Does Self-esteem Moderate the Effect of Mortality Salience on Worldview Defense in Japan?

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Abstract: According to terror management theory (TMT), people respond to a reminder of their inevitable death (mortality salience, MS) by defending their cultural worldview (MS hypothesis). Although the MS hypothesis has been supported in numerous studies conducted in Western cultures, it is not always supported in interdependent cultures such as Japan. Considering that TMT argues that self-esteem can also buffer death anxiety and moderate the effect of MS, careful examination of this effect is also needed. The present study examined whether such moderating effect of self-esteem would be found among Japanese through three studies. Results revealed that the moderating effect of self-esteem on the relationship between MS and worldview defense was not found. The results suggest that self-esteem does not function as a death anxiety buffer in Japan.

Key words: mortality salience, self-esteem, terror management theory, worldview defense

1. Introduction

1.1 Terror Management Theory

Terror management theory (TMT; Greenberg, Pyszczynski, & Solomon, 1986; Pyszczynski, Solomon, & Greenberg, 2015) predicts how people manage death anxiety when the awareness of the inevitability of death arises. According to TMT, cultural worldview and self-esteem can alleviate the anxiety. Cultural worldview is defined as human-constructed beliefs about reality shared by individuals in groups (Solomon, Greenberg, & Pyszczynski, 2004). Self-esteem is a sense of personal value that is obtained by believing in the validity of one's cultural worldview and living up to the standards of that worldview (Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004). Pyszczynski et al. (2015) described the functions of cultural worldviews, which provide (1) a theory of reality that gives life meaning, purpose, and significance; (2) standards by which human behavior can be assessed and have value; and (3) the hope of literal or symbolic immortality. They also argue that literal or symbolic immortality can be obtained by having self-esteem. Namely, cultural worldviews provide the basis for belief in immortality and self-esteem provides a sense of that immortality. TMT assumes the universality of its theoretical proposal and, because it attempts to understand the roots of several

motives that other theories use (e.g., self-esteem, belonging), this theory can be useful to understand human behavior completely (Pyszczynski et al., 2015).

TMT predicts that reminders of death (mortality salience, MS) should increase one's need for the protection of one's worldview and self-esteem (MS hypothesis). In fact, this hypothesis has been examined in multiple studies. For example, Greenberg et al. (1990) found that reminding participants of their mortality leads to positive reactions to someone who praises their worldview and negative reactions to someone who threatens their worldview. Also, Greenberg, Pyszczynski, Solomon, Simon, and Breus (1994) demonstrated that those who were assigned to the MS condition increased their preference for the author who wrote the essay praising their country over the one who wrote the essay criticizing their country.

Turning to the relationship between MS and self-esteem, previous studies have confirmed the MS hypothesis. For example, in the study of Mikulincer and Florian (2002), individuals who were exposed to MS attributed the positive outcomes more to their internal, stable, and global causes than those who were in the control condition, whereas they attributed the negative outcomes less to their internal, stable, and global causes. Namely, they showed self-serving bias. The function as death anxiety buffer of self-esteem has been supported in various studies (for a review, see Pyszczynski et al., 2004).

1.2 Worldview Defense in Interdependent Cultures

Although it has been shown that MS leads to worldview defense, most of the studies were conducted in Western cultures (i.e., independent cultures). Such findings are not always supported in interdependent cultures including Japan. Although some studies conducted in interdependent cultures demonstrated the effect of MS on worldview defense (e.g., Heine, Harihar, & Niiya, 2002), other studies failed to find such effect. For example, the people of the Latin American nation of Costa Rica, which is an interdependent culture (Markus & Kitayama, 1991), did not increase their pro-Costa Rican bias when they were exposed to MS (Navarrete, Kurzban, Fessler, & Kirkpatrick, 2004). Yen and Cheng (2010) also demonstrated that worldview defense against MS was not found among Taiwanese. They also conducted meta-analysis of the effect of MS on worldview defense in Asia. The average standardized effect size was $r = .055$, which was not significantly different from zero. Therefore, they concluded that the non-significant result of the effect of MS on worldview defense in Asia was robust. In fact, the author of this report and colleagues have conducted some studies based on TMT using Japanese samples and showed that the effect of MS on worldview defense was not found through meta-analysis of our data sets (Toya, Nakashima, & Morinaga, 2015).

