European Journal of Social Psychology, *Eur. J. Soc. Psychol.* **44**, 242–254 (2014)
Published online in Wiley Online Library (wileyonlinelibrary.com) **DOI**: 10.1002/ejsp.2012

Research article

Mortality salience and evaluations of in-group versus out-group critics: The role of criticism legitimacy and perceived threat

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Abstract

Significant terror management research has examined the impact of mortality salience on evaluations toward in-group versus out-group and attitudinally similar versus dissimilar others. However, relatively little research has examined evaluations when group membership is disentangled from attitude similarity. The current research examined the impact of mortality salience on evaluations toward in-group and out-group critics when people are less likely to rely on group membership as a heuristic. In Experiment 1, the results showed that in the control condition, participants rated an in-group member who provided unjustified criticism more positively than an out-group member who provided the same criticism. Under mortality salience, the reverse occurred: An in-group member who provided unjustified criticism was rated more negatively than an out-group member. Experiment 2 showed that under mortality salience, the derogation of an in-group critic who provided unjustified criticism was mediated by perceptions of threat. Implications for reactions to group-directed criticism as well as mortality salience effects are discussed. Copyright © 2014 John Wiley & Sons, Ltd.

Facing criticism is a common situation that groups find themselves in. Scientists might come under fire for questionable research practices, a country might be criticized for being fiscally irresponsible, and so on. Such criticism could come from within the group or from an out-group. Such criticism could also be perceived as legitimate (e.g., "the government in Country X have not been clear about rules for managing income and expenditure") or unjustified (e.g., "people from Country X are all spendthrifts"). Furthermore, such criticism sometimes occurs in a relatively mundane context but other times in a more threatening context. The main goal of the current research is to examine individuals' evaluations of critics when they are presented with group-directed criticism while coping with potential anxiety from reminders of their mortality.

Since the conception of terror management theory (TMT; Greenberg, Solomon, & Pyszczynski, 1997; also Greenberg, Solomon, & Arndt, 2008), there has been much empirical support for the notion that mortality salience impacts a wide variety of social outcomes including stereotyping and prejudice (see Greenberg & Kosloff, 2008, for a review), punishment decision for criminals (Jost, Glaser, Kruglanski, & Sulloway, 2003), peace processes (Neista, Fritsche, & Jonas, 2008), and close relationships (Hirschberger, Florian, & Mikulincer, 2002, 2003). Of utmost importance for the purpose of this research, when humans are reminded of their mortality, they exhibit favoritism toward the in-group member over the out-group member and prefer attitudinally similar others to attitudinally dissimilar others (e.g., Greenberg et al., 1990). In the extant literature on TMT, in-group members are often presumed to be attitudinally similar, and out-group members attitudinally dissimilar (See & Petty, 2006). In some cases, the research measured evaluations of in-group versus out-group members without any reference to whether the in-group or out-group member shares the same opinions as the participant (e.g., Castano, Yzerbyt, Paladino, & Sacchi, 2002). In other cases, the research examined evaluations of an attitudinally similar or dissimilar target without independently manipulating the group membership of the target (e.g., Dechesne, Janssen, & van Knippenberg, 2000; Greenberg et al., 1990).

However, group membership and attitudinal similarity are separate factors. For example, it is possible for an in-group member to disagree with an individual's opinions. Indeed, theory and research on social identification suggest that an individual could express criticism toward his or her group out of concern for the group (Hornsey, 2006; Packer, 2008). Of particular relevance, when presented with the same criticism, people tend to evaluate an in-group critic more favorably than an out-group critic (e.g., Hornsey, Oppes, & Svensson, 2002). This bias is termed the intergroup sensitivity effect (Hornsey, 2006; Hornsey et al., 2002). Interestingly, the level of familiarity does not account for the intergroup sensitivity effect, as suggested by prior research that manipulated the level of the critic's familiarity and found that familiarity did not moderate participants' relative derogation of the out-group critic (Hornsey & Imani, 2004). Instead, the intergroup sensitivity effect occurs because criticism from an in-group member

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Author Note: Portions of this research were presented at the 13th Annual Meeting of the Society for Personality and Social Psychology, January 26–28, 2012, San Diego, CA. We thank Tsai Fen Fang, Jia Lile, Jeff Schimel, and Dominic Packer for their comments on an earlier version of this manuscript.

 Received 15 August 2013, Accepted 13 February 2014

is perceived to constitute constructive and legitimate suggestions that could promote positive change in the group whereas the same criticism from an out-group member is less likely to be attributed to positive intentions (Hornsey & Imani, 2004; Hornsey et al., 2002). Although the intergroup sensitivity effect has been demonstrated on numerous occasions, there are situations where this effect is attenuated and the in-group critic is disliked at least as much as the out-group critic. For example, Ariyanto, Hornsey, and Gallois (2010) found that Muslim participants rated a Muslim critic more negatively when reminded of the ongoing intergroup conflict between Muslims and Christians than when the participants were not reminded of the existing conflict between Muslims and Christians. Therefore, people are just as negative toward in-group members who fail to protect the group as they are to out-group members. Similarly, Matheson, Cole, and Majka (2003) found that female participants disliked attitudinally dissimilar women as much as attitudinally dissimilar men when the participants were in the presence of a man. Taken together, these findings suggest that in a context where people might be especially concerned about threats to the overall in-group, they do not necessarily favor the in-group member over the out-group member. In fact, there are reasons to expect that under mortality salience, the opposite pattern of the intergroup sensitivity effect might occur where an in-group member who presents unjustified criticism of the group not only loses favor but is actually derogated relative to the out-group member.

TERROR MANAGEMENT THEORY

Inspired from the writings of Ernest Becker (1971, 1973, 1975), TMT proposes that humans possess complex cognitive abilities that enable them to be aware of their existence as well as the inevitability of death. Coupled with the innate desire for self-presentation, the awareness of inevitable death generates potential terror (Greenberg et al., 1997). According to TMT (Greenberg et al., 1997, 2008), when people are reminded of the inevitability of their own death, they employ the use of a two-component anxiety buffer—cultural worldview and self-esteem—in order to ameliorate the potential for death anxiety. The cultural worldview consists of standards for what is considered valued behavior and provides order, meaning, and permanence to those who uphold these standards (e.g., Greenberg et al., 1997). Several predictions have been proposed and supported with respect to the role of worldview defense as an anxiety buffer. First, reminding people of their death should increase defensiveness about their worldview. Indeed, a common finding is that reminders of death increase the derogation of others who attack one's worldview (e.g., Greenberg et al., 1990; see Burke, Martens, & Faucher, 2010, for a meta-analysis). Second, weakening one's worldview should increase the accessibility of death-related thoughts. Indeed, threats to one's cultural worldview, such as the trivialization of participants' Christian worldviews and support for alternative worldviews and the derogation of participants' national culture, have been shown to increase death-thought accessibility (Schimel, Hayes, Williams, & Jahrig, 2007; see Hayes, Schimel, Arndt, & Faucher, 2010, for a review).

