

***Creative Consumption after Mortality Salience:
Compared to What, for Whom, What Tasks? And a Time Horizon Issue***

AUTHORS:

Huimin Xu, The Sage Colleges

Merrie L. Brucks, University of Arizona

Lin Guo, University of New Hampshire

ABSTRACT:

Consumers frequently pursue creative activities without practical concerns. This research investigates a less intuitive driver of such creative consumption—existential thoughts—and seeks to understand under what circumstances mortality salience stimulates creative consumption. We found that when creative consumption was presented as the only outlet, a subliminal prime of death increased creative interest. When creative tasks were juxtaposed with non-creative tasks, mortality salience spurred a creative urge only among the more creatively inclined individuals, or when the creative tasks involved lower, manageable levels of challenge. Mortality salience even dampened creative interest when the creative tasks posed high levels of challenge. In other words, the effect of mortality salience on creative interest was moderated by an individual's pre-existing creative tendency and the level of the creative challenge. Interestingly, although creative tasks did not always show superior initial appeal relative to non-creative leisure, thinking about one's past creative experiences more effectively suppressed death-related thoughts compared to thinking about past shopping experiences. These findings were based on four experiments with varying operations of mortality salience and creative interest. This paper contributes to research on antecedents of creative consumption and terror management theory. The implications for targeting and consumer psychological well-being are discussed.

Keywords: terror management theory, mortality salience, creative consumption, consumer motivation, experiment, subliminal prime

Scholarly study of consumer creativity has increased over the past decades. Existing research on consumer creativity tends to focus on its utilitarian aspects, seeing creativity as a way of solving practical problems, such as using a car heat shield as an umbrella (e.g., Ridgway & Price, 1994; Burroughs & Mick, 2004; Moreau & Dahl, 2005). However, consumers frequently pursue creative activities to express creativity without practical concerns. Our research seeks to understand this type of creative consumption that is less utilitarian, more proactive, and largely overlooked by extant research.

Every day, amateur consumers buy art and craft supplies from stores like Michael's Arts & Crafts, collect camera accessories to help demonstrate their originality in photography, or get software to facilitate the production of their own musical compositions or video collages. The industry serving these consumers is substantial. For instance, Michael's Arts and Crafts operates more than 1040 stores in the U.S. and Canada, recording \$4.2 billion in sales in 2011. Unlike reacting to external constraints with the utilitarian-driven creativity, consumers mindfully initiate such creative pursuits without apparent necessity. Consumer resources (e.g., time, effort and money) committed to such purposefully creative consumption are often considerable. So it leads to the question: why do consumers engage in proactive creativity? Drawing on Terror Management Theory, this research seeks to understand one particular driver of creative consumption: existential thoughts which ebb and flow with an individual's life changes, societal events, and media portrayals. In particular, we investigate under what circumstances mortality salience does and does not stimulate creative consumption. The findings would bear implications for more effective consumer targeting and product/service development, also for consumer welfare.

Conceptual Background

Mortality Salience and Creative Consumption

Terror Management Theory seems to suggest mortality salience's boost on interest in creative consumption. This theory deems unconscious mortality fear as a driving force of various human behaviours and proposes a dual-component model of attaining self-esteem and bringing mortality fear under control. First, an individual needs to subscribe to a worldview. Second, he/she needs to ascertain the belief that he/she lives up to the cultural standards prescribed by that particular worldview. A higher level of self-esteem, whether dispositional or experimentally induced, has been shown to buffer mortality anxiety (Greenberg et al., 1993). Terror Management Theory contends that due to its protective function, when reminded of their mortality, people strive to enhance self-esteem. Experimental data over two decades repeatedly show that mortality salience leads to various forms of self-esteem striving (for a review, see Pyszczynski et al., 2004).

Being creative is a source of self-esteem in many cultures, especially valued in current American society. Creativity is "the glorification of the individual personality" (Rank, 1932, p. 27) and it results in "conviction of superiority" (Rank, 1932, p. 42). In some clinical cases, individuals even feel compelled to keep producing artwork as a private hobby in order to "stave off an ever-threatening collapse of self-esteem" (Gedo, 1990, p. 37). Because mortality salience stimulates self-esteem striving, and because expressing one's creativity may help enhance one's self-esteem, it follows that mortality salience would amplify one's interest in being creative.

The link between creative pursuits and mortality has long been intuitively understood though not empirically tested. Gyorgy Faludy, when interviewed by Csikszentmihalyi (1996), attributed his poetry writing to fear of death. The proposed linkage between mortality concerns and the urge to create is also aligned with Rank's central argument (1932) that art essentially arises from

the problem of death. With consumption as the focus, this research represents the first attempt to experimentally test the causal link between mortality and creativity:

H1: Mortality salience increases individuals' interest in creative consumption.

