

Spring 2015

The impact of “fearful” and “serene” mood on mortality salience

Kathryn A. Howard
James Madison University

Follow this and additional works at: <https://commons.lib.jmu.edu/honors201019>



Part of the [Social Psychology Commons](#)

Recommended Citation

Howard, Kathryn A., "The impact of “fearful” and “serene” mood on mortality salience" (2015). *Senior Honors Projects, 2010-current*. 56.
<https://commons.lib.jmu.edu/honors201019/56>

This Thesis is brought to you for free and open access by the Honors College at JMU Scholarly Commons. It has been accepted for inclusion in Senior Honors Projects, 2010-current by an authorized administrator of JMU Scholarly Commons. For more information, please contact dc_admin@jmu.edu.

The Impact of “Fearful” and “Serene” Mood on Mortality Salience

An Honors Program Project Presented to
the Faculty of the Undergraduate
College of Health and Behavioral Sciences
James Madison University

by Kathryn Anne Howard

May 2015

Accepted by the faculty of the Department of Psychology, James Madison University, in partial fulfillment of the requirements for the Honors Program.

FACULTY COMMITTEE:

HONORS PROGRAM APPROVAL

Project Advisor: Kevin J. Apple, Ph.D.,
Interim Department Head, Psychology

Phillip Frana, Ph.D.,
Interim Director, Honors Program

Reader: Jeff Dyché, Ph.D.,
Associate Professor, Psychology

Reader: Jaime Kurtz, Ph.D.,
Associate Professor, Psychology

PUBLIC PRESENTATION

This work is accepted for presentation, in part or in full, at 2015 Honors Symposium, Madison Union Ballroom,
Friday April 24

Table of Contents

List of Figures	3
Acknowledgments	4
Abstract	5
The Impact of Fearful and Serene Mood on Mortality Salience	6
Method	21
Results	28
Exploratory Analysis	30
Discussion	32
Appendix	39
Bibliography	46

List of Figures

Tables

1	Initial Analysis	42
2	Exploratory Analysis	42

Figures

1	Initial Analysis for Author Derogation	43
2	Initial Analysis for Islamoprejudice	43
3	Exploratory Analysis for Author Derogation	44
4	Exploratory Analysis for Islamoprejudice	44

Acknowledgments

First and foremost I would like to thank my thesis advisor, Dr. Kevin Apple for all of his excellent guidance, support, and patience throughout the development and completion of my project. Not only did Dr. Apple lead me through my thesis adventure, he offered countless advice and contributed significantly to my graduate school application process. I would also like to thank my committee readers, Dr. Jeff Dyché and Dr. Jaimie Kurtz for their dedication and meaningful input to my thesis. Additionally I am exceedingly grateful to Dr. Jessica Irons for allowing me to use her scale, helping me execute a very integral part of my project. I would also like to thank my wonderful research assistant Rachel Larkin. If it were not for Rachel and her assistance, I would not have been able to accomplish many of the goals I initially set for my project. Lastly, I would like to thank the Department of Psychology for providing me a research grant in order to acquire all of the necessary materials needed to complete my thesis.

Abstract

Seventy-eight participants were randomly assigned to receive either a serene, neutral, or fearful mood induction, followed by either a neutral salience or mortality salience induction. After these manipulations, participants read a political essay that opposed their world view. Participants then completed several measures examining how much they liked/did not like the author of the essay, along with a measure assessing their opinion on an ethnic out-group. It was hypothesized that participants who received the serene mood induction would derogate the author of the opposing essay and ethnic out-group members significantly less than those who received the fearful or neutral mood manipulation. After conducting a 2 x 3 ANOVA, no significant interactions were found between mood and salience, but there were several main effects of mood and salience that approached significance. However, exploratory analysis revealed that participants in the fearful mood condition derogated the ethnic out-group significantly more than those in the neutral or serene mood conditions. Additionally, participants in the mortality salience condition derogated the author of the essay significantly more than those in the neutral salience condition.

The Impact of “Fearful” and “Serene” Mood on Mortality Salience

Human diversity is vast: thousands of languages, traditions, superstitions, societal structures, and artistic styles are practiced throughout the world. Even within this diversity, all cultures cook food, communicate with language, avoid incest, bury their dead, form kinship groups, and experience aggression (Pinker, 2002). Humanity’s propensity to wage wars leads to degradation of land, resources, and people. In an attempt to understand the mechanisms behind human aggression, social psychologists have been applying Terror Management Theory.

Review of Terror Management Theory (TMT)

Terror Management theory (TMT) (Greenberg, Pyszczynski, Solomon, Rosenblatt, Veeder, Kirkland, & Lyon, 1990; Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989) provides a mechanism for out-group derogation. Out-group derogation is harsh criticism or aggression directed at groups to which one does not belong, such as a different political affiliation, race, or ethnicity. TMT researchers posit that humans, like other animals, possess an innate desire to survive. Unlike other species though, humans possess a unique capacity to understand that life is only temporary. These two conflicting notions—the need to survive and knowledge of eventual death—allegedly produce terror within human beings (McGregor, Lieberman, Greenberg, Solomon, Arndt, Simon, & Pyszczynski, 1998). In fact, TMT researchers suggest that death is the most terrifying concept for humans. Car crashes, disease, and even the SAT’s all evoke distress, but unlike these scary events, death produces an even greater terror within humans because it is the only life event that is truly inevitable (Pyszczynski, Motyl, Abdollahi, 2009; Landau, Johns, Greenberg, Pyszczynski, Martens, Goldenberg and Solomon, 2004).

According to TMT researchers, when people encounter a situation that reminds them of their death, they experience a loss of personal security and identity, known as “death anxiety” (McGregor et al., 1998). Because it is difficult to find security within the self, one must turn to in-groups (groups an individual strongly associates with) for security. TMT researchers propose that people relieve death-anxiety by maintaining self-esteem and living up to their cultural worldview. High self-esteem may increase personal security and this prevents the individual from being disturbed by thoughts of death. By maintaining the cultural standards set by their in-group, people build self-esteem and figuratively escape death via religion or tradition. For example, many religions offers immortality through belief in supernatural principles, numerous deities, or a single God. Specifically, even though an individual’s life may end, other members of the in-group continue perpetuating tradition, providing the individual with symbolic immortality (Arndt, Greenberg, Solomon, Pyszczynski, & Simon, 1997; Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004; Pyszczynski, 2013).

According to this model, when people experience death related thoughts coupled with an opposing worldview, they can either support their in-group or derogate the opposing out-group to relieve the ensuing death anxiety. Supporting the in-group may help people escape the threat of death as in-groups offer security and symbolic immortality, and derogation of out-groups reassures people that they have been living by the correct worldview. Reassurance that one is living by the correct worldview raises personal security and ensures that symbolic immortality is reached. A clear example of out-group derogation used to manage death-anxiety and threatening worldviews is demonstrated by McGregor et al. (1998).

McGregor et al. (1998) induced mortality salience (MS) (unconscious fear of death) to one group, and neutral salience to another. MS was induced by having participants write about

their own death and neutral salience was evoked by having participants write about an upcoming trip to the dentist. After completing the salience manipulation, the participants read a political position paper that opposed their beliefs. They were then told to prepare a sample of hot sauce in a cup for the author of the position paper they had just read. Participants believed the author would have to consume all of the hot sauce. McGregor et al. (1998) found that those who had been induced with MS gave a significantly greater amount of hot sauce to the opposing author than those who had not received the MS. Therefore, McGregor et al. (1998) concluded that the unconscious threat of death may have caused the participants to behave more violently towards an individual with an opposing opinion in order to enhance personal identity and self-esteem. Furthermore, although a dental exam can produce significant duress, participants in the dental exam salient condition allocated significantly less hot sauce to the opposing author. These findings suggest that the threat of death is especially salient to humans and may carry an impact unlike other anxiety evoking events.

Further supporting the claim of a specialized fear of death, many studies have shown that typically fearful situations do not evoke in-group support or out-group derogation. Having subjects write about dental pain (Jonas, Greenberg & Frey, 2003; Landau et al., 2006; Schmeichel, Galliot, Filardo, McGregor, Gilter, & Baumesiter, 2009), an upcoming exam (Landau et al., 2006) extreme physical pain (Pyszczynski, Abdollahi, Solomon, Greenberg, Cohen, & Weise, 2006), uncertainty (Landau, Johns, Greenberg, Pyszczynski, Martens, Goldenberg, & Solomon, 2004), or moving away from friends and family members (Schimmel, Wohl, & Williams, 2006) did not produce any significant out-group derogations or increased support toward the in-group. These findings suggest that death anxiety is processed differently than other forms of anxiety.

Additional studies using a variety of measures have shown an increase in out-group derogation after MS. After MS, for example, participants are more derogatory towards prostitutes (Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989), are more derogatory towards Islamic and Arab groups (Kesebir, 2014), and are less likely to forgive someone (Schimmel et al., 2006). Furthermore, Pyszczynski et al. (2006) found that when primed with MS, Iranian students are more likely to support martyrdom and aggression towards America and likewise, Americans are more likely to support aggressive military action in the Middle East.

Alternative Theories

Although TMT has garnered support, researchers have proposed alternative causes to out-group derogation. A study by Fritsche, Jonas, and Fankhanel (2008) manipulated MS in which one group received the traditional mortality induction and another group was asked to write about suicide (a self-determined death). Fritsche et al. (2008) found that when one was in charge of his or her own death (i.e., suicide), he/she did not feel the need to derogate. This contradicts the original TMT model, where death is the ultimate loss of identity and instigates the need for people to symbolically bolster themselves through in-group support and out-group derogation. Fritsche et al. (2008) claimed that suicide does not cause one to derogate because suicide does not signify a loss of control. With suicide, people determine their own death and therefore power is still within the individual. Fritsche et al. (2008) posits that death does not possess a symbolic loss of identity, but rather a loss of personal control which then leads one to derogate. Death outside of suicide just happens to be the ultimate loss of human control. In the present study, participants may experience a loss of control via the traditional MS manipulation.

