your loved one as he or she physically dies and once he or she is physically dead.” Participants in CONDITION’s 1-3 were then asked to read a short story (as a distraction) before completing the death thought/word fragment task. Participants in CONDITION 4 ($n = 80$), were asked the same questions as CONDITION 1 (i.e., to “Briefly describe the emotions that the thought of your own death arouses in you.” They were then asked to “Jot down as specifically as you can, what you think will happen to you physically as you die and once you are physically dead”), but complete the death thought/word fragment task before the short story (i.e., no distraction prior to death thought/word fragment task). In all conditions, participants completed 3 follow-up questions to assess comprehension for the short story distraction. Additionally, all participants completed measures of past trauma, positive/negative emotions, cultural worldview, and self-construal, as well as a demographics form.

Measures (in order of presentation in study).

NEO Five-Factor Inventory-3. The NEO Five-Factor Inventory-3 (NEO-FFI-3; Costa & McCrae &, 2004) is a 60-item assessment that measures the five domains of personality (Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness). This version of the NEO is a shortened version of the original 240-item NEO Personality Inventory-revised. Participants were asked to read a series of statements (e.g., “I rarely feel anxious or fearful,” “I

work hard to accomplish my goals”) and rate their agreeableness on a 5-point likert scale from “Strongly Disagree” (1) to “Strongly Agree” (5). Consistent with previous studies of mortality salience the NEO-FFI-3 was included in the present study as a “filler measure”.

Short Story Distraction (reverse order for CONDITION 4). The short story distraction was a 1,316-word excerpt from the story "The Growing Stone" written by Albert Camus (1957). Following completion of reading the short story, all participants were asked to answer three multiple-choice questions regarding the content of the story: (1) The short story took place A) at lunchtime B) at night C) in the winter; (2) What form of transportation was used to get across the river? A) jetski B) hang gliders C) ferry; (3) How frequently did the men talk? A) not at all B) whenever they were hungry C) when someone fell overboard. Answers to the validation questions were used to determine if participants in conditions 1-3 attended to the content of the story (i.e., read in it's entirety), as it was intended to serve as the distraction before the mortality induction. Those participants who answered 2 or all of the questions wrong were excluded from analyses ($n = 3$).

Word Fragment Task (Reverse order for CONDITION 4). The Word Fragment Task (Greenberg, Pyszczynski, Solomon, Simon, & Breus, 1994) was developed to specifically assess the accessibility of death-related thoughts (following varying delays) after participants are exposed to explicit mortality reminders. In this task, participants were asked to complete a series of word fragments (e.g., “COFF__” ; “DE__”) that could have been completed with death-related or neutral words (COFFIN vs. COFFEE; DEAD vs. DEAR). Five of the word fragments are primed to produce death-related word completion for those with greater mortality salience. Greenberg et al. (1994) found that the accessibility of death-related thought was higher after a delay and distraction than immediately after conscious contemplation of death, supporting the

inclusion of CONDITION 4 in the current study. Word Fragment Total Scores were determined by summing the total number of death-related words provided. Scores range from 0 to 5.

Worldview Analysis Scale. The Worldview Analysis Scale (WAS; Obasi, Flores, & Myers, 2009) is a 45-item questionnaire that assess seven conceptual dimensions of worldview: Materialistic Universe, Tangible Realism, Communalism, Indigenous Values, Knowledge of Self, Spiritual Immortality, and Spiritualism. Participants were asked to read a series of statements (e.g., “I enjoy participating in family events,” “Things that cannot be measured do not exist”) and rate their agreeableness on a 6-point likert scale from “Strongly Disagree” (1) to “Strongly Agree” (6). Scores on the WAS lie on a continuum, with low scores indicative of a worldview that is rooted in materialism, and high scores indicative of a worldview that is rooted in spiritualism. To date, the WAS has not been validated for use with persons who identify as Hispanic or Latino(a), therefore participants in the current study who indicate they are of Hispanic origin were excluded from analyses in which the WAS was used as an outcome measure ($n = 90$).

Positive and Negative Affect Schedule. The Positive and Negative Affect Schedule (PANAS; Watson & Clark, 1988) is a 20-item index of positive and negative emotionality. Citing previous literature supporting the notion that positive and negative affect are two distinct, relatively independent dimensions, the authors of the PANAS created the measure to assess each dimension individually (i.e., providing a score for each affect state), by combining two 10-item mood scales. Participants were provided with 20 words that describe different feelings and emotions (e.g., interested, hostile) then asked to rate the extent to which they felt each feeling/emotion “right now, in the present moment” on a 5-point likert scale from “Very slightly or not at all” (1) to “Extremely.” Positive and Negative affect total scores were determined by

summing the responses on each of the 10-item mood scales. Possible points ranged from 10 to 50 on each scale.

Trauma History Screen. The Trauma History Screen (THS; Carlson et al., 2011) is a 14-item index of past traumatic events, including general crime, assault, natural disaster, etc. Participants were given examples of 14 types of traumatic events (e.g., “A really bad car, boat, train, or airplane accident,” “Attacked with a gun, knife, or weapon”) and asked whether “this kind of thing has ever happened to you?” (1=No; 2=Yes). For each traumatic event they responded with a “Yes,” they were then asked to provide the number of times in their life they had experienced that event.

