

MORTALITY SALIENCE AND PRODUCT EVALUATION: ROLE OF SELF VERSUS LOVED ONES

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ABSTRACT

Marketing communications can activate a consumer's thought about his own death, or the death of his loved one. Although past research has largely focused on thoughts about one's own death, which has been termed mortality salience (Greenberg, Solomon, and Pyszczynski 1997), recent studies have shown that there are two types of mortality salience, namely mortality salience of self (MSS) and mortality salience of a loved one (MSLO) which may have different impact on certain consumer behaviors (Wang 2015). In this research, we specifically examine the effects of MSS and MSLO on two types of product choices, namely social status choice and social experience choice. Based on a need salience mechanism, we discover in four studies that MSS individuals prefer social status choice options over social experience choice options; whereas MSLO individuals prefer social experience choice options over social status choice options. Moreover, these effects are more pronounced among MSS individuals high in independent self-construal, and MSLO individuals high in interdependent self-construal. This research contributes to the mortality salience literature by proposing a new mediating mechanism based on need salience which predicts the divergent effects of MSS and MSLO on type of choice, and identifying two new moderating variables, namely independent self-construal and interdependent self-construal which can modify the effect of MSS versus MSLO on type of choice.

INTRODUCTION

Marketing communications can activate a consumer's thought about his own death, or the death of his loved one. For example, while watching a television ad for the *Heart & Stroke Foundation*, an individual may become increasingly aware of his own mortality if he has a heart condition, or he may become increasingly aware of the possible death of a loved one if the person has chronic heart disease. How the different death-related thoughts influence consumers' follow-up behaviour has not been fully disclosed in consumer studies. Past research has largely focused on thoughts about one's own death, which has been termed mortality salience (Greenberg, Solomon, and Pyszczynski 1997). Studies have shown that mortality salience may have two distinct types— namely mortality salience of self (MSS) and mortality salience of a loved one (MSLO), which can have different effect on consumer behavior (Wang 2015). In this research, we specifically examine the effects of MSS and MSLO on two types of product choices, namely social status choice and social experience choice. Here, social status choice refers to a choice whereby consumers' primary intention is to gain social status, whereas social experience choice refers to a choice whereby consumers' primary intention is to obtain social experience (Van Boven and Gilovich 2003).

We hypothesize and find that MSS individuals are more likely to favour social status choice options over social experience choice options; in contrast, MSLO individuals are more likely to prefer social experience choice options over social status choice options. We argue that a need salience mechanism may underlay these effects, such that preference for social status choice options are driven by the need for self-esteem bolstering, while preference for social experience choice options are driven by the need for social connection. Based on this mechanism, we propose that individuals' self-construal moderate the effect of type of mortality salience on type of choice. We test hypotheses in four studies, which also assess robustness of results across different product categories and measures of product evaluation.

THEORETICAL BACKGROUND

Mortality salience has been defined as an individual's awareness of his or her eventual death (Becker 1973; Greenberg et al. 1997). It has been researched to considerable extent in psychology, sociology, anthropology, and to a lesser extent, in consumer behaviour (Burke, Marten and Faucher 2010). Two underlying mechanisms have been proposed in past research to explain the effects of mortality salience, namely cultural worldview validation and self-esteem bolstering (Greenberg et al., 1997). Cultural worldview consists of shared beliefs about the nature of reality that provide meaningful explanations of life and the world (Greenberg, et al. 1997). Worldview validation suggests that when mortality is salient, individuals are more likely to express cultural values and engage in culturally prescribed behavior to buffer the fear of death (Greenberg et al. 1990). Self-esteem refers to a person's overall evaluation or appraisal of his or her own worth (Hewitt 2009, 217-224). The mortality salience literature suggests that people are motivated to deal with death concerns by bolstering self-esteem from sources such as material possessions, physical appearance, and risky behaviors (Greenberg et al. 1990, Arndt et al. 2004). Notably, mortality salience has largely been considered as a single construct representing awareness of one's own death. Recent research has shown that there may be two distinct types of mortality salience, namely mortality salience of self (MSS) and mortality salience of a loved one (MSLO) which lead to different effects on certain consumption behaviors (Wang 2014b).

Type of Mortality Salience

In consistent with past research (Wang 2014a), we define type of mortality salience in terms of the person whose mortality is salient, the person being either the self or a loved one. Thus, mortality salience of self (MSS) refers to the awareness of one's own death and mortality salience of a loved one (MSLO) refers to the awareness of the death of a loved one. Here, loved ones refer to one's spouse, children, parents, siblings and other important family members (Harvey 1998).

Past research on mortality salience has largely focused on MSS, with only a few studies explored the effect of MSLO (Greenberg et al. 1994; Bonsu and Belk 2003). In these latter studies, it was assumed that MSLO would serve as a reminder of an individual's own mortality (Taubman-Ben-Ari and Katz-Ben-Ami 2008; Mikulincer, Florian and Hirschberger, 2003). As a result, past research has assumed that MSLO and MSS influence consumer behaviour in a similar manner. Consistent with this assumption, Greenberg et al. (1994) found that both MSS and MSLO increase

an individual's defense of their cultural worldviews. Similarly, Bonsu and Belk (2003) found that like their MSS counterparts, MSLO consumers also tend to engage in conspicuous consumption. Although it is possible that MSS and MSLO sometimes have similar effects on judgment and choice, past research has shown that MSS and MSLO can also have divergent effects on certain consumer behavior such as materialistic consumption (Wang 2014b). In this research, we further compare the effect of MSS and MSLO on two specific types of choice, namely social status choice and social experience choice.

Type of Choice

We define type of choice in terms of the purpose or goal underlying choice, and differentiate between two types of choice: social status choice and social experience choice. The main goal of social status choice is to signal position in the social hierarchy (Sheldon and Kasser 2008; Van Boven and Gilovich 2003), while the main goal of social experience choice is to share experiences with others (Van Boven and Gilovich 2003). For example, choosing a luxury car (e.g., BMW) or a costly watch (e.g., Rolex) could be an example of social status choice. Conversely, choosing a tent (e.g., Columbia) or a sleeping bag (e.g., MEC) to camp in a national park with one's family could be an example of social experience choice. Notably, a given brand could be chosen primarily for social status or social experience purposes, depending on its positioning in the consumer's mind. For example, a BMW car can be chosen as a social status product if a consumer acquires the product mainly for the purpose of signalling social status; alternatively it can be chosen as a social experience product if the consumer's main purpose is to enjoy experiences with family members. Notably, this distinction in the present research between social status choice versus social experience choice is analogous to other choice taxonomies in the literature such as hedonic versus utilitarian choice, and functional versus symbolic choice (Dhar and Wetenbroch 2000).

In the present research, we propose that MSS and MSLO have divergent effects on type of choice. With respect to MSS, past research on mortality salience suggests that one way individuals can cope with fear of their own death is to bolster self-esteem (Greenberg et al. 1990; Pyszczynski, Greenberg, and Solomon, 1999). Therefore, when MSS is primed, the need for self-esteem bolstering is likely to be salient. Because possessing social status products can enhance one's self-esteem in capitalist societies (Solomon, Greenberg, and Pyszczynski, 1991), we argue that MSS can lead to a preference for social status choice options over social experience choice options.

