Article

Journal of Humanistic Psychology
1–14

DOI: 10.1177/00221678241252731
journals.sagepub.com/home/jhp


Effects of Mortality Salience and Religion on Aggression

Peter K. H. Chew[1], **Patrick K. F. Lin**[1], **and Cybelle Quek**[1]

Abstract

The current study aimed to examine the effects of mortality salience (MS) and religion on aggression. Participants were 120 students (58.3% females; 73.3% with religion) from a private university in Singapore. They were randomly assigned to either the MS condition or the control condition, asked to remember a time when they were deeply hurt or offended by a person, and provided an opportunity for revenge by sticking pins into a voodoo doll that represented the person. The results showed that participants in the MS condition inserted a significantly higher number of pins into the voodoo doll than participants in the control condition. However, this effect was not moderated by religion and extent of belief in God. Limitations include the consideration of participants with religion as one group for data analysis. Future research directions include recruiting a larger and more diverse group of participants.

Keywords

terror management theory, mortality salience, religion, aggression

[1]James Cook University Singapore, Singapore

Corresponding Author:
Peter K. H. Chew, James Cook University Singapore, 149 Sims Drive, Singapore 387380, Singapore
Email: peter.chew@jcu.edu.au

According to terror management theory (TMT), the juxtaposition of the universal instinct for life and the uniquely human awareness of the inevitability of death results in terror (Greenberg et al., 1986). To live life with equanimity, we manage this terror using a combination of proximal and distal defenses (Pyszczynski et al., 1999). Proximal defenses are used when death-related thoughts are conscious (e.g., immediately after reminders of death). These pseudo-rational defenses include distracting oneself, denying one's vulnerability, and suppressing death-related thoughts. In contrast, distal defenses are used when death-related thoughts and awareness are unconscious but accessible (e.g., after a delay following a reminder of death). These defenses include defending one's own worldview, obtaining self-esteem, and seeking close relationships (i.e., the tripartite security system; Hart et al., 2005).

The predictions of TMT have often been tested using the mortality salience (MS) hypothesis (Burke et al., 2010). The hypothesis states that if the components of the tripartite security system act as an anxiety buffer against death-related thoughts and awareness, then MS should increase the need for those components. Indeed, participants under MS showed out-group derogation (i.e., defending one's own worldview; Greenberg et al., 1992, 1994), were more likely to engage in risky behaviors such as reckless driving and suntanning if those behaviors were linked to their self-esteem (i.e., obtaining self-esteem; Routledge et al., 2004; Taubman Ben-Ari et al., 1999), and reported higher desire for intimacy and affiliation (i.e., seeking close relationships; Mikulincer et al., 2003). Overall, a meta-analysis of 277 experiments yielded effect sizes that ranged from −.48 to .99, with an overall moderate effect size of .35, providing support for the MS hypothesis (Burke et al., 2010).

Literature has documented a multitude of approaches used to defend one's own worldview. One of those approaches is to manage worldview-threatening individuals. Specifically, in response to those individuals, participants could either engage in assimilation, bolstering and derogation, or aggression (Vail, Kosloff, et al., 2012). For example, MS motivated Christian participants to invite an atheist to church (assimilation; Kosloff et al., 2011), participants to rate a member of an in-group favorably (bolstering) and a member of an out-group unfavorably (derogation; Greenberg et al., 1990), and participants to allocate a large amount of hot sauce to a worldview-threatening individual (aggression; McGregor et al., 1998; McPherson & Joireman, 2009). However, there are two limitations associated with research on the last strategy.

Figure 1. The Voodoo Doll Task.

First, it appears that TMT research has exclusively used the hot sauce paradigm to assess aggression (McGregor et al., 1998; McPherson & Joireman, 2009). Consequently, it is unclear if the effect would be found using other measures of aggression, imposing a limit to the generalizability of the findings. Second, the hot sauce paradigm might not be cross-culturally valid given the preference for spicy foods in some cultures. For example, foods in Western cultures tend to be milder and less spicy in taste compared to foods in Asian cultures (Kittler & Sucher, 2003). Indeed, in a survey of attitudes toward Malaysian foods, Western tourists indicated that the food is too hot and spicy for them (Jalis et al., 2009). As such, it appears that the use of hot sauce as a form of punishment and an indicator of aggression is probably valid among Western samples only (e.g., McGregor et al., 1998; McPherson & Joireman, 2009).