Self-Construal Scale. The Self-Construal Scale (SCS; Singelis, 1994) is a 30-item measure of the tendency to think of oneself in terms of relationships with others. Specifically, it measures the strength of an individual's interdependent and independent self-construals. Participants were provided with 20 statements (e.g., “I am comfortable with being singled out for praise or rewards,” “I will sacrifice my self-interest for the benefit of the group I am in.”) and asked to 7-point likert scale from “Strongly Disagree” (1) to “Strongly Agree” (7). Results from the SCS generated two scores: Independent and Interdependent total scores.

CHAPTER 3

RESULTS

Preliminary Analyses

Before undertaking analyses specific to the hypotheses posed, a Missing Values Analysis (MVA) was conducted to determine if missing data were missing completely at random (MCAR) based on Little's Expectation Maximization method (Little, 1988; Little & Rubin, 1987). Functionally, these analyses were performed using SPSS Version 23. Missing data were noted for WAS (4.8%), word fragment task (0.3%), PANAS negative (4.2%), PANAS positive (3.9%), SCS independent (3.9%), SCS interdependent (3.9%), and trauma history (3.6%). The Little's MCAR test obtained for this study's data resulted in a non-significant chi-square = 19.382 ($df = 26$; $p = .820$), which indicates that the data are indeed missing at random (i.e., no identifiable pattern exists to the missing data), and thus no adjustment is warranted to test the proposed hypotheses.

Univariate outliers were identified using standardized z scores for all variables of interest in the current study. A small number of outliers were identified. In accordance with the method recommended by Tabachnick and Fidell (1996), univariate outliers were assigned a raw score on the offending variable that was one unit larger or smaller than the next most extreme score. Multivariate outliers were identified using Mahalanobis Distance with $p < .001$. One multivariate outlier was detected and deleted from subsequent analysis.

Demographic variables were then examined at the univariate and multivariate levels for participants in each condition ($N = 334$). Participants were 133 men and 186 women aged 18 to 56 years (men: $M = 21.98$, $SD = 3.89$; women: $M = 23.17$, $SD = 5.21$). The average age of

participants in the total sample was 22.67 ($SD = 4.73$). Table 1 presents the raw demographic data for conditions 1- 4.

Table 1

Raw Data – Demographic Variables per Condition

	Participant Condition**			
	1 ($n = 86$)	2 ($n = 84$)	3 ($n = 84$)	4 ($n = 80$)
Age:	$M = 22.85$ $SD = 4.43$	$M = 21.95$ $SD = 3.98$	$M = 22.20$ $SD = 4.48$	$M = 23.67$ $SD = 5.73$
Race/Ethnicity: n (%)*				
Black/African-American:	29 (33.7)	21 (25.0)	15 (17.9)	24 (30.0)
White:	32 (37.2)	32 (38.1)	35 (41.7)	42 (52.5)
Hispanic:	20 (23.3)	27 (31.2)	31 (36.9)	12 (15.0)
Other: ^a	4 (4.7)	2 (2.4)	2 (2.4)	2 (2.5)
Marital Status: ^b n (%)*				
Yes:	18 (20.9)	9 (10.7)	11 (13.1)	10 (12.5)
No:	64 (74.1)	72 (85.7)	69 (82.1)	67 (83.8)
Gender: n (%)*				
Male:	31(36.0)	33 (39.3)	35 (41.7)	34 (42.5)
Female:	50 (58.1)	48 (57.1)	45 (53.6)	43 (53.8)

*Missing data accounts for percent deviation from 100; **1 = “your own death;” 2 = “death of a loved one;” 3 = “your own death”[no distractions]; 4 = “watching tv” [control condition]

^aIncludes Asian, Pacific Islander, Bi-Racial, and other self-identified races.

^bMarital categories used by the US Census (never married, now married, separated, divorced, widowed) have been collapsed into “yes” (now - or living as - married and separated) or “no” (never married, divorced, or widowed).

Several variables were recoded for planned analyses. Race/Ethnicity was recoded as “Black”, “White”, “Hispanic”, and “Other”, with the “other” category inclusive of lesser-represented racial groups in the current sample, including “Asian/Pacific Islander and not Hispanic ($n = 2$), “Bi/Multi-Racial and not Hispanic” ($n = 4$), and self identified as “other” ($n = 4$). Participants who identified as being Hispanic were included as a distinct category irrespective of their reported racial makeup. The *WAS* total score was recoded by a median split ($mdn = 211$) to transform the continuous total score variable into categorical for analysis. What resulted was a

two-group variable with participants who scored 1 *SD* above the median categorized as identifying as more spiritual ($n = 51$), and participants who scored 1 *SD* below the median as rooted more in materialism ($n = 37$). The same method of transformation was used to create two *SCS Independent* and two *SCS Interdependent* groups based on 1 *SD* above and below the median total score on each scale. (Note that these transformations of the SCS variable were only used for hypothesis 1.) While use of this method of categorization could be interpreted as a limitation in the study, the planned analyses could not be otherwise conducted without such transformation.

Sample size and power calculations

Power analyses were approximated based on Burke et al. (2010), who reported small to medium effect sizes on average across the 276 MS they reviewed ($r(276) = .35; p = .00$). Therefore, an effect size in the medium range ($f^2 = 0.04$ to $.12$) was entered into GPower 3.1 (Faul, Erdfelder, & Buchner, 2009) sample size approximation method for MANCOVA using $\alpha = 0.05$ and power = 0.80. This method revealed that each group in the current study should have an $n = 40$. All conditions in the current study met this threshold: 1) “Your own death” ($n = 86$); 2) “Death of a loved one” ($n = 84$); 3) “Your own death” with no distraction ($n = 84$), and; 4) “watching tv” control condition ($n = 80$).