Mortality Salience Buffers

Regardless of whether derogation is a result of MS or a lack of internal control, researchers are investigating buffers that prevent derogation from occurring in the first place. Many studies have examined the buffering effects of self-esteem on MS. Arndt and Greenberg (1999) found that individuals with high self-esteem are less likely to derogate after an MS induction. If people have a strong sense of implicit self-esteem—an inherent faith in oneself to succeed—they have a natural cognitive buffer to ward off threats to personal security, and therefore do not need to derogate after MS (Schmeichel, Galliot, Filardo, McGregor, Gilter, & Baumesiter, 2009). Additionally, Schmeichel et al. (2009) found that when self-esteem is artificially induced, individuals with artificially high self-esteem derogate less after MS than those with baseline self-esteem.

Several other buffers have been examined that may ward off death-anxiety. High internal locus-of control (Talati, Fritsche, Du, Jonas, & Castano, 2013), belongingness to a religious affiliation (Castano, 2004), having close relationships (Mikulincer, Florian, & Hirschberger, 2004), and having children (Zhou, Lei, Marley, & Chen, 2009) have all been found to buffer morality salience. Participants who were primed to “think rationally” rather than “experientially” reported less derogation to the out-group (Simon, Greenberg, Harmon-Jones, Solomon, Pyszczynski, Arndt, & Abend, 1997.) Simon et al. (1997) posits that TMT activates an unconscious, instinct-driven system, and therefore reminding participants that they are capable of logical, effortful thinking may prevent derogation.

Furthermore, using themes from lay epistemology, Kruglanski (1989) and Landau et al. (2004) examined the extent to which MS influenced participant’s need to categorize and structure people into social groups. Landau et al. (2004) had participants read two inconsistent

essays about a fictional character and then answer questions about the character. They found that those in the MS condition were more influenced by the first paragraph when forming their opinion of the character and hence were more affected by primacy. Landau et al. (2004) concluded that the existential uncertainty evoked by MS produces a need to generalize individuals into groups. The clarity of structure produces a sense of security within the individual. On a similar vein, Dechesne, Janssen, and van Knippenberg (2000) measured participant's personal need for structure. They found that those who are more uncomfortable with uncertainty were more likely to be affected by MS. These two studies support that MS increases an individual's need for structure, and that those who do not feel a pressing need for structure are buffered against anxiety and derogation.

Lastly, Kesebir (2014) found that the trait "humility" may be an existential death buffer, in which those who possess high levels of humility and low levels of entitlement are less likely to derogate after MS. To experimentally induce feelings of humility, Kesebir (2014) had participants in the "humility" condition write about a time when they felt humbled. After MS was induced, Kesebir (2014) found that participants in the experimentally humble group reported a significantly lower "death anxiety" than did those in baseline. Surprisingly, Kesebir (2014) found that those who were induced with humility and MS were actually less fearful of death than the control who had not been induced with MS. In conclusion, it appears that MS can actually produce positive effects among individuals with already high levels of humility and low levels of entitlement. Kesebir (2014) suggest that those who possess humility may already have a stable and realistic view of the world, and therefore do not experience death as a threat and do not need to artificially bolster self-esteem via derogation.

In sum, a wide variety of psychological mechanisms may have the potential to protect individuals from derogation after MS. High implicit self-esteem, logical thinking, comfort with uncertainty, and high humility are all psychological features that may inhibit derogatory sentiments towards out-groups. Further research on possible death-anxiety buffers is imperative to the field of TMT, as buffers have the potential to encourage cooperation between unlike groups.

Affect and TMT

Measuring mood. Another potential anxiety buffer against MS could be mood. An intriguing aspect of TMT research is the seemingly absent change in affect after the MS induction. Because of the grim nature of the MS manipulation, researchers assumed writing about death would produce a drop in mood. However, studies have found no change in mood after the MS manipulation (McGregor et al., 1998; Simon et al., 1997; Pyszczynski et al., 2004; Schimel et al., 2006; Schemichel et al., 2009; Pyszczynski, Motyl, & Abdollahi, 2009). The PANAS-X (Watson & Clark, 1994) is a scale designed to capture temporary mood, in which participants rate their current mood state in regards to 40 mood relevant adjectives. Not only is the PANAS-X used frequently in mood research, but it is routinely administered after MS in the classic TMT design (McGregor et al., 1998; Greenberg et al., 1994; Landau et al., 2006.) Because of this lack of mood-change, researchers conclude that MS must utilize a psychological mechanism that does not involve affective processes. Although many researchers are skeptical that a special, discrete mechanism exists for death threat, this explanation has been the accepted rule for approximately thirty years (Hayes, Schimel, Arndt, & Faucher, 2010, Arndt, Allen, & Greenberg, 2001; Simon, Greenberg, Harmon-Jones, Solomon, Pyszczynski, Arndt, & Abend, 1997).

TMT and fear. Not until recently has this assumption about mood and TMT been addressed. Contrary to the majority of TMT research, Lambert, Eadeh, Peak, Scherer, Schott, and Slochower (2014) found a significant change in mood after MS. Rather than using the PANAS-X, Lambert et al. (2014) used a narrow mood-measure and reported a large increase in participant fear levels. Lambert et al. (2014) suggests that previous TMT studies did not detect change in mood because the PANAS-X is too broad of a measure. Within the PANAS-X, negative mood words such as “jittery” and “hostile” are grouped together in order to calculate an overall “negative mood” score. This grouping of emotions does not allow for the detection of subtle mood differences. “Anger” and “sadness” are two qualitatively different emotions, and therefore separate scales must be used to chart individual affective fluctuations. In order to hone in on specific emotions, Lambert et al. (2014) chose three anxiety related items (*nervous, anxious, worried*, $\alpha = .86$) and three fear related items (*afraid, frightened, scared*, $\alpha = .92$) from the PANAS-X along with the addition of the similar word “fearful.” Composite scores of the “fear” words and “anxiety” words were calculated in order to have a single measure of “fear” and “anxiety”. Only after calculating these separate mood scores was Lambert et al. (2014) able to detect a non-significant but directional increase in anxiety and a significant increase in fear after MS.

Lambert et al. (2014) points out another contradictory element of past TMT research: the traditional TMT model suggests that death-anxiety operates on a special level that does not involve affect. However, TMT researchers propose that *non-life threatening anxiety should* involve a change in affect. This assumption is problematic because TMT researchers rarely find changes in affect after mood inductions that are intended to produce affect change. For example, change in affect is rarely reported after dental-exam anxiety inductions, test-taking inductions, or

inductions when participants must write about a romantic partner leaving them. Lambert et al. (2014) claims this logical fallacy is produced due to a faulty measuring tool commonly used in TMT research. The PANAS-X and other similar mood measures such as the Brief Mood Introspection Scale (Mayer & Gaschke, 1988) are too broad to detect individual changes in any specific emotion. When Lambert et al. (2014) used their narrow measure of mood to measure dental-pain salience, a significant increase in anxiety was found. Lambert et al. (2014) suggests MS and dental pain provoke different emotions because the two situations are qualitatively different experiences: unlike dental pain, death is an inevitable circumstance for *everyone*. Participants can write about dental pain, but it is not an inevitable part of their future. In conclusion, people feel anxious about dental pain because it is uncertain, but fearful for death because it most *certainly* will happen.

If emotions are ultimately involved in TMT, it could be that the affective experience of fear produces out-group derogation rather than an existential fear of death. Much like Control Salience Theory (Fritsche et al., 2008), which claims that death is the ultimate lack of human control, it is also possible that thoughts of death simply elicit an ultimate amount of fear. Therefore, fear may be the impetus that produces out-group derogation and in-group support. This assumption is reasonable as it aligns with the vast majority of mood-based research. Many theorists have found that mood has the potential to produce behavioral and cognitive changes within the individual. Happiness, sadness, anger, and fear are commonly studied and have been shown to yield various changes in behavior, cognition, and judgment.

Cognitive changes after mood induction

Within mood research, participants induced to feel sad report lower life satisfaction, lower openness, and appear less friendly and confident. Conversely, participants induced to feel happy express significantly higher levels of life satisfaction, smile more, appear friendlier, and are more open-minded (Schwarz & Clore, 1983; Forgas & Moylan, 1987). A sad mood can also produce more socially desirable effects, such as a decrease in heuristic use and stereotypic thinking. In contrast, a happy mood can actually increase reliance on heuristics and stereotypic thinking (Lambert, Khan, Lickel, & Fricke, 1997; Bless, Clore, Schwarz, Golisano, Rabe, & Wolk, 1996; Park & Banaji, 2000).

Furthermore, experiencing fear or anxiety can also alter an individual's behavior. Lambert, Scherer, Schott, Olson, Andrews, O'Brien, and Zisser (2010) found that when participants felt threatened after watching a video containing 9/11 footage, participants were more likely to support a "hawkish" politician who called for severe action against an out-group. Although watching a 9/11 film does not require participants to explicitly ponder their own death, thoughts of death are likely to be associated with the devastating video footage. Interestingly, Lambert et al. (2010) and classic TMT studies follow a similar format: death-related threat followed by a measure of in-group support and out-group derogation. Lambert et al (2010) even found results that aligned with TMT findings: participants who underwent MS fervently supported the in-group leader more so than those who had not received the threat. Although TMT and Lambert et al (2010) followed a very similar design, Lambert et al (2010) found changes in participant anger and anxiety levels, whereas traditional TMT does not find affect change. Again, these contradictory results emphasize the notion that TMT produces a change in mood, but a more sensitive scale is needed to detect it.