1.3 The Function of Self-Esteem as Anxiety Buffer in Interdependent Cultures

TMT also proposes a function of self-esteem as anxiety buffer. It is predicted that individuals with high self-esteem (generally measured by the Rosenberg Self-Esteem Scale) should be less subject to MS and show less worldview defense than those with low or moderate self-esteem. Harmon-Jones et al. (1997) manipulated levels of state self-esteem of participants and examined whether such manipulation decreases worldview defense against MS. People with high state self-esteem did not respond to MS with increased worldview defense, whereas people with moderate state self-esteem did. They also tested whether the dispositional levels of self-esteem moderate the effect of MS. The result was identical to that of state self-esteem. This study confirms that self-esteem moderates the effect of MS. In other words, high self-esteem does buffer anxiety of death and reduce defensive responses.

Nevertheless, similar to divergent findings of cultural worldview defense between independent and interdependent cultures, the findings of the self-esteem buffering hypothesis are still discussed. For example, Navarrete et al. (2004) did not find the moderating effect of self-esteem on intergroup bias in Costa Rican samples. Furthermore, Du et al. (2013) also showed that the interaction between MS and trait self-esteem on worldview defense was not significant in Chinese samples. Considering that interdependent cultures have distinct conceptions of individuality that insist on the fundamental

relatedness of individuals to each other (Markus & Kitayama, 1991), Du et al. (2013) demonstrated that if self-esteem is built on living up to social norms within culture-specific worldviews, interdependent cultures (e.g., China, Japan) should not tend to rely on independent self-esteem (measured by the Rosenberg Self-Esteem Scale). However, they used only a Chinese sample in their research.

In contrast, few studies suggest the moderating effect of self-esteem (e.g., Kashima, Halloran, Yuki, & Kashima, 2004; Yanagisawa, Abe, Kashima, & Nomura, 2016). For example, Kashima et al. (2004) found that among Japanese people with lower self-esteem, individuals who were induced to think about their mortality showed decreased motivation to engage in individualist behaviors compared to those who were not. However, this research was only a single study, so it seems to be required to conduct conceptual or direct replication for reproducibility. In addition, although these studies used young adult samples, it is necessary to examine the TMT with broader age samples. In TMT, the hypothesis of an anxiety-buffering function of self-esteem is the central theoretical issue because TMT was proposed to answer why people need self-esteem. If the proposition of TMT is valid, an anxiety-buffering function of self-esteem can apply to all ages. Thus, it is important to test the moderating effect of self-esteem on MS effects with broader samples in terms of age. I believe that this examination can provide opportunities for refining TMT.

1.4 Overview of the Present Study

In the present study, I will examine if self-esteem moderates the MS effects on worldview defense by using the data of my past studies (Toya et al., 2015) and the subsequent studies. I will test that by using Japanese individuals in their 20s and 50s (Studies 1 and 2), as well as undergraduates (Study 3). Middle-aged people (50s) cannot help being concerned about their own death and tend to feel fear of death more than young adults (e.g., Kumabe, 2006), so they should show a response against MS as well as young adults do if TMT is true. In Studies 1 and 2, I measured inter-generation conflict as the worldview defense (for details, see Study 1). According to the theoretical review of TMT, the cultural worldviews on which self-esteem is based are not necessarily the same for everyone in the same culture (Greenberg et al., 1986). Based on this proposition, it is possible that individuals even in the same culture will react negatively to each other when mortality is salient. I believed this was worth examining experimentally for investigation of the validity of TMT. Previous studies have measured worldview defense in various ways (e.g., preference for an essay writer who praises one's worldview over one who criticizes it; Greenberg et al., 1994). Here, I define worldview defense as "defending one's worldview by evaluating others who do not share or criticize one's worldview more negatively (or less positively) than others who share or validate one's worldview when raising the awareness of death, compared to a usual situation."

2. Study 1

2.1 Method

2.1.1 Participants

I conducted a web survey. Participants were individuals in their 20s (N = 222, 111 women, mean age = 25.3) and individuals in their 50s (N = 227, 114 women, mean age = 53.9) who were monitor panel members of the research agency.