The Current Study

Many methods, such as administering electrical shocks (Taylor, 1967), hitting with a Styrofoam sword (Diener, 1976), and the aforementioned allocating of hot sauce (McGregor et al., 1998; McPherson & Joireman, 2009), have been used to assess aggression. However, these methods are either unethical or not cross-culturally valid. The current study aimed to address

those limitations and build on extant literature by using the Voodoo Doll Task (see Figure 1; DeWall et al., 2013), a culturally sensitive method to assess aggression among Asian populations.

Specifically, after a MS manipulation, participants were encouraged to remember a time when they were deeply hurt or offended by a person before being provided with an opportunity for revenge by sticking pins into a voodoo doll that represented the person. It is assumed that being hurt by a person represents a challenge to the tripartite security system (Hart et al., 2005). Specifically, the offensive behavior could threaten one's own worldview (e.g., by violating prevailing norms of respectful behavior), reduce self-esteem (e.g., if denigrating comments were made on one's personality or abilities), or affect close relationships (e.g., if the behavior was done by one's friend or family member). Consequently, participants under MS would be motivated to take revenge via the voodoo doll to "eliminate" the person (i.e., an extreme form of aggression).

However, it was expected that religion or extent of belief in God would moderate the effects of MS on aggression. First, because most religions promise literal immortality, either in the form of an afterlife for Christians and Muslims or reincarnation for Buddhists and Hindus, religions provide a solution to the problem of death (Vail, Kosloff, et al., 2012). In other words, there is a reduced need for the tripartite security system to address death-related thoughts and awareness. Indeed, MS did not result in the typical elevated levels of death-related thoughts and use of distal defenses for participants high on intrinsic religiousness (Jonas & Fischer, 2006). Second, religion is an important component of the worldview for many people. Therefore, the upholding of one's own worldview as a defense would result in an increased need for religion. For example, MS increased religious participants' religiosity and their belief in the God prescribed by their religion (Vail, Arndt, & Abdollahi, 2012). Furthermore, the literature is replete with research that has found a positive relationship between religion and forgiveness (Ayten, 2012; Escher, 2013; Hui et al., 2006; Krause, 2018; Rye & McCabe, 2014). Consequently, in response to MS and recall of a hurtful offense, participants with religion or greater belief in God might not respond with aggression either because there is a reduced need for the tripartite security system or an increased need for religion and forgiveness.

Based on our reasoning, it was hypothesized that participants in the MS condition should use a significantly higher number of pins than participants in the control condition. In addition, it was hypothesized that participants in the MS condition with religion or greater belief in God should use a significantly lower number of pins than participants without religion.

Method

Participants

Participants were a convenience sample of 120 Asian students (58.3% females) from a private university in Singapore. Their age ranged from 17 to 64 years ($M = 23.05$, $SD = 5.06$). A total of 32 participants (26.7%) indicated no religious affiliation. The remaining 88 participants were Christians (35.0%), Buddhists (18.3%), Muslims (10%), and Hindus (10%). Due to the small number of participants in each religion, these participants were considered as one group for data analysis.

Materials

The Mortality Attitudes Personality Survey. The Mortality Attitudes Personality Survey is a two-item task designed to manipulate MS (Rosenblatt et al., 1989). The task was presented to participants as a "Projective Life Attitudes Assessment," an innovative method for the assessment of an individual's personality via content analysis. The two items are: (a) please briefly describe the emotions that the thought of (your own death [MS] OR taking an examination [control]) arouses in you and (b) jot down, as specifically as you can, what you think will happen to you as you (physically die and once you are physically dead [MS] OR take an examination paper and once you complete that paper [control]). In a recent meta-analysis, 79.8% of the 277 studies used the Mortality Attitudes Personality Survey for MS manipulation (Burke et al., 2010).

The Hurtful Offense Recall Task. The Hurtful Offense Recall Task is a task designed to elicit memories of a specific hurtful offense (Van Tongeren et al., 2013). The following instructions were presented:

> Please think of someone who has deeply hurt or offended you. Without writing the name, write yourself a brief description of what the person did to hurt or offend you. (Note: if the person has done many things, it is important to recall one specific event on which you focus.) Write a short description below to remind yourself of the event. (Van Tongeren et al., 2013, p. 759)

Subsequently, participants were asked to rate the hurtfulness of the offense using a 5-point Likert-type scale that ranges from 1 = *very little hurt* to 5 = *large amount of hurt*. This task is commonly used in forgiveness research (Worthington, 2005).