Hypothesis 1: Worldview and Self-Construal combined effect on Death-Thought

Accessibility

To examine whether persons who reported their worldview as more spiritual and their self-construal as more interdependent, experienced less death thought accessibility (DTA) following mortality induction than persons who reported higher levels of materialism and a more independent self-construal, variable transformations were used to first create two *worldview*

groups: 1) participants who scored 1 *SD* below the WAS median (spiritual) and 1 *SD* above the SCS Interdependent median ($n = 16$), and; 2) participants who score 1 *SD* below the WAS median (materialism) and 1 *SD* above the SCS independent median ($n = 15$). A univariate ANOVA was then used to compare *word fragment (WF)* total scores between *worldview groups* in mortality prime conditions 1- 3. Results indicated there were no statistically significant differences in *WF total score* between *worldview groups* ($F(1,29) = 0.008, p = .928$).

A follow-up independent-samples *t*-test was conducted to compare scores on *SCS interdependent* and *independent* subscales across *WAS* groups. Results found a significant difference in the *SCS interdependent* ($M = 69.77, SD = 11.54$) and *SCS independent* scale scores ($M = 66.10, SD = 8.60$) across *WAS* groups ($t(312) = 4.681, p = .000$), such that persons who reported their worldview as more spiritual expressed more independent and interdependent self-construal than persons who identified with a more materialistic worldview.

Hypothesis 2: Testing the “Affect Free Claim” (Lambert et al., 2014)

A one-way ANOVA was conducted to determine whether scores on the PANAS varied by *participant condition*. Results indicated *PANAS negative* scores significantly differed between *participant condition* ($F(3,316) = 3.180, p = .020$), while there were no statistically significant differences in *PANAS positive* scores between conditions ($F(3,317) = 1.057, p = .377$). Given the statistically significant ANOVA *F* test, post hoc analyses were conducted. Specifically, Tukey HSD tests were conducted on all possible pairwise comparisons of *PANAS negative* scores between *participant conditions*. Results found statistical differences ($p < .05$) on *PANAS negative* scores between conditions 1 (“your own death” with distraction; $M = 1.918, SD = .850$) and 3 (“your own death” without distraction; $M = 1.575, SD = .635$), but no significant differences in reported negative affect between conditions 2 (“death of a loved one;” $M = 1.793,$

$SD = .846$) and 4 (control condition; “watching tv,” $M = 1.654$, $SD = .687$). These results indicate that it was the content of the mortality prime, and whether or not participants received the distraction task, that resulted in higher reported negative affect, as opposed to whether or not a participant was in the mortality prime condition versus the control condition. Participants in the control condition reported negative affect at a level that was not significantly different from participants in any of the 3 mortality prime conditions.

Hypothesis 3: Cultural Worldview

Examining whether higher levels of spiritualism (as measured by total score on *WAS*) would yield less death thought accessibility and negative affect than higher levels of materialism, a univariate ANOVA was conducted with results indicating death thought accessibility and negative affect were not significantly affected by scores on *WAS* (*word fragment total score*: $F(1,63) = .379$, $p = .450$; *PANAS Negative*: $F(1,63) = .076$, $p = .784$). However, *PANAS negative* scores were significantly different for participants who identified as more *materialistic* ($t(311) = -3.67$, $p = .019$), supporting the hypothesis that a more spiritual worldview would yield less negative affect. This finding was consistent across all conditions, regardless of whether participants received a mortality prime.

Hypothesis 4: Self-Construal

Prior to the following analyses, SCS independent and interdependent total scores were recoded in order to provide a grouping variable for analyses. Each total score was transformed into a three-group variable with cutoffs of 1 *SD* above and below median (*SCS independent mdn* = 63.26, $SD = 12.575$; *SCS interdependent mdn* = 67.44, $SD = 11.015$).

Interdependent Self-Construal. Two one-way ANOVAs, conducted to examine whether higher levels of interdependent self-construal would yield less death thought

accessibility and less negative affect following a mortality prime, found *PANAS negative scores* were significantly affected by scores on the *SCS interdependent* scale amongst participants in the mortality prime conditions ($F(2,73) = 3.534, p = .034$), a result which was not replicated in the control condition ($F(2,240) = 1.339, p = .264$). However, DTA did not significantly differ between *SCS interdependent* groups across participant conditions ($F(2,219) = 1.727, p = .180$). Post hoc Tukey HSD tests were conducted on all possible pairwise comparisons in the control condition. Results found statistical differences ($p < .05$) on *PANAS negative scores* between *SCS interdependent* groups 1 (lowest scorers *SCS interdependent*; $M = 1.248, SD = .640$) and 3 (highest scorers *SCS interdependent*; $M = 1.918, SD = .755$), but no significant differences in *PANAS negative scores* for *SCS interdependent* group 2 (neither high nor low on *SCS interdependent*). That is, amongst participants in the mortality prime conditions, those who scored more than 1 *SD* above the median on the *SCS interdependent* scale reported less negative affect on the *PANAS Negative* scale.