Note that H1 focuses on mortality salience's effect at a very basic level. Competition for consumers' attention, time and energy is not considered. It is exactly based on the existence of competing activities that some works in existential psychology and lay epistemic theory argue for a more complex relation, which we will discuss soon.

The Moderating Effects of Creative Tendency and Levels of Creative Challenge

Some research in existential psychology imply that in the repertoire of mortality anxiety buffers, to some individuals, being creative may not have the same appeal as some other coping mechanisms. For example, through identification with existing social entities, such as nation (Arndt, Greenberg, & Cook, 2002) and religion (Greenberg et al., 1990), individuals connect to something larger and longer-lasting and expand their sense of self in space and time in a safe and easy manner, thus alleviating their mortality concerns. In contrast, trying to be individually creative is to deviate, to do what people do not usually do, and to risk being rejected. Scholars have recognized the creative process as separation that requires solitude and independence from--even unconcern for--others (Abra, 1988a; Rank, 1932; Rogers, 1961). Before the audience announces acceptance (if any), the creator stays isolated and cannot connect to them through his/her creative acts. It means that bringing up the prospect of death, the fundamental isolation, may make some people less attracted to creative acts that constitute another form of isolation.

Lay epistemic theory cites a different mechanism in leading to the same inference. This theory posits that situational factors such as aversive states of uncertainty heighten the need for nonspecific closure (Jost et al., 2003). Death elicits a variety of concerns, one of which is feelings of

uncertainty (Florian & Mikulincer, 2004; McGregor et al., 2001; Van den Bos, 2001). This uncertainty leads to a broad desire for definiteness and an aversion toward deviation. When reminded of mortality, people more severely punished moral transgression which is a form of deviation from consensual norms (Rosenblatt et al. 1989), and increased stereotyping which allowed them to perceive the world in an orderly manner (Schimel et al., 1999). Along this line of thinking, for people with elevated need for nonspecific closure that is induced by mortality salience, creative activities would not have much appeal compared to non-creative routine activities. Creativity is characterized by infrequency, originality, and deviation from the norm (Amabile, 1996), which is inherently riddled with uncertainty. We argue that, when mortality is salient, for individuals who are not accustomed to embracing creative challenges, creative activities may aggravate those feelings of uncertainty elicited by death. As a result, creative activities would not have more appeal to these individuals in comparison to non-creative routine activities. Routledge & Arndt (2009) found that without an additional creativity treatment (e.g., reading that creativity is culturally valued), mortality salience and dental pain control conditions did not differ in terms of participants' exploratory responses that characterize creative processes; there was even a slight (though non-significant) trend of less exploration among mortality salience participants.

Does mortality salience spur or suppress creativity? There may be room for both perspectives, given the right conditions. For one thing, if a temporary creativity treatment in the lab was able to dissipate the hesitation toward creative explorations for individuals in the mortality salience condition (Routledge & Arndt, 2009), a strong pre-existing creative tendency would have a similar if not a more pronounced effect. More creatively prepared individuals have more skills and experiences to utilize, which may offset the downside of creativity. In a similar vein, task complexity moderates the focal relationship. Creative tasks that are perceived as easy and manageable would have a similar effect, because even the less creative individuals can feel a sense of mastery when

engaging in less-challenging creative activities. In either of these two situations, an individual would anticipate the creative outcome to be worthy and self-esteem bolstering, which would redeem the inhibiting aspects of creative expeditions.

H2: When alternative non-creative activities are provided, the effect of mortality salience on interest in creative consumption is moderated by a pre-existing creative tendency. Specifically, mortality salience is more likely to boost interest in creative consumption among individuals with a stronger pre-existing creative tendency.

H3: When alternative non-creative activities are provided, the effect of mortality salience on interest in creative consumption is moderated by levels of creative challenge. Specifically, mortality salience is more likely to boost interest in creative consumption when the creative tasks are less challenging.

Considering that in real life creative consumption competes with non-creative alternatives for consumers' limited resources, we tried to improve realism and internal validity through the use of dependent measures in a relative setting when investigating H2 and H3 (i.e., by juxtaposing creative consumption with non-creative options). This relative choice context makes it more stringent to find support for the hypotheses: creative consumption needs to demonstrate more appeal relative to non-creative tasks rather than the implicit option of doing nothing.

To address the alternative mechanism of mood effects, mood was gauged with Positive and Negative Affect Schedule in all experiments (PANAS; Watson, Clark, & Tellegen, 1988). Mood either did not differ across experimental conditions, or differed but did not mediate the effect of mortality salience on creative interest as shown in Sobel's test (Table 1). Hence the mood explanation is ruled out.

Table 1. Means of positive affect and negative affect across experimental conditions

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
	MS vs. Control	MS vs. Control	MS vs. Control	Creating vs. Spending (both under MS)
PA	2.92 vs. 3.05 ($p = .46$)	2.84 vs. 2.91 ($p = .55$)	2.82 vs. 2.82 ($p = .99$)	3.04 vs. 2.96 ($p = .67$)
NA	1.42 vs. 1.72 ($p = .04$)	1.33 vs. 1.34 ($p = .86$)	1.75 vs. 1.52 ($p = .25$)	1.64 vs. 1.44 ($p = .19$)
	* Sobel's test rules out mediation			

Note. All p values are two-tailed.