2.1.2 Measures and Procedure

I randomly assigned participants to one of the three experimental manipulation conditions (MS vs. dental pain vs. control). The dental pain condition is often used in TMT studies as an aversive control condition (*cf.* Burke, Martens, & Faucher, 2010). Participants in the MS condition answered 20 items relating to death (e.g., "I become anxious when I expect my own death") on a 5-point scale (1 'not at all applicable' to 5 'extremely applicable'). Those who were assigned to the control condition responded

to a 20-item multiple choice questionnaire about leisure activity (e.g., "take a walk") that used a similar 5-point scale (1 'do not at all' to 5 'do almost every day'). This experimental manipulation was used by Wakimoto (2009). Participants in the dental pain condition responded to a 20-item multiple choice questionnaire concerning dental treatment (e.g., "I get more anxious when my tooth is scaled") by rating items on a 6-point scale (1 'strongly disagree' to 5 'strongly agree' and 6 'I don't know'). The 20 items used in the questionnaire of the dental pain condition were modified questions selected from the Japanese version of the Dental Fear Survey (Sano, Tanabe, & Noda, 2001).

After experimental manipulation, participants were asked to rate their mood by responding to 46 items (e.g., fearful) using a 5-point scale (1 'strongly disagree' to 5 'strongly agree'; Lambert et al., 2014). Previous research has shown that MS effect emerges after delay between MS manipulation and measurement of dependent variable (Greenberg et al., 1994). I used those 46 items as a delay task. Lambert et al. (2014) found that MS manipulation elevates fear and I thought it possible that fear induced by MS manipulation affects worldview defense. So, I assessed participants' fear by five words they used (i.e., fearful, afraid, scared, frightened, and terrified) and controlled the effect on worldview defense.[1]

Next, worldview defense was measured. I modified the Japanese version of the Collective Self-Esteem Scale (J-CSES; Watanabe, 1995) to assess the evaluation for social categories (e.g., Isobe, Ura, & Hasegawa, 2005).[2] Four items of "the positive evaluation for the group" and four items of "the negative evaluation for the group" were selected from the sub-scale of the J-CSES. Participants were asked to rate their attitude toward an ingroup (their own generation) and an outgroup (not their own generation). Specifically, participants in their 20s (50s) rated their attitude toward people in their 20s (50s) as their ingroup (i.e., those who seemed to share the participant's beliefs of standard behavior) and their attitude toward people in their 50s (20s) as their outgroup (i.e., those who seemed to have different beliefs of standard behavior). I suggest that this measure reflects one type of worldview defense because individuals in a specific generation share a value consciousness that differs from the value consciousness of every other generation in Japanese society (Nakamura, 1997). Participants responded to each item (e.g., "this generation is good," "This generation is able to do anything well," "This generation does not have enough ability to succeed") using a 5-point scale (1 'strongly disagree' to 5 'strongly agree'). The order of evaluation for each generation was counterbalanced between participants.

At the end of the study, self-esteem was assessed by the Japanese version of the Rosenberg Self-Esteem Scale (Yamamoto, Matsui, & Yamanari, 1982). Participants responded to 10 items (e.g., "I take a positive attitude toward myself") using a 5-point scale.

2.2 Results and Discussion

In Study 1, I examined whether self-esteem moderates the effect of MS on worldview defense among people in their 20s and 50s. First, I examined whether MS manipulation elevated fear (α = .89). A 3 (experimental manipulation: MS vs. dental pain vs. control) × 2 (sample: participants in their 20s vs. 50s) ANOVA yielded only the significant main effect of experimental manipulation (F [2, 443] = 9.07, p < .01, η_p^2 = 0.04). Participants in the MS condition felt more fear than those in the dental pain (t [443] = 3.14, p < .01) and control conditions (t [443] = 4.06, p < .01).

I measured participants' self-esteem at the end of the study. Previous studies have found that MS leads people to pursue high levels of self-esteem (e.g., Mikulincer & Florian, 2002). So, it is possible that MS manipulation influences participants' self-esteem. In order to examine this possibility, I conducted a 3 (experimental manipulation: MS vs. dental pain vs. control) × 2 (sample: participants in their 20s vs. 50s) ANOVA with self-esteem as the dependent variable. The score of self-esteem was calculated by averaging the 10 items, and a higher score represented a higher self-esteem (α = .85). There were no main effects of experimental manipulation (F [2, 443] = 0.20, p = .82, η_p^2 = 0.001) and interaction of

Table 1

Results of the multiple regression analysis on the worldview defense in Studies 1–3.