Independent Self-Construal. To examine whether the same results were true for the *SCS independent* condition, two one-way ANOVAs were conducted. Results indicated *PANAS negative scores* significantly differed for high scorers on the *SCS independent* scale in all conditions, regardless of whether they received a mortality prime ($F(2,316) = 8.684, p = .000$). Consistent with the *SCS interdependent* results, *death thought accessibility* was not significantly different between *SCS independent* groups across participant conditions ($F(2,316) = .215, p = .807$). Post hoc Tukey HSD analyses of pairwise comparisons revealed statistical differences in *PANAS negative scores* between *SCS independent* groups 1 (lowest scores on *SCS independent*; $M = 1.118; SD = .755$) and both *SCS independent* groups 2 and 3 (middle to high scorers on *SCS independent*; group 2, $M = 1.653; SD = .850$; group 3, $M = 1.792; SD = .846$). Taken together,

these results indicate that participants who identified strongly with an independent self-construal (as measured by higher scores on that scale) expressed more negative affect regardless of whether they received a mortality prime.

Hypothesis 5: Controlling for Covariates

To measure whether death thought accessibility (as measured by the word fragment task) would differ as a function of cultural worldview (as measured by the WAS and the SCS), when controlling for trauma history, race, age, and gender, a MANCOVA was performed. Results indicated that death thought accessibility did not differ as a function of cultural worldview ($F(4,219) = .654, p = .631$). As such, further planned analyses for this hypothesis were not performed.

Exploring the Impact of a Traumatic Past

In an effort to explore how trauma history affects mortality salience, bivariate correlations between trauma-related variables, death thought accessibility, affect, worldview, and self-construal were analyzed for the entire participant sample. Responses on the Trauma History Screen (*THS*) were examined in two ways: 1) the presence of trauma history (yes/no), and; 2) total number of traumatic experiences. Table 2 presents the intercorrelation matrix for trauma history and main outcome variables of interest. Over 85% of participants reported experiencing one or more traumatic events in their lifetime ($n = 287; M = 7.17, SD = 10.93$). While the presence of traumatic events endorsed in the current sample is higher than most previously reported college samples, a closer look at the type of events endorsed shed some light on a possible reason for this anomaly. The most commonly reported traumatic event was “Hurricane, Flood, Earthquake, Tornado, or other natural disaster” (64%). Participants in the current sample

live in an area of the country which frequently experiences flooding and hurricanes. Therefore the large representation of that type of trauma in the current sample was not surprising.

Table 2

Intercorrelations of measured variables within total sample (N =334)

	Measured Variables							
	TH	Ttot	WAS	SCin	SCint	POS	NEG	DTA
Trauma History (TH)	-----							
Trauma Total (Ttot)	-.21**	-----						
Cultural Worldview ^a (WAS)	-.05	-.18**	-----					
Independent SCS (SC-in)	-.10	.14*	.12*	-----				
Interdependent SCS (SC-int)	-.10	.16	.29**	-.59**	-----			
Positive Affect (POS)	.01	.00	.13*	.22**	.01	-----		
Negative Affect (NEG)	-.03	.11	-.07	-.23**	-.13*	.09	-----	
Death thoughts ^b (DTA)	-.06	.05	-.06	-.06	.08	-.06	-.05	-----

^aWorldview Analysis Scale total score

^bDeath thought accessibility as measured by Word Fragment Total Score

*Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.001 level (2-tailed)

The results indicated that presence of traumatic history alone is not correlated with worldview, self-construal, affect, or mortality salience when considering participants as either having or not having a history of trauma. However, when considering the total number of traumatic events in a participant's past, results indicate total number of traumas is negatively correlated with cultural worldview ($r = -.181$, $p = .001$) and positively correlated with independent self-construal ($r = .141$, $p = .011$), suggesting that participants with a significant history of trauma (i.e., larger number of reported traumatic events) are more likely to express a more materialistic worldview and an independent self-construal.

CHAPTER 4

DISCUSSION

Despite the abundance of research on mortality salience and cultural worldview, no study to date has attempted to empirically study cultural aspects of worldview to clarify the role of one's worldview to mortality salience. As such, cultural worldview has been frequently misunderstood, leaving open to interpretation cultural values which could vary from person to person and possibly influence how one responds to a mortality prime. Further, the role of affect in mortality salience literature has been widely ignored following the publication of the suppression hypothesis (Rosenblatt, 1989, Greenberg et al., 1994), which posits that affect is not impacted by mortality salience because the psychological protection provided by cultural worldview inherently suppresses negative affect. This study directly challenged the suppression hypothesis and offered an opportunity to examine whether cultural aspects of particular worldviews and self-construals could account for variability in DTA and/or affect following a mortality salient experience. Three specific questions formed the basis for the study's hypotheses: 1) Do specific worldviews, independently and in combination with self-construal, contribute to DTA; 2) Does one's affective response to a mortality prime vary as a result of their cultural worldview, and do those variations impact DTA, and; 3) Does the presence of trauma history influence access to death thoughts?