Experiment 1

Experiment 1 examined mortality salience's effect on creative interest when no competing activities are provided for consideration (H1). Because supraliminal mortality salience treatment may trigger thoughts other than death (e.g., demand characteristic), Experiment 1 primed mortality subliminally. Over the last few decades, research has established that priming, whether inside or outside conscious awareness, increased accessibility (for a review, see Bargh, 1996). Accessible but unconscious death thoughts have been found to generate the classic mortality salience effects (Arndt, Greenberg, Pyszczynski, & Solomon, 1997; Arndt, Greenberg, & Cook, 2002; Schimel, Hayes, Williams, & Jahrig, 2007). Depending on the strength with which two concepts are connected in an individual's long-term memory that is commonly conceptualized as associative network (Collins & Loftus, 1975), activation of one concept spreads to activate the other, producing a range of perception, attitude, and behaviour outcomes (Klinger & Greenwald, 1995; Bargh, 1996). If the kinship between mortality and creativity exists, we expect to see greater interest in creative activities as induced by subliminally activated death concept.

Method

Seventy-one business undergraduates from an introductory marketing course at a northeast public college participated for partial course credit (39 male, 32 female, *M* age = 20.97). First, a brief survey was given. Then, respondents moved to a computer for a word association game, which actually was the mortality salience manipulation. Right after the manipulation, without a distraction/delay task, was Positive Affect Negative Affect Scale and dependent measures. Prior research showed that when death primes were presented outside of conscious awareness, death-thought accessibility increased immediately and triggered self-esteem enhancement (e.g., Arndt et al., 1997). Finally, respondents were probed if they found anything unusual about the study, to which no one reported recognizing the subliminally primed words.

The word association computer task was enabled by DMDX software (Forster & Forster, 2001). It required respondents to decide as quickly and accurately as possible whether two words that flashed sequentially at the centre of a 17-in Dell monitor were semantically related by pressing the correct key. For example, if the words *forest* and *tree* were presented, respondents were to press the right shift key to indicate that they were related. But if the words *plastic* and *stream* were presented, they were to press the left shift key to indicate that they were unrelated. These words actually served as a forward mask (and fixation point) and backward mask, and were each displayed for 416 ms (milliseconds). The critical subliminal prime, either *DEATH* or *PAIN* depending on the experimental condition, also centred on the screen, was presented for 49 ms between the two masking words. All words were 20 points in font. There were 4 practice sets and 20 test trials, which means that each respondent was subliminally exposed to either “DEATH” or “PAIN” for 24 times. We selected “PAIN”, following the Terror Management Theory research tradition that frequently attempted to generate pain-related anxiety to construct the control condition.

For dependent measures, respondents were presented with six activities: taking artistic pictures at a scenic place, writing a fiction for publication, acting in a stage play or a movie, making a video clip for circulation, producing art work, and doing craft/art projects with kids. For each activity, they indicated their gut-feel inclination of engaging in that activity “at the very moment” on an 8-point scale.

Prior to manipulation, we measured individuals’ pre-existing tendency to engage in creative activities. A stronger pre-existing creative tendency would predict more creative interest. Two activities with cartoon illustrations were presented. One was captioned as “Watching TV for relaxation/killing time;” the other as “Some type of creative work with a long-lasting product.” Respondents indicated their usual behavioural inclination by checking one of the 8 places anchored by the two illustrations. Cartoons were used beyond verbal description, because literature has

demonstrated that pictorial measures better bypass social desirability and call forth a more deeply structured sense of self (e.g., Aron, Aron, & Smollan, 1992).

Results and Discussion

The dependent variable was operationalized as the mean interest level of the 6 creative activities (Cronbach's $\alpha = .58$). A hierarchical regression showed that subliminally primed mortality increased creative interest ($\beta = .22$, $t(67) = 1.97$, $p = .05$), supporting H1. In this regression, the two centred independent variables were entered first. Then, the interaction term based on centred values was included. As expected, a stronger pre-existing creative tendency predicted greater creative interest ($\beta = .28$, $t(67) = 2.43$, $p = .02$). Although the interaction was non-significant ($p = .12$), there was a trend of mortality salience boosting creative interest to a greater extent for individuals at higher levels of creative tendency. As hypothesized, we only expect a significant interaction when creative consumption is pitted against non-creative tasks.

Because the control condition primed pain, a negative notion, Experiment 1 casts doubt on the argument that creative urge would be amplified by any stress factor. The subliminal priming bypassed active strategies on respondents' part such as demand characteristics and yielded support to the notion that creativity and death are interconnected in people's associative network. This implies that creativity as an existential anxiety buffer is likely to be well established in long-term memory rather than improvised in laboratory. Culture may have played a big role in fostering the link between these two notions.