Appraisal tendency approach

In other studies of fear, Lerner and Keltner (2000) measured participants' baseline fear levels and found that those high in fear made more pessimistic assessments of the future than those in other mood states. A related study found that participants high in fear appraised risky situations more pessimistically (Lerner & Keltner, 2001). Lerner and Keltner (2001) suggest modification in behavior after a change in mood could be explained by the appraisal tendency approach. The appraisal tendency approach posits that emotions trigger changes in physiology and cognition, and these changes help the individual form a judgment of a novel situation or object. Additionally, each situation requires a different appraisal, and each appraisal can produce a different emotion. In turn, these different emotions can lead to various judgmental outcomes. Theoretically, emotions exist to best prepare us for the given situation. Despite the functional nature of mood, emotions can over-generalize to objects that are not related to the situation, and it is in this instance where unnecessary judgments, prejudices, and opinions are formed (Lerner & Keltner; Lambert et al., 2010)

Appraisal tendency approach and TMT. Fear produced by the appraisal tendency approach may be one of the underlying mechanisms responsible for death anxiety and derogation in TMT research. When examining MS effects through an appraisal tendency lens, participants unconsciously appraise the situation of their inevitable death, and fear is the ensuing emotion. The ensuing fear may unconsciously modify cognitions to prepare the individual to deal best with death anxiety. Specifically, fear produced after MS may cause participants to cling to the in-group and derogate the out-group. Initially clinging to in-groups may help propel the participant out of death anxiety, but the participant's fear may overgeneralize to groups of people

who are not appropriate targets of derogation. Hence, over-generalization may explain why researchers observe exaggerated prejudice after fear-inducing threats.

In a real world application, if a citizen in a war-torn society witnesses a violent act, he/she may appraise the situation as dangerous and experience fear. The emotional experience of “fear” then changes cognitions in order to best prepare the individual for the dangerous situation. In order to alleviate fear, the citizen may seek protection from other in-group members and experience hostility towards out-group members. According to evolutionary psychologists, humans may have evolved to cooperate with members of their tribe in order to fend off opponents and guard resources (Van Vugt, 2007; Navarrete, Olsson, Ho, Mendes, Thomsen, & Sidanius, 2009). Within this perspective, those who learned to stick with the in-group in times of peril survived and passed on genes. The appraisal tendency approach may have been a mechanism that helped ancient humans survive and TMT research may be capturing this psychological function that lingers on in modern day society. In sum, if fear is a prominent mechanism that causes in-group support and out-group derogation after MS, then alterations to the current model of TMT must be made to incorporate this development.

The Current Study

Due to this recent discovery of increase in fear after MS manipulation, I further investigated how mood influences the psychological response to MS. As far as I know, no TMT research has induced mood before the administration of MS and then observed the potential buffering effects. If MS produces change in affect (fear), it is reasonable to assume that manipulating a participant into a serene mood (Jallais & Gilet, 2010)—an affective state almost opposite of fear—may buffer the effects of MS. Similarly, it is also reasonable to assume that inducing a participant with a fearful mood may exacerbate the effects of MS. Additionally, if

fear is one of the underlying mechanisms that produces derogation, then inducing a participant into a fearful state should provoke a similar amount of derogation that is evoked in a classic MS manipulation.

Overview of Study

In order to investigate whether a) various mood states can alter MS effects and b) a fearful mood can produce derogation independent of MS, all participants were asked to write a brief paragraph describing their political affiliation and opinion of current politics in America. This description is used later in the out-group derogation measure. Participants were then directed to complete a mood induction task. For this particular task participants wrote about a time they felt either fearful or serene in order to induce fearful and serene moods. Participants in the neutral mood condition wrote about mundane, everyday occurrences. This form of mood induction, autobiographical recall, has been used in previous mood research and is thought to be one of the most successful mood induction procedures (Jallais & Gilet, 2010; Bless et al., 1996; Bodenhausen, Kramer, & Siisser, 1994; Krauth-Gruber, S. & Ric, F., 2000; Strack, Schwarz, & Gschneidinger, 1985; Park & Banaji, 2000). In order to measure out-group derogation, participants were led to believe that there were two groups involved in this study, and that they had been assigned to “group one.” Participants were informed that they were going to read an essay written by a participant in “group two,” and that they would form an impression of the author based on his or her essay. Participants were told that a “group two” member would also read and form impressions of them based on one of their essays.

The first assessment of derogation was a behavioral measure. This method is an adaptation of McGregor et al. (1998), in which aggression towards out-group members is measured by how much hot sauce is allocated towards an opposing worldview author. Within

this framework, the more hot sauce the participant allocates, the higher the level of derogation. For the second measure of derogation, participants rated how much they liked/disliked and agreed/disagreed with the author of the opposing essay. Lastly, participants will complete an out-group measure that assesses prejudicial attitudes towards Muslims and Arabs.

Islamoprejudice measure

In order to measure opinions towards Muslims and Arabs I selected the Islamoprejudice scale (Imhoff & Recker, 2012). When researchers asked participants whether they supported the construction of a new mosque in the surrounding neighborhood, Islamoprejudice scores were significantly predictive of whether participants supported construction, with Cronbach's alpha equaling .87. Kesebir (2014) also successfully used the Islamoprejudice scale to measure the effects of humility on out-group derogation after MS. A main effect was found in which participants high in humility had significantly lower Islamoprejudice scores than those low in humility (Kesebir, 2014).

Additionally, the number of Muslim citizens in the US is growing rapidly due to immigration and conversion and is estimated to be between 3 to 7 million (Pew Research Center, 2007; Amer & Bagasra, 2013). Furthermore, it is estimated that Islam will be the largest minority religion within the next decade (Kobeisy, 2004; Amer & Bagasra, 2013). Alongside this increase in population, Muslims have experienced a steady increase in prejudice and hate crimes since 9/11 (Sweeney & Opatow, 2013; Elchardus & Spruyt, 2014; Amar & Bagasra, 2013). This increase in population and tension between Anglo-Americans and Muslim Americans makes the Islamoprejudice scale a relevant measure of in-group affiliation and out-group derogation.

Hypotheses

For Hypothesis One, I predicted that there would be a main effect of mood, such that those in the fearful mood condition would derogate out-group members significantly more than those in the neutral or serene mood conditions (Schwarz & Clore, 1983; Lambert et al., 2010; Lerner & Keltner, 2000). To test this hypothesis, I conducted a 2 (salience: mortality or neutral) x 3 (mood: serene, neutral, and fearful) analysis of variance (ANOVA) on each of the three dependent variables: allocated hot sauce, derogation of author, and Islamoprejudice.

For Hypothesis Two, I predicted a main effect of MS such that those in the MS condition would derogate to a greater extent than those in neutral salience across all three dependent measures. Again, I used a 2x3 ANOVA to assess any main effects (Lambert et al., 2014; Landau et al., 2004; Arndt & Greenberg, 1999; McGregor et al., 1998; Kesebir, 2014).

According to Hypothesis Three, I predicted that there would be an interaction between the mood and MS conditions. Specifically, derogation would be buffered after MS when participants were induced with a serene mood, but not when participants were induced with a neutral or fearful mood. Additionally, I predicted that derogation would increase after neutral salience when participants were induced with a fearful mood but not when they were induced with a serene or neutral mood. A 2 x 3 ANOVA was used to detect any interactions across the three dependent variables.

Method

Participants and Design

Seventy-eight students from Introductory Psychology courses at a large Southeastern American university participated in this study to partially fulfill a class requirement. Participants signed-up via a participant pool and then were randomly assigned to conditions in a 3 (serene, fearful, neutral mood) x 2 (mortality, neutral salience) between subjects design. Thirteen participants were in each condition. The sample consisted of 52 females, 25 males, and one participant who identified as “other.” In regards to class year, 42 participants were freshmen, 24 were sophomores, six were juniors, and six identified as seniors. Lastly, there were 64 white participants, six Hispanic participants, three participants who identified as black or African American, two Asian students, two students who identified as “other,” and one student who identified as Middle Eastern.

Procedure

Participants waited for the study to begin in the waiting room of the study suite (1201 Miller Hall). In order to create the illusion that there were two separate groups of participants, I greeted the participants with my research assistant. I explained to the participants that there were “two groups in the study” and that the second group was “arriving 15 minutes later” and would be led by my research assistant. Additionally, I explained that I had to divide the time slot “into two groups at the last minute for confidentiality reasons.” I asked the participants if anyone “received an email asking them to come 15 minutes later,” and then I proceeded to take role to “ensure everyone was in the correct group.” After everyone was accounted for, I led the participants to their study room. On the door of the study room was a sign that said “Kathryn

Howard Group 1,” and a door close to group one’s room had a sign that said “Kathryn Howard Group 2.”

Participants were given the choice to sit at any of the six desks available in the room. After consent forms were signed and collected, I explained the agenda for the session. Participants were informed that they were “engaging in a study on impression formation and the various assumptions people make based on impressions.” I clarified that they were going to respond to several prompts and that at the end session they would read a prompt randomly assigned to them from a “group two” member. They were then informed that they were in the “food preference condition” and that they would be making an assumption on how much a “group two” member enjoyed spicy food based on their essay. I explained that in order to measure assumptions in an objective, quantifiable manner, participants would pour the amount of hot sauce into a cup that they thought the author of the essay would most enjoy. Participants were told that the authors of the essays would actually consume the hot sauce during the study, and then rate how much they enjoyed the sample. Lastly, participants were told that a participant from “group two” would be forming impressions and assumptions about them. In order to strengthen the illusion of the existence of another group, participants were informed that “group two” was in the “music preference condition” and that at the end of the study, they would listen to a music clip specifically prepared for them by a participant in “group two,” and then rate how much they enjoyed it.

Ideological essays. Following the method for measurement of out-group derogation from McGregor et al. (1998), participants were given a questionnaire with a prompt that asked them to “briefly share their political views and opinion on politics in America.” At the top of the page before the prompt, participants were asked to check the appropriate box in response to the

question: “overall, I consider myself mostly a) liberal, b) moderately liberal, c) moderately conservative, or d) conservative.”

Attached with the ideological essay prompt was a measure of how much the participant enjoyed rock music and hot sauce. Participants indicated their preference on a 21 point rating scale, ranging from one (no liking at all) and 21, “extreme liking.” This liking scale was included in order to enhance the effectiveness of the illusion of another group. Participants were told that the bogus “group 2” members filled out an identical scale, and that they would be able to reference the bogus author’s response when deciding how much hot sauce to allocate. For every participant, the bogus author indicated a “3” out of “21” on the liking scale for hot sauce. This ensured participants understood that the bogus author did not like hot sauce, confirming that if participants allocated a significant amount of hot sauce for the bogus “group 2” member to consume, it could be viewed as a form of aggression.