Contrary to the majority of the available published literature, DTA did not differ between conditions and was not significantly associated with any of the variables of interest in the current study. While this result might come as a surprise to TMT researchers, when considered together with all other findings from the current study, specifically those related to affect, a pattern emerges which suggests that DTA might be of less importance as an outcome measure in

culturally diverse samples than previously thought. Based on the results of this study, one could argue that affective response to receiving a mortality prime is a stronger indicator of the degree to which diverse participants' respond to MS, and to how worldview is activated following MS, than their tendency to associate with death-related words as measured in the DTA task. In fact, several of the findings from the current study closely resemble results from previous TMT research with respect to what one would expect to find following MS; however, instead, affective response replaced thoughts of death. For example, in a highly replicated 1994 study, death-related thought was more accessible after a delay and distraction than immediately after conscious contemplation of death (Greenberg et al., 1994). Results from the present study found the same to be true for negative affect. Similarly, the current study found increased negative affect for participants who were explicitly asked to think about their own death versus those who were asked to think about the death of a loved one, while Simon et al. (1997) reported analogous findings with respect to DTA. The current study, together with Lambert et al. (2014), who were the first to directly challenge the "affect-free claim," provides empirical evidence that directly contradicts the suppression hypothesis laid forth by the TMT founders, and carried forward by later generations of TMT researchers.

The current study also paves the way for a more complete understanding of how cultural factors, such as worldview and self-construal, contribute to one's affective response to mortality salience. As hypothesized, participants who reported their worldview as more spiritual expressed more interdependent self-construal than persons who identified with a more materialistic worldview. Surprisingly though, those same participants (i.e., those with more spiritual worldview) also reported more independent self-construal than those who identified with a more materialistic worldview. While those participants who identified closely with a

materialistic worldview were not found to identify strongly with either an independent nor interdependent self-construal. These results highlight the fluid nature of self-construal for people who identify with a spiritual worldview, and suggest that they are able to define their “self” both in terms of connections with wider social groups and as an individual with unique aspirations (Komarraju & Cokley, 2008). This fluidity in self-construal is important when considering the finding that persons with a materialistic worldview, who do not identify strongly with either self-construal, and persons who identified very strongly to an independent self-construal, were both found to express more negative affect in general (i.e., irrespective of receiving a morality prime). Further, persons who reported a strong interdependent self-construal expressed less negative affect following a mortality prime, supporting previous research that those who define the self largely in terms of connections with broader social groups utilize those social groups as a way to cope with MS (Routledge et al., 2013).

To our knowledge, this is the first study to explore trauma history as it relates to worldview, self-construal, and affect following MS. While no specific hypotheses were identified in this area prior to analysis, research regarding trauma history in the clinical psychology literature (Calhoun and Tedeschi, 1998; Davis & McKearey, 2003) makes a strong case for inclusion of this variable, at the very least, as an exploratory hypothesis in any MS study. The experience of trauma has been found to cause significant disruptions in an individual's sense of meaning, connection, identity, and worldview (Gavrilovic, Schutzwahl, Fazel, & Priebe, 2005), and one could hypothesize a priori, that these disruptions would influence the way in which someone responds to MS. While results from this study indicated no significant association between personal trauma history and DTA, total number of traumatic events in participants’ past was correlated with worldview and self-construal, in that those who

endorsed a significant trauma history held a more materialistic worldview, and identified the strongest with an independent self-construal. This finding was true regardless of whether they received a mortality prime. Further research in this area would provide more clarification on the role of trauma history to MS, but the results of this study suggest that personal trauma history might influence worldview and self-construal in a way that is impervious to mortality salience.

The present study provides important insight to the role of cultural factors to mortality salience. Some limitations, however, should be noted. One such limitation of the study was use of a cultural worldview self-report measure that had not yet been normed on a Hispanic sample, thus limiting analyses which used that outcome measure to only Non-Hispanic participants. However, since worldview, as measured from the perspective of different groups, have limited utility across ethnic groups, even if such an instrument were available, validity would be limited by the very nature of what the instrument is measuring. In general, there is likely a larger measurement issue, as measuring worldview across racial and ethnic groups is inherently challenging. Though based on the results of the current study, a more inclusive WAS scale likely would not have yielded different results with respect to DTA, as the SCS is normed for a Hispanic population and yielded similar null results as the WAS. The variable transformation of both the WAS and SCS scale total scores could be also considered a limitation of this study. While there is evidence to support the median $1 SD$ above/below cut-point method used in the current study (Iacobucci, Posavac, Kardes, Schneider, & Popovich, 2015), the use of this type of transformation, specifically in combination with the exclusion of Hispanic participants for analyses which used the WAS, significantly impacted the sample size of participants and decreased power. To date, however, no known MS study has measured individual self-construal or cultural worldview, and few studies have examined DTA in a multi-ethnic sample. Thus this

study serves as a very important first step towards a better understanding how cultural factors influence response to MS.

Our diverse multiethnic sample is a particular strength of the current study, as race and ethnicity have surprisingly been among the largest “missing pieces” in the MS literature. However, in striving for inclusion, our ethnically diverse participant sample might have also contributed to the null findings with respect to DTA, as those null findings have not been reported in any available published MS research and no other obvious differences exist in participant samples. Future studies should consider a more purposeful examination of race/ethnicity by both promoting diversity in the study sample and comparing racial/ethnic groups for differences in DTA following MS. While the use of undergraduate samples is standard practice in psychological research, morality salience researchers might also enhance their knowledge base by examining cultural and personal factors as they relate to a more diversely aged population. Lastly, future studies might also consider a more deliberate examination of trauma history as it relates to MS. Though we provide preliminary insight into how trauma history might influence one’s cultural worldview, the role of trauma history to mortality salience remains unclear. Thus, generalizations associated with the current study’s findings should be limited until future studies can further assess the effects of trauma history to mortality salience.