Experiment 2

As stated in H2, when non-creative alternative activities are presented simultaneously with creative consumption, mortality salience should exert a more positive influence on creative interest among individuals with stronger pre-existing creative tendencies. More accustomed to and adept at

creative activities, these individuals are more likely to utilize creativity in countering existential threats. In contrast, those with weaker pre-existing creative tendencies are less likely to resort to a creativity tool on which they do not place high value.

Method

We recruited 121 undergraduates from introductory business classes at a large public U.S. university (72 male, 49 female, *M* age = 21.9). A novel manipulation of mortality salience was used. With the ostensible purpose of gathering customer opinions about product designs, we requested respondents to evaluate either a set of gravestones (mortality salience) or a set of nameplates (control). Unlike writing about death (e.g., Greenberg et al., 1993), this more naturalistic manipulation is expected to invite a less effortful contemplation about death, which might make it a cleaner mortality salience manipulation, less susceptible to demand characteristics.

Each of the dependent measures juxtaposed a creative option with a non-creative one. Specifically, each of the 5 items, scored on an 8-point scale, contrasted creating something on one's own with buying it from stores. The contexts were "for something that could be displayed in my front yard or back yard," "for something that could be displayed in my house," "for a gift for my family members," "for a gift for my romantic partner," and "take pictures by myself" versus "buy pictures from stores" at a scenic place.

To measure pre-existing creative tendency, we evaluated attitude and behavioural inclinations prior to the manipulation. Using three 6-point scales, we measured values of being creative, current creative inclinations, and future creative inclinations ($\alpha = .78$, *M* = 3.44, *SD* = 1.03).

Results and Discussion

When the continuous variable of pre-existing creative tendency was included as the moderator in a hierarchical regression, a significant interaction emerged ($\beta = .18$, $t(117) = 2.03$, $p = .045$), supporting H2. Whereas pre-existing creative tendency predicted greater creative interest ($\beta = .30$, $t(117) = 3.37$, $p = .001$), mortality salience showed no significant main effect ($p = .88$). Tests of simple slopes (± 1 SD) revealed an interaction pattern in line with the hypothesis. Specifically, at two standard deviations above the mean of pre-existing creative tendency, mortality salience marginally bolstered creative interest ($\beta = .37$, $t(117) = 1.89$, $p = .06$). However, at two standard deviations below the mean of pre-existing creative tendency, mortality salience exhibited a trend of dampening creative interest ($\beta = -.34$, $t(117) = -1.75$, $p = .08$). This interaction pattern supports our expectation that mortality salience is more likely to boost creative interest when there is a stronger pre-existing creative tendency.

Different from Experiment 1, the current study did not find mortality salience's main effect on creative interest of either direction. This probably has resulted from the relative dependent measure employed, as elaborated in the conceptual background section. For common people as sampled in the current study, creative pursuits possessed similar appeal when facing existential threat compared to non-creative activities such as shopping (Experiment 2), even though creative activities had greater appeal compared to doing nothing at all (Experiment 1). However, for those who self-reported their creative tendency at two standard deviations above the mean (i.e., 5.5 on the 6-point scale), creativity was stimulated by mortality salience.

Experiment 3

In Experiment 2, we gauged interest in artistically creative activities among undergraduates recruited from business classes, most of who were of business majors. Due to this mismatch,

perhaps even the more creatively inclined respondents were still not sufficiently confident about the artistic tasks presented to them. In Experiment 3, we will match creative activities with respondents' specialty. Specifically, we will request art majors to consider artistic tasks. Furthermore, Experiment 3 will examine the boundary in which mortality salience exerts influence on creative interest.

Whereas Experiment 2 investigated general creative tendency as a moderator, Experiment 3 looks at levels of challenge of creative tasks (a within-subjects factor) as a potential moderator.

Method

We distributed questionnaires to 49 undergraduates in upper level studio art courses at the same northeast public college as in Experiment 1 (30 male, 19 female, *M* age = 20.6). All but two respondents were of art majors. We manipulated mortality salience the conventional way. Respondents were asked to "briefly describe the emotions that the thought of your own death arouse in you" and "jot down, as specifically as you can, what you think will happen to *you* as you physically die." This manipulation has been used in numerous studies on Terror Management Theory (e.g., Greenberg et al., 1993). Following the manipulation was PANAS.

Because the current study is a within-subject design, we presented to each respondent two sets of artistic tasks that differed on the level of creative challenge (high vs. low creative challenge). The "low creative challenge" set included five casual creative tasks with lenient creative quality standards. Each of the five dependent measures juxtaposed a creative option with a non-creative one on an 8-point scale to probe level of interest. Four items concern "make or buy" decision in different contexts: for something to display in house, for a gift to family members, for a gift to romantic partner, and obtaining pictures at a scenic place (reversely coded). To make something by oneself generally requires more creativity than to buy something. The fifth item compared craft/art projects with board games when considering spending time with kids (reversely coded). The craft/art option is considered more creative than board games which are primarily based on chance and logic.

Note that the creative options of these five measures are not narrowly specified, thus they should give those professionally trained ample room to picture something in their comfort zone. Later, our data showed relatively high interest in these five creative activities that pose less creative challenge (Cronbach's $\alpha = .75$, $M = 5.56$ out of 8, $SD = 1.47$).

A goal of the current study is to examine mortality salience' effect on creative interest when level of creative challenge increases. Based on what art instructors deemed as demanding courses offered at the college, the second set of tasks consisted of computer art, drawing, 3D computer animation/modelling, movie making, product concept design, professional photography, drawing, painting and sculpting. As part of formal training, these artistic tasks require a lot of skills and are accompanied by high evaluation standards; thus they pose considerable creative challenge to a typical art undergraduate at the college. Prior to mortality salience manipulation, each respondent selected a task from this set based on personal preference. The frequently selected tasks were computer art (15), drawing (12), and 3D computer animation/modelling (7). Meanwhile, they also selected a task from a group of non-creative and easy activities such as watching movies, surfing internet, browsing People magazine, reading fiction, and window shopping. The frequently selected non-creative leisure were watching movies (21), surfing internet (9), doing nothing (6), and reading fiction (5). Note that each respondent selected one creative task with greater challenge and one non-creative task prior to the key mortality salience manipulation. After the key manipulation, each respondent allocated 100 points between the two pre-selected activities (i.e., one creative task and one non-creative task). Points allocated to the creative tasks ($M_{ms} = 47.8$, $M_{control} = 59.4$) did not overwhelm those allocated to the non-creative leisure activities.

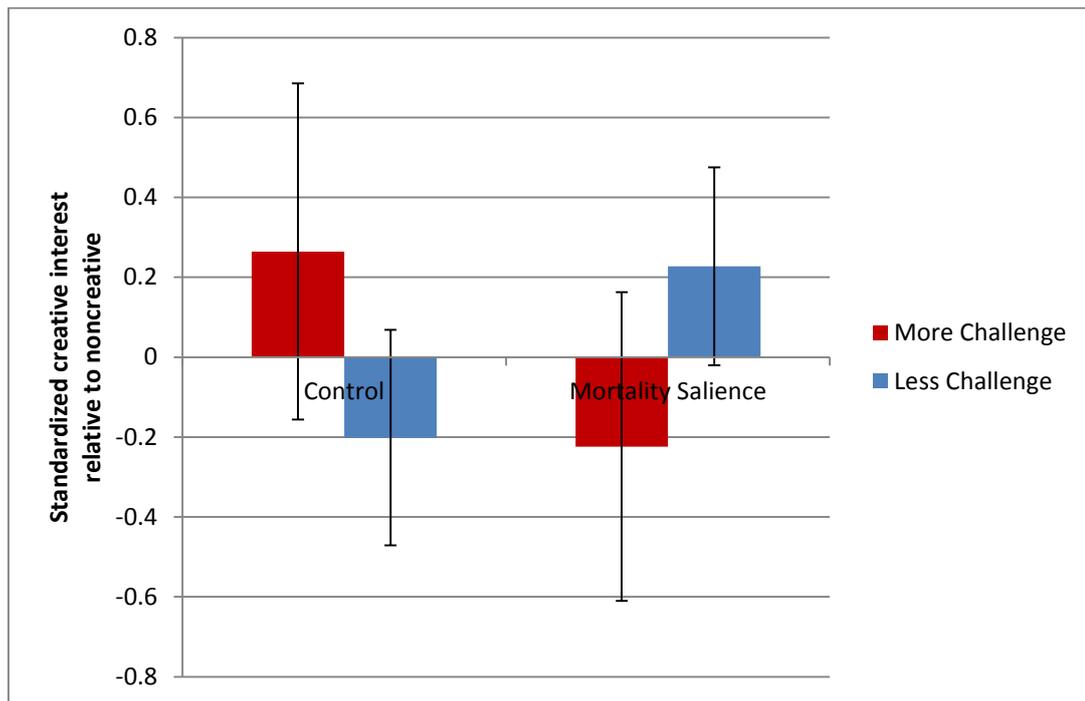
Results and Discussion

To compare two sets of creative interest measures on different scales (i.e., 8 points for lower creative challenge vs. 100 points for higher creative challenge), we first standardized each measure.

For the set of less challenging creative tasks, we conducted an one-way ANOVA on the mean of the five standardized dependent measures. Mortality salience marginally bolstered creative interest at the cost of non-creative options ($M_{ms} = .16$, $M_{control} = -.20$, $F(1, 47) = 3.65$, $p = .06$). However, the effect was reversed for the more challenging creative tasks. An one-way ANOVA showed that mortality salience marginally reduced standardized point allocation to creative tasks ($M_{ms} = -.22$, $M_{control} = .26$, $F(1, 47) = 2.96$, $p = .09$).

Using the standardized dependent measures, a 2 (between-subject factor: mortality salience vs. control) x 2 (within-subject factor: high vs. low creative challenge) mixed ANOVA revealed a crossroad interaction as illustrated in Figure 1 ($F(1, 45) = 12.30$, $p = .001$). Levels of creative challenge moderated mortality salience' role in shaping creative interest, lending support to H3. No main effect was observed for mortality salience ($F(1, 45) = .02$, ns).

Figure 1. Preferences for more vs. less creative challenge among art undergraduates (including 95% confidence intervals)



As expected, mortality salience stimulated interest in casual and simple creative consumption among art undergraduates. To individuals with formal training in arts, tasks like craft projects with kids or making a gift for close others likely were deemed easy and they did not need to measure up to a high creative standard. Respondents may anticipate creative outcomes to be self-esteem enhancing rather than threatening. Therefore, existential thoughts unleashed creative interest. On the other hand, highly specialized tasks such as 3D computer animation were demanding even for an average art student. To be judged against raised standard put self-esteem at risk, which rendered these tasks daunting when existential threat infringed. Creative self-efficacy may underlie the moderating role that creative challenge exerts. Future research can directly manipulate self-efficacy to see if it interacts with mortality salience in a similar fashion.

The three experiments so far assessed whether creative consumption, when evaluated prospectively, may be stimulated by mortality salience. Terror Management Theory contends that to the extent that a particular coping mechanism allays mortality concerns, it is summoned when the latter infringes. Although the unconscious process was not examined, our findings provide indirect

evidence that creative pursuits may allay existential concerns. To gauge this relationship more directly, Experiment 4 investigate whether thinking about creative consumption suppresses death-related thoughts. Therefore, Experiment 4 examined creative consumption from a different angle, i.e., in retrospect (H4). Similar to the previous two experiments, creativity is compared with non-creative activities to assess creativity's "net value". We selected shopping / spending as a comparison to creative consumption, because shopping is routine, unchallenging, and a popular escape in a social surrounding (Mandel & Smeesters, 2008); creative tasks, on the other hand, are novel, more challenging and often accomplished in solitude. Further, Experiment 2 and some measures in Experiment 3 juxtaposed creative pursuits with shopping, so the current experiment continued this comparison.

Reactions toward a stimulus in prospect are not necessarily the same as those in retrospect. In coming up with a retrospective global evaluation, people give more weight to the affectively intense peak moment as well as the affective states toward the end of an experience (Fredrickson & Kahneman, 1993), which can give rise to a rosier retrospective evaluation (e.g., Mitchell et al., 1997). A creative experience, even if challenging and uncertain for some individuals in the beginning, can still generate some rewarding moments when difficulties are overcome and ultimately result in a creative outcome. These salient rewarding moments and the crescendo pattern that accompanies them may lead to a more positive evaluation of a creative experience in retrospect than when it is evaluated prospectively or on-line. Here we compare creative pursuits with shopping, a largely non-creative activity. Often, shopping does not make people feel as happy as they predicted they would feel (Hsee & Hastie, 2006). This affective discrepancy can arise from an overestimation of one's needs when in a different arousal state (e.g., hungry before shopping vs. satiated after shopping), or from a choice of an immediately gratifying option at the cost of long-term happiness. We conjecture that creative consumption in retrospect elicits a more positive global evaluation than shopping does.

Contemplating rewarding creative moments and how they enrich life would better pacify existential concerns than recalling past shopping experiences, even though creative pursuits may lack superior initial appeal.

H4: Contemplating one's past creative consumption reduces existential thoughts more effectively than contemplating one's past shopping experiences.

Experiment 4

To assess which of these two activities (creative consumption vs. routine shopping) better reduced existential thoughts, we looked at their respective effects on reducing death-thought accessibility. Reaction time was recorded to gauge accessibility. If someone consistently makes slower judgments about a specific category of words, then it is reasonable to infer that the category construct is less accessible (e.g., Bargh & Chartrand, 2000). Previous Terror Management Theory research has made use of response latencies in the context of a lexical decision task (e.g., Arndt, Greenberg, & Cook, 2002; Shimmel et al., 2007).

Method

Eighty undergraduates from introductory management and psychology courses at a public U.S. university participated for partial credit (33 female, 47 male, *M* age = 20.79). To examine if creativity better offsets heightened mortality salience and whether this mechanism can restore baseline level of mortality salience, we created three conditions: mortality salience followed by writing about past creative endeavours (*n* = 31); mortality salience followed by writing about past shopping and spending (*n* = 33); and absence of mortality salience followed by writing about past creativity (*n* = 16). Different from the previous experiments, we made mortality salient via presenting a shortened form of the Death Anxiety Scale with items such as "I find it really difficult to accept that I have to die" (Templer, 1970). Prior Terror Management Theory research has effectively utilized this

operation of mortality salience (e.g., Rosenblatt et al., 1989). After answering this scale, respondents were instructed to spend five minutes writing about their past creative endeavours, or past expenditure and shopping experiences. The written content was examined later as a manipulation check. After a distraction / delay task, the experimenter directed respondents to a computer to collect reaction time data. PANAS was given in the end.

We used DMDX (Forster & Forster, 2001) to record reaction time in milliseconds. Following a fixation point, a real or made-up English word flashed at the centre of a 17" Dell monitor for 498 ms. Respondents were asked to press as quickly and accurately as possible the left shift key for fake words and the right shift key for real ones. After 9 practice items the real test began: 7 death words, 11 neutral words and 10 fake words in a scrambled sequence. The time used to press the key reflected concept accessibility. Longer time indicates lower accessibility. As shown in Table 2, death words and neutral words were matched as to length and frequency (Wiktionary, 2008), because these two factors would also affect reaction time besides construct accessibility (Bargh & Chartrand, 2000).

Table 2. Word types matched on frequency and length

<i>Death words</i>	Expire	End	Flesh	Deceased	Cemetery	Nothingness	Oblivion
<i>Neutral words</i>	Sector	Set	Proof	Circular	Cupboard	Disagreement	Scrutiny
	Fleece	Saw		Realized			
	Toward						

To explore interaction, we measured pre-existing creative tendency prior to manipulation on three 5-point scales: "I am confident about my ability to do creative work," "In the past I have abundantly shown my creativity," and "Being creative is important for my self-worth." ($\alpha = .78$, $M =$

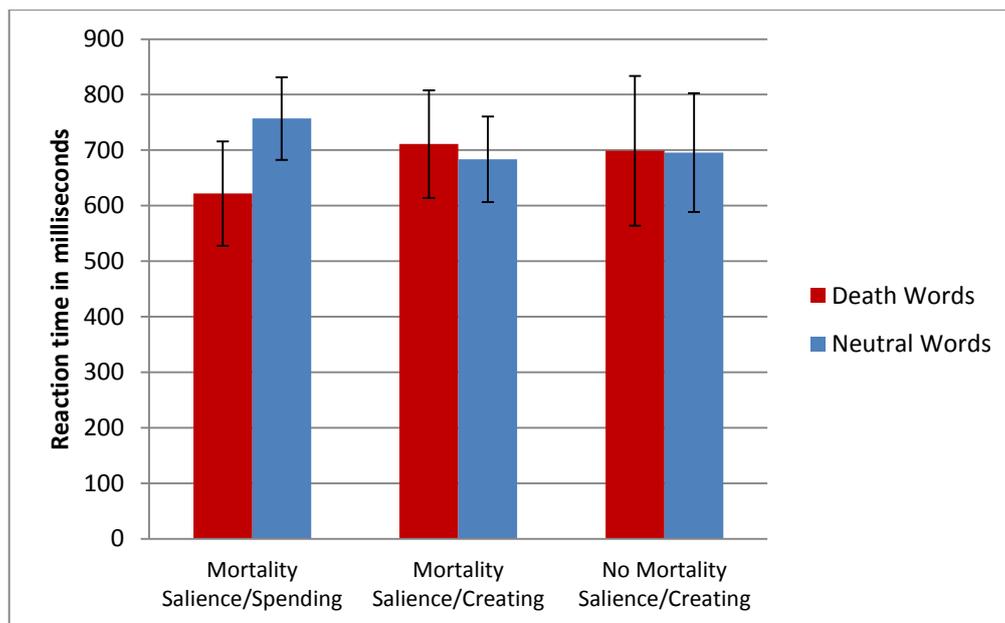
4.06, $SD = .74$). Because contemplating one's past creative acts involves much less mental challenge than planning creative acts does, pre-existing creative tendency may not exert a moderating role as it did in Experiment 2.

Results and Discussion

Following a recommendation by Bargh and Chartrand (2000), we recoded outlier responses longer than 2,000 ms to read 2,000 ms. Incorrect responses were excluded from the analysis. Mean reaction times were then computed for death and neutral words. A 2 (prime: creating vs. spending) \times 2 (accessibility: death vs. neutral words) mixed ANOVA was performed on mortality primed cases ($N = 64$; $n_{\text{spending}} = 33$; $n_{\text{creating}} = 31$). A significant interaction showed that compared to writing about one's past spending, writing about one's past creative endeavours better suppressed death-words accessibility ($F(1, 62) = 4.92, p = .03$), thus supporting H4. As illustrated in Figure 2, for those writing about spending, death words were more accessible than neutral words ($M_{\text{neutral words}} = 757$ ms, $M_{\text{death words}} = 621$ ms, $t(32) = 2.44, p = .02$). For those writing about creating, death words and neutral words were similarly accessible ($M_{\text{neutral}} = 683$ ms, $M_{\text{death}} = 710$ ms, $t(1, 30) = .58, ns$). An one-way, between-subject ANCOVA (with neutral word reaction time as covariate because it was unaffected by the manipulation) showed that for those writing about creative experiences ($N = 47$; $n_{\text{ms}} = 31$; $n_{\text{control}} = 16$), death-thought accessibility across mortality salience and control conditions remained the same ($M_{\text{control}} = 695$ ms, $M_{\text{ms}} = 712$ ms, $F(1, 44) = .053, ns$). This indicated that when the thought of death infringed, thinking about past creative experiences restored death-thought accessibility to the baseline level. We also found that a stronger pre-existing creative tendency desensitized death thoughts, which demonstrated creativity's long-term effect on psychological equanimity. A regression that includes creative tendency, the key manipulation, and their product term was run among the 64 mortality salience cases. More creatively inclined individuals recognized death words at a marginally slower speed ($\beta = .24, t(60) = 1.89, p = .06$), yet

exhibited no difference in terms of reaction to neutral words ($\beta = -.04, t(60) = .30, ns$). These findings lend support to the linkage between creativity and death in long-term memory.

Figure 2. Reaction time to death and neutral words (including 95% confidence intervals)



The above regression also showed that the continuous variable of pre-existing creative tendency did not moderate the effect of retrospective thoughts on reaction time toward death-related words ($\beta = .11, t(60) = .89, ns$). The absence of interaction contrasted with the interactions found in Experiments 2 and 3, both of which suggest that creativity as an existential threat coping mechanism is only suitable for individuals who have a strong pre-existing creative tendency or for less-challenging tasks. In Experiment 4, less creative individuals utilized past creative achievements to buffer mortality thoughts as well as their more creative peers. Thus, creativity in retrospect seems to serve a wider population than in prospect when dealing with existential concerns. Perhaps reminiscing about one's past creative endeavours and achievements is easy enough for everyone, whereas initiating a new creative task can be intimidating for many.

General Discussion

Results of this research contribute to both Terror Management Theory and consumer behaviour literature. Unlike past research on consumer creativity, this paper examines consumer creativity that is not driven by utilitarian necessity such as financial limits, time pressure and unavailability. Further, it investigates a driver of creativity that people commonly are not conscious of: existential issues. With four operations of mortality salience (one of which being our innovation), our experiments lend support to the hypotheses. Our experiments address different parts of the feedback loop between creativity and mortality salience. Experiment 1 demonstrated at a very basic level, mortality salience spurs interest in creative consumption. Experiment 2 and 3 showed that when competing activities are present, mortality salience stimulates creative interest under certain circumstances. Experiment 4 revealed that thinking about past creative experiences suppresses death-related thoughts.

Creative consumption did not possess more appeal when juxtaposed with non-creative activities such as watching TV (Experiment 2). Only among the highly creatively inclined individuals did mortality salience arouse creative interest above the easy, non-creative activities (Experiment 2), which was in line with the view that certain aspects of creative processes may dampen its effectiveness as death anxiety buffer. As a limitation, this research did not investigate the mediating processes, partially because we doubt respondents can report things they are not conscious of. We can only speculate by reviewing the dependent measures employed in Experiment 2 and 3. What might constitute deviation and isolation in those creative activities? Our student respondents spend most of their leisure time on TV, video games, shopping, theatres, concerts, or popular websites. To do what most other in-group members are doing connotes connecting to one's in-group. To turn away from these normative activities (coincidentally uncreative) for individual creative acts means deviation and isolation, at least temporarily. Previous research found that when the social assimilation need was attended, creativity became less psychologically problematic (Arndt et al.,

2005). Amplified mortality concerns decreased the creative quality of new ideas when the task was self-directed but not when it was community-directed (Routledge, et al., 2008). These works did not contrast creative tasks with non-creative tasks. Future research could explore whether creative tasks are better than non-creative tasks at allaying death threat when creativity is stripped of the elements of deviation and isolation, e.g., by situating creative tasks in a collective environment or by attending to assimilation needs beforehand.

This paper contributes to consumer behaviour literature by identifying two boundary conditions regarding under what circumstances creativity is summoned in face of existential thoughts. The first boundary condition relates to an individual difference: Only among the most creatively inclined individuals did mortality salience arouse one's interest in creative consumption (Experiment 2). The second boundary condition concerns one characteristic of creative tasks: creative consumption is pursued after a reminder of death, but only when the tasks are within one's skill mastery (Experiment 3). Compared to media consumption and other non-creative leisure presented in our experiments, creative acts imposed a greater mental demand and bear the possibility of producing a disappointing outcome. To some individuals creative acts are more likely to endanger self-esteem rather than to enhance it. In a similar vein, greater confidence would