Mood induction. In order to induce either fear or serenity depending on the randomly assigned condition, the autobiographical recall mood induction from Bodenhausen, Kramer, and Susser (1994) was used. For the fear condition, participants were asked to “recall, re-experience, and write about an event that made them feel particularly fearful.” The method was identical to Bodenhausen et al. (1994) except that the word “fear” was used instead of “happy.” Likewise, participants in the serene condition were given the same prompt, but the word “serene” was used instead of “happy.” Lastly, participants in the neutral condition were asked to “recall, re-experience, and write about an ordinary, routine day in their student life” (Krauth-Gruber et al., 2000). As suggested by Strack, Schwarz, and Gshneidinger (1985), participants were asked to “focus on concrete, vivid, experiential aspects of the event rather than on an abstract or objective assessment of it.” Focusing on a specific, concrete memory may allow for a stronger affective

experience and prevent against comparison effects (Strack et al., 1985). Participants were informed that the researchers were interested in how people form impressions based on written material and that they had 10 minutes exactly to complete the task (Bodenhausen et al., 1994).

MS induction. Directly after the mood induction, half of the participants received either a MS induction or a NS induction. For MS, participants were induced using the method developed by Greenberg et al. (1995) and used successfully by others (Greenberg et al., 1997; McGregor et al, 1998; Shepard et al., 2011; Agroskin & Jonas, 2013; Fritsche & Jonas, 2008, Lambert et al., 2014). To induce MS, participants were asked to "Please briefly describe the emotions that the thought of your own death arouses in you" and "Jot down, as specifically as you can, what you think will happen to you as you physically die and once you are physically dead." The NS induction was also modeled after Greenberg et al. (1995), in which participants wrote about watching TV and "what thoughts about watching TV arouses" in them. This neutral salience induction has been used as a reliable measure of neutral salience in previous TMT research (Dechesne, Greenberg, Arndt, & Schimel, 2000; Wisman & Goldenberg, 2005). Each participant was given 10 minutes exactly to complete this task.

Directly after the MS induction, participants completed a packet of neutral word and number games. The packet included a JMU word search, and four different Sudoku puzzles. Word Searches and other number puzzles have been used in previous studies as a neutral filler item (Landau et al., 2004; Pyszczynski, Abdollahi, Solomon, Greenberg, Cohen, & Weise, 2006). Participants worked on these puzzles for 10 minutes, as the literature has shown that the passage of approximately 10 - 15 minutes is beneficial for the full effects of MS to occur (Arndt et al., 1996; Arndt et al 1994; Simon et al., 1997).

Theoretically, after MS is received, the individual uses his or her cognitive strategies to suppress the troublesome thoughts of death (McGregor et al., 1998). After several minutes these cognitive strategies allegedly wear out, and an individual is able to access death thoughts. According to the theory, it is at this time when death thoughts are accessible that worldview defense is used to buffer the death anxiety. Numerous studies have been completed assessing worldview defense directly after MS and several minutes after MS, and these studies have found worldview defense to be highest several minutes after the MS induction (Arndt et al., 1996; Arndt et al., 1994; Simon et al., 1997).

Essay evaluation. While participants completed the puzzles, I gathered together the essays from each participant. I explained to participants that I was momentarily stepping out of the room to hand the essays to my research assistant in “group two” so that the essays could be swapped between groups. My assistant waited in the “group two” study room, and received the essays from the participants. In order to properly offend participants’ worldviews, the bogus essay each participant received had to oppose the political affiliation that the participant indicated. For example, if a participant indicated that they were conservative, they would receive a bogus essay written from a liberal point of view that derogated conservatives. It was my research assistant’s responsibility to assess how each participant identified politically, and then assign the correct bogus essay for them to receive. After my research assistant completed this task, she knocked on my door and handed me “group two’s essays.”

After 10 minutes, the puzzles were collected, and the opposing essays were distributed to each participant. Those who identified as liberal, or moderately liberal, received this essay from McGregor et al. (1998):

“Don’t even get me started. Liberals are the cause of so many problems in this country, it’s not funny. Not only that, but they get in the way of decent Americans who are trying to solve all those problems that they created in the first place. The bleeding heart stance they take, of trying to help everyone is a joke and incredibly stupid. How can they help the world when they can’t even help themselves!? Do liberals put any thought into what they believe? I don’t think so. Thankfully there are people in power that agree with me.

Those who indicated they were conservative or moderately conservative received this essay:

“Don’t even get me started. Conservatives are the cause of so many problems in this country, it’s not funny. Not only that, but they get in the way of decent Americans who are trying to solve all those problems that they created in the first place. The cold-hearted stance they take, of trying to help only themselves is a joke and incredibly stupid. Do conservatives put any thought into what they believe? I don’t think so. Thankfully there are people in power that agree with me.”

After participants were given a chance to read the bogus essay and form an impression of the author, hot sauce materials were distributed. Following the methodology from McGregor et al. (1998), participants received the bogus preference scale, along with a plastic cup, and a bottle of hot sauce. The hot sauce was composed of a Chile Habanero pepper mix, and was labeled as “XXXTRA HOT.” The Elyucateco brand of hot sauce was used. Participants were instructed to use the essay and the preference scale to decide how much hot sauce the author would most like to consume. Participants were encouraged to “add as much or as little hot sauce” as they would like, but were reminded that the author would “have to consume the entire sample” (McGregor et al., 1998). After each participant poured their desired amount of hot sauce in the cup, they sealed the lid and the cups and bottles were collected.

Each participant was then asked to evaluate the author of the bogus essay using an impression formation questionnaire (Greenberg et al., 1994). This questionnaire contained five questions. Examples are: “How much do you like this person?” “How intelligent do you think this person is?” and “How knowledgeable do you think this person is?” (See Appendix B for the complete scale.) In Greenberg et al. (1994), a significant correlation of $-.61$ was found, in which the more negatively a target was rated on the scale, the more hot sauce the target received.

Lastly, all participants completed the abridged Islamoprejudice scale (Kesebir, 2014; Imhoff & Recker, 2012). Following Kesebir et al. (2014), subjects answered six questions on a seven point rating scale from the original Islamoprejudice measure (Imhoff & Recker, 2012). Sample items are “Compared to other religious and philosophical approaches Islam is rather primitive,” “Any critique of the West brought forward by representatives of Islam is exaggerated and unjustified,” and “Hostility against Muslims is an intolerable form of discrimination.” (See Appendix C for full scale.) For this study, higher numbers on this scale indicated higher prejudice towards Islam and Muslims.

Directly following the Islamoprejudice measure, participants completed a questionnaire containing several demographic items addressing race, class year, gender, religion, and academic major. On the back of the demographics sheet, participants were asked if they “knew anyone else who had taken this study” and if they “knew anything about this study” before the session. Lastly, participants were asked what they “thought the study was about.” These questions were asked to ensure that participants were unaware of TMT and the main research questions. After this last questionnaire was collected, participants were debriefed and the study was complete.

Results

For Hypothesis One, I predicted that there would be a main effect of mood, such that participants in the fearful mood condition would derogate out-group members significantly more than those in the neutral or serene mood conditions (Schwarz & Clore, 1983; Lambert et al., 2010; Lerner & Keltner, 2000). To test this hypothesis, I conducted a 2 (salience: mortality or neutral) x 3 (mood: serene, neutral, and fearful) analysis of variance (ANOVA) on each of the three dependent variables: allocated hot sauce to author, derogation of author, and Islamoprejudice. Participants did not allocate significantly more hot sauce in the fearful condition ($M = 3.39$, $SD = 4.46$) than the neutral ($M = 6.27$, $SD = 13.92$) or serene conditions ($M = 5.02$, $SD = 9.48$), $F(2, 72) = .52$, $p = .595$. Similarly, participants did not derogate the author in the fearful condition ($M = 35.16$, $SD = 6.41$) significantly more than the neutral ($M = 34.31$, $SD = 6.03$) or serene conditions ($M = 35.12$, $SD = 7.25$), $F(2, 71) = .16$, $p = .857$, (see Figure 1). However, there was a main effect of mood that approached significance, $F(2, 71) = 2.82$, $p = .066$, in which participants in the fearful condition ($M = 23.44$, $SD = 5.63$) reported higher Islamoprejudice scores than participants in the serene ($M = 20.31$, $SD = 5.99$) and neutral ($M = 20.04$, $SE = 5.11$) conditions, (see Figure 2). Overall, Hypothesis One was not supported.

For Hypothesis Two, I predicted that there would be a main effect of salience, such that participants in the MS condition would derogate out-group members significantly more than those in the neutral salience condition. As in Hypothesis One, I conducted a 2 x 3 ANOVA on each of the three dependent variables. Participants did not allocate significantly more hot sauce in the MS condition ($M = 5.31$, $SD = 9.36$) than participants in the neutral salience condition ($M = 4.48$, $SD = 10.70$), $F(1, 72) = .42$, $p = .661$. There was a main effect of salience on “derogation of the author” that approached significance, $F(1, 71) = 3.66$, $p = .06$, in which participants in the

MS condition ($M = 36.29$, $SD = 6.66$) derogated the author more than participants in the neutral salience condition ($M = 33.46$, $SD = 6.12$), (see Figure 1). Lastly, participants in the MS condition ($M = 21.45$, $SD = 5.68$) did not report higher Islamoprejudice than those in the neutral salience condition ($M = 21.03$, $SD = 5.83$), $F(1, 71) = .139$, $p = .711$, (see Figure 2). In sum, Hypothesis 2 was not supported.

For Hypothesis Three I predicted there would be an interaction between mood and MS. Specifically, I predicted that derogation would be buffered after MS when participants were induced with a serene mood, but not when participants were induced with a neutral or fearful mood. Additionally, I expected that derogation would increase after neutral salience when participants were induced with a fearful mood but not when they were induced with a serene or neutral mood. Again, I conducted a 2x3 ANOVA to analyze the possible interactions between mood and salience across the three variables. In regards to hot sauce allocation, derogation of out-groups after neutral salience and MS was not impacted by mood, $F(2, 72) = .42$, $p = .661$. Additionally, derogation of the author after neutral salience or MS also was not mediated by mood, $F(2, 71) = .216$, $p = .806$. Lastly, mood did not mediate Islamoprejudice scores, $F(2, 71) = .118$, $p = .889$. In conclusion, there were no significant reactions in regards to the proposed hypotheses; Hypothesis Three was not supported. See Table 1 for a review of group means.