Next consider MSLO. When MSLO is primed, we argue that the need for social connection is likely to be salient. Past research has indicated that the need for social connection, or the desire for interpersonal attachment, is a fundamental human motivation (Bowlby 1973; Baumeister and Leary, 1995). The prospect of the death of a loved one is likely to increase the salience of goals associated with this loved one, such as affiliation and connectedness (Harvey 2002; Thompson 1985). As a result, after being reminded of losing a loved one through death, an individual's need for social connection can become more salient. This argument is consistent with past research showing that people who have suffered the loss of a loved one would place greater value on relationships and connections with others (Tedeschi and Calhoun 1996). Because experiences are generally considered more social in orientation and are more likely to satisfy the need for social

connection than high-status possessions are (Van Boven 2005), we argue that MSLO can lead to a preference for social experience choice options over social status choice options. The preceding arguments are summarized in the following hypothesis:

H1: Type of mortality salience will influence type of choice such that:

(a) MSS individuals will prefer social status choice options over social experience choice options.

(b) MSLO individuals will prefer social experience choice options over social status choice options.

In H1 above, we have proposed the different effects of type of mortality salience on type of choice. In the next section, we propose that an individual's self-construal can thus moderate the effect of type of mortality salience on type of choice.

Self-Construal

Self-construal refers to how people view themselves either as an individuated entity or in relation to others (Singelis 1994). Past research indicates that there are two distinct types of self-construal, namely interdependent self-construal and independent self-construal. Interdependent self-construal has been described as self-representation in terms of others, which emphasizes belongingness and interconnection with others (Cross and Madson 1997; Markus and Kitayama 1991). In contrast, independent self-construal has been described as one's sense of uniqueness, which emphasizes individual achievement and distinction from others (Cross and Madson 1997; Markus and Kitayama 1991). Past research indicates that independent self-construal and interdependent self-construal are conceptually distinct (Singelis, 1994). Past research has also shown that individuals may have both independent and interdependent self-construal, which can differ in their relative strength (Cross and Markus, 1991). Given the distinct nature of independent self-construal and interdependent self-construal, we examine these two types of self-construal separately in the present research. In particular, we argue that interdependent self-construal is more strongly related to the need for social connection, while independent self-construal is more strongly related to the need for self-esteem bolstering. Consequently, interdependent self-construal and independent self-construal can moderate the effects of type of mortality salience on type of choice.

First, consider interdependent self-construal. People high in interdependent self-construal put more emphasis on interconnection with others, so they might have a stronger need for social connection than those low in interdependent self-construal. We have argued earlier that MSLO activates one's need for social connection, which leads to preference for social experience choice options over social status choice options. If interdependent self-construal highlights the need for social connection, then the relative preference for social experience (over social status) choice options in the case of MSLO individuals should be more pronounced among those high in interdependent self-construal compared with those low in interdependent self-construal. On the other hand, we have proposed that MSS can lead to preference for social status choice options over social experience choice options. If interdependent self-construal highlights the need for social connection, then the relative preference for social status (over social experience) choice options in the case of MSS individuals should be stronger among those low in interdependent self-construal

compared with those high in interdependent self-construal. The preceding arguments are summarized in the following hypothesis:

H2: Interdependent self-construal moderates the effect of type of mortality salience on type of choice such that:

- (a) The preference for social experience choice options over social status choice options in the case of MSLO individuals will be stronger for those high in interdependent self-construal, than for those low in interdependent self-construal.*
- (b) The preference for social status choice options over social experience choice options in the case of MSS individuals will be stronger for those low in interdependent self-construal, than for those high in interdependent self-construal.*

Next, consider independent self-construal. People high in independent self-construal put more emphasis on individual achievement and distinction from others. In a materialistic culture, bolstering self-esteem through possessing high status products can be a way to manifest individual achievement and differentiate oneself from others (Marks and Kitayama 1991; Solomon et al. 1991). We have argued earlier that MSS activates one's need for self-esteem bolstering, which leads to preference for social status choice options over social experience choice options. If independent self-construal highlights individual achievement through possessing high status products, then the relative preference for social status (over social experience) choice options in the case of MSS individuals should be more pronounced among those high in independent self-construal compared with those low in independent self-construal. On the other hand, we have proposed that MSLO can lead to preference for social experience choices over social status choices. If independent self-construal highlights individual achievement through possessing high status products, then the relative preference for social experience (over social status) choice options in the case of MSLO individuals should be more pronounced among those low in independent self-construal compared with those high in independent self-construal. The preceding arguments are summarized in the following hypothesis:

H3: Independent self-construal moderates the effect of type of mortality salience on type of choice such that:

- (a) The preference for social status choice options over social experience choice options in the case of MSS individuals will be stronger for those high in independent self-construal, than for those low in independent self-construal.*
- (b) The preference for social experience choice options over social status choice options in the case of MSLO individuals will be stronger for those low in independent self-construal, than for those high in independent self-construal.*

In the following sections, we describe four studies designed to test the hypotheses. Studies 1 and 2 tested H1, study 3 tested H2, and study 4 tested H3.

STUDY 1

Design & Procedure

This study was designed as a 2 (Type of Mortality Salience: MSS vs. MSLO) x 2 (Choice Option: Social Status vs. Social Experience) between-subjects factorial which allows to test the effect of MSS and MSLO on type of choice as proposed in H1. One hundred and twenty four undergraduate students from a Canadian university and a junior college voluntarily participated in the study for 5-dollar compensation. The sample size in study 1, as in other studies in this research, is decided based on the desired confidence level and margin of error which can ensure the accuracy of results from the studies. The cover story described the study as a survey on the effects of emotion and personality on the attitudes of college students toward advertisements. Participants were invited to a computer lab where they answered an online questionnaire. To correspond with the cover story, the first session of the questionnaire included filler questions from the big five personality test (John, Donahue, and Kentle 1991). After answering the filler questions, participants were randomly assigned to one of the two types of mortality salience: MSS or MSLO. In the MSS condition, participants responded to two open-ended questions used in previous mortality salience research (e.g., Arndt et al. 2004): (a) "Please briefly describe the emotions that the thought of your own death awakens in you" and (b) "Describe, as specifically as you can, what you think will happen to you as you physically die and once you are physically dead." Participants in the MSLO condition were first asked to think of a deeply loved parent and then to indicate, using seven-point Likert scales, how important and close this parent was to them. Then they were asked to respond to two similar open-ended questions adapted from Greenberg et al. (1994): (a) "Please briefly describe the emotions that the thought of this loved one's death arouses in you," and (b) "Describe, as specifically as you can, what you think will happen to this loved one as he or she dies, and once he or she has died."

All participants then completed the Positive and Negative Affect Scale (PANAS) for mood (Watson, Clark, and Tellegen 1988), followed by a filler anagram task. This filler task was introduced between the manipulation and choice task in accordance with prior mortality salience research which found mortality salience manipulations to be more effective after a delay (Arndt et al. 2004). Participants' mood states were found to be unaffected by the mortality salience manipulation, hence this factor is not discussed further.

Next, participants were asked to examine an advertisement for a BMW car. The advertisement included a slogan which manipulated choice option. The dependent variable, preference for choice option, was measured by attitude towards the brand and purchase intent (Mandel and Heine 1999). Attitude towards the brand was measured by a single item scale: "To what extent do you like the product in the advertisement?" Purchase intent was measured by a three-item scale: (1) "After reading the advertisement, how possible is it that you will buy the product in the future?" (2) "After reading the advertisement, how likely is it that you will buy the product in the future?" and (3) "After reading the advertisement, how probable is it that you will buy the product in the future?" Participants indicated their answers on a seven-point Likert scale (1=not at all / 7=very much). Note that, in this and subsequent studies, my dependent variable is preference for choice option which acts as a proxy for actual choice. Past research on attitude-

behavior consistency indicates that individuals' attitude towards high involvement products (e.g., BMW car) can be a significant predictor of their actual choice behavior (Kokkinaki and Lunt 1997). As a result, preference for choice option is likely to be a relevant proxy for actual choice in my studies which use high involvement products as stimuli. We also empirically address this issue in the general discussion section, where we report the results of a follow up study that measures effects of mortality salience on actual choice.

Next, the manipulation of choice option was checked by participants' responses to the following binary scale: "Please pick the statement below that best describes the slogan in the advertisement: a) it focuses on owning a BMW car as a high-status possession; b) it focuses on using a BMW car to enjoy a good experience with a loved one." As in Mandle and Heine (1999), student participants were told to assume for all the questions that they had graduated from college and were earning a comfortable salary. Thus, they could afford any of the items, though acquiring them would likely involve having to forego other purchases. At the end of the study, participants were thanked and debriefed.

Results

Manipulation Checks. In general, participants' answers to the binary choice question were consistent with the manipulation of choice option. Data from participants who indicated answers contrary to the manipulation were discarded before analysis, resulting in an effective sample size of 116.

Hypothesis Tests. We tested H1 by conducting a two-way between-subjects ANOVA with type of mortality salience and choice option as the independent variables and preference of choice option as the dependent variable (see table 1).

TABLE 1
TYPE OF MORTALITY SALIENCE & PREFERENCE FOR CHOICE OPTIONS (STUDY 1)

Preference	Type of mortality salience	Social choice	status	Social experience choice	p-value (one-tailed)
Brand Attitude	MSS	4.85 (1.60)		4.03 (1.83)	$t(112)=3.02; p=.04$
	MSLO	3.58 (1.94)		4.43 (1.78)	$t(112)=3.41; p=.03$
Purchase Intent	MSS	4.76 (1.54)		4.03 (1.67)	$t(112)=2.79; p=.05$
	MSLO	3.66 (1.71)		4.46 (1.88)	$t(112)=3.28; p=.04$

Note: Numbers in the table are means (standard deviation).

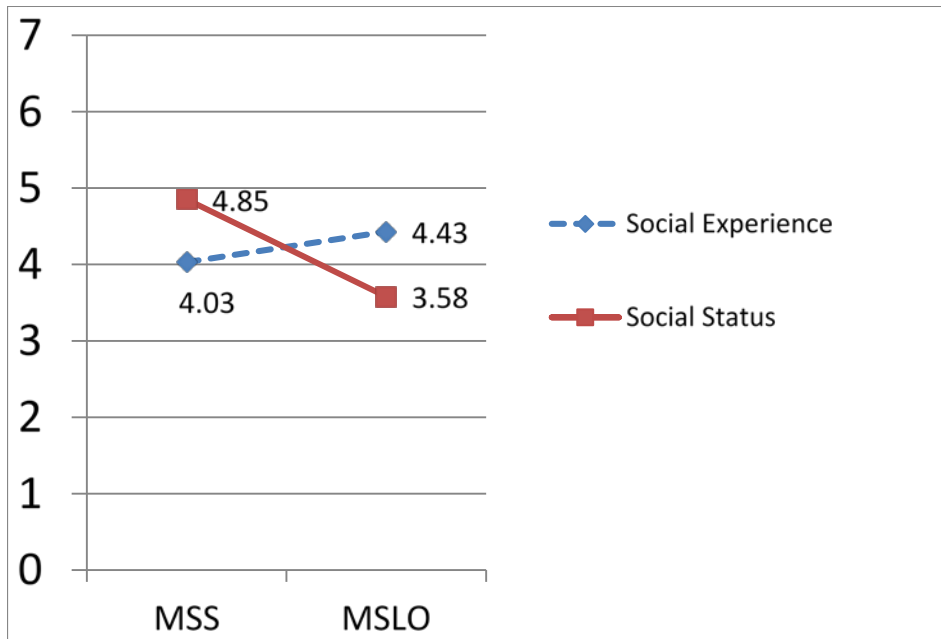
As described earlier, preference for choice option was measured by brand attitude and purchase intent. Regarding brand attitude, there was a significant interaction between type of mortality salience and choice option ($F(1, 112)=6.3, p<.02$). The results showed no significant effect of type of mortality salience ($F(1, 112)=1.72, NS$) or choice option ($F(1, 112)=.01, NS$). Pairwise comparisons using the overall error showed that MSS participants reported more positive

brand attitude for BMW when the product was framed as a social status choice option. In contrast, MSLO participants reported more positive brand attitude for BMW when the product was framed as a social experience choice option. Note that the t-tests in the pairwise comparisons in this research are one-tailed hypothesis tests since my research hypotheses are predicting differences in particular directions.

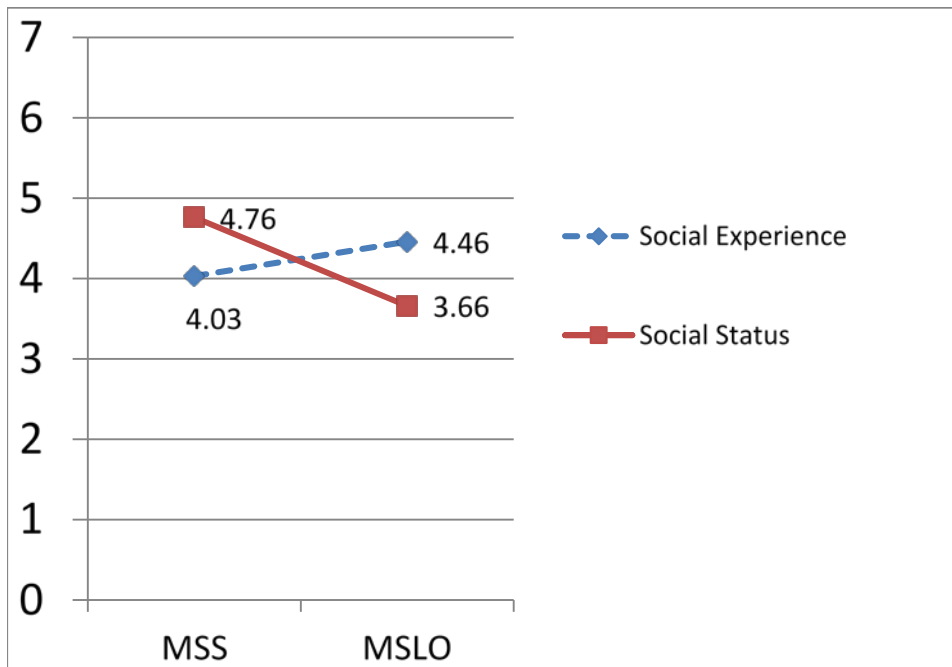
Regarding purchase intent, there was a significant interaction between type of mortality salience and choice option ($F(1, 112)=6.1, p<.02$). The results showed no significant effect of type of mortality salience ($F(1, 112)=1.26, NS$) or choice option ($F(1, 112)=.05, NS$). Pairwise comparisons results were consistent with those on brand attitude. Overall, these results support H1a and H1b (see figure 1).

FIGURE 1
TYPE OF MORTALITY SALIENCE & TYPE OF CHOICE ON BMW (STUDY 1)

DV: Brand Attitude



DV: Purchase Intent



Study 2 was designed with two objectives in mind. First, we wanted to conduct a more complete test of H1 by including a control condition without mortality thoughts. Second, we

wanted to test the robustness of results in two new product categories, namely tablet computer and TV.

STUDY 2

Design & Procedure

The study was designed as a 3 (Type of Mortality Salience: MSS vs. MSLO vs. Control) x 2 (Choice Option: Social Status vs. Social Experience) between-subjects factorial which allows to test the effects of MSS and MSLO, in comparison to a control condition, on type of choice. Two hundred and seventeen undergraduate students from a Canadian university and a junior college participated in the study for five dollars compensation. After reading the same cover story and answering the same manipulation questions as in study 1, participants were asked to examine product advertising for iPad in the tablet computer category and Panasonic 3D TV in the TV category. The presentation of the products' advertising was counterbalanced. As in the previous study, choice option was manipulated by slogans. Preference for choice option was measured by brand attitude and purchase intention, using the same scales as in study 1. For each brand, participants also answered a binary choice scale which checked the manipulation of choice option as in study 1. Participants were told to assume for all the questions that they had graduated from college and were able to afford the products. At the end, participants were thanked and debriefed.

Results

Manipulation Checks. In general, participants' answers to the binary choice question were consistent with the manipulation of choice option. Data from participants who indicated answers contrary to the manipulation were discarded before data analysis, resulting in an effective sample size of 196.

Hypothesis Tests. To conduct a more complete test of H1, we included a control condition without mortality thoughts in study 2. The logic in doing so is that participants in the control condition may not have any significant change on either type of need. Thus, we expect that their preferences for social status choice options and social experience choice options may not differ significantly.

We tested H1 by first conducting a MANOVA test, with preference of choice option on iPad and Panasonic 3DTV as repeated factors, and with type of mortality salience and choice option as between-subject variables. The results on brand attitude revealed significant interaction between type of mortality salience and choice option (Hotelling's trace=.06, $F(2, 190)=2.96$, $p<.03$), and non-significant effect of type of mortality salience (Hotelling's trace=.005, $F(2, 190)=.24$, NS) or choice option (Hotelling's trace=.01, $F(2, 190)=.07$, NS). Similarly, the analysis with purchase intent as the dependent variable also revealed significant interaction between type of mortality salience and choice option (Hotelling's trace=.05, $F(2, 190)=2.55$, $p<.04$), and non-significant effect of type of mortality salience (Hotelling's trace=.004, $F(2, 190)=.20$, NS) or choice option (Hotelling's trace=.002, $F(2, 190)=.23$, NS). Given the significant interaction revealed in the omnibus MANOVA, we proceeded to test H1 separately for Panasonic 3D TV and

iPad. We tested H1 by conducting a two-way between-subjects ANOVA with type of mortality salience and choice option as the independent variables, and preference of choice option as the dependent variable (see table 2).

TABLE 2
TYPE OF MORTALITY SALIENCE & PREFERENCE FOR CHOICE OPTIONS (STUDY 2)

Brand	Preference	Type of mortality salience	Social status choice	Social experience choice	p-value (one-tailed)
Panasonic 3D TV	Brand Attitude	MSS	4.44 (1.78)	3.66 (1.83)	$t(190)=3.06; p=.04$
		MSLO	3.64 (1.87)	4.38 (1.76)	$t(190)=3.37; p=.03$
		Control	3.96 (1.73)	4.31 (1.83)	$t(190)=.44; p=.26$
	Purchase Intent	MSS	3.74 (1.42)	3.14 (1.53)	$t(190)=2.09; p=.08$
		MSLO	3.10 (1.47)	3.79 (1.46)	$t(190)=5.38; p=.01$
		Control	3.41 (1.31)	3.51 (1.48)	$t(190)=.09; p=.38$
iPad	Brand Attitude	MSS	4.97 (1.90)	4.06 (1.93)	$t(190)=3.91; p=.03$
		MSLO	3.84 (1.89)	4.82 (1.95)	$t(190)=5.19; p=.02$
		Control	4.44 (1.68)	4.31 (1.91)	$t(190)=.02; p=.45$
	Purchase Intent	MSS	4.43 (1.90)	3.61 (1.80)	$t(190)=3.18; p=.04$
		MSLO	3.40 (1.88)	4.16 (1.83)	$t(190)=3.10; p=.04$
		Control	3.80 (1.94)	4.11 (2.04)	$t(190)=.35; p=.28$

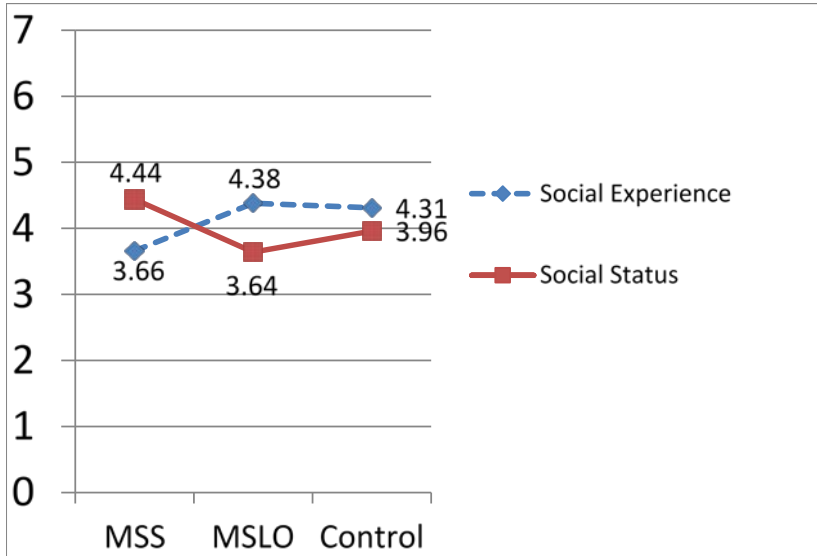
Note: Numbers in the table are means (standard deviation).

Regarding Panasonic 3D TV, with respect to brand attitude, the between-subjects ANOVA results revealed a significant interaction between type of mortality salience and choice option ($F(2, 190)=3.33, p<.04$). The results showed no significant effect of type of mortality salience ($F(2, 190)=.33, NS$) or choice option ($F(1, 190)=.53, NS$). Pairwise comparisons using the overall error term showed that MSS participants reported more positive brand attitude for Panasonic 3D TV when the product was framed as a social status choice. In contrast, MSLO participants reported more positive brand attitude for Panasonic 3D TV when the product was framed as a social experience choice option. Further, control participants did not report significantly different brand attitude for Panasonic 3D TV under different choice option condition.

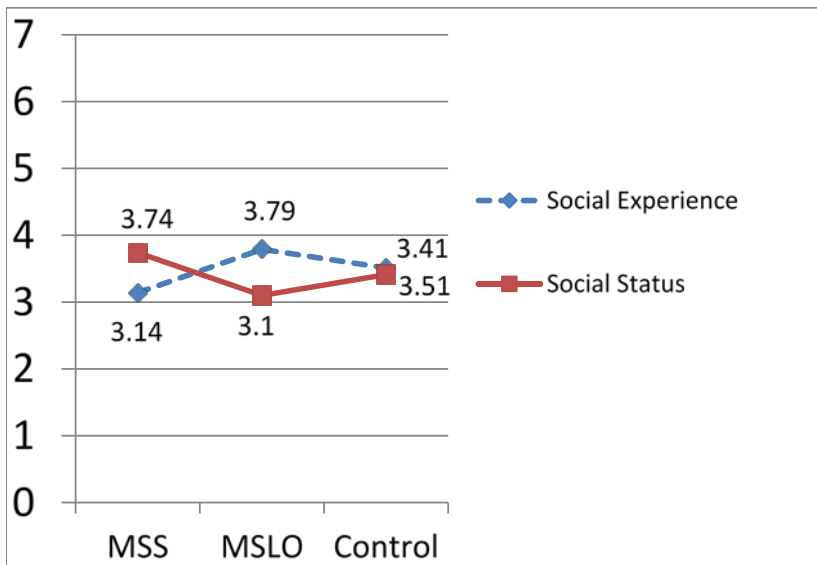
With respect to purchase intent for Panasonic 3D TV, there was a significant interaction between type of mortality salience and choice option ($F(2, 190)=3.57, p<.03$). The results showed no significant effect of type of mortality salience ($F(1, 190)=.02, NS$) and choice option ($F(2, 190)=.06, NS$). Pairwise comparison results were consistent with those on brand attitude. Overall, the results for Panasonic 3D TV support H1a and H1b (see figure 2).

FIGURE 2
TYPE OF MORTALITY SALIENCE & TYPE OF CHOICE ON PANASONI3DTV (STUDY 2)

DV: Brand Attitude



DV: Purchase Intent



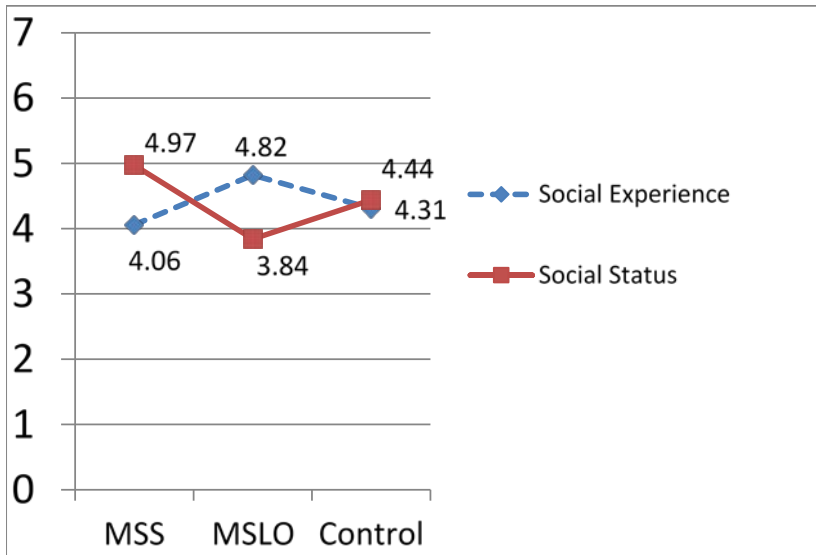
Regarding iPad, with respect to brand attitude, the between-subjects ANOVA results revealed a significant interaction between type of mortality salience and choice option ($F(2, 190)=4.5, p<.02$). The results showed no significant effect of type of mortality salience ($F(2, 190)=.18, NS$) or choice option ($F(1, 190)=.01, NS$). Pairwise comparisons using the overall error term showed that MSS participants reported more positive brand attitude for iPad when the product

was framed as a social status choice option. In contrast, MSLO participants reported more positive brand attitude for iPad when the product was framed as a social experience choice. Further, control participants did not report significantly different brand attitude towards iPad under different choice option condition.

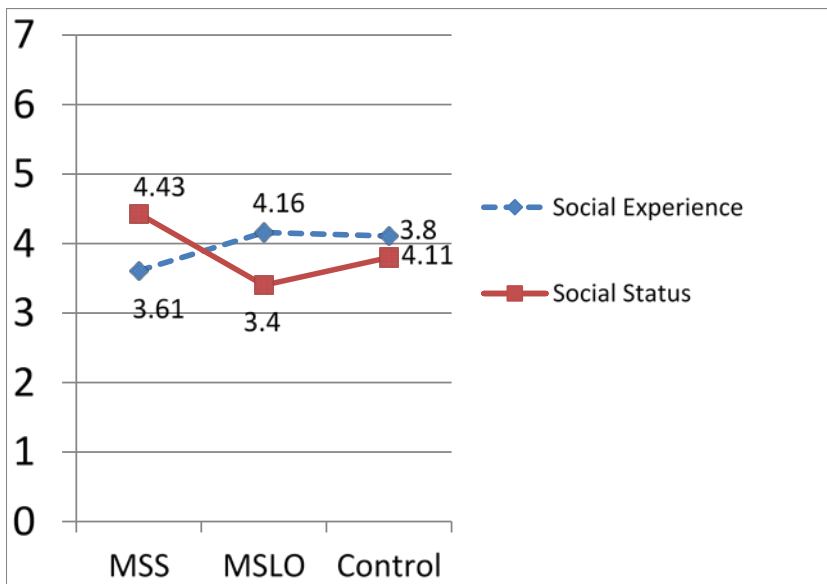
With respect to purchase intent on iPad, there was a significant interaction between type of mortality salience and choice option ($F(2, 190)=3.25, p<.05$). The results showed no significant treatment effect of type of mortality salience ($F(2, 190)=.30, NS$) or choice option ($F(1, 190)=.09, NS$). Pairwise comparison results were consistent with those on brand attitude. Overall, the results for iPad support H1a and H1b (see figure 3).

FIGURE 3
TYPE OF MORTALITY SALIENCE & TYPE OF CHOICE ON IPAD (STUDY 2)

DV: Brand Attitude



DV: Purchase Intent



Study 3 was designed to test hypotheses H2 regarding the moderating effect of interdependent self-construal. In study 1 and 2, both measures of the dependent variable, namely brand attitude and purchase intent have produced the same results on testing the hypotheses. Hence, for the sake of parsimony in the moderation analysis, study 3 will measure the dependent variable using purchase intent only. Study 3 used one product category from study 1 and one product category from study 2 to increase comparability of the results across studies.

STUDY 3

Design & Procedure

Study 3 was designed as a 2 (Type of Mortality Salience: MSS vs. MSLO) x 2 (Choice Option: Social Status vs. Social Experience) x 2 (Interdependent Self-Construal: High vs. Low) between-subjects factorial which allows to test the moderating effect of interdependent self-construal on the effects of MSS and MSLO. One hundred and fifty three students from a Canadian university participated in the study in exchange for a chance to win one of the two 8G iPod nanos worth \$170 each. The cover story was similar to previous studies, and participants were told that the study was designed to understand how emotion and personality affect college students' attitude toward advertisements. Participants were invited to a lab where they answered a paper & pencil questionnaire in a cubicle. Seven participants provided incomplete answers to the dependent variables, so their questionnaires were discarded. After answering filler questions on personality as in study 1, participants were randomly assigned to MSS or MSLO condition manipulated as in study 1. They then completed the Positive and Negative Affect Scale (PANAS), followed by a filler anagram task. Participants' mood states were found to be unaffected by mortality salience manipulation, hence this factor is not reported further.

Participants were then asked to examine advertisements for a BMW car and iPad. The presentation of the two brands was counterbalanced. The manipulation of choice option within these brands was the same as in studies 1 and 2. Preference for choice option was measured by purchase intent, using the same three-item scale as in studies 1 and 2. For each brand, participants also answered a binary choice scale which checked the manipulation of choice option. Participants were also told to assume for all the questions that they had graduated from college and were able to afford the products.

In the last section of the study, participants completed Singelis' (1994) 12-item measure of interdependent self-construal. This scale has been validated in previous research on a variety of cultural groups (Singelis 1994; Singelis et al. 1999). Sample items included, "I often have the feeling that my relationships with others are more important than my own accomplishments," and "my happiness depends on the happiness of those around me." Responses ranged from "strongly disagree" (1) to "strongly agree" (7). Participants' responses to the 12 items were averaged into an index. Cronbach's alpha for interdependent self-construal scale was .73, similar to the results reported in previous research (Singelis 1994; Oyserman, Coon and Kimmelmeier 2002). High and low levels of interdependent self-construal were constructed by a median split on responses to the scale. Finally, participants were thanked and debriefed.

Results

Manipulation Checks. In general, participants' answers to the binary choice questions were consistent with the manipulation of choice option. Data from participants who indicated answers contrary to the manipulation were discarded before data analysis, resulting in an effective sample size of 138.

Interdependent Self-Construal and MSLO. We tested H2a by first conducting a MANOVA test on MSLO participants, with purchase intent for BMW and iPad as repeated factors, along with choice option and interdependent self-construal as between-subjects variables. The results revealed significant directional main effect of choice option (Hotelling's trace=.112, $F(1, 64)=3.70$, $p<.04$) and marginally significant interaction of level of interdependent self-construal by choice option (Hotelling's trace=.073, $F(1, 64)=2.42$, $p<.10$). Overall, results from MANOVA provided initial support for the moderating role of interdependent self-construal. Given the marginally significant effect revealed in the omnibus MANOVA, we proceeded to test H2a separately for BMW and iPad in the case of MSLO participants. We tested H2a by conducting a two-way between-subjects ANOVA using choice option and interdependent self-construal as independent variables, and purchase intent as dependent variable (see table 3)

TABLE 3
INTERDEPENDENT SELF-CONSTRUAL & PREFERENCE FOR CHOICE OPTIONS IN MSLO CONDITION
(STUDY 3)

Brand	Interdependent construal	self- Social choice	status	Social experience choice	p-value (one-tailed)
BMW	High	3.00 (1.69)		4.48 (1.55)	$t(64)=9.10$, $p=.002$
	Low	3.33 (1.36)		3.04 (1.38)	$t(64)=.32$, $p=.29$
iPad	High	2.38 (1.87)		4.37 (1.95)	$t(64)=10.74$, $p=.001$
	Low	2.64 (1.58)		3.21 (1.67)	$t(64)=.88$, $p=.18$

Note: Numbers in the table are means (standard deviation).

Regarding MSLO participants' purchase intent for BMW, the between-subjects ANOVA results revealed a significant main effect of choice option ($F(1, 64)=6.13$, $p<.02$) and marginally significant interaction between choice option and interdependent self-construal ($F(1, 64)=2.75$, $p<.10$). Pairwise comparisons using the overall error term showed that MSLO participants high in interdependent self-construal have stronger purchase intent for the BMW when it was framed as a social experience choice. This effect of choice option disappeared on MSLO participants low in interdependent self-construal. The results for BMW were consistent with the proposed moderating role of interdependent self-construal on MSLO participants.

Regarding MSLO participants' purchase intent on iPad, the between-subject ANOVA results revealed a significant main effect of choice option ($F(1, 64)=5.30$, $p<.03$) and marginally significant interaction between choice option and interdependent self-construal ($F(1, 64)=2.76$, $p<.10$). Pairwise comparison results were consistent with those on BMW. Thus, the results for iPad were consistent with the proposed moderating role of interdependent self-construal on MSLO participants. Overall, results from study 3 support H2a.

Interdependent Self-Construal and MSS. We tested H2b by first conducting a MANOVA test on MSS participants, with purchase intent for BMW and iPad as repeated factors, along with

choice option and interdependent self-construal as between-subjects variables. The results revealed a marginally significant directional main effect of choice option (Hotelling's trace=.09, $F(1, 66)=2.89, p<.07$) and non-significant interaction of interdependent self-construal by choice option (Hotelling's trace=.061, $F(1, 66)=2.01, p=.14$). Given the non-significant interaction, we concluded that H2b was not supported by the data.

Study 4 was designed to test hypothesis H3 regarding the moderating effects of independent self-construal. For the same parsimony purpose, Study 4 checks the dependent variable using one measurement only. To check the robustness of measurement, study 4 switches to measure brand attitude using a three-item scale, rather than the single item scale used in earlier studies. This study used one product category from study 3 (i.e., TV) to facilitate comparability with earlier results, as well as a new product category (i.e., computer) to further test robustness of the results.

STUDY 4

Design & Procedure

Study 4 was designed as a 2 (Type of Mortality Salience: MSS vs. MSLO) x 2 (Choice Option: Social Status vs. Social Experience) x 2 (Independent Self-Construal: High vs. Low) between-subjects factorial which allows to test the moderating effects of independent self-construal on the effects of MSS and MSLO. Two hundred and twenty seven students from a Canadian university and a junior college participated in the study in exchange for two dollars compensation and a chance to win a 16GB iPhone 5 worth \$200. The cover story was similar to previous studies, and participants were told that the study was designed to understand how personality affects college students' attitude toward advertisements. Participants were invited to a computer lab where they completed an online questionnaire. After answering filler questions on personality as in study 1, participants were randomly assigned to MSS or MSLO condition manipulated as in study 1. They then completed the Positive and Negative Affect Scale (PANAS), followed by a filler anagram task. Participants' mood states were found to be unaffected by mortality salience manipulation, hence this factor is not reported further.

Next, participants were asked to examine advertisements for Panasonic 3D TV in the TV category and Apple MacBook computer in the laptop computer category. The presentation of the two brands was counterbalanced. The manipulation of choice option for Panasonic 3D TV was the same as in study 2. Regarding Apple MacBook, the slogan in the social experience condition was, "Enjoy a better experience with others"; the slogan in the social status condition was, "Show your owner's pride to others". Preference for choice option was measured by product attitude, using three bipolar evaluative scales (Gardner 1983) on the question: "Please rate your feelings towards the product in the advertisement on the following scales". Participants indicated their answers to the question using a seven-Likert scale (bad/good, dislike/like, unpleasant/pleasant). For each brand, participants also answered a binary choice scale which checked the manipulation of choice option. Participants were also told to assume for all the questions that they had graduated from college and were able to afford the products.

In the last section of the study, participants completed Singelis' (1994) twelve-item scale for independent self-construal. This scale has been validated in previous research on a variety of cultural groups (Singelis 1994; Singelis et al. 1999). Sample items included, "I enjoy being unique and different from others in many respects," and "My personal identity independent of others, is very important to me." Responses ranged from "strongly disagree" (1) to "strongly agree" (7). Participants' responses to the 12 items were averaged into an index. Cronbach's alpha for interdependent self-construal scale was .76, similar to the results reported in previous research (Singelis 1994; Oyserman et al. 2002). High and low levels of independent self-construal were constructed by a median split on responses to the scale. Finally, participants were thanked and debriefed.

Results

Manipulation Checks. In general, participants' answers to the binary choice question were consistent with the manipulation of choice option. Data from participants who indicated answers contrary to the manipulation were discarded before data analysis, resulting in an effective sample size of 205.

Independent Self-Construal and MSS. We tested H3a by first conducting a MANOVA test on MSS participants, with brand attitude for Panasonic 3D TV and MacBook laptop as repeated factors, along with choice option and independent self-construal as between-subjects variables. The results revealed significant effect of choice option (Hotelling's trace=.192, $F(1, 97)=9.21$, $p<.01$) and significant interaction of interdependent self-construal by choice option (Hotelling's trace=.107, $F(1, 97)=5.13$, $p<.01$). Overall, results from MANOVA provided initial support on the moderating role of independent self-construal. Given the significant effect revealed in the omnibus MANOVA, we proceeded to test H3a separately for Panasonic 3D TV and MacBook laptop in the case of MSS participants. We tested H3a by conducting a two-way between-subjects ANOVA using choice option and independent self-construal as the independent variables and brand attitude as dependent variable (see table 4).

TABLE 4
INDEPENDENT SELF-CONSTRUAL & PREFERENCE FOR CHOICE OPTIONS IN MSS CONDITION
(STUDY 4)

Brand	Independent construal	self- Social status choice	Social experience choice	p-value (one-tailed)
Panasonic 3DTV	High	4.68 (1.12)	3.71(1.34)	$t(97)=9.18$, $p=.002$
	Low	4.44(1.31)	4.30 (1.21)	$t(97)=.05$, $p=.41$
MacBook Laptop	High	5.21 (1.38)	4.10 (1.51)	$t(97)=8.1$, $p=.002$
	Low	4.89 (1.30)	4.60 (1.29)	$t(97)=.97$, $p=.16$

Note: Numbers in the table are means (standard deviation).

Regarding MSS participants' brand attitude for Panasonic 3D TV, the between-subjects ANOVA results revealed a significant main effect of choice option ($F(1, 97)=5.36, p<.03$) and marginally significant interaction between choice option and interdependent self-construal ($F(1, 97)=3.15, p<.08$). Pairwise comparisons using the overall error term showed that MSS participants high in independent self-construal reported more positive attitude for Panasonic 3D TV when it was framed as a social status choice. This effect of choice option disappeared on MSS participants low in independent self-construal. The results for Panasonic 3D TV were consistent with the proposed moderating role of independent self-construal on MSS participants.

Regarding MSS participants' brand attitude on MacBook laptop, the between-subject ANOVA results revealed a significant main effect of choice option ($F(1, 97)=7.21, p<.01$) and marginally significant interaction between choice option and interdependent self-construal ($F(1, 97)=3.82, p<.06$). Pairwise comparison results were consistent with those on Panasonic 3D TV. Thus, the results for MacBook laptop were consistent with the proposed moderating role of independent self-construal on MSS participants. Overall, results from study 4 support H3a.

Independent Self-Construal and MSLO. We tested H3b by first conducting a MANOVA test on MSLO participants, with brand attitude for Panasonic 3D TV and MacBook laptop as repeated factors, along with choice option and independent self-construal as between-subject variables. The results revealed significant main effect of choice option (Hotelling's trace=.13, $F(1, 100)=6.41, p<.01$) and non-significant interaction of independent self-construal by choice option (Hotelling's trace=.02, $F(1, 100)=.98, NS$). Thus results from MANOVA did not support the moderating role of independent self-construal stated in H3b.

DISCUSSION

The present research differentiates between two types of mortality salience (i.e., MSS and MSLO) and shows that they can have different effects on type of choice. Specifically, we hypothesize and find that MSS individuals favor social status choice options over social experience choice options (H1a), whereas MSLO individuals favor social experience choice options over social status choice option (H1b). We argue that these divergent effects are driven by a need salience mechanism on self-esteem bolstering and social connection. As interdependent self-construal is more strongly related to the need for social connection, and independent self-construal is more strongly related to the need for self-esteem bolstering, we further argue that interdependent self-construal moderates the effects of MSLO (H2a) and MSS (H2b) on type of choice, and independent self-construal moderates the effects of MSS (H3a) and MSLO (H3b) on type of choice. Our results support H2a and H3a regarding the moderating effects of interdependent self-construal on MSLO individuals and independent self-construal on MSS individuals. These results indirectly support the proposed need salience mechanism. Our results do not support H2b and H3b regarding the moderating effect of interdependent self-construal on MSS individuals and the moderating effect of independent self-construal on MSLO individuals. The results imply that the effects of MSLO and MSS are not driven by the decreased need for self-esteem bolstering and the decreased need for social connection respectively. These results further complement the proposed need salience mechanism in that the effects of type of mortality salience are not driven by need

reduction. Notably, in our four studies, we have tested the robustness of hypotheses across different manipulations of choice options, different measures of product preference, and five product categories.

Contribution to the Literature

The present research makes three contributions to the literature on mortality salience. Firstly, consistent with past research (Wang 2014a, b), it distinguishes between two types of mortality salience, namely MSS and MSLO, and further exams their effect on type of choice. Past research on mortality salience assumed that MSLO and MSS influence consumer behaviour in a similar manner (Greenberg et al. 1997). We show in the present research that MSS and MSLO can actually have divergent effects on type of choice. Thus, this finding contributes to the literature by providing evidence for a new independent variable, namely type of mortality salience with MSS and MSLO as its two levels. The comparison of the effect sizes between MSS and MSLO in the present research with previous meta-analysis results may provide evidence of the distinctness of MSS and MSLO. Specifically, past meta-analysis has shown that MSS yielded moderate effects ($r=.35$) on a range of dependent variables, with effects increased for experiments using American participants (Burke, Martens and Faucher 2010). A pilot study of this research comparing the effect of MSS and MSLO with control condition on the preference for high-status products (a BMW car and a Rolex watch) has yielded effect size of .21 for MSS individuals and -.11 for MSLO individuals, which may validate the distinctness of MSS and MSLO in certain scenario.

Secondly, it contributes to the literature by proposing a new mediating mechanism based on need salience which may explain the divergent effects of MSS and MSLO on type of choice. Past research has identified worldview validation and self-esteem bolstering as two underlying mediating mechanisms that explain the effect of MSS on various outcome variables (Greenberg et al. 1997). In the present research, the effect of MSS on type of choice is related to the mediating mechanism of self-esteem bolstering. Based on past bereavement studies, we propose and test an additional mediating mechanism, namely the need for social connection that underlies the effect of MSLO on type of choice. Notably, in this research we didn't argue that the corresponding need is exclusively activated by MSS or MSLO. It is possible that MSS can also activate the need for social connection (Florian, Mikulincer & Hirschberger, 2002) and MSLO can also activate the need for self-esteem bolstering (Bonsu and Belk 2003). What we've proposed is that the corresponding need is more salient for MSS or MSLO individuals. In our studies, we verified the proposed need salience mechanism by testing the moderating role of independent self-construal and interdependent self-construal which are logically related to the need for self-esteem bolstering and social connection respectively. The observed moderating effects of independent self-construal on MSS individuals and interdependent self-construal on MSLO individuals provide indirect support for the proposed mediating mechanism based on need salience.

Thirdly, it contributes to the literature by identifying two new moderating variables, namely independent self-construal and interdependent self-construal which modify the effects of MSS versus MSLO on type of choice. Past research has investigated a range of moderators of MSS such as self-esteem, social presence, social value orientation, self-transcendent values and locus of control (Landau and Greenberg 2006; Joireman and Duell 2005, 2007; Miller and Mulligan

2002). In the present research, we demonstrate for the first time the moderating roles of independent self-construal and interdependent self-construal on the effects of MSS versus MSLO on type of choice. Notably, past research has investigated the effects of independent and interdependent self-construal in other domains. For example, independent self-construal has been found to moderate the effect of self-esteem on self-protection (Brockner and Chen 1996), need-for-cognition on purchase intent (Polyorat and Alden 2005), and self-concept connection on brand evaluations (Swaminathan, Page, and Gürhan-Canli 2007). Conversely, interdependent self-construal has been found to moderate the effect of procedural fairness on cooperation (Brockner et al. 2005), willpower on impulsive consumption (Zhang and Shrum 2009), and country-of-origin connection on brand evaluations (Swaminathan, Page, and Gürhan-Canli 2007). The present research adds to the literature on self-construal by showing the independent and interdependent self-construal can also play a moderating role in the domain of mortality salience.

Managerial Implication

This research highlights an important interaction effect between product choice option and type of mortality salience. It can provide practical implications for brand managers on planning and designing product advertisement. For example, if the preceding TV program or advertisement can prompt consumers to contemplate their own death (e.g., a death-theme series such as *Six Feet Under*, or an advertisement related to drinking or driving), a brand manager should highlight the product's social status aspect. Alternatively, if the preceding TV program or advertisement can prompt consumers to contemplate the death of a loved one (e.g., a program persuading children to insist their mothers get a breast cancer screening mammogram, or an advertisement related to infant safety), he should highlight the product's social experience aspect. Thus, to maximize the effectiveness of his advertising, a brand manager should be aware of the preceding TV program, as well as other advertisement embedded between when planning to air his. Regarding the manipulation of product choice option, a brand manager can use slogans, as shown in our studies. He can also adopt different graphic elements in designing the advertisement. For example, to highlight the social status aspect of the product, an image of a successful business man in suit can be used, whereas to highlight the social experience aspect of the product, an image of a loving and caring dad with his son can be used.

The above managerial application to marketing is destined to bring up a host of ethical concerns. Some may argue that it is unethical and even morally wrong to take advantage of people's anxieties evoked by mortality thoughts in order to sell products. Thus, we would suggest that this research can also be used in a more positive manner, namely on social marketing. Regarding MSS, past research has shown that one way that people may respond to MSS is to behave more like an exemplary citizen of their culture, thereby upholding their cultural values (Greenberg et al. 1990). As result, MSS can enhance prosocial attitudes and behaviors (Joire and Duell 2007; Jonas et al. 2002). So marketers of non-profit organizations for anti-poverty such as Salvation Army may find that subtle reminders of one's inevitable mortality may increase memberships to volunteer and donate. Social marketers may also find that presenting public service announcements denouncing such things as drugs, drunk driving or smoking are more effective when embedded within news or stories prompting the thought of one's own death.

Regarding MSLO, our research has shown that MSLO individuals have more salient need for social connection, so they prefer the social experience aspect of a product or service. So marketers of non-profit organizations such as Big Brothers Canada may find that subtle reminders of one's loved one's death may increase memberships to volunteer and donate. Social marketers may find that presenting public service announcements promoting such things as family harmony, community contribution or child safety are more effective preceded by news or stories prompting the thought of a loved one's death.

Limitations and Future Studies

There are several limitations of the present research that should be pointed out, which also provides suggestions for future studies. First, we didn't test the mediating role of need salience directly. Instead, we tested the proposed mediating mechanism indirectly through two moderators, namely interdependent self-construal and independent self-construal. Thus, this mediating mechanism can be checked more directly in future research by measuring need salience, and using need salience as a mediator in a mediation analysis. Past research has indicated that mortality salience works through a preconscious mental process (Pyszczynski et al. 1999), suggesting that an implicit measure of need salience might be most appropriate. Specifically, a future study could use an implicit measure based on visual word recognition. In this measure, participants would view self-esteem and social connection relevant words very briefly after receiving MSS or MSLO manipulation and indicate when they recognize a word. The underlying assumption for visual word recognition is that if words in a semantic category are salient in a viewer's mind, they will be identified more promptly than neutral words (Forster and Davis 1984; Besner and Smith 1992). Thus, the assumption of measuring need salience implicitly is that MSS individuals will recognize words related to self-esteem faster, whereas MSLO individuals will recognize words related to social connection faster.

Second, in our studies, participants' average degree of closeness ($M=6.2/7$, $SD=.94$) and importance to their parents ($M=6.6/7$, $SD=.78$) were relatively high. It is possible that relationship intensity can moderate the effect of MSLO on type of choice. Previous studies have shown that the degree to which a given person perceives his loss after the death of a loved one depends on how close (or engaging or mutually dependent) the relationship was (Levinger 1992). As a result, the strength of the relationship with a loved one can influence the intensity of MSLO. Specifically, it could be that when MSLO is about an important loved one (e.g., a parent), MSLO participants would be more likely to prefer social experience choice options over social status choice options, than when MSLO is about a so-so beloved person (e.g., a distant uncle). Hence, further study could investigate how relationship strength influences the effects of MSLO.

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