The Positive and Negative Affect Schedule. The Positive and Negative Affect Schedule is a 20-item instrument designed to assess two factors of affect: (a) positive affect (e.g., attentive) and (b) negative affect (e.g., distressed; Watson et al., 1988). Participants were asked to report on their feelings and emotions in the present moment. Responses are made on a 5-point Likert-type scale that ranges from 1 = *very slightly or not at all* to 5 = *extremely*. Appropriate item scores are summed for each factor, with higher scores indicating higher levels of positive or negative affect. Scores on the instrument range from 10 to 50 for each factor. The two-factor structure of the instrument has been supported by exploratory factor analysis (Watson et al., 1988). In addition, the positive affect factor had an acceptable internal consistency of .88 whereas the Negative Affect factor had an acceptable internal consistency of .87 (Watson et al., 1988).

The Voodoo Doll Task. The Voodoo Doll Task is an innovative procedure designed to assess aggression (DeWall et al., 2013). Participants were provided with a doll and a box of 20 pins. They were told that the doll represented the person who had hurt them in that specific event during the Hurtful Offense Recall Task and were given the opportunity to stab the doll in any location using the pins. The number of pins inserted into the doll was computed by the third author who was blind to the experimental conditions of the participants, with higher number of pins indicating higher levels of aggression. Scores on the task ranged from 0 to 20. Across nine studies, the Voodoo Doll Task has been established as a valid measure of aggression (DeWall et al., 2013).

Procedure

Participants completed the study in a laboratory. First, participants were randomly assigned to either the MS condition or the control condition using the Mortality Attitudes Personality Survey (Rosenblatt et al., 1989). Second, participants completed the Hurtful Offense Recall Task (Van Tongeren et al., 2013), the Positive and Negative Affect Schedule (Watson et al., 1988), and the Voodoo Doll Task (DeWall et al., 2013). The Positive and Negative Affect Schedule was administered to provide a delay after the MS manipulation, allowing for the activation of distal defenses (Pyszczynski et al., 1999). Finally, participants completed a demographic form that asks for age, gender, religion, and extent of belief in God (1 = *do not believe in God* to 5 = *very much believe in God*). Participants who entered "nil," "atheist," "agnostic," or "free thinker" were categorized as without religion, whereas participants who entered "Christian," "Buddhist," "Muslim," or "Hindu" were

Table 1. Means (Standard Deviations) of Number of Pins.

	No religion		Religion		All participants	
Variables	MS	Control	MS	Control	MS	Control
Number of pins	3.25 (5.41)	1.25 (2.08)	2.39 (4.78)	1.11 (1.90)	2.62 (4.92)	1.15 (1.94)

Note. MS = mortality salience.

categorized as with religion. At the end of the experiment, participants were debriefed about the true nature of the study. This procedure was approved by the university's Human Research Ethics Committee (approval number: H7037).

Results

The data were analyzed using SPSS Version 21 with the alpha level set at .05.

Preliminary Analyses

Preliminary analyses were conducted using independent-samples *t*-tests and Chi-square test of independence (with Yates Continuity Correction). First, there were no significant effects of gender on number of pins ($t(118) = 1.51$, $p = .133$). Second, participants without religion ($M = 1.81$, $SD = 1.73$) had significantly lower belief in God than participants with religion ($M = 4.15$, $SD = 1.20$, $t(118) = -8.32$, $p < .001$). Finally, participants in the MS condition did not significantly differ on positive affect ($t(118) = .06$, $p = .955$), negative affect ($t(118) = -1.20$, $p = .234$), age ($t(118) = -.72$, $p = .473$), and gender (χ^2 (1, $n = 120$) $= .86$, $p = .355$, $\varphi = -.10$) than participants in the control condition. However, participants in the MS condition ($M = 4.38$, $SD = .74$) had significantly higher hurtfulness of the offense scores than participants in the control condition ($M = 4.08$, $SD = .87$, $t(118) = -2.04$, $p = .04$). Consequently, hurtfulness of the offense was included as a covariate for subsequent data analyses.