A reliability analysis was conducted for both the author derogation scale and Islamoprejudice scale. A Cronbach's alpha of .82 was found for the author liking scale, suggesting fairly high reliability. The Islamoprejudice scale found an acceptable Cronbach's alpha of .69.

Exploratory Analysis

Due to the similarity of scores between the neutral and serene mood conditions on several measures, it is possible that the serene induction may have elicited the same, or very similar, responses from participants as the neutral mood induction. Although manipulation checks were not administered, it appears that the serene mood induction probably did not provoke a serene mood. Perhaps the act of being a participant, sitting in a strange room, filling out questionnaires, and writing essays are not conducive factors for producing feelings of serenity. Because of these reasons, the serene condition was eliminated, and the same data analyses that were used for the original three hypotheses were run again.

Hypothesis One investigated the main effects of mood across the three dependent variables. When excluding serene mood, participants in the fearful condition ($M = 3.39$, $SD = 4.46$) did not allocate more hot sauce than participants in the neutral condition ($M = 6.27$, $SD = 13.92$), $F(1, 48) = .98$, $p = .327$. Additionally, participants in the fearful condition ($M = 35.16$, $SD = 6.41$) did not derogate the author more than those in the neutral condition ($M = 34.31$, $SD = 6.03$), $F(1, 47) = .30$, $p = .587$, (see Figure 3). However, participants in the fearful condition ($M = 23.44$, $SD = 5.63$) reported significantly higher Islamoprejudice than participants in the neutral condition ($M = 20.04$, $SD = 5.11$), $F(1, 47) = 4.96$, $p = .031$, (see Figure 4). That is, a fearful mood may lead to greater prejudice towards Islam.

Hypothesis Two analyzed the main effect of salience across the three dependent variables. When excluding serene mood, participants in the MS condition ($M = 4.85$, $SD = 7.26$) did not allocate more hot sauce to the author than those in the neutral salience condition ($M = 4.81$, $SD = 12.85$), $F(1, 48) = .57$, $p = .454$. However, participants in the MS condition ($M = 36.48$, $SD = 5.96$) derogated the author of the essay to a significantly greater extent than those in

the neutral salience condition ($M = 33.04$, $SD = 6.00$), $F(1, 47) = 4.15$, $p = .047$, (see Figure 3). Lastly, participants in the MS condition ($M = 21.76$, $SD = 5.65$) did not report higher Islamoprejudice than participants in the neutral salience condition ($M = 21.65$, $SD = 5.64$), $F(1, 47) = .02$, $p = .712$, (see Figure 4). In sum, MS may have influenced participants to judge the author of the essay more negatively than participants in a neutral state.

After excluding the “serene” condition, no interactions between mood and salience were found on any of the three dependent variables. It is probable that a fearful mood does not exacerbate the effects of the MS manipulation. See Table 2 for a review of group means for exploratory analysis.

Discussion

Review of TMT

Within the framework of TMT, when people are reminded of their death, they are more likely to support their in-group and derogate their out-group (Arndt et al., 1999; Greenberg et al., 1990; Hayes et al., 2010). TMT researchers propose that this need for out-group derogation arises from an existential threat to personal identity, and that changes in mood play no role in this process (Greenberg et al; 1994., McGregor et al; 1998). However, a recent study found that when assessing specific dimensions of mood rather than just “negative” or “positive” mood, participants experienced an increase in fear after the MS manipulation (Lambert et al., 2014). The current study aimed to further examine the mediating role of mood in TMT, specifically the potential buffering effects of a serene mood and the exacerbating effects of a fearful mood. If a fearful mood plays a powerful role in producing the reaction observed in TMT studies, then inducing a serene mood and priming participants to feel “safe” and “secure” may buffer any fearful emotions evoked by the MS manipulation. Likewise, if a fearful mood is indeed one of the driving forces behind the TMT manipulation, then simply having participants write about fear should produce out-group derogation.

For this study, the effect of mood on TMT was examined via three hypotheses: a) participants in a fearful mood should report more derogation on all measures than those in a neutral or serene mood, b) those in the MS condition should report more derogation on all measures than those in the neutral salience group, and c)—an interaction between mood and salience in which a serene mood should buffer the negative effects of the MS manipulation. A 2x3 ANOVA determined that these hypotheses were not supported.

Although no significant differences were found, group means for several of the conditions reflected the expected patterns for the author derogation scale and Islamoprejudice scale. As predicted, participants in the MS condition derogated the author of the opposing essay more than those in the neutral salience condition. Additionally, participants in the fearful mood condition reported higher Islamoprejudice scores than those in the neutral and serene condition. Also, participants who were in both the MS condition and fearful mood condition derogated the author to the greatest extent and reported the highest Islamoprejudice scores. Allocation of hot sauce was the only dependent measure that did not display any results that moved in the expected direction.

Limitations of Hot Sauce Measure

These seemingly erratic responses for allocation of hot sauce between conditions may be due in part to several confounds with the hot sauce measure. In regards to the protocol, before participants were informed to allocate hot sauce, they were directed to look at the bogus author's taste preference sheet. This sheet informed participants that the bogus author did not like hot sauce. Despite being told to reference this sheet, several participants poured hot sauce before consulting the author's preference. Not examining this sheet may have affected the quantity that some participants poured. Additionally, in two of the sessions, participants asked aloud in front of all other participants if they "had to pour any hot sauce at all" because they noticed the author "did not like hot sauce." This comment possibly swayed how other participants in the room responded. Furthermore, due to difficulties working out the kinks of this measure, some participants received smaller or larger cups to pour hot sauce in during the early stages of this study. It is possible that a bigger cup may provoke a larger allocation of hot sauce. Overall, this dependent variable may have had too many confounds to provide legitimate, significant results.

Furthermore, the efficacy of the hot sauce measure, along with derogation of the author and the Islamoprejudice scale was affected by several other design flaws and unfortunate circumstances. First and foremost, the number of participants in the study may not have been large enough to discern any significance. Due to the lull in the participant pool, it was difficult to collect sufficient data in the allotted time. Additional participants may have provided enough power in order to detect main effects for the MS and fear conditions.

Limitations of Mood Manipulation

Additionally, the autobiographical mood manipulation allowed for a limited amount of control and consistency (Lerner & Kelter, 2000). Although most participants used the whole 10 minutes to record their responses, I had no control over the serene, routine, or fearful experiences participants chose to write and contemplate about. For example, in the fear condition, some participants wrote about severe topics, some of which included 9/11 trauma, near-fatal car crashes, serious illness (personal or familial), missing siblings, date rape, and one participant wrote about pulling a dead body out of the ocean while he/she was lifeguarding at the beach. Other participants wrote about less severe topics, such as hiking on a steep mountain, staying home alone at night, or walking home in the dark. These experiences are qualitatively different, and therefore participants who wrote about higher-fear moments may have experienced a stronger reaction and responded more severely to the dependent measures. This same logic also applies to the MS condition, as I had no control over how participants chose to write and think about their death.

Similar to the fear measure, I could not control how participants responded to the serene condition. Not only did I lack control, but the nature of being a participant and writing an essay may not have effectively produced feelings of serenity, even when participants recollected on

serene moments. A more effective mood manipulation may involve exposing all participants to the same, strong mood stimulus. For example, showing a video clip in order to induce fear and/or serenity may be a more effective method.

In addition to the lack of control with the mood measures, there was no manipulation check after the mood induction to ensure that the manipulation was effective. Because this check was not incorporated in the study, I cannot be certain that participants did *not* experience serenity. Furthermore, I cannot be certain that participants experienced fear—it may have been another mood, or another factor entirely that caused a directional increase in Islamoprejudice in the fear condition. Future studies should incorporate the use of a manipulation check in order to ensure that the correct mood or response is elicited.

Review of Exploratory Analyses

Despite some of the limitations to this study, exploratory analyses revealed significant differences between conditions. When analyzing the mean scores for Islamoprejudice and author derogation, the serene condition and the neutral condition reported nearly identical means. A *t*-test between the two conditions revealed that a serene mood and a neutral mood were not statistically different from one another. Unfortunately, due to the lack of a manipulation check, it is impossible to know if a serene mood was even elicited. Regardless, these findings suggest that a serene mood or the serene mood manipulation was ineffective in buffering the effects of the MS manipulation.

Due to the lack of effectiveness of the serene mood manipulation and the similarity in results between the serene and neutral mood conditions, exploratory analyses were run in which the serene condition was excluded. Much like the previous findings, there was no interaction between mood and salience in for any of the dependent measures. However, these exploratory

analyses revealed a main effect of MS, in which those in the MS condition derogated the author of the world view opposing essay significantly more than those in the neutral salience condition. A main effect of mood was also found, in which participants in the fearful mood reported significantly higher Islamoprejudice scores than those in the neutral mood condition. Again, no significant interactions were found between mood and salience.

Interestingly, the MS condition increased derogation of the author but did not increase Islamoprejudice. This finding is actually consistent with the MS literature: Previous studies have found that once participants derogate an out-group, they relieve their need to derogate and assess any succeeding groups in a neutral, basal, manner (Kesebir, 2014; McGregor et al., 1998; Landau et al., 2006). In this study, all participants allocated hot sauce, then derogated the author, and completed the Islamoprejudice measure last. If participants were in a neutral mood, they may have felt no need to derogate Islam after they derogated the author. Conversely, participants in the fearful + MS condition reported high derogation of the author and high Islamoprejudice scores. Participants in this condition may still have felt a need to derogate Islam after they derogated the author due to the fearful mood induction. This suggests that the effects of fear may persevere longer than the effects of the MS manipulation.