The overall aim of the current study was to assess the effects of cultural factors and affect (with trauma history as an exploratory factor) on mortality salience in a multi-ethnic sample of adults. The findings suggest that cultural worldview and self-construal, when directly measured, may not impact mortality salience or provide psychological buffering against negative affect as claimed by the TMT founders. Although an abundance of evidence exists in social and clinical

psychology literature highlighting how mood/affect influence attitude, thoughts, and behaviors (Schwarz, 2012; Holland, Vries, Hermsen, & Knipp, 2012; Flor, H., & Birbaumer, N. (2013), this phenomenon has remained mostly unexplored in TMT literature, save for this study and Lambert and colleagues' 2014 publication. Fully capturing the way in which people respond to MS should be of vital importance to behavioral and social scientists alike, given the inescapable nature, and unpredictable frequency, of morality salient events in one's life. Taken together, the findings in the current study are of specific importance because they enrich the limited existing knowledge about cultural worldview and the fluid nature of self-construal, and explicitly contradict the suppression hypothesis laid forth by TMT researchers.

References

- Akbar, N. I. (1979). African roots of Black personality. In W.D. Smith, K. Burlew, M., M. Mosely, & W. Whitney (Eds). *Reflections on Black psychology* (pp. 79-87). Washington, DC: University Press America.
- Akbar, N. (1984). Africentric social sciences for human development. *Journal of Black Studies*, *14*(4), 395 – 414.
- Akbar, N. (1985). Nile valley origins of the science of the mind. In I. Van Sertima (Vol. Ed.), *Nile valley civilizations*. New Brunswick, NJ: *Journal of African Civilizations*.
- Alvarado, K. A., Templer, D. I., Bresler, C., & Thomas-Dobson, S. (1995). The relationship of religious variables to death depression and death anxiety. *Journal of Clinical Psychology*, *51*(2), 202-204.
- Ani, M. Y. (1994). An African-Centered Critique of European Cultural Thought and Behavior. *Trenton NJ: Africa World*.
- Arndt, J., Greenberg, J., & Cook, A. (2002). Mortality Salience and the Spreading Activation of Worldview-Relevant Constructs: Exploring the Cognitive Architecture of Terror Management. *Journal of Experimental Psychology: General*, *131*(3), 307–24.
doi:10.1037/0096-3445.131.3.307.
- Asante, M. K. (1988). *Afrocentricity*. Trenton, NJ: African World Press.
- Brewer, M. B., & Gardner, W. (1996). Who is this " We"? Levels of collective identity and self representations. *Journal of personality and social psychology*, *71*(1), 83
- Burke, B. L., Martens, A., & Faucher, E. H. (2010). Two decades of terror management theory: A meta-analysis of mortality salience research. *Personality and Social Psychology Review*, *14*(2), 155-195.

- Carlson, E.B., Smith, S.R., Palmieri, P.A., Dalenberg, C., Ruzek, J.I., Kimerling, R., Burling, T.A., & Spain, D.A. (2011). Development and Validation of a Brief Self-Report Measure of Trauma Exposure: The Trauma History Screen. *Psychological Assessment, 23*(2), 463–77. doi:10.1037/a0022294.
- Calhoun, L. G., & Tedeschi, R. G. (1998). Beyond recovery from trauma: Implications for clinical practice and research. *Journal of social Issues, 54*(2), 357-371.
- Chentsova-Dutton, Y. E., & Tsai, J. L. (2010). Self-focused attention and emotional reactivity: the role of culture. *Journal of Personality and Social Psychology, 98*(3), 507.
- Davis, C.G., & McKeareney, J.M. (2003). How Do People Grow from Their Experience with Trauma or Loss? *Journal of Social and Clinical Psychology, 22*(5), 477–92. doi:10.1521/jscp.22.5.477.22928.
- Diop, C. A. (1974). *The African Origin of Civilization: Myth or Reality*. (trans. Mercer Cook), Chicago, IL: Lawrence Hill.
- Du, H., & Jonas, E. (2015). Being Modest Makes You Feel Bad: Effects of the Modesty Norm and Mortality Salience on Self-Esteem in a Collectivistic Culture. *Scandinavian Journal of Psychology, 56*(1), 86–98. doi:10.1111/sjop.12175.
- Du Bois, W. E. B. (1903). *The souls of black folk*. Chicago, IL: Oxford University Press.
- Gardner, W.L., and Gabriel, S. (1999). I Value Freedom, but 'we' Value Relationships: Self-Construal Priming Mirrors Cultural. *Psychological Science, 10*(4), 321 - 326.
- Gavrilovic, J. J., Schutzwohl, M., Fazel, M., & Priebe, S. (2005). Who seeks treatment after a traumatic event and who does not? A review of findings on mental health service utilization, *Journal of Traumatic Stress, 18*(6), 595–605.