	Study 1	Study 2	Study 3
Dental pain (a)	.09	.02	-.01
Control (b)	.10 †	-.08	.04
Self-esteem (c)	.22 ***	.13 †	-.37 **
Sample (d)	.14 *	.00	
Fear	.09 †	-.02	-.10
a × c	**.05**	**-.10**	**-.16**
b × c	**.01**	**-.09**	**-.06**
a × d	.05	.00	
b × d	.04	.07	
c × d	-.12 *	.04	
a × c × d	**.00**	**.06**	
b × c × d	**-.02**	**.06**	

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

experimental manipulation and sample (F [2, 443] = 0.72, p = .49, η_p^2 = 0.003). These results show that experimental manipulation did not influence participants' self-esteem.

Next, I examine if self-esteem moderates the MS effect. The worldview defense score was calculated by subtracting the average score of evaluation toward the outgroup (after reversing the negatively worded items; a = .72) from the average score of evaluation toward the ingroup (a = .76). Thus, a higher score means higher levels of worldview defense. I conducted a multiple regression analysis. Predictors were the main effects of centered self-esteem, the dummy-coded sample (0 = participants in their 20s, 1 = participants in their 50s) and the dummy-coded experimental conditions (belonging to the condition = 1, not belonging = 0; excluding the comparison condition), and the interaction effects among these variables. The comparison condition was the MS condition. Also, I included fear in the model as a control variable.[3] Results are shown in Table 1. I will report the effects including the experimental conditions.

The main effect of the control condition was marginally significant (β = .10, t [436] = 1.75, p = .08), which indicated that participants in the MS condition tended to show less worldview defense than those in the control condition did. Significantly, the effects including the interactions of experimental manipulation × self-esteem were not significant (β < |.05|, ps > .41).

In sum, results revealed that self-esteem did not moderate the effect of MS. I also found that MS led people to show less worldview defense when compared with the control condition. However, the effect was marginally significant and the sample size was relatively large (N = 449). So, I will not discuss the effect now and will examine it again in Study 2.

I used a multiple-choice questionnaire as an experimental manipulation (Wakimoto, 2009). However, previous researches often manipulated awareness of death by open-ended questionnaire (e.g., Greenberg et al., 1994). This is a popular method in TMT. In Study 2, I will change the experimental manipulation for open-ended questionnaire and test the moderating effect of self-esteem again.

3. Study 2

3.1 Method
3.1.1 Participants

I conducted a web survey as in Study 1. Participants were individuals in their 20s (N = 158, 84 women, mean age = 25.8) and individuals in their 50s (N = 162, 84 women, mean age = 54.0) of monitor panel members of the research agency.

3.1.2 Measures and Procedure

I randomly assigned participants to one of the three experimental manipulation conditions (MS vs. dental pain vs. control). In Study 2, I used open-ended questions as the experimental manipulation (e.g., Greenberg et al., 1994). Participants who were in the MS condition were asked to "Briefly describe the emotions that the thought of your own death arouses in you," and "Jot down, as specifically as you can, what you think will happen to you as you physically die and once you are physically dead." The dental pain condition consisted of parallel questions with respect to the dental treatment with pain. Participants in the control condition were asked to "Describe how you spend your time when you are free or on your day off." The other materials and procedures were identical to those of Study 1.

3.2 Results and Discussion

In Study 2, I examined whether self-esteem moderates the MS effect by changing the experimental manipulation form to that of Study 1. An ANOVA for the examination of MS effect on fear (α = .89) with the same design as that of Study 1 yielded only the significant main effect of experimental manipulation (F [2, 314] = 7.28, p < .01, η_p^2 = 0.04). Participants in the MS and dental pain conditions felt more fear than those in the control condition (respectively, t [314] = 3.64, p < .01 and t [314] = 2.80, p < .01).

I examined whether MS manipulation would affect participants' self-esteem. A 3 (experimental manipulation: MS vs. dental pain vs. control) × 2 (sample: participants in their 20s vs. 50s) ANOVA was conducted with self-esteem (α = .87) as the dependent variable. There were no main effects of experimental manipulation (F [2, 314] = 0.65, p = .52, η_p^2 = 0.004) and interaction of experimental manipulation and sample (F [2, 314] = 2.18, p = .11, η_p^2 = 0.01). These results show that experimental manipulation did not influence participants' self-esteem.

To examine the moderating effect of self-esteem, I conducted a multiple regression analysis with the same model as that of Study 1 (evaluation toward the ingroup α = .73; evaluation toward the outgroup α = .74). There were no significant main effects of experimental conditions (β < |.08|, ps > .25) and interactions including experimental condition × self-esteem (β < |.09|, ps > .14; Table 1).