In regards to the main effect of mood within the exploratory analyses, a fearful mood significantly increased Islamoprejudice scores but had no effect on allocation of hot sauce or author derogation. A fearful mood may have only affected Islamoprejudice because the two out-groups used in this study to measure derogation, (Islam and opposing political affiliation), differ in several fundamental ways. Because participants are exposed to this author's opinion for the first time during the study, they have no preconceived notions about the author. In contrast, the majority of participants probably already had knowledge of, or experiences with Islam, and may

have already had stereotypes for this group. Unfortunately, because of 9/11, current conflicts in Gaza, and the constant media coverage of the war and terrorist groups, participants may have entered the study with an already existing “fearful schema” for Islam (Amer & Bagasra, 2013; Elchardus & Spruyt, 2014; Pyszczynski et al., 2009). It may be that the fearful mood induction activated and intensified this schema, causing Islamoprejudice scores to increase. In fact, several participants in the fearful condition wrote about trauma they personally experienced during 9/11, therefore, the fearful condition may have primed Islamoprejudiced responses. Although participants may have felt bothered or annoyed by the bogus author, the content of the essay probably did not interact with their alleged fearful mood, preventing any change to author derogation.

Secondly, approximately 50% of participants reported political apathy, and circled an affiliation merely because “they felt they had to.” In their political prompts, some participants explained that they “did not know anything about politics” or “did not care at all about politics.” It may be that the political out-group was not strong enough to offend some participants. Overall, it may be that this group of participants had stronger feelings about Islam than politics, and an increase in a fearful mood may only increase derogation of groups that one feels strongly about.

A possible improvement to this study would be to vary the order in which dependent measures are given to participants. In my study, every participant first allocated hot sauce, then completed the author derogation scale, and ended with the Islamoprejudice scale. The order of these measures may have influenced how participants responded to each succeeding measure. In the current study MS did not affect Islamoprejudice, but as previously stated, this may have been due to the fact that participants already derogated the author and therefore felt no more need to derogate (McGregor et al., 1998). If the Islamoprejudice measure was given before the other

measures, a significant effect of salience may have been elicited. Future studies could potentially assess the effects of order of the dependent measures one each succeeding response.

Conclusion

Although several confounds and design difficulties may have influenced a lack of significant findings for the main hypotheses, exploratory analysis found that MS increased derogation of an opposing world view author, and thinking and writing about a fearful mood may lead to greater Islamoprejudice. Previous TMT literature states that affect is not involved in the derogation of out-groups, but this study found that a change in affect (fear) may indeed produce increases in out-group derogation. Additionally, this study was able to find an increase in out-group derogation without an MS manipulation. Because of these contradictory findings, future research should explore in greater depth the influence of a fearful mood on other measures of out-group derogation. If a fearful mood increases derogation of Islam, it is very possible that derogation of other out-groups, such as different racial groups, may be affected by fear.

Most importantly, if future research confirms that fear is a prominent factor in out-group derogation, than TMT researchers must integrate the effects of mood into the theoretical framework. Specifically, TMT must incorporate the change in affective-fear after the MS manipulation. Although a serene mood manipulation was not found to buffer the effects of MS, other moods, or other mood manipulations may be effective. Discovering which psychological factors have the potential to buffer people from the effects of MS is integral to TMT, as it makes the theory beneficial and applicable in real life settings where death anxiety or fear occurs. As our world population creeps from 7 billion to 8 billion, and societies become increasingly connected via technological advances, understanding how to live peacefully with unlike-others is necessary for peaceful, societal growth.

Appendix A

Consent to Participate in Research

Identification of Investigators & Purpose of Study

You are being asked to participate in a research study conducted by Kathryn Howard from James Madison University. The purpose of this study is to understand how people form impressions of others based on written material. This study will contribute to the researcher's completion of her senior thesis.

Research Procedures

Should you decide to participate in this research study, you will be asked to sign this consent form once all your questions have been answered to your satisfaction. This study consists of several questionnaires that will be administered to individual participants in (*Miller lab 1201*). You will also be asked to write two short essays. Additionally, you will be asked to provide answers to a series of questions related to current events, the process of impression formation, and your opinion on various authors and selections of text.

Time Required

Participation in this study will require 60 minutes of your time.

Risks

The investigator does not perceive more than minimal risks from your involvement in this study (that is, no risks beyond the risks associated with everyday life).

Benefits

There are no direct benefits to you for participating in this study; however, results from this study may add to the already existing knowledge of impression formation.

Confidentiality

The results of this research will be presented at the senior thesis symposium. The results of this project will be coded in such a way that the respondent's identity will not be attached to the final form of this study. The researcher retains the right to use and publish non-identifiable data. While individual responses are confidential, aggregate data will be presented representing averages or generalizations about the responses as a whole. All data will be stored in a secure location accessible only to the researcher. Upon completion of the study, all information that matches up individual respondents with their answers will be destroyed.

Participation & Withdrawal

Your participation is entirely voluntary. You are free to choose not to participate. Should you choose to participate, you can withdraw at any time without consequences of any kind.

Questions about the Study

If you have questions or concerns during the time of your participation in this study, or after its completion or you would like to receive a copy of the final aggregate results of this study, please contact:

Kathryn Howard
Psychology
James Madison University
howardka@dukes.jmu.edu

Dr. Kevin J Apple
Department Head of Psychology
James Madison University
Telephone: (540) 568 2555
applekj@dukes.jmu.edu

Questions about Your Rights as a Research Subject

Dr. David Cockley
Chair, Institutional Review Board
James Madison University
(540) 568-2834
cocklede@jmu.edu

Giving of Consent

I have read this consent form and I understand what is being requested of me as a participant in this study. I freely consent to participate. I have been given satisfactory answers to my questions. The investigator provided me with a copy of this form. I certify that I am at least 18 years of age.

Name of Participant (Printed)

Name of Participant (Signed)

Date

Name of Researcher (Signed)

Date

Appendix B

Please respond to the following questions based on your impression of the author of the essay you just read

1) How much do you like this person?

1	2	3	4	5	6	7	8	9
Totally		Very much		Moderately		Somewhat		Not at all

2) How intelligent do you think this person is?

1	2	3	4	5	6	7	8	9
Totally		Very much		Moderately		Somewhat		Not at all

3) How knowledgeable do you think this person is?

1	2	3	4	5	6	7	8	9
Totally		Very much		Moderately		Somewhat		Not at all

4) How much do you agree with this person's opinion?

1	2	3	4	5	6	7	8	9
Totally		Very much		Moderately		Somewhat		Not at all

5) From your perspective, how true do you think this person's opinion is?

1	2	3	4	5	6	7	8	9
Totally		Very much		Moderately		Somewhat		Not at all

Appendix C

Scale for Islamoprejudice and Secular Critique of Islam

Strongly agree	Agree	Somewhat disagree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
(1)	(2)	(3)	(4)	(5)	(6)	(7)

1. Compared to other religious and philosophical approaches Islam is rather primitive.

(1) (2) (3) (4) (5) (6) (7)

2. Any critique of the West brought forward by representatives of Islam is exaggerated and unjustified.

(1) (2) (3) (4) (5) (6) (7)

3. Hostility against Muslims is an intolerable form of discrimination.

(1) (2) (3) (4) (5) (6) (7)

4. Islam and Christianity share the same universal ethical principles.

(1) (2) (3) (4) (5) (6) (7)

5. I think Islamic religion and its aggressive sides predispose it towards proximity to terrorism.

(1) (2) (3) (4) (5) (6) (7)

6. Muslims and their religion are so different from us that it would be naive to demand an equal access to all positions in society.

(1) (2) (3) (4) (5) (6) (7)

Tables

Table 1. Initial Analysis.

	Hot Sauce	Author Derogation	Islamoprejudice
Main effect of Mood	$F = .52$	$F = .16$	$F = 2.83$
Main effect for Salience	$F = .128$	$F = 3.66$	$F = .14$
Interaction between Mood and Salience	$F = .42$	$F = .22$	$F = .12$
Means for Serene Mood	$M = 5.02, SD = 9.48$	$M = 35.12, SD = 7.25$	$M = 20.31, SD = 5.96$
Means for Neutral Mood	$M = 6.27, SD = 13.92$	$M = 34.31, SD = 5.32$	$M = 20.04, SD = 5.11$
Means for Fearful Mood	$M = 3.39, SD = 4.46$	$M = 35.24, SD = 6.82$	$M = 23.45, SD = 5.63$
Means for MS	$M = 5.31, SD = 9.36$	$M = 36.31, SD = 6.66$	$M = 21.51, SD = 5.68$
Means for NS	$M = 4.48, SD = 10.70$	$M = 33.46, SD = 6.12$	$M = 21.03, SD = 5.83$

Table 2. Exploratory analysis

	Hot Sauce	Author Derogation	Islamoprejudice
Main effect of Mood	$F = .98$	$F = .30$	$F = 4.96^*$
Main effect for Salience	$F = .00$	$F = 4.15^*$	$F = .02$
Interaction	$F = .569$	$F = .10$	$F = .14$
Means for Neutral Mood	$M = 6.27, SD = 13.92$	$M = 34.31, SD = 6.03$	$M = 20.04, SD = 5.11$
Means for Fearful Mood	$M = 3.39, SD = 4.45$	$M = 35.16, SD = 6.41$	$M = 23.44, SD = 5.63$
Means for MS	$M = 4.85, SD = 7.26$	$M = 36.48, SD = 5.96$	$M = 21.76, SD = 5.65$
Means for NS	$M = 4.81, SD = 12.85$	$M = 33.04, SD = 6.00$	$M = 21.65, SD = 5.64$