- Gire, J. (2014). How Death Imitates Life: Cultural Influences on Conceptions of Death and Dying. *Online Readings in Psychology and Culture*, 6(2)(<http://dx.doi.org/10.9707/2307-0919.1120>)
- Greenberg, J., & Kosloff, S. (2008) Terror management theory: Implications for understanding prejudice, stereotyping, inter-group conflict, and political attitudes. *Social and Personality Psychology Compass*, 2(5), 1881 -1894.
- Greenberg, J., Pyszczynski, T., Solomon, S., Simon, L., & Breus, M. (1994). Role of consciousness and accessibility of death-related thoughts in mortality salience effects. *Journal of personality and social psychology*, 67(4), 627.
- Greenberg, J., Solomon, S., Pyszczynski, T. (1997). Terror management theory of self-esteem and social behavior: Empirical assessments and conceptual refinements. *Advances in Experimental Social Psychology*, 29, 61 – 139. doi:10.1016/s0065-2601(08)60016-7.
- Greenberg, J., Simon, L., Pyszczynski, T., Solomon, S., & Chatel, D. (1992). Terror Management and Tolerance: Does Mortality Salience Always Intensify Negative Reactions to Others Who Threaten One's Worldview? *Journal of Personality and Social Psychology*, 63(2), 212–20. doi:10.1037/0022-3514.63.2.212.
- Hayes, J., Schimel, J., Arndt, J., & Faucher, E.H. (2010). A Theoretical and Empirical Review of the Death-Thought Accessibility Concept in Terror Management Research. *Psychological Bulletin*, 136(5), 699–739. doi:10.1037/a0020524.
- Holland, R.W., Vries, M.D., Hermesen, B., & Knippenberg, A.V. (2012) Mood and the attitude-behavior link: The happy act on impulse, the sad think twice. *Social Psychological and personality Science*, 3(3), 356 – 364.

- Iacobucci, D., Posavac, S. S., Kardes, F. R., Schneider, M., & Popovich, D. (2015). Toward a more nuanced understanding of the statistical properties of a median split. *Journal of Consumer Psychology, 25*(4), 652 -665.
- Jonas, E., Fritsche, I., & Greenberg, J. (2005). Currencies as cultural symbols: An existential psychological perspective on reactions of Germans toward the Euro. *Journal of Economic Psychology, 26*, 129–146. doi:10.1016/j.joep.2004.02.003.
- Jost, J. T., Glaser, J., Kruglanski, A. W., & Sulloway, F. (2003). Political conservatism as motivated social cognition. *Psychological Bulletin, 129*, 339–375. doi:10.1037/0033-2909.129.3.339.
- Juhl, J., & Routledge, C. (2014). The effects of trait self-esteem and death cognitions on worldview defense and search for meaning. *Death Studies, 38*(1), 62-68.
- Kashmina, E.S., Beatson, R., Kaufmann, L., Branchflower, S., & Marques, M.D. (2014). Mortality Salience and Cultural Cringe The Australian Way of Responding to Thoughts of Death. *Journal of Cross-Cultural Psychology, 45*(10), 1534–48. doi:10.1177/0022022114543521.
- Kashima, E. S., Halloran, M., Yuki, M., & Kashima, Y. (2004). The effects of personal and collective mortality salience on individualism: Comparing Australians and Japanese with higher and lower self-esteem. *Journal of Experimental Social Psychology, 40*(3), 384-392.
- Komarraju, M., & Cokley, K. O. (2008). Horizontal and vertical dimensions of individualism-collectivism: a comparison of African Americans and European Americans. *Cultural Diversity and Ethnic Minority Psychology, 14*(4), 336.

- Lambert, A.J., Eadeh, F.R., Peak, S.A., Scherer, L.D., Schott, J.P., & Slochower, J.M. (2014). Toward a Greater Understanding of the Emotional Dynamics of the Mortality Salience Manipulation: Revisiting the ‘Affect-Free’ Claim of Terror Management Research. *Journal of Personality and Social Psychology, 106*(5), 655–78. doi:10.1037/a0036353.
- Lambert, A. J., Scherer, L. D., Schott, J., Olson, K. R., Andrews, R. K., O’Brien, T. C., & Zisser, A. R. (2010). Rally effects, threat, and attitude change: An integrative approach to understanding the role of emotion. *Journal of Personality and Social Psychology, 98*, 886–903. doi:10.1037/a0019086.
- Landau, M. J., Greenberg, J., Solomon, S., Pyszczynski, T., & Martens, A. (2006). Windows into nothingness: Terror management, meaninglessness, and negative reactions to modern art. *Journal of Personality and Social Psychology, 90*, 879-892. doi:10.1037/002235-14.90.6.879
- Leary, M. R., & Schreindorfer, L. S. (1997). Unresolved issues with terror management theory. *Psychological Inquiry, 8*, 26–29. doi:10.1207/s15327965pli0801_4
- Little, R. J. A. (1988). A Test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association, 83*(404), 1198 – 1202. doi:10.1080/01621459.1988.10478722.
- Little, R. J. A. & Rubin, D. B. (1987). *Statistical analysis with missing data*. New York: Wiley.
- MaKellams, C., & Blascovich, J. (2011). Culturally Divergent Responses to Mortality Salience. *Psychological Science, 22*(8), 1019–24. doi:10.1177/0956797611413935.
- Ma-Kellams, C. & Blascovich, J. (2012). Enjoying Life in the Face of Death: East–West Differences in Responses to Mortality Salience. *Journal of Personality and Social Psychology, 103*(5), 773–86. doi:10.1037/a0029366.