In sum, self-esteem did not moderate the MS effect on worldview defense. In opposition to Study 1, MS did not lead people to show less worldview defense when compared with the control condition. Although I used inter-generation evaluation as a worldview defense score in Studies 1 and 2, Heine et al. (2002) and Yanagisawa et al. (2016) demonstrated the effect of MS on worldview defense in Japan by assessing how participants evaluate a person who ostensibly writes an essay criticizing their country. This is a typical pattern for measuring cultural worldview. In Study 3, I thus adopted the material that Heine et al. (2002) used as a worldview defense measurement.

4. Study 3

4.1 Method
4.1.1 Participants

Participants were Japanese undergraduates (N = 124, 80 women, mean age = 19.2).

4.1.2 Measures and Procedure

This study was conducted across 2 weeks as part of the regular class in a psychology-related program. In the first week, participants answered the questionnaire that included the Japanese version of the Rosenberg Self-Esteem Scale.

In the second week, I conducted the questionnaire experiment. As the cover story, participants were told that the study concerned students' values and lifestyle. Materials and procedure were identical to those of Study 2 except for the measurement of worldview defense.[4] Worldview defense was assessed by evaluations of two essay writers (Heine et al., 2002). The first essay was neutral in tone and included the author's hobby in his spare time, whereas the other was an anti-Japan essay that criticized Japan. Following each essay, participants were asked to evaluate the essay writer by four items (e.g., "How much do you like this person?"), and indicate how well five positive (e.g., warm) and five negative (e.g., rigid) traits applied to each essay writer using a 9-point scale (1 'not at all applicable' to 9 'extremely applicable'). The order of evaluation for the essay writers was counterbalanced between participants.

4.2 Results and Discussion

I examined whether MS manipulation elevated fear (α = .82). A 3 (experimental manipulation: MS vs. dental pain vs. control) ANOVA yielded significant main effect (F [2, 120] = 3.57, p = .03, η_p^2 = 0.06). Participants in the MS condition felt more fear than those in the dental pain (t [120] = 2.40, p = .02) and control conditions (t [120] = 2.17, p = .03).

I calculated the evaluation toward the neutral essay writer (averaged score of the 14 items after reversing the five negative trait items; α = .86) and the evaluation toward the anti-Japan essay writer (α = .87). The worldview defense score was calculated by subtracting the score of evaluation for the anti-Japan essay writer from the score of evaluation for the neutral essay writer.[5] Thus, a higher score means higher levels of worldview defense. To examine the moderating effect of self-esteem, I conducted a multiple regression analysis with the same model as that of Studies 1 and 2, except for the sample factor (self-esteem α = .85). There were no significant main effects of the experimental conditions (β < |.04|, ps > .69) and interactions including the experimental condition × self-esteem (β < |.16|, ps > .16; Table 1). These results were the same as those of Studies 1 and 2.

5. Meta-Analysis of the Effect Size

To test whether self-esteem moderates the effect of MS manipulation on worldview defense thoroughly, I conducted meta-analysis of experimental condition × self-esteem interactions of three studies. It is proposed that beta coefficients can be used in meta-analysis by imputing corresponding correlation coefficients if the beta coefficients reside in the interval ± .50. This is because the relationship between corresponding betas and rs appears to be robust (Peterson & Brown, 2005). I thus used beta coefficients like r as effect sizes of interactions between MS and self-esteem. Beta coefficients were transferred to Fisher's z, followed by z-statistic to determine whether the average effect size was significant.

Two types of meta-analysis were conducted based on the random effects model: (1) when the comparison condition was dental pain and (2) when the control condition was used. The average effect sizes of interaction between MS and self-esteem were not significant in the meta-analysis of the dental condition as the comparison condition (β = .06, z = -0.88, p = .38, 95 % CI [-.18, .07]) and in the meta-analysis of the control condition as the comparison condition (β = -.03, z = -0.88, p = .38, 95% CI [-.11, .04]).[6]

6. General Discussion

In this article, I examined whether self-esteem moderates the MS effect on worldview defense in Japanese people. The results of three studies revealed that the moderating effect of self-esteem did not exist in Japan. Also, according to the results of the meta-analyses, averaged effect size was not significant. Given that participants in the MS condition felt more fear than those in the control condition across all studies, the MS manipulation was effective. Taken together, this article suggests that the moderating effect of self-esteem on MS did not emerge in Japan. Considering the findings of this study and the previous studies that showed that MS did not lead to worldview defense in interdependent cultures (e.g., Yen & Cheng, 2010; Toya et al., 2015), it seems that MS effects are not the same across cultures. At least in Japan, it has been found not only that MS does not lead to worldview defense, but also that self-esteem does not moderate the MS effect on worldview defense, suggesting the less trans-cultural nature of TMT.