Main Analyses

The descriptives are presented in Table 1. An analysis of covariance was conducted with condition (MS vs control) and religion (without religion vs with religion) as the independent variables, hurtfulness of the offense

as a covariate, and number of pins as the dependent variable. There was a significant main effect for condition ($F(1, 115) = 4.56$, $p = .04$, $\eta_p^2 = .04$). Participants in the MS condition used a significantly higher number of pins than participants in the control condition. There was no significant main effect for religion ($F(1, 115) = .39$, $p = .53$) and no significant interaction effect for condition and religion ($F(1, 115) = .23$, $p = .63$).

Hayes' (2017) PROCESS Model 1 was used to conduct a moderation analysis with condition (dummy coded with control condition as 0 and MS condition as 1) as the independent variable, extent of belief in God ($M = 3.53$, $SD = 1.70$) as a moderator, hurtfulness of the offense as a covariate, and number of pins as the dependent variable. There was no significant interaction effect between condition and extent of belief in God ($p = .32$) and no significant effect for extent of belief in God ($p = .50$). The effect for condition is close to significance ($b = .2.87$, $t(115) = 1.84$, $p = .07$) with participants in the MS condition using a significantly higher number of pins than participants in the control condition.

Discussion

The present study produced two findings. First, the results showed that participants in the MS condition demonstrated more aggression toward someone who had hurt them in the past compared to those participants in the control condition. Specifically, the MS condition participants inserted 2.3 times more pins in the voodoo doll than those in the control condition. Second, religion and extent of belief in God did not moderate the impact of MS on aggression. Regardless of the participant's religion (i.e., with or without religion) and extent of belief in God, there were no significant differences in the number of pins inserted in the voodoo doll.

The results were consistent with previous studies that found an increase in aggression due to MS (McGregor et al., 1998; McPherson & Joireman, 2009). However, the underlying mechanisms are probably different. In previous studies, aggression was used to punish worldview-threatening individuals and eliminate their worldview. With the elimination of that worldview, the validity of the participant's own worldview is strengthened, increasing its terror management function. In the current study, aggression appears to be used as a form of revenge to "eliminate" the person representing a challenge to the tripartite security system. Subsequently, the restoration of the tripartite security system enables it to act effectively as an anxiety buffer against death-related thoughts and awareness. Overall, the results provided support for the MS hypothesis.

Contrary to expectations however, our results showed that religion and extent of belief in God did not moderate the effects of MS on aggression. This was inconsistent with studies that found religion as a moderator of MS effects (Jonas & Fischer, 2006), an increased need for religion in response to MS (Vail, Arndt, & Abdollahi, 2012), and a positive relationship between religion and forgiveness (Ayten, 2012; Escher, 2013; Hui et al., 2006; Krause, 2018; Rye & McCabe, 2014). This might be explained by the way religion and extent of belief in God were assessed in the current study. Specifically, there have been disagreements on how religion should be conceptualized and assessed (McKay & Dennett, 2009). Religion has been operationalized in several ways. For example, some categorized religion as intrinsic versus extrinsic religiosity; others have measured participant's spiritual awareness and/or perceived importance of religion as their measurement of religion (Gervais & Norenzayan, 2012; Pichon et al., 2007; Shariff & Norenzayan, 2007). Hence, it is unclear which form of religion measurements would moderate the effect of MS on aggression. Also, other research that examined the effect of religion (e.g., prosocial behaviors, punitive acts, moral hypocrisy, self-evaluation) also tended to compare participant's high religiosity with low religiosity (e.g., Saroglou et al., 2009). However, this approach conflates uncommitted God believers (participant with religion) with non-God believers (participant without religion), making it hard to make definitive conclusions on whether the effects are due to religiosity alone (Galen, 2012). A valid instrument to assess religion is needed to correctly examine the moderating effect of religion in TMT research. Some researchers have suggested to measure individual's religion implicitly. For example, Bering (2002) found that participants who explicitly indicated that they did not believe in afterlife implicitly agreed with the statements of an afterlife.