- McGregor, I., Zanna, M. P., Holmes, J. G., & Spencer, S. J. (2001). Compensatory conviction in the face of personal uncertainty: Going to extremes and being oneself. *Journal of Personality and Social Psychology, 80*, 472–488. doi:10.1037/0022-3514.80.3.472
- Mccrae, R. R., & Costa, P. T. (2004). A contemplated revision of the NEO Five-Factor Inventory". *Personality and Individual Differences, 36*(3), 587–596. doi:10.1016/S0191-8869(03)00118-1.
- Maris, R. W. (1981). *Pathways to suicide: A survey of self-destructive behaviors*. Baltimore, MD: Johns Hopkins University Press.
- Nail, P. R., McGregor, I., Drinkwater, A. E., Steele, G. M., & Thompson, A. W. (2009). Threat causes liberals to think like conservatives. *Journal of Experimental Social Psychology, 45*, 901–907. doi:10.1016/j.jesp.2009.04.013.
- Nobles, W. W. (1986). *African psychology: Toward its reclamation, reascension or revitalization*. Oakland, CA: Institute for the Advanced Study of Black Family Life and Culture.
- Obasi, E.M., Flores, L.M., & James-Myers, L. (2009). Construction and Initial Validation of the Worldview Analysis Scale (WAS). *Journal of Black Studies, 39*, 6, 937–61.
- Parham, T. A. (2002). *Counseling persons of African descent: Raising the bar of practitioner competence*. Thousand Oaks, CA: Sage Publications.
- Parsuram, A., & Sharma, M. (1992). Functional relevance of belief in life-after-death. *Journal of Personality and Clinical Studies, 8*(1), 97 – 100.
- Paulhus, D. L., & Trapnell, P. D. (1997). Terror management theory: Extended or overextended? *Psychological Inquiry, 8*, 40–43. doi:10.1207/s15327965pli0801_8.

- Pyszczynski, T., Greenberg, J., Solomon, S., Arndt, J., & Schimel, J. (2004a). Converging toward an integrated theory of self-esteem: Reply to Crocker and Nuer (2004), Ryan and Deci (2004), and Leary (2004). *Psychological Bulletin*, *130*, 483–488. doi:10.1037/0033-2909.130.3.483.
- Rosenblatt, A., Greenberg, J., Solomon, S., Pyszczynski, T., & Lyon, D. (1989). Evidence for Terror Management Theory: I. The Effects of Mortality Salience on Reactions to Those Who Violate or Uphold Cultural Values. *Journal of Personality and Social Psychology*, *57*(4), 681–90. doi:10.1037/0022-3514.57.4.681.
- Roshdih, S., Templer, D. I., Cannon, W. G., & Canfield, M. (1999). The relationships of death anxiety and death depression to religion and civilian war-related experiences in Iranians. *Journal of Death and Dying*, *38*(3), 201-210. doi: 10.2190/UB6T-QF51-AF5J
- Routledge, C., Ostafin, B., Juhl, J., Sedikides, C., Cathey, C., & Liao, J. (2010). Adjusting to Death: The Effects of Mortality Salience and Self-Esteem on Psychological Well-Being, Growth Motivation, and Maladaptive Behavior. *Journal of Personality and Social Psychology* *99*(6), 897–916. doi:10.1037/a0021431.
- Routledge, C., Juhl, J., Vess, M., Cathey, C., & Liao, J. (2013). Who uses groups to transcend the limits of the individual self? Exploring the effects of interdependent self-construal and mortality salience on investment in social groups. *Social Psychological and Personality Science*, *4*(4), 483-491.
- Sani, F., Herrera, M., & Bowe, M. (2009). Perceived collective continuity and ingroup identification as defence against death awareness. *Journal of Experimental Social Psychology*, *45*(1), 242-245. doi:10.1016/j.jesp.2008.07.019.

- Schwarz, N. (2012). Feelings-as-information theory. In P.M. Van Lange, A.W. Kruglanski, & E. Higgins (Eds.), *Handbook of theories of social psychology* (Vol. 1, 289-308). Thousand Oaks, CA: Sage Publications.
- Simon, L., Greenberg, J., Harmon-Jones, E., Solomon, S., Pyszczynski, T., Arndt, J., & Abend, T. (1997). Cognitive-experiential self-theory and terror management theory: Evidence that terror management occurs in the experiential system. *Journal of Personality and Social Psychology*, *72*, 1132–1146. doi:10.1037/0022-3514.72.5.1132
- Singelis, T. M. (1994). The Measurement of Independent and Interdependent Self-Concepts. *Personality and Social Psychology Bulletin*, *20*(5), 580–591.
- Tabachnick, B. G., & Fidell, L. S. (1996). *Using Multivariate Statistics (3rd ed.)*. New York: Harper Collins.
- Tritt, S.M., Inzlicht, M., & Harmon-Jones, E. (2012). Toward a Biological Understanding of Mortality Salience (And Other Threat Compensation Processes). *Social Cognition*, *30*(6), 715–733. doi:10.1521/soco.2012.30.6.715.
- Voyer, B. G., & Franks, B. (2014). Toward a better understanding of self-construal theory: An agency view of the processes of self-construal. *Review of General Psychology*, *18*(2), 101. doi:10.1037/0022-3514.72.5.1132
- Walker, R.L., Alabi, D., Roberts, J., & Obasi, E.M. (2010). Ethnic Group Differences in Reasons for Living and the Moderating Role of Cultural Worldview. *Cultural Diversity and Ethnic Minority Psychology*, *16*(3), 372–78. doi:10.1037/a0019720.

Wicklund, R. A. (1997). Terror management accounts of other theories: Questions for the cultural worldview concept. *Psychological Inquiry*, 8, 54–58.

doi:10.1207/s15327965pli0801_12.

Wink, P. (2006). Who is afraid of death? Religiousness, spirituality, and death anxiety in late adulthood. *Journal of Religion, Spirituality and Aging*, 18(3), 93-110.