* = $p < .01$

Figures

Figure 1. Initial Analysis for Author Derogation

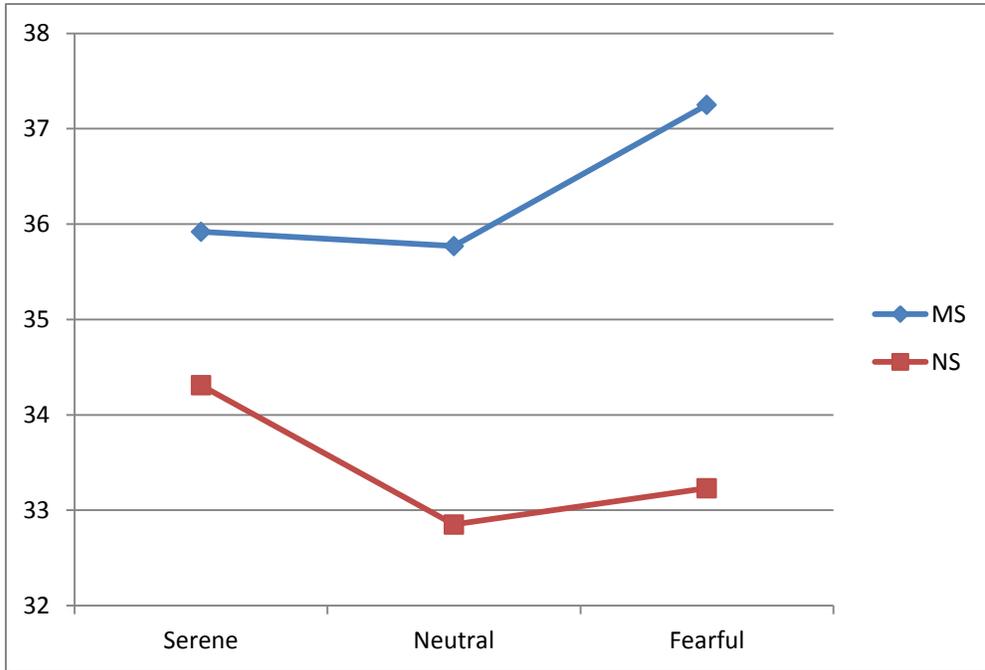
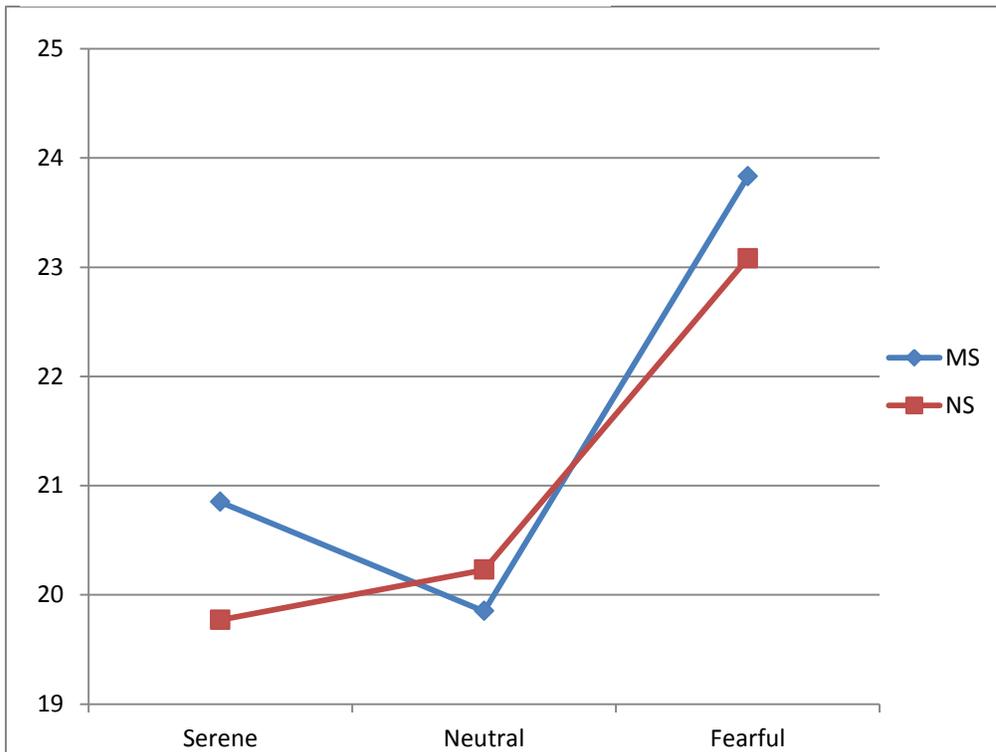


Figure 2. Initial Analysis for Islamoprejudice



Figures Cont.

Figure 3. Exploratory Analysis for Author Derogation

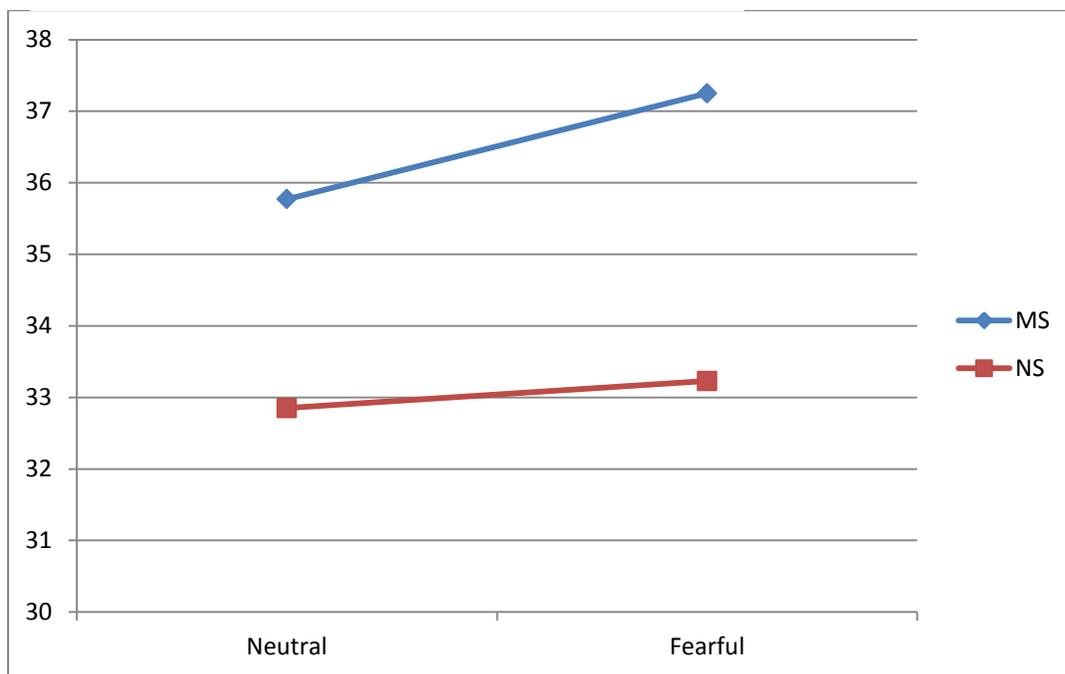
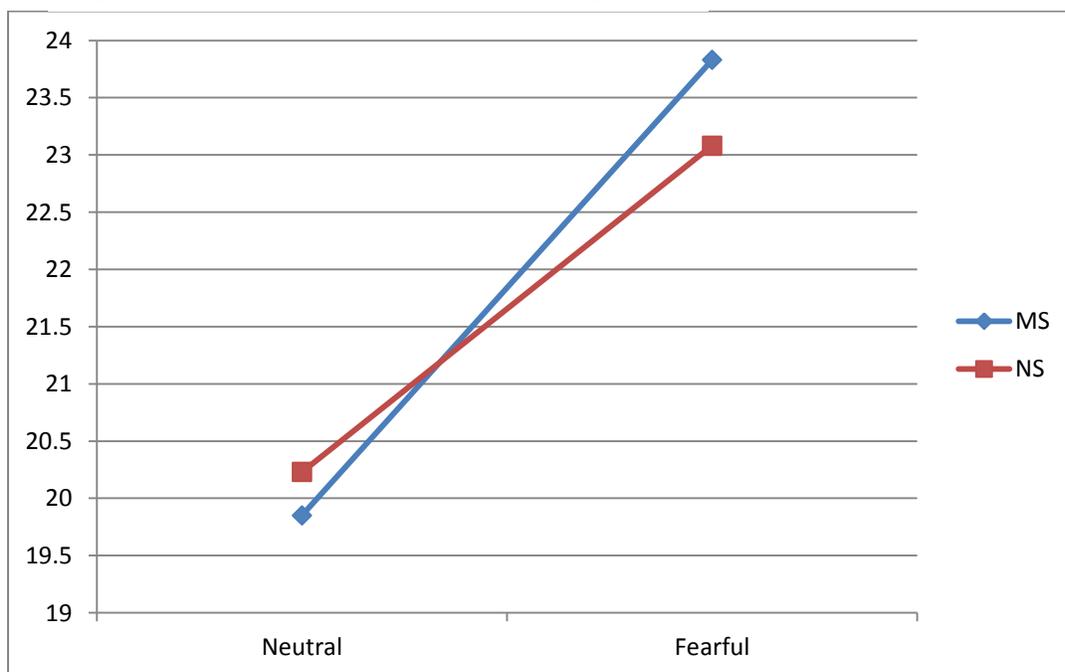


Figure 4. Exploratory Analysis for Islamoprejudice



Bibliography

- Agroskin, D., & Jonas, E. (2013). Controlling death by defending ingroups—Mediational insights into terror management and control restoration. *Journal of Experimental Social Psychology, 49*, 1144 – 1158.
- Amer, M., & Bagasra, A. (2013). Psychological research with Muslim Americans in the age of Islamophobia: Trends, challenges, and recommendations. *American Psychologist, 68*(3), 134 – 144.
- Arndt, J., Allen, J., & Greenber, J. (2001). Traces of terror: Subliminal death primes and facial electromyographic indices of effect. *Motivation and Emotion, 25*(3), 253 – 277.
- Arndt, J., & Greenberg, J. (1999). The effects of self-esteem boost and mortality salience on responses to boost relevant and irrelevant worldview threats. *Personality and Social Psychology Bulletin, 25*, 1331 – 1341.
- Arndt, J., Greenberg, J., Solomon, S., Pyszczynski, T., & Simon, L. (1997). Suppression, accessibility of death related thoughts, and cultural world-view defense: Exploring the psychodynamics of terror management. *Journal of Personality and Social Psychology, 73*, 5 – 18.
- Bless, H., Clore, G., Schwarz, N., Golisano, V., Rabe, C., & Wolk, M. (1996). Mood and the use of scripts: Does a happy mood really lead to mindlessness? *Journal of Personality and Social Psychology, 71*(4), 665 – 679.
- Bodenhausen, G., Kramer, G., & Susser, K. (1994). Happiness and stereotypic thinking in social judgment. *Journal of Personality and Social Psychology, 66*(4), 621 – 632.
- Castano, E. (2004). In case of death, cling to the ingroup. *European Journal of Social Psychology, 34*, 375–384.