The difficulty in operationalizing religion is exacerbated by the lack of distinction between religious beliefs and belief in supernatural agents. According to the dual process model of religious cognition (e.g., Jong et al., 2012; Pirutinsky et al., 2015), individuals without religion can still subscribe to beliefs in supernatural agents (Uhlmann et al., 2008). In Singapore (and other Southeast Asian countries), the notion of supernatural agents is intertwined with major religions and folklores. While many individuals are involved in these superstitious practices (e.g., during the seventh lunar month, it is considered "bad luck" to walk alone at night when the doors of hell are opened and ghosts roam on earth), they do not claim to have any religion or religious affiliation. Consequently, it is unclear if the participants without religion in the current study are indeed

irreligious. Taken together, these conceptual and methodological issues might explain the lack of an effect for religion.

Limitations of the study should be noted. First, participants from different religions were considered as one group for data analysis. While all religions are associated with forgiveness, there are differences across religions with regard to levels of forgiveness (e.g., some religions are more forgiving than others) and criteria for forgiveness (e.g., religions differ on the type of offenses that are forgivable; Rye & McCabe, 2014). Second, participants were not asked if they perceived the voodoo doll as an actual representation of the person (i.e., they believe they were hurting the person with the pins). Finally, the current study did not manipulate the recall of hurtful offense. This precluded a conclusion on the specificity of the effects of MS on aggression. For example, MS might also induce aggression on the voodoo doll among those who did not recall a hurtful offense, given the close relationship between death and sticking pins into a voodoo doll that represented a person. In the future, these limitations might be controlled by recruiting a larger and more diverse group of participants, asking participants their perception and belief in the voodoo doll, and introducing a control condition where participants do not recall any hurtful offense, respectively.

In conclusion, the current study showed that MS increased participants' aggression toward someone who had hurt them in the past. This effect was found regardless of the participant's religion (i.e., with or without religion) and extent of belief in God. The findings of this study are important because it provides evidence that MS would increase aggression using a different, culturally sensitive, measure of aggression among an Asian sample. With the proliferation of technology (e.g., internet and social media), people are reminded of death on an almost daily basis. Furthermore, given the prevalence of violence, there is a need to address the problem of death as an intervention for aggression. Unfortunately, since religion did not moderate the effects of MS on aggression, more research is needed to examine other variables that could serve as an intervention. With the proper management of terror, we move one step closer to the goal of peace.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

ORCID iDs

Peter K. H. Chew https://orcid.org/0000-0002-5243-1481
Patrick K. F. Lin https://orcid.org/0000-0003-1751-7287

References

Ayten, A. (2012). How religion promotes forgiveness: The case of Turkish Muslims. *Archive for the Psychology of Religion*, *34*(3), 411–425. https://doi.org/10.1163/15736121-12341243

Bering, J. (2002). Intuitive conceptions of dead agents' minds: The natural foundations of afterlife beliefs as phenomenological boundary. *Journal of Cognition and Culture*, *2*(4), 263–308. https://doi.org/10.1163/15685370260441008

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. https://doi.org/10.1177/1088868309352321

DeWall, C. N., Finkel, E. J., Lambert, N. M., Slotter, E. B., Bodenhausen, G. V., Pond, R. S., Renzetti, C. M., & Fincham, F. D. (2013). The voodoo doll task: Introducing and validating a novel method for studying aggressive inclinations. *Aggressive Behavior*, *39*(6), 419–439. https://doi.org/10.1002/ab.21496

Diener, E. (1976). Effects of prior destructive behavior, anonymity, and group presence on deindividuation and aggression. *Journal of Personality and Social Psychology*, *33*(5), 497–507. https://doi.org/10.1037/0022-3514.33.5.497

Escher, D. (2013). How does religion promote forgiveness? Linking beliefs, orientations, and practices. *Journal for the Scientific Study of Religion*, *52*(1), 100–119. https://doi.org/10.1111/jssr.12012

Galen, L. W. (2012). Does religious belief promote prosociality? A critical examination. *Psychological Bulletin*, *138*, 876–906. https://doi.org/10.1037/a0028251

Gervais, W. M., & Norenzayan, A. (2012). Like a camera in the sky? Thinking about God increases public self-awareness and socially desirable responding. *Journal of Experimental Social Psychology*, *48*(1), 298–302. https://doi.org/10.1016/j.jesp.2011.09.006