Several predictions have also been proposed and supported with regard to the role of self-esteem as an anxiety buffer. First, reminding people of their own death should increase the tendency to maintain or increase one's self-esteem. Accordingly, mortality salience has been shown to increase self-esteem striving in various behaviors such as risky driving (Taubman Ben-Ari, Florian, & Mikulincer, 1999) and sun exposure (Routledge, Arndt, & Goldenberg, 2004; see Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004, for a review). Second, threats to one's self-esteem should increase the accessibility of death-related thoughts. For instance, providing false feedback that participants had lower than average intelligence or that they had given a poor speech or that their personality was unsuitable for their desired career has been shown to increase death-thought accessibility (Hayes, Schimel, Faucher, & Williams, 2008). Third, self-esteem should moderate the effects of mortality salience. For example, a common finding is that individuals with high dispositional self-esteem or experimentally increased self-esteem display lower levels of anxiety or worldview defense following mortality salience (Greenberg et al., 1992; Harmon-Jones et al., 1997; but also Burke et al., 2010). In summary, both cultural worldview and self-esteem serve as death anxiety buffers by providing the means to attain symbolic and literal immortality—the sense that one is part of something larger and more enduring.

THE ROLE OF GROUPS IN TERROR MANAGEMENT THEORY

Of most relevance to the current research, to the extent that group membership validates one's cultural worldview or helps to enhance one's self-esteem, mortality reminders would increase the extent to which one evaluates an in-group member more positively than an out-group member. In a classic experiment, mortality salience increased Christian participants' liking for a Christian target relative to a Jewish target (Greenberg et al., 1990). In other research, mortality salience led participants to shift their identification away from a losing football team to a winning basketball team (Dechesne, Greenberg, Arndt, & Schimel, 2000). In a slightly different analysis, groups have also been described as a relatively direct means to providing a sense of immortality because the self can be extended in space and time beyond one's death when aspects of the self are shared with the in-group (Castano & Dechesne, 2005; Castano, Yzerbyt, & Paladino, 2004). Accordingly, the positive impact of mortality salience on in-group identification has been demonstrated to be mediated by perceptions about the continued existence of the in-group over time (Sani, Herrera, & Bowe, 2009).

CURRENT RESEARCH

Although it is well established that groups become even more important when people are coping with mortality reminders, it is less clear how mortality salience would impact people's evaluations of a critic of their group as a function of the critic's group membership. Some previous research suggests that mortality-salient participants would rely on the group membership of the

critic as a heuristic to determine evaluations and thus be inattentive to the fact that the target was expressing criticism against the group (See & Petty, 2006). In their research, See and Petty (2006) had participants read written transcripts ostensibly taken from live radio broadcasts. Participants first received information that the interviewee was either an in-group member (an administration officer on the Ohio State University campus) or an out-group member (administration officer on the University of Michigan campus). After participants had already read the information about the individual, they then read the individual's negative comments about The Ohio State University. For instance, participants read that the interviewee felt that Ohio State University students do not have a positive attitude about their studies and are not very concerned with their role in society. In that research, the results showed that mortality-salient participants continued to favor the in-group critic over the out-group critic and that mortality-salient participants were more favorable toward the in-group critic compared with the control condition. Importantly, as noted by See and Petty (2006), these findings occurred when the critic's group membership was presented before the criticism. That is, participants found out that the critic was from the same university as them or from a rival university, and then they read the critic's comments about their university.

However, in the real world, the group membership of a critic is not always readily apparent. In other words, people sometimes find out the group membership of a critic only after they have processed the criticism. For example, during online interactions, anonymous comments are prevalent, and commenters might choose to reveal their identity only upon prompting. Thus, there are practical implications for examining the effects of mortality salience on evaluations of a critic when people are discouraged from using group membership as a heuristic to determine their attention to the critic's position. Furthermore, as explained later, examining such effects allows us to understand better how group membership could play different roles in determining evaluations and thus facilitate predictions about the extent to which such evaluations are stable, resistant to attack, or predictive of behavior (Petty & Cacioppo, 1986; Petty & Wegener, 1999).

In the attitudes literature, it is well established that the same variable could play different roles in determining evaluations. Both the elaboration likelihood model (Petty & Cacioppo, 1986; Petty & Wegener, 1999; also Petty, Briñol, Tormala, & Wegener, 2007) and the heuristic-systematic model (Chaiken, Liberman, & Eagly, 1989) posit that the same variable could impact evaluations through different mechanisms depending on the extent to which they scrutinize the relevant information. Applied to the current research, group membership could serve as a heuristic when people are not inclined to scrutinize the information, impact the extent to which people process the information when people are moderate in their inclination to scrutinize the information, and serve as an argument itself or bias the processing of the information when people are motivated and able to scrutinize the information (Fleming & Petty, 2000; Mackie & Queller, 2000). In fact, one contextual difference that matters is the order in which people are presented with the information versus the heuristic. For example, Mackie, Gastardo-Conaco, and Skelly (1992) found that presenting a heuristic (i.e., message position) after the information encouraged people to process the information more extensively than presenting the heuristic before the information. Such increased processing was manifest in more positive evaluations when the information was cogent. In other words, people were less likely to rely on message position as a heuristic for their evaluations when message position was presented after the information. In the context of this research, it is possible that when group membership is presented after the information, people are less likely to rely on group membership as a heuristic and might instead be differentially agreeable to the information as a function of its cogency. It is worth noting that greater processing of information results in more favorability for the cogent than unconvincing information, even when people are inclined to disagree with the message position (e.g., implementation of comprehensive examinations, Petty & Cacioppo, 1986; Petty & Wegener, 1999). In other words, the extent to which a message advocates an aversive or threatening viewpoint is independent of how strong or weak its arguments are. In fact, as explained later, people could view weak arguments as particularly threatening in certain contexts even as they recognize the flaws in the weak arguments.

In the context of processing criticism, if people had already read the criticism by the time they found out the critic's group membership, instead of ignoring the criticism, they might put forth extra mental effort to reconcile the fact that an in-group member was criticizing their in-group. As mentioned before, mortality salience renders the effectiveness of one's group in providing worldview validation, self-esteem enhancement, or symbolic immortality especially important. Therefore, under mortality salience, people might be especially vigilant about the in-group member's behaviors. We hypothesized that when the criticism is clearly unjustified, the in-group critic would be derogated more than the out-group critic because it would be hard to favor the in-group member by thinking that the in-group member is looking out for the group's interests. In fact, an in-group member who provides unjustified criticism could be viewed as somebody who is embarrassing the group by expressing frivolous complaints and thus regarded as an incompetent black sheep (e.g., Marques, Yzerbyt, & Leyens, 1988) or as somebody who is purposely discrediting the group and thus viewed as having ill intentions (Hornsey & Imani, 2004). In either case, such an in-group member is likely to be viewed as threatening, particularly when people are relying on groups to cope with their death anxiety. On the other hand, when the criticism is perceived as clearly justified, the critic's group membership would not matter because such criticism is likely to enhance the group and perhaps even increase the effectiveness of the group as a death anxiety buffer. Consistent with this, Hornsey and Imani (2004) also suggest that legitimate criticisms can create awareness toward existing problems and a review of suboptimal attitudes and behaviors. Importantly, these actions will allow the group to fulfill its potential (Janis, 1982; Nemeth & Owens, 1996).

Our predictions are less clear for the control conditions. As mentioned before, prior research has demonstrated that people favor the in-group critic over the out-group critic because they attribute the criticism from the in-group critic to more constructive intentions (Hornsey & Imani, 2004). This suggests that under relatively mundane situations, the intergroup sensitivity effect occurs given some amount of ambiguity with respect to the legitimacy of the criticism. However, at least two

possibilities might occur when the criticism is perceived as clearly unjustified. To the extent that people remain biased in their attributions about the critic's intention in the face of such criticism, for example, as they engage in rationalization to avoid attributing ill intentions to the in-group critic, the in-group member would still elicit less negative evaluations than the out-group member. In other words, the intergroup sensitivity effect would occur even when criticism is clearly unjustified. However, to the extent that people do not remain biased in their attributions, for example, because they now view the in-group critic as a weakly identified member (Hornsey, Trembath, & Gunthorpe, 2004), we would not expect the intergroup sensitivity effect to occur when the criticism is clearly unjustified. Therefore, the current research explores whether unjustified criticism could override the positive bias toward an in-group member. Similarly, when the criticism is perceived as clearly justified, there are at least two scenarios. To the extent that people remain biased in their attributions about the critic's intention in the face of such criticism, perhaps as they dismiss the constructiveness of comments from the out-group critic, then the intergroup sensitivity effect would still occur. However, to the extent that suspicion about the out-group critic is now reduced, for instance, because they now view the out-group critic as part of a common superordinate group (Hornsey et al., 2004), then group membership would not matter when the criticism is clearly justified. Therefore, the present experiments explore whether clearly justified criticism could override the negative bias toward an out-group member.

To summarize, the present research examined evaluations toward an in-group versus out-group critic under mortality salience. Importantly, because we were interested in people's evaluations of the critic when they are less likely to rely on the critic's group membership as a heuristic, we departed from prior research (See & Petty, 2006) and presented information about the critic's group membership at the end of the critic's comments. In Experiment 1, we sought to examine people's evaluations of an in-group versus out-group critic as a function of the legitimacy of criticism under mortality salience. We predicted that because groups are critical to people's defense against reminders of their mortality, an in-group member who directs criticism at the group would be derogated relative to an out-group critic under mortality salience, especially when the criticism is perceived as unjustified. In Experiment 2, we explored the role of perceived threat in mediating the effects of group membership on evaluations of the unjustified critic among mortality-salient participants.

EXPERIMENT 1

Method

Participants and Design

Eighty-four undergraduates (58 women and 26 men) from the National University of Singapore, between the ages of 18 and 25 years ($M = 20.69$, $SD = 1.54$) completed this research for partial course credit. Of the 84 participants, 77 self-identified as Chinese, five were Malay, and two were Indian. Participants were randomly assigned to conditions.[1] The design is a 2 (salience: mortality vs. dental pain) × 2 (group membership: in-group vs. out-group) × 2 (criticism legitimacy: justified vs. unjustified) between-subjects study. All materials were presented on Medialab (Jarvis, 2008).

Procedure and Materials

Overview. Participants were told that they were enrolled in a study examining "Perceptions of Life Experiences." Upon arrival at the laboratory, participants were asked to write about their mortality or dental pain depending on the condition they had been randomly assigned to. All participants then completed a state version of the Positive Affect Negative Affect Scale (PANAS: Watson, Clark, & Tellegen, 1988). There are two reasons for measuring affect using PANAS. First, PANAS is typically used as a delay so that the suppression of death thoughts that immediately follow mortality salience would be relaxed, thus allowing for distal defenses such as worldview defense to emerge (Greenberg, Pyszczynski, Solomon, Simon, & Breus, 1994). Second, PANAS is frequently included so that negative affect can be ruled out as an explanation for mortality salience effects. After PANAS, participants proceeded to complete an ostensibly separate study entitled "Attitudes toward Singapore Universities." Depending on the condition that they had been randomly assigned to, they then read either an unjustified criticism or a justified criticism about why local universities are inferior to overseas universities. This criticism was presumably provided by a student who is from a local university or an overseas university. The university affiliation of the student constituted the manipulation of the critic's group membership. Next, participants reported their overall evaluations of the critic. At the end of the session, all participants were probed for suspicion of the hypothesis before they were debriefed and dismissed.

Independent Variables

Salience. Following most prior research (Greenberg et al., 1990), participants wrote about their mortality or dental pain by listing their thoughts to the following two open-ended questions: "Please briefly describe the emotions that the thought of your own death (dental pain) arouse in you" and "Jot down, as specifically as you can, what you think will happen to you as you physically die (you feel dental pain)."

Criticism legitimacy. Next, participants received a message that highlighted reasons why local universities were inferior to overseas universities. The entire message was presented on one computer screen. The message in the *justified criticism* condition emphasized legitimate reasons, such as Singapore universities' curriculum emphasis on formulaic thinking rather than flexible problem solving. The message in the *unjustified criticism* condition, on the other hand, focused on less legitimate issues such as the low quality of food on campus (Appendix).

[1]Age did not differ between conditions, Salience × Group Membership × Criticism Legitimacy, $F(1, 76) = 0.132$, $p = .72$, $\eta_p^2 = 0.002$. To examine if participants' responses differed on the basis of gender, it was entered as a covariate in the analyses. The results did not differ when gender was included in the analyses; hence, it was excluded from all analyses.

The messages were pilot tested with a separate sample of 42 undergraduates (34 women and eight men) from the same university, aged between 18 and 24 years ($M = 20.02$, $SD = 1.41$). Participants were asked to rate both messages on "How justified are the author's criticism of Singapore universities?" and "How legitimate are the author's criticism of Singapore universities?" on a 7-point scale (1 = *not at all*; 7 = *totally*).[2] The order of the messages was counterbalanced. Participants' responses on the justified and legitimate questions for each message (justified message, $\alpha = .93$, and unjustified message, $\alpha = .79$) were averaged to form a mean legitimacy score where higher scores reflect more perceived legitimacy. Repeated-measures Analysis of Variance (ANOVA) on participants' ratings showed no Message × Order interaction. Analyses revealed only a significant main effect of message on participants' ratings of legitimacy. Therefore, regardless of the order in which participants received the messages, they felt that the message containing legitimate criticism ($M = 4.36$, $SD = 1.05$) was more justified than the message containing less legitimate criticism ($M = 3.82$, $SD = 1.12$) against Singapore universities, $F(1, 41) = 8.79$, $p = .005$, $\eta_p^2 = 0.18$.

Critic's group membership. Following prior mortality salience research, the group membership of the evaluation target was operationalized in terms of participants' university affiliation (e.g., Dechesne, Greenberg, et al., 2000; See & Petty, 2006). Participants in the *in-group* condition read that the author of the message was an undergraduate from a local university, whereas those in the *out-group* condition read that the author of the message was an undergraduate from an overseas university. This information about the affiliation of the author was presented at the end of the comments on the bottom of the same computer screen.

Dependent Measures

Affect. After writing their responses to the salience questions, participants completed a state version of PANAS (Watson et al., 1988). They responded to 20 items and rated the extent to which they felt specific emotions (e.g., interested, determined, afraid, and jittery). Each item was measured on a 1 (*never*) to 7 (*a great deal*) scale. The 10 positive emotion items were averaged to form a mean positive affect score ($\alpha = .91$) while the 10 negative emotion items were averaged to form a mean negative affect score ($\alpha = .92$).

Critic evaluation. Participants reported their attitudes toward the critic. This was measured using a five-item source rating questionnaire that has been used in prior research (e.g., Greenberg et al., 1990). The five items were how likable, intelligent, and knowledgeable the critic was; their agreement with critic's standpoint; and how true they felt the critic's opinions were on a 1 (*not at all*) to 7 (*extremely*) scale (e.g., Greenberg et al., 1990). The average of participants' responses to these five items was computed as an index of critic evaluation ($\alpha = .88$) where higher ratings reflect more positive evaluations.

Results

Affect

There were no significant differences in positive emotions or negative emotions between participants in the mortality salience condition and dental pain condition (all p's $> .36$). Participants in the mortality salience condition ($M = 3.54$, $SD = 1.31$) did not experience more positive emotion than participants in the dental pain condition ($M = 3.79$, $SD = 1.22$). Similarly, there were no differences in negative emotions between mortality-salient participants ($M = 2.37$, $SD = 1.27$) and dental pain participants ($M = 2.55$, $SD = 1.37$). Thus, mortality salience did not influence affect, and any differences could not be attributed to differences in affect.

Critic Evaluation

Evaluations of the critic were subjected to a 2 (salience: mortality vs. dental pain) × 2 (group membership: in-group vs. out-group) × 2 (criticism legitimacy: justified vs. unjustified) ANOVA. The results revealed a significant main effect of criticism legitimacy, $F(1, 76) = 9.87$, $p = .002$, $\eta_p^2 = 0.12$. Overall, participants disliked the critic who provided unjustified comments ($M = 3.87$, $SD = 1.07$) more than the critic who provided justified comments ($M = 4.41$, $SD = 0.63$). There was also a significant Salience × Group Membership interaction, $F(1, 76) = 5.64$, $p = .02$, $\eta_p^2 = 0.07$. Participants disliked the in-group critic more under the mortality salience condition ($M = 3.90$, $SD = 1.02$) than in the dental pain condition ($M = 4.46$, $SD = .79$), $F(1, 76) = 4.65$, $p = .03$, $\eta_p^2 = 0.06$. Participants rated the out-group critic equally under dental pain ($M = 3.95$, $SD = 1.08$) and mortality salience conditions ($M = 4.23$, $SD = 0.68$), $F(1, 76) = 1.42$, $p = .24$, $\eta_p^2 = 0.02$.

Of most importance, there was a significant three-way interaction between salience, group membership, and criticism legitimacy, $F(1, 76) = 9.41$, $p = .003$, $\eta_p^2 = 0.11$ (Figure 1). Planned comparisons within each salience condition showed that as predicted, when the criticism was unjustified, mortality-salient participants disliked the in-group critic ($M = 3.34$, $SD = 1.11$) more than the out-group critic ($M = 4.25$, $SD = 0.84$), $F(1, 76) = 6.36$, $p = .01$, $\eta_p^2 = 0.08$. However, when the criticism was justified, there were no differences in liking for the in-group ($M = 4.46$, $SD = 0.53$) versus out-group critic ($M = 4.20$, $SD = 0.51$) in the mortality salience condition, $F(1, 76) = 0.51$, $p = .48$, $\eta_p^2 = 0.007$. In addition, among dental pain salience participants, the in-group critic ($M = 4.42$, $SD = 0.75$) was tolerated more than the out-group critic ($M = 3.36$, $SD = 1.20$), $F(1, 76) = 8.52$, $p = .005$, $\eta_p^2 = 0.10$, when the criticism was unjustified. When the criticism was justified, there were no differences in liking between the in-group critic ($M = 4.50$, $SD = 0.87$) and the

[2]Participants were also asked to rate how accurate and valid were the author's criticism of Singapore universities. There were no significant main effects of message or Message × Order interaction effects. Collapsed across order, analyses revealed no differences in participants' ratings of accuracy ($M_{justified} = 4.35$, $SD_{justified} = 1.19$, vs. $M_{unjustified} = 4.19$, $SD_{unjustified} = 1.25$), $F(1, 41) = 0.43$, $p = .52$, $\eta_p^2 = 0.01$, and validity of the messages ($M_{justified} = 4.52$, $SD_{justified} = 1.15$, vs. $M_{unjustified} = 4.24$, $SD_{unjustified} = 1.21$), $F(1, 41) = 1.66$, $p = .21$, $\eta_p^2 = 0.04$. These results suggest that participants did not deem the justified criticism to be harder to defend against compared with the unjustified criticism. Thus, we do not expect mortality-salient participants to perceive justified criticism as more threatening to the integrity of their worldview and thus more in need of derogation.

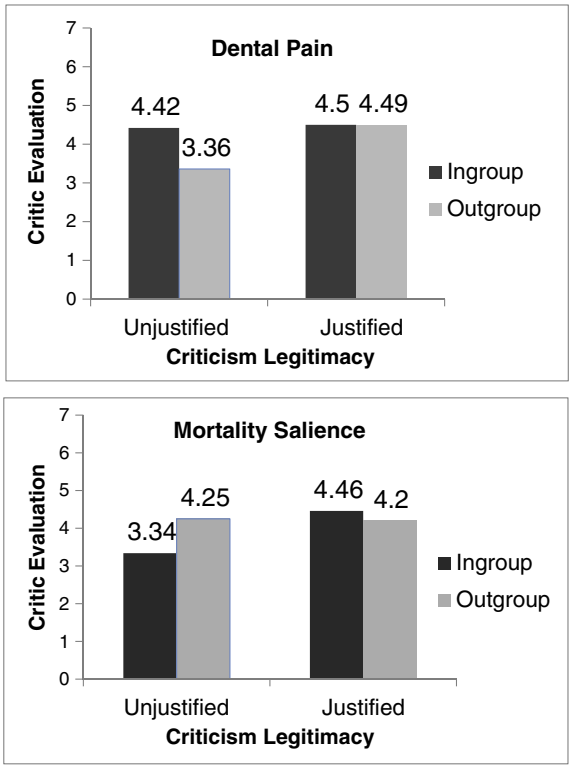

Figure 1. Critic evaluation as a function of salience, group membership, and criticism legitimacy (Experiment 1)

out-group critic ($M = 4.49$, $SD = 0.61$) in the dental pain control condition, $F(1, 76) = .001$, $p = .98$, $\eta_p^2 = 0.00$.

We also decomposed the three-way interaction by conducting mortality salience versus dental pain comparisons within each criticism condition. As expected, mortality-salient participants disliked the in-group critic significantly more than the control participants when the critic provided unjustified comments, $F(1, 76) = 8.84$, $p = .004$, $\eta_p^2 = 0.10$. Unexpectedly, participants liked the out-group critic significantly more under the mortality salience condition than in the dental pain condition when the criticism was unjustified, $F(1, 76) = 6.09$, $p = .02$, $\eta_p^2 = 0.07$. In addition, there were no differences in liking for the in-group critic between mortality-salient participants when the in-group critic provided justified comments, $F(1, 76) = 0.012$, $p = .91$, $\eta_p^2 = 0.00$. There were also no differences between mortality-salient and control participants in their critic evaluations for the out-group member when the criticism was justified, $F(1, 76) = .68$, $p = .41$, $\eta_p^2 = 0.009$.

Discussion

Experiment 1 showed that the in-group member who provided unjustified criticism was disliked more than an out-group member under mortality salience. This suggests that because mortality salience renders groups extremely important, people might be especially threatened by an unjustified criticism when it comes from an in-group member than when it comes from an out-group member. As mentioned before, this could be due to perceptions that an in-group member was embarrassing the rest of the group by expressing frivolous concerns (e.g., Marques et al., 1988) or that an in-group member was seeking to discredit the group (e.g., Hornsey & Imani, 2004). Notably, such effects disappeared when the criticism made was perceived as legitimate. This suggests that when people have already processed the criticism by the time they find out about the critic's group membership, their evaluations of the critic depend on not just the critic's group membership but also the legitimacy of the criticism. This pattern differs from the findings in prior research (See & Petty, 2006), where mortality-salient participants favored the in-group critic over the out-group critic regardless of the quality of the criticism. As mentioned earlier, in previous research (See & Petty, 2006), participants were presented with group membership information first, so it was likely that they used that information as a heuristic to determine their attention to the position expressed by the in-group versus out-group member. Therefore, the present research goes beyond prior research by examining evaluations of in-group and out-group critics under mortality salience in a context where people are less likely to rely on group membership as a heuristic.

On the other hand, in the control condition, the in-group member who provided unjustified criticism was liked more than an out-group member. Although not the main focus of the current research, these findings suggest that even in the face of unjustified criticism, the intergroup sensitivity effect remains, perhaps because people somehow avoid attributing ill intentions to the in-group member who presents criticism that is not perceived as legitimate. However, when the criticism was justified, group membership did not matter. This suggests a new boundary condition for the intergroup sensitivity effect. Similar to when participants view the out-group critic as part of a common superordinate group (Hornsey et al., 2004), when participants are presented with legitimate criticism from the out-group critic, the intergroup sensitivity effect disappears.

EXPERIMENT 2

Experiment 2 differed from Experiment 1 in various ways. First, in Experiment 1, we operationalized group membership as participants' university affiliation, but in Experiment 2, we operationalized group membership as the participant's country. This allowed us to test the generalizability of the differences between mortality-salient and control participants in their evaluations of in-group versus out-group critics. Because Experiment 1 demonstrated that such differences emerged when the criticism was unjustified, we focused on replicating the effects of mortality salience on evaluations toward the in-group versus out-group critic who presents unjustified criticism. We expected to replicate the findings in Experiment 1 such that mortality-salient participants would dislike the in-group critic more than the out-group critic whereas control participants would tolerate the in-group critic relative to the out-group critic. Second, as mentioned before, owing to the importance of groups as a death anxiety buffer, mortality-salient people might be especially threatened by criticism that they had noticed to be unjustified when the criticism comes from an

in-group member than when it comes from an out-group member. Therefore, in Experiment 2, we added a measure that assesses the proposed mediator—perceptions of threat. To the extent that perceptions of threat mediate differences among mortality-salient participant in their evaluations of the in-group versus out-group critic, statistically controlling for perceptions of threat should significantly reduce the effects that group membership has on evaluations under mortality salience.

Method

Participants and Design

Sixty undergraduates (45 women and 15 men) from the National University of Singapore, between the ages of 18 and 26 years ($M = 19.9$, $SD = 1.60$) participated in this research for partial course credit. Participants were randomly assigned to conditions in a 2 (salience: mortality vs. dental pain) × 2 (group membership: in-group vs. out-group) between-subjects design.[3]

Materials and Procedure

Overview. As in Experiment 1, upon arrival at the laboratory, participants were asked to write about their mortality or dental pain depending on the condition they had been randomly assigned to. All participants then completed a state version of PANAS (Watson et al., 1988) before they proceeded to complete an ostensibly separate study entitled "Attitudes toward Singapore." Participants were told the cover story that they would be presented with comments that were written by other students from a previous semester. These other students had presumably indicated that they disliked Singapore in a pilot study and had provided further comments for why they disliked Singapore. All participants then read the following criticism that had been ostensibly provided by another student:

> Singapore is not a nice place to be living or working in. It is hot, humid and sticky most of the time. The day-time temperature is at a high of 32 degrees Celsius. The humidity level is at around 84% and on top of that, there are sudden and unpredictable rain spells.

This criticism was presented on one computer screen. To ensure that the criticism of Singapore was considered unjustified, the criticism was pilot tested with a separate sample of 58 undergraduates (40 women and 18 men) from the same university, aged between 19 and 24 years ($M = 20.40$, $SD = 1.24$). Participants were asked to rate the extent to which the comment was an unjustified reason and an justified reason to dislike Singapore. Responses were made on a scale of 1 (*not at all*) to 7 (*very much*). Participants' ratings for the "unjustified" item were reverse coded and then averaged with their "justified" ratings to form a mean legitimacy score ($\alpha = .68$), such that higher scores meant perceptions of more legitimacy. As expected, a one-sample *t*-test (test value = 4) revealed that participants perceived the criticism as low on legitimacy ($M = 3.22$, $SD = 1.34$), $t(57) = -4.43$, $p < .001$.[4]

After reading the criticism, participants were presented with details about the critic on the subsequent computer screen. This constituted the manipulation of the critic's group membership. Next, they reported their perceptions of how threatening the comment was and then their overall evaluations of the critic. At the end of the session, all participants were probed for suspicion of the hypothesis before they were debriefed and dismissed.

Independent Variables

Salience. As before, participants were randomly assigned to write about either their mortality or dental pain by listing their thoughts to two open-ended questions (e.g. Greenberg et al., 1990).

Group membership. After reading the criticism, participants were given information about the affiliation of the author on the next computer screen. Specifically, participants in the *in-group* condition were told that "The comment you just read was written by R, a Singaporean student from the National University of Singapore." Participants in the *out-group* condition were told that "The comment you just read was written by S, a Chinese exchange student from FuDan University in China."

Dependent Variables

Positive Affect Negative Affect Scale. Participants completed a state version of PANAS (Watson et al., 1988) as in Experiment 1. The 10 positive emotion items were averaged to form a mean positive affect score ($\alpha = .87$), whereas the 10 negative emotion items were averaged to form a mean negative affect score ($\alpha = .90$).

Perceived threat. Participants responded to three items on a scale of 1 (*not at all*) to 7 (*totally*): "The comments S[R] made reflect badly on me," "The comments S[R] made reflect badly on my country," and "S[R] is seeking to discredit Singapore." These items were derived from the literature on social identity theory (e.g., Tajfel & Turner, 1979) and the intergroup sensitivity effect (e.g., Hornsey & Imani, 2004). Responses to these three items were averaged to form a perceived threat index ($\alpha = .68$) such that higher values indicate greater perceptions of threat.

Critic evaluation. Participants reported their attitudes toward R or S using the same five-item source rating questionnaire as before (e.g., Greenberg et al., 1990; $\alpha = .79$). As before, higher ratings indicate more positive evaluations.

Results

Affect

Similar to the bulk of prior research, there was no main effect of mortality salience on negative affect or positive affect. That

[3]Age did not differ between conditions, Salience × Group Membership, $F(1, 56) = 0.100$, $p = .75$, $\eta_p^2 = 0.002$. To assess if participants' gender influenced responses, gender was entered as a covariate in our analyses. The results did not differ when gender was included in the analyses; hence, it was excluded from all analyses.

[4]Participants also rated the extent to which the criticism was accurate on a 7-point scale (1 = *not at all*; 7 = *very much*). One-sample t-tests (test value = 4) revealed that the criticism was perceived as high in accuracy ($M = 5.62$, $SD = 1.30$), $t(57) = 9.53$, $p < .001$. This suggests that criticism that was perceived as unjustified was not necessarily viewed as easy to defend against. That is, we do not expect mortality-salient participants to view unjustified criticism as less in need of derogation.

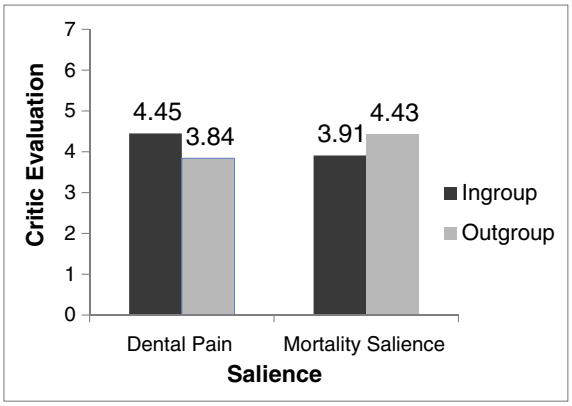

Figure 2. Critic evaluation as a function of salience and group membership (Experiment 2)

is, there were no differences in negative emotions between mortality-salient participants ($M = 2.72$, $SD = 1.37$) and dental pain participants ($M = 2.61$, $SD = 1.02$), $p = .73$. Similarly, participants in the mortality salience condition ($M = 3.79$, $SD = 1.09$) did not experience more positive emotions than participants in the dental pain condition ($M = 3.93$, $SD = 0.93$), $p = .59$.[5]

Critic evaluation

A 2 (salience: mortality vs. dental pain) × 2 (group membership: in-group vs. out-group) ANOVA on critic evaluation revealed no main effects, p's $> .82$. Of importance, there was a significant Salience × Group Membership interaction, $F(1, 56) = 7.25$, $p = .009$, $\eta_p^2 = 0.12$ (Figure 2). As predicted, mortality-salient participants tended to dislike the in-group critic ($M = 3.91$, $SD = 0.66$) more than the out-group critic ($M = 4.43$ $SD = 1.10$), $F(1, 56) = 3.05$, $p = .09$, $\eta_p^2 = 0.05$. In the dental pain condition, participants disliked the out-group critic ($M = 3.84$, $SD = 0.85$) more than the in-group critic ($M = 4.45$, $SD = 0.55$), $F(1, 56) = 4.24$, $p = .04$, $\eta_p^2 = 0.07$.

Analyzed differently, as predicted, participants tended to dislike the in-group critic more under mortality salience relative to the dental pain condition, $F(1, 56) = 3.37$, $p = .07$, $\eta_p^2 = 0.06$. Unexpectedly, participants tended to dislike the out-group critic more in the dental pain condition relative to the mortality salience condition, $F(1, 56) = 3.88$, $p = .05$, $\eta_p^2 = 0.07$.

Perceived threat

A 2 (salience: mortality vs. dental pain) × 2 (group membership: in-group vs. out-group) ANOVA revealed a significant main effect of group membership. Overall, participants perceived criticism from an in-group critic to be more threatening ($M = 2.83$, $SD = 1.10$) than criticism from an out-group critic ($M = 2.18$, $SD = 1.03$), $F(1, 56) = 6.83$, $p = .01$, $\eta_p^2 = 0.11$. Perceptions of threat did not differ as a function of salience, $p = .83$. Of importance, there was a significant Salience × Group Membership interaction, $F(1, 56) = 13.52$, $p = .001$, $\eta_p^2 = 0.19$.

As expected, mortality-salient participants perceived the criticism to be more threatening when it came from the in-group member ($M = 3.27$, $SD = 1.05$) than when it came from the out-group member ($M = 1.69$, $SD = 0.67$), $F(1, 56) = 19.8$, $p < .001$, $\eta_p^2 = 0.26$. In the dental pain condition, there were no differences in perceived threat between the in-group critic ($M = 2.40$, $SD = 0.99$) and the out-group critic ($M = 2.67$, $SD = 1.11$), $F(1, 56) = 0.57$, $p = .45$, $\eta_p^2 = 0.01$.

Analyzed differently, participants perceived criticism from the in-group member as more threatening under mortality salience than dental pain, $F(1, 56) = 5.97$, $p = .02$, $\eta_p^2 = 0.10$. In addition, participants perceived the criticism from the out-group as less threatening under mortality salience ($M = 1.69$, $SD = 0.67$) than dental pain ($M = 2.67$, $SD = 1.11$), $F(1, 56) = 7.60$, $p = .008$, $\eta_p^2 = 0.12$.

Perceived threat as a mediator

As a statistical test of the mediating role that perceived threat plays in the effects of mortality salience and group membership on critic evaluation, we conducted moderated mediation analyses on the basis of 5000 bootstrapped samples using bias-corrected and accelerated 95% confidence intervals (CIs; see PROCESS, Hayes, 2013). Conditional direct effects suggest that, after controlling for perceived threat among mortality-salient participants, the critic's group membership no longer influenced evaluations, $B = 0.217$, $SE = 0.340$, $t(55) = 0.638$, $p = .53$. However, even when controlling for perceived threat, group membership still tended to influence how control participants evaluated the critic, such that they disliked the out-group critic more than the in-group critic, $B = -0.562$, $SE = 0.294$, $t(55) = -1.91$, $p = .06$. These analyses also revealed that indirect effects suggest that perceived threat mediated the effect of group membership on critic evaluation in the mortality salience condition (CI [0.007, 0.721]), but not the dental pain condition (CI [−0.214, 0.119], Table 1).[6]

[5]A 2 (salience: mortality vs. dental pain) × 2 (group membership: in-group vs. out-group) ANOVA conducted on mean positive affect scores revealed a significant Salience × Group Membership interaction, $F(1, 56) = 4.32$, $p = .04$, $\eta_p^2 = 0.07$. No other effects were significant, p's $> .33$. There were no significant differences in positive affect for dental pain control in the in-group critic ($M = 3.79$, $SD = 1.09$) and out-group critic ($M = 4.07$, $SD = 0.74$) conditions, $F(1, 56) = 0.603$, $p = .44$, $\eta_p^2 = 0.01$. However, mortality-salient participants reported more positive affect in the in-group critic condition ($M = 4.18$, $SD = 0.97$) than in the out-group critic condition ($M = 3.40$, $SD = 0.26$), $F(1, 56) = 4.68$, $p = .04$, $\eta_p^2 = 0.08$. A 2 (salience: mortality vs. dental pain) × 2 (group membership: in-group vs. out-group) ANOVA conducted on mean negative affect scores also revealed no significant interaction, $F(1, 56) = 0.00$, $p = .99$.

[6]Because there was an unexpected significant difference in positive affect between mortality-salient participants in the in-group critic condition and the out-group critic condition (see Footnote 5), we also conducted a moderated mediation analysis based on 5000 bootstrapped samples to examine the role of perceived threat in mediating the relationship between mortality salience and group membership on critic evaluation with participants' self-reported positive affect as a covariate. The significance of the findings remained the same. That is, even when adding positive affect as a covariate, analyses of indirect effects suggest that perceived threat significantly mediated the effect of group membership on critic evaluation in the mortality salience condition (CI [0.019, 0.646]), but not the dental pain condition (CI [−0.203, 0.131]). Although there were no significant differences in negative affect as a function of salience, group membership, or their interaction in Experiment 2, we included negative affect as a second covariate in our model to examine the effects after controlling for mood. The significance of the findings remained the same. When both positive and negative affect were included as covariates, analyses of indirect effects suggest that perceived threat significantly mediated the effect of group membership on critic evaluation in the mortality salience condition (CI [0.009, 0.648]), but not the dental pain condition (CI [−0.201, 0.150]).

Table 1. Regression results for conditional indirect effect

Predictor	B	*SE*	*t*	*p*
Dependent variable: Perceived threat				
Constant	2.400	0.251	9.570	0.001
Salience	0.867	0.355	2.440	0.018
Group membership	0.267	0.355	0.752	0.455
Salience × Group Membership	−1.840	0.502	−3.680	0.001
Dependent variable: Critic evaluation				
Constant	4.910	0.336	14.600	0.001
Perceived threat	−0.192	0.110	−1.740	0.087
Salience	−0.380	0.308	−1.240	0.222
Group Membership	−0.562	0.294	−1.910	0.061
Salience × Group Membership	0.779	0.461	1.690	0.097

Salience	B	Boot SE	Boot LLCI	Boot ULCI
Dental pain	−0.051	0.083	−0.214	0.119
Mortality salience	0.303	0.181	0.007	0.721

Note: Bootstrap sample size = 5000. LLCI: lower level of the 95% bootstrap percentile confidence interval; ULCI: upper level of the 95% bootstrap percentile confidence interval.

Discussion

Using national identity instead of school affiliation as an operationalization of group membership, the findings in Experiment 2 replicated the pattern in Experiment 1. In Experiment 2, all participants were presented with unjustified criticism. Under mortality salience, the in-group member who provided unjustified criticism was disliked more than an out-group member. Furthermore, the derogation of the in-group critic relative to the out-group critic under mortality salience was mediated by perceptions of threat. Put differently, among mortality-salient participants, the out-group critic who provided unjustified criticism was perceived as less threatening than the in-group critic who provided the same unjustified criticism. Another finding worth noting is that, as in Experiment 1, the intergroup sensitivity effect was observed among control participants such that they evaluated an in-group critic more positively than an out-group critic even though the criticism was unjustified.

GENERAL DISCUSSION

Across two experiments, we demonstrated that people derogate an in-group member relative to an out-group member who presents unjustified criticism when they are under mortality salience. To establish the reliability of the results in this research, meta-analyses for Experiments 1 and 2 were conducted to test the significance of the combined probabilities (Rosenthal & Rosnow, 2008). The results revealed that the pattern that the in-group critic was disliked more than the out-group critic under mortality salience was reliable, $Z = -3.02$, $p < .01$. Examined differently, across the two experiments, the derogation of an in-group critic among mortality-salient participants, relative to their control counterparts, was also reliable, $Z = -3.32$, $p < .001$. These findings support our key hypothesis that mortality-salient participants would derogate an in-group member who provides unjustified criticism. In addition, we also found that the out-group critic was liked among mortality-salient participants, relative to participants in the control group, $Z = 1.41$, $p < .05$.

Implications for Terror Management Theory

At first glance, the current research might appear to be similar to prior research that examined the role of groups in TMT. For instance, some research has demonstrated that mortality-salient people are quick to distance themselves from the group if the group no longer serves as a viable basis for self-esteem. In this research, mortality salience intensified negative evaluations of the work of Hispanic artists, when primed with a negative exemplar (a Hispanic drug lord), and positive evaluations of the work of Hispanic artists when primed with a positive exemplar (a Hispanic missionary; Arndt, Greenberg, Schimel, Pyszczynski, & Solomon, 2002). However, we agree with Hornsey (2006) that evaluating an in-group critic is not necessarily the same, because unlike an in-group member who happens to be associated with a tainted in-group, an in-group member who directs criticism at the group explicitly could actually end up promoting positive change and thus enhance the in-group. In other words, the role of the group as a basis for self-esteem, and thus an effective death anxiety buffer, might be enhanced when an in-group member is critical of one's group. This is consistent with Experiment 1's findings that although an in-group member who provides unjustified criticism is derogated under mortality salience, such derogation disappears when the in-group member provides criticism but that criticism is justified.

In addition, other research seems to suggest that mortality-salient people are quick to derogate an individual who directs criticism at their group. For example, when presented with criticism toward their university, mortality-salient participants derogated the critic especially when they perceived group membership to be relatively fixed rather than permeable (Dechesne, Janssen, et al., 2000). However, it is worth noting that in that research, the critic stated that "I am glad I don't study there." Therefore, it is likely that the critic was perceived as an out-group member. In other words, it was unclear from that prior research whether under mortality salience, evaluations of the critic would be similar or different when the same criticism came from an in-group member. Going beyond that research, the findings in Experiments 1 and 2 suggest that when the criticism is unjustified, group membership matters such that the in-group member would be derogated relative to the out-group member under mortality salience. Experiment 1 further suggests that the quality of the criticism matters because when mortality-salient participants have already read the criticism and found it to be justified, evaluations of the critic were similar regardless of whether the critic was an in-group or out-group member.

Besides going beyond the research by Arndt et al. (2002) and Dechesne, Greenberg, et al. (2000), the current findings also showed the opposite pattern of findings compared with other prior research that revealed favoritism toward the in-group critic

over the out-group critic under mortality salience (See & Petty, 2006). As suggested earlier, in that research, participants first knew that the critic was an in-group member before learning about the critic's comments (See & Petty, 2006). Similar to other research in which participants were more likely to rely on a heuristic when it was presented before rather than after the message (e.g., Mackie et al., 1992), the participants in the research by See and Petty (2006) were likely to have relied on group membership as a heuristic. In contrast, participants in the present experiments had already processed the criticism by the time they found out that the critic was an in-group member. Hence, under mortality salience, participants in the present research might have put in extra mental effort to reconcile a criticism made by an in-group member. Some readers might think that our suggestion that effortful processing had occurred seems inconsistent with Experiment 2's finding that the unjustified criticism was viewed as more threatening (and not less threatening) by mortality participants who thought the criticism came from an in-group member. However, as mentioned before, it is possible for people who are engaged in effortful processing to recognize the flaws in unjustified criticism and still view such criticism as threatening. Furthermore, the data from Experiment 1 showed that when evaluating an in-group critic, mortality-salient participants distinguished between justified and unjustified criticisms, $F(1, 76) = 0.91$, $p = .003$, $\eta_p^2 = 0.11$, whereas control participants did not distinguish between justified and unjustified criticisms, $F(1, 76) = 0.05$, $p = .82$, $\eta_p^2 = 0.001$. Nevertheless, it would be useful for further research to directly assess the interactive effects of mortality salience and the placement of group membership information on information processing. This could be accomplished by manipulating the placement of group membership information, besides mortality salience, and examining the extent to which evaluations are driven by the valence of participants' thoughts or the confidence in their thoughts (Horcajo, See, Briñol, & Petty, 2008). We predict that especially among mortality-salient participants, the valence of participants' thoughts or the amount of confidence in their thoughts would impact evaluations toward a critic to a greater extent, thus suggesting greater processing, when participants learn the critic's group membership only after they have already read the criticism than when they learn the critic's group membership before they read the criticism.

As discussed earlier, the same variable could play different roles in determining evaluations (e.g., Chaiken et al., 1989; Petty & Cacioppo, 1986; Petty & Wegener, 1999; Petty et al., 2007). For example, under mundane conditions, group membership serves as a heuristic when the topic is of little relevance to the group, but group membership impacts the extent of scrutiny when the topic is relevant to the group (Mackie, Worth, & Asuncion, 1990). Importantly, differences in how the same variable plays a role in determining evaluations have downstream consequences such as the extent to which the evaluations are predictive of behavior. On the basis of the pattern of evaluations suggested by the current findings, it is possible that under mortality salience, when people find out that a critic is an in-group member only after they have processed the criticism, their relatively negative evaluations of the in-group member would be followed by actual punishment of the in-group critic such as expulsion from the group. In addition, it is possible that under mortality salience, when people know the critic's group membership first and thus are inattentive to the position of the in-group critic (See & Petty, 2006), their relatively positive evaluations of the in-group member would not actually result in any correspondent reward. Further research could examine directly the effects of the order of group membership and criticism on the extent to which evaluations produce correspondent behavior among mortality-salient participants.

It is worth noting that in both experiments, mortality salience actually increased liking for the out-group critic who presented unjustified criticism. At first glance, one possible explanation is that the unjustified out-group critic fulfilled participants' expectations regarding out-group members. Indeed, prior research has shown that mortality salience increases one's preference for individuals who behave in a stereotype-consistent manner (Schimel et al., 1999). Specifically, mortality salience increased liking for an African-American who was described to be dressed in "untied high-top sneakers, an Atlanta Braves shirt, low-worn black shorts, dark sunglasses, and a backward baseball cap." In contrast, mortality salience increased dislike for an African-American who was described in a stereotype-inconsistent manner. Note that although it is possible that the fulfillment or violation of expectations could impact evaluations under mortality salience, it is not possible for expectations to fully account for the findings in the present research. On the basis of the expectations account, to the extent that an unjustified out-group critic fulfills expectations and thus elicits positive evaluations, then arguably, a justified in-group critic might also be consistent with expectations. Nevertheless, we did not find that mortality salience increased liking for the in-group critic who provided justified criticism. Furthermore, a justified out-group critic might be considered as violating expectations. However, we did not find that a justified out-group critic was also disliked more under mortality salience.

Implications for Intergroup Sensitivity Effect

By independently manipulating criticism legitimacy, the current research extends prior work because it identifies new boundary conditions in which the intergroup sensitivity effect occurs. In the control condition, the intergroup sensitivity effect remains when the criticism is unjustified, thus suggesting that unjustified criticism gives rise to the opportunity for people to query the intentions of critics, such that attributional bias against the out-group critic emerges. On the other hand, there were no differences in derogation toward the in-group or out-group critic when the criticism was perceived as justified. In other words, legitimate criticism overrides the tendency to favor the in-group critic over the out-group critic. This finding complements other research on persuasion strategies that are aimed at reducing defensive evaluations toward group-directed criticism from out-group members such as *sweetening* (mixing criticism with positive feedback) and *sharing* (presenting criticism in a broad way so that it appears to include a wider audience; Hornsey, Robson, Smith, Esposo, & Sutton, 2008). Future research could investigate the conditions under which various persuasion strategies mitigate the intergroup sensitivity effect by decreasing the derogation of the out-group critic. For instance, providing justified criticism might be more effective for people with

high need for cognition who are intrinsically motivated for careful elaboration whereas sharing might be more effective for individuals with low need for cognition (Cacioppo, Petty, Feinstein, & Jarvis, 1996).

In addition to features of the persuasion (i.e., criticism legitimacy), the present research suggests that self-related defensive mechanisms could also be an important factor in the intergroup sensitivity effect. Specifically, the motivation to alleviate the potential for one's death anxiety reverses the intergroup sensitivity effect, as demonstrated by the derogation of the in-group relative to the out-group critic among mortality-salient participants. Indeed, it is worth noting that in a prior study where intergroup conflict was shown to attenuate the intergroup sensitivity effect, death-related words such as "killed" and "burned house" were used to induce perceptions of intergroup conflict. Future research could examine the extent to which the attenuation or reversal of the intergroup sensitivity effect occurs in response to other self-related threats such as uncertainty (e.g., McGregor, Zanna, Holmes, & Spencer, 2001) or ostracism (Williams, 2007). Furthermore, it would be worthwhile to examine the extent to which effects are unique to these various threats or similar across them (e.g., Echebarria-Echabe, 2013; Shepherd, Kay, Landau, & Keefer, 2011).

Implications for Black Sheep Effect

Another way to interpret the current findings is that under mortality salience, evaluations toward the in-group member who provided unjustified criticism became more extreme than those toward the out-group member who provided unjustified criticism. This pattern seems consistent with the notion that when people are highly motivated to maintain a positive social identity, such as when they are coping with the potential for death anxiety, the black sheep effect occurs. In the black sheep effect, people derogate an undesirable in-group member relative to an equally undesirable out-group member and praise a desirable in-group member in comparison with a desirable out-group member (e.g., Marques et al., 1988; Marques & Paez, 1994). Applied to the current research, the black sheep would be the in-group member who provided unjustified criticism.

It is worth noting that the black sheep effect occurs only when people form evaluations toward a target on the basis of attributes that have implications for their social identity (Marques et al., 1988). This raises the question regarding whether the unjustified in-group critic in the current research was treated like a black sheep because the critic had expressed negative opinions of the group, because the critic had appeared incompetent for giving unjustified comments, or both. The current findings suggest that both the expression of criticism and the expression of unjustified comments contribute independently to the black sheep effect. That is, although mortality-salient participants derogated the unjustified in-group critic relative to the unjustified out-group critic, they did not increase their favorability toward the justified in-group critic relative to the justified out-group critic. Thus, expressing unjustified versus justified comments alone was not sufficient to produce the black sheep effect. Similarly, if expressing criticism alone was sufficient to produce the black sheep effect, then mortality-salient participants would have derogated the justified critic too and not only the unjustified critic, but this was not the case. Instead, derogation only occurred among mortality-salient participants when the criticism was both unjustified and voiced by an in-group member.

CONCLUSION

The present research provides further insight regarding the evaluations of critics under mortality salience. In particular, we found that reactions toward critics depend not only on their group membership but also on the nature of criticism (i.e., criticism legitimacy), as well as the situation in which the criticism is received. We hope that these findings will lead to new advances in research that enriches our understanding of psychological processes in reaction to group-directed criticism and terror management strategies.

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APPENDIX

Justified and Unjustified Criticism Used in Experiment 1

Justified Criticism

Data from the Educational Testing Service (ETS) have shown that Singaporean students are less engaged and concerned about their role in society. Overseas students are more mature and informed about the relevant issues and problems around them. Also, professors from overseas universities are also more concerned about the school and their students. On average, they spend 5 times more time engaging in reciprocal, collaborative discussions with their students. The curriculum at overseas universities is geared toward practical applications and career-oriented teaching. On the other hand, Singapore universities remain largely theoretically-based, with emphasis on formulaic thinking rather than flexible problem solving. This is perhaps why overseas universities received far more distinctions in a recent Times ranking of top universities. Students applying for universities should strongly consider Overseas universities over Singapore universities.

Unjustified Criticism

Students applying for universities should strongly consider Overseas universities over Singapore universities. On-campus eateries at Overseas universities serve better quality food than Singapore universities. Singaporean students cannot get a decent meal on campus even if they were willing to pay for it. Unlike Overseas universities, Singapore universities have 8 am and 7 pm classes. Such timings are inhumane. University administrators should realise that in order for students to do well—not just in school but in life—they have to live a little. Furthermore, students in Singapore universities are so competitive. A typical student often starts revising much earlier than necessary. Because most courses are graded on a bell curve, it is too difficult for the average person to do well. Students applying for universities should strongly consider Overseas universities over Singapore universities.