- Dechesne, M., Janssen, J., & Van Knippenberg, A. (2000). Derogation and distancing as terror management strategies: The moderating role of need for closure and permeability of group boundaries. *Journal of Personality and Social Psychology, 79*(6), 923 – 932.
- Elchardus, M., & Spruyt, B. (2014). Universalism and anti-Muslim sentiment. *International Journal of Intercultural Relations, 38*, 75 – 85.
- Forgas, J., & Moylan, S. (1987). After the movies: The effects of transient mood states on social judgments. *Personality and Social Psychology Bulletin, 13*, 478 – 489.
- Fritsche, I., Jonas, E., & Fankhanel, T. (2008). The role of control motivation in mortality salience effects on ingroup support and defense. *Journal of Personality and Social Psychologist, 95*(3), 524 – 541.
- Greenberg, J., Pyszczynski, T., Solomon, S., Rosenblatt, A., Veeder M., Kirkland, S., & Lyon, D. (1990). Evidence for terror management theory: II The effects of mortality salience reactions to those who threaten or bolster the cultural worldviews. *Journal of Personality and Social Psychology, 58*, 308 – 318.
- Greenberg, J., Pyszczynski, T., Solomon, A., Simon, L., & Breus, M. (1994). The role of consciousness and accessibility of death-related thoughts in mortality salience effects. *Journal of Personality and Social Psychology, 67*, 627 – 637.
- Harmon-Jones, E., Simon, L., Greenberg, J., Pyszczynski, T., Solomon, S., & McGregor, H. (1997). Terror management theory and self-esteem: Evidence that increased self-esteem reduces mortality salience effects. *Journal of Personality and Social Psychology, 72*(1), 24 – 36.

- Hayes, J., Schimel, J., Arndt, J., & Faucher, E. (2010). A theoretical and empirical review of the death-thought accessibility concept in terror management research. *Psychological Bulletin*, *136*(5), 699 – 739.
- Imhoff, R., & Recker, J. (2012). Differentiating Islamophobia: Introducing a new scale to measure Islamoprejudice and secular Islam critique. *Political Psychology*, *33*(16), 811 – 824.
- Jallais, C., & Gilet, A. (2010). Inducing changes in arousal and valence: Comparison of two mood induction procedures. *Behavioral Research Methods*, *42*(1), 318 – 325.
- Jonas, E., & Fritsche, I. (2013). Destined to die but not to wage war: How existential threat can contribute to escalation or de-escalation of violent intergroup conflict. *American Psychologist*, *68*(7), 543 – 558.
- Jonas, E., Greenberg, J., & Frey, D. (2003). Connecting terror management theory and dissonance theory: Evidence that mortality salience increases the preference for supporting information after decisions. *Personality and Social Psychology Bulletin*, *29* PAGES
- Kesebir, P. (2014). A quiet ego quiets death anxiety: Humility as an existential anxiety buffer. *Journal of Personality and Social Psychology*, *106*(4), 610 – 623.
- Kobesiy, A. (2006). Faith based practice: An introduction. *Journal of Muslim Mental Health*, *1*(1), 57 – 63.
- Krauth-Gruber, S., & Ric, F. (2000). Affect and stereotypic thinking: A test of the mood and general knowledge model. *Personality and Social Psychology Bulletin*, *26*, 1587 – 1597.
- Lambert, A., Eadeh, F., Peak, S., Scherer, L., Schott, J., & Slochower, J. (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 – 678.
- Lambert, A., Khan, S., Lickel, B., & Fricke, K. (1997). Mood and the correction of positive versus negative stereotypes. *Journal of Personality and Social Psychology*, 72(5), 1002 – 1016.
- Lambert, A., Scherer, L., Schott, J., Olson, K., Andrews, R., O’Brien, T., & Zisser, A. (2010). Rally effects, threat, and attitude change: An integrative approach to understanding the role of emotion. *Journal of Personality and Social Psychology*, 98(6), 886 – 903.
- Landau, M., Greenberg, J., Pyszczynski, T., Solomon, S., & Martens, A. (2006). Windows into nothingness: Terror management, meaningless, and negative reactions to modern art. *Journal of Personality and Social Psychology*, 90(6), 879 – 892.
- Landau, M., Johns, M., Greenberg, J., Solomon, S., Pyszczynski, T., Martens, A., Goldenberg, J., & Solomon, S. (2004). A function of form: Terror management and structuring the social world. *Journal of Personality and Social Psychology*, 87(2), 190 – 210.
- Lerner, J., & Keltner, D. (2001). Fear, anger, and risk. *Journal of Personality and Social Psychology*, 81(1), 146 – 159.
- Lerner, J., & Keltner, D. (2000). Beyond valence: Toward a model of emotion-specific influences on judgment and choice. *Cognition and Emotion*, 14, (4), 473 – 493.
- Mayer, J., & Gaschke, Y. (1988). The experience and meta – experience of mood states on social judgments. *Journal of Personality and Social Psychology*, 55, 102 – 111.
- McGregor, H., Greenberg., Arndt, J., Lieberman, J., Solomon, S., Simon, L., & Pyszczynski, T. (1998). Terror management and aggression: Evidence that mortality salience motivates

- aggression against worldview-threatening others. *Journal of Personality and Social Psychology*, 74(3), 590 – 605.
- Mikulincer, M., Florian, V., & Hirschberger, G. (2004). The terror of death and the quest for love—An existential perspective on close relationships. In J. Greenberg, S. L. Koole, & T. Pyszczynski (Eds.), *Handbook of experimental existential psychology* (pp. 287–304). New
- Navarrete, C., Olsson, A., Ho, A., Mendes, W., Thomsen, L., & Sidanius, J. (2009). Fear extinction to an out-group face: The role of target gender. *Psychological Science*, 20(2), 155 – 158.
- Park, J., & Banaji, M. (2000). Mood and heuristics: The influence of happy and sad states on sensitivity and bias in stereotyping. *Journal of Personality and Social Psychology*, 78(6), 1005 – 1023.
- Pinker, S. (2002). *The Blank Slate: The Modern Denial of Human Nature*. New York: Viking.
- Pyszczynski, T., Abdollahi, A., Solomon, A., Greenberg, J., Cohen, F., & Weise, D. (2006b). Mortality salience, martyrdom, and military might: The great Satan versus the axis of evil. *Personality and Social Psychology Bulletin*, 32(4), 525 – 537.
- Pyszczynski, T., Motyl, M., & Abdollahi, A. (2009). Righteous violence: Killing for God, country, freedom, and justice. *Behavioral Sciences of Terrorism and Political Aggression*, 1(1), 12 – 39.
- Rosenblatt, A., Greenberg, J., Solomon, S., Pyszczynski, T., & Lyon, D. (1989). Evidence for terror management theory: The effects of mortality salience on reactions to those who violate or uphold cultural values. *Journal of Personality and Social Psychology*, 57(4), 681 – 690.

- Schimmel, J., Wohl, A., & Williams, T. (2006). Terror management and trait empathy: evidence that mortality salience promotes reactions of forgiveness among people with high (vs low) trait empathy. *Motivation and Emotion*, 30(3), 214 – 224.
- Schmeichel, B., Gailliot, M., Filardo, E., McGregor, H., Gilter, S., & Baumeister, R. (2009). Terror management theory and self-esteem revisited: The roles of implicit and explicit self-esteem in mortality salience effects. *Journal of Personality and Social Psychology*, 96(5), 1077 – 1087.
- Schmeichel, B., & Martens, A. (2005). Self-affirmation and mortality salience: Affirming values reduces worldview defense and death thought accessibility. (2005). *Personality of Social Psychology Bulletin*, 31, 658 – 667.
- Schwarz, N., & Clore, G. (1983). Mood, misattribution, and judgment of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology*, 45(3), 513 – 523.
- Shepard, S., Kay, A., Landau, M., & Keefer, L. (2011). Evidence for the specificity of control motivations in worldview defense: Distinguishing compensatory control from uncertainty management and terror management process. *Journal of Experimental Social Psychology*, 47, 949 – 958.
- Simon, L., Greenberg, J., Harmon-Jones, E., Solomon, S., Pyszczynski, T., Arndt, J., & Abend, T. (1997). Terror management and cognitive-experiential self-theory: Evidence that terror management occurs in the experiential system. *Journal of Personality and Social Psychology*, 72(5), 1132 – 1146.

- Strack, F., Schwarz, N., & Gschneidinger, E. (1985). Happiness and reminiscing: The role of time perspective, affect, and mode of thinking. *Journal of Personality and Social Psychology, 49*(6), 1460 – 1469.
- Sweeney, P., & Opatow, S. (2013).” Why there?” Islamophobia, environmental conflict, and justice at Ground Zero. *Social Justice Research, 26*(4), 492 – 512.
- Talati, Z., Fritsche, I., Du, H., Jonas, E., & Castano, E. (2013). The possibility of self-determined death eliminates mortality salience effects on cultural worldview defense: Cross-cultural evidence. Manuscript submitted for publication.
- Van Vugt, M., De Cremer, D., & Janseen, D. (2007). Gender differences in cooperation and competition: The male warrior hypothesis. *Psychological Science, 18*(1), 19 – 23.
- Wisman, A., & Goldenberg, J. (2005). From the grave to cradle: Evidence that mortality salience engenders a desire for offspring. *Journal of Personality and Social Psychology, 89*(1), 46 – 61.
- Zhou, X., Lei, Q., Marley, S., & Chen, J. (2009). Existential function of babies: Babies as a buffer of death-related anxiety. *Asian Journal of Social Psychology, 12*, 40 – 46