Greenberg, J., Pyszczynski, T., & Solomon, S. (1986). The causes and consequences of a need for self-esteem: A terror management theory. In R. F. Baumeister (Ed.), *Public self and private self* (pp. 189–212). Springer. https://doi.org/10.1007/978-1-4613-9564-5_10

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 on reactions to those who threaten or bolster the cultural worldview. *Journal of Personality and Social Psychology*, *58*(2), 308–318. https://doi.org/10.1037/0022-3514.58.2.308

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), 627–637. https://doi.org/10.1037/0022-3514.67.4.627

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), 212–220. https://doi.org/10.1037/0022-3514.63.2.212

Hart, J., Shaver, P. R., & Goldenberg, J. L. (2005). Attachment, self-esteem, worldviews, and terror management: Evidence for a tripartite security system. *Journal of Personality and Social Psychology*, *88*(6), 999–1013. https://doi.org/10.1037/0022-3514.88.6.999

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis, second edition: A regression-based approach*. The Guilford Press. http://ebookcentral.proquest.com/lib/jcu/detail.action?docID=5109647

Hui, E. K. P., Watkins, D., Wong, T. N. Y., & Sun, R. C. F. (2006). Religion and forgiveness from a Hong Kong Chinese perspective. *Pastoral Psychology*, *55*(2), 183–195. https://doi.org/10.1007/s11089-006-0017-2

Jalis, M. H., Mohd Zahari, M. S., Izzat, M., & Othman, Z. (2009). Western tourists perception of Malaysian gastronomic products. *Asian Social Science*, *5*(1), 25–36. https://doi.org/10.5539/ass.v5n1p25

Jonas, E., & Fischer, P. (2006). Terror management and religion: Evidence that intrinsic religiousness mitigates worldview defense following mortality salience. *Journal of Personality and Social Psychology*, *91*(3), 553–567. https://doi.org/10.1037/0022-3514.91.3.553

Jong, J., Halberstadt, J., & Bluemke, M. (2012). Foxhole atheism, revisited: The effects of mortality salience on explicit and implicit religious belief. *Journal of Experimental Social Psychology*, *48*(5), 983–989. https://doi.org/10.1016/j.jesp.2012.03.005

Kittler, P. G., & Sucher, K. P. (2003). *Food and culture* (4th ed.). Brooks Cole.

Kosloff, S., Cesario, J., & Martens, A. (2011). *Resistance is futile: Mortality salience increases efforts to assimilate differing others into one's own worldview* [Unpublished manuscript].

Krause, N. (2018). Assessing the relationships among religion, humility, forgiveness, and self-rated health. *Research in Human Development*, *15*(1), 33–49. https://doi.org/10.1080/15427609.2017.1411720

McGregor, H. A., Lieberman, J. D., Greenberg, J., Solomon, S., Arndt, J., 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. http://dx.doi.org.elibrary.jcu.edu.au/10.1037/0022-3514.74.3.590

McKay, R. T., & Dennett, D. C. (2009). The evolution of misbelief. *The Behavioral and Brain Sciences*, *32*(6), 493–510. https://doi.org/10.1017/S0140525X09990975

McPherson, S., & Joireman, J. (2009). Death in groups: Mortality salience and the interindividual-intergroup discontinuity effect. *Group Processes & Intergroup Relations*, *12*(4), 419–429. https://doi.org/10.1177/1368430209105044

Mikulincer, M., Florian, V., & Hirschberger, G. (2003). The existential function of close relationships: Introducing death into the science of love. *Personality and Social Psychology Review*, *7*(1), 20–40. https://doi.org/10.1207/S15327957PSPR0701_2

Pichon, I., Boccato, G., & Saroglou, V. (2007). Nonconscious influences of religion on prosociality: A priming study. *European Journal of Social Psychology*, *37*(5), 1032–1045. https://doi.org/10.1002/ejsp.416

Pirutinsky, S., Siev, J., & Rosmarin, D. H. (2015). Scrupulosity and implicit and explicit beliefs about God. *Journal of Obsessive-Compulsive and Related Disorders*, *6*, 33–38. https://doi.org/10.1016/j.jocrd.2015.05.002

Pyszczynski, T., Greenberg, J., & Solomon, S. (1999). A dual-process model of defense against conscious and unconscious death-related thoughts: An extension of terror management theory. *Psychological Review*, *106*(4), 835–845. https://doi.org/10.1037/0033-295X.106.4.835

Rosenblatt, A., Greenberg, J., Solomon, S., Lyon, D., & Pyszcznski, T. (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), 681–690.

Routledge, C., Arndt, J., & Goldenberg, J. L. (2004). A time to tan: Proximal and distal effects of mortality salience on sun exposure intentions. *Personality and Social Psychology Bulletin*, *30*(10), 1347–1358. https://doi.org/10.1177/0146167204264056

Rye, M. S., & McCabe, C. F. (2014). Religion and forgiveness of others. In C. Kim-Prieto (Ed.), *Religion and spirituality across cultures* (pp. 303–318). Springer. https://doi.org/10.1007/978-94-017-8950-9_16

Saroglou, V., Corneille, O., & Van Cappellen, P. (2009). "Speak, Lord, your servant is listening": Religious priming activates submissive thoughts and behaviors. *International Journal for the Psychology of Religion*, *19*(3), 143–154. https://doi.org/10.1080/10508610902880063

Shariff, A. F., & Norenzayan, A. (2007). God is watching you: Priming God concepts increases prosocial behavior in an anonymous economic game. *Psychological Science*, *18*(9), 803–809. https://doi.org/10.1111/j.1467-9280.2007.01983.x

Taubman Ben-Ari, O., Florian, V., & Mikulincer, M. (1999). The impact of mortality salience on reckless driving: A test of terror management mechanisms. *Journal of Personality and Social Psychology*, *76*(1), 35–45. http://dx.doi.org.elibrary.jcu.edu.au/10.1037/0022-3514.76.1.35

Taylor, S. P. (1967). Aggressive behavior and physiological arousal as a function of provocation and the tendency to inhibit aggression. *Journal of Personality*, *35*(2), 297–310. https://doi.org/10.1111/j.1467-6494.1967.tb01430.x

Uhlmann, E. L., Poehlman, T. A., & Bargh, J. A. (2008). Implicit theism. In R. Sorrentino & S. Yamaguchi (Eds.), *Handbook of motivation and cognition across cultures* (pp. 71–94). Academic Press.

Vail, K. E., Arndt, J., & Abdollahi, A. (2012). Exploring the existential function of religion and supernatural agent beliefs among Christians, Muslims, Atheists, and Agnostics. *Personality and Social Psychology Bulletin*, *38*(10), 1288–1300. https://doi.org/10.1177/0146167212449361

Vail, K. E., Kosloff, S., Vess, M. K., & Ashish, D. (2012). Faith and finitude: Exhuming the death-denying function of religious belief. In P. McNamara & W. Wildman (Eds.), *Science and the world's religions* (pp. 291–321). Praeger Press.

Van Tongeren, D. R., Green, J. D., Davis, D. E., Worthington, E. L. Jr., & Reid, C. A. (2013). Till death do us part: Terror management and forgiveness in close relationships. *Personal Relationships*, *20*(4), 755–768. https://doi.org/10.1111/pere.12013

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*(6), 1063–1070.

Worthington, E. L. Jr. (Ed.). (2005). *Handbook of forgiveness*. Routledge.

Author Biographies

Peter K. H. Chew is an Associate Professor of Psychology at James Cook University Singapore. His primary area of research focus is on behavioral addictions, terror management theory, and psychometrics. Specifically, he is interested in (a) examining the prevalence, correlates, effects, and interventions of various behavioral addictions (e.g., internet gaming disorder), (b) examining the effects of reminders of death on a broad range of human behavior, and (c) evaluating the psychometric properties of psychological instruments among the Singaporean population.

Patrick K. F. Lin graduated from York University, Toronto, Canada and received the Academic Achievement Award for his specialized honors in psychology (BA Spec. Hons.) in 2004. He then went on to complete his Master of Social Sciences and PhD in psychology at the National University of Singapore. He lectures research methods, statistics, environmental psychology, and social psychology at James Cook University Singapore. Patrick's main research interests are pertinent to interpersonal attraction, effects of priming, and factors related to Hikikomori.

Cybelle Quek received her Bachelor of Psychological Science (Honors) from James Cook University Singapore. Her research interest is in terror management theory where her honors thesis specifically focused on the effect of mortality salience on aggression.