One possible reason why self-esteem does not buffer the MS effects in Japanese people is that self-esteem measured by the Rosenberg Self-Esteem Scale is not applicable to self-esteem for Japanese people as Du et al. (2013) assumed. Self-esteem is defined as a sense that one is living up to the standards of one's worldview (Pyszczynski et al., 2004). In Japan, an interdependent culture, it is important to view oneself as part of an encompassing social relationship (Markus & Kitayama, 1991). Based on such self-construal, independent self-esteem (measured by the Rosenberg Self-Esteem Scale) may not function as a death anxiety buffer for Japanese.

The present study suggested that self-esteem did not function as a buffer of MS effects. However, this is of course what I should examine in future research. As noted in the Introduction, some studies demonstrated the moderating effect of self-esteem in Japan (e.g., Kashima et al., 2004; Yanagisawa et al., 2016). Because there could be potential moderators that explain the gap between these findings and this article, it is important to conduct a meta-analysis of the moderating effect of self-esteem using the many studies conducted in Japan. Potential moderators may be situationally different, such as experimental conditions or difference of manipulation methods such as implicit or explicit death prime. Although drawer problems or publication bias interrupt this approach, I think that researchers such as us manage to conduct relevant meta-analysis in broader samples. Relatedly, as another point to examine in future research, it is unclear whether the findings of this article or meta-analysis are applicable to the other interdependent cultures because this article included only a Japanese sample. Although the present research is valuable in that in Japan the self-esteem buffering hypothesis of TMT is not applicable, it should be examined by other interdependent societies.

In addition, it is necessary to examine another possibility regarding the pattern of worldview defense in Japan. In this article, I defined worldview defense as "defending one's worldview by evaluating others who do not share or criticize one's worldview more negatively (or less positively) than others who share or validate one's worldview when raising the awareness of death, compared to a usual situation." However, Wakimoto (2006) found that Japanese undergraduates who are significantly enculturated to the Japanese worldview showed stronger relative self-enhancement, which is defined as the more negative evaluation of oneself in comparison to a close friend, when mortality was salient. He considered this pattern was shown because of the Japanese cultural norm of interpersonal harmony. Although this research did not focus on a moderating effect of self-esteem, the traditional pattern of worldview defense as I defined may not follow the Japanese cultural norm. It is also important to look for other death anxiety buffers for Japanese. Considering Wakimoto (2006), close relationships may function as a death anxiety buffer for them (for details of the function as a death anxiety buffer of close relationships, see Mikulincer, Florian, & Hirschberger, 2003). Future research should explore the way Japanese people guard against MS from these points of view.

Footnotes

1. As the delay task, previous studies often used PANAS or PANAS-X to see whether MS manipulation increases negative affect (e.g., Greenberg et al., 1994). However, I employed items Lambert et al. (2014) used to replicate their finding.
2. Here, I mean that I did not aim to assess "collective self-esteem" but "evaluation for a specific group" by this scale.
3. Even when fear was not controlled, the results did not change.
4. In Study 3, in order to explore another purpose, experimental conditions included the meaninglessness condition (Proulx & Heine, 2009) based on the meaning maintenance model (Heine, Proulx, & Vohs, 2006). However, the sample in the meaninglessness condition was excluded from the analysis of this study because the effect of meaninglessness was not the one that I should examine in this study.
5. Like Heine et al. (2002), I also examined the effect of experimental manipulation on the neutral essay and the anti-Japan essay. In the neutral essay, there were no main effects of experimental manipulations (ps > .57), whereas the interaction of the dental pain condition × self-esteem was marginally significant (β = -.20, p = .09). However, simple slope analysis did not show any significant effects. In the anti-Japan essay, there were no main effects of experimental manipulations and interactions (ps > .33).
6. Because there were no three-way interactions in Studies 1 and 2, I did not consider the difference of effect size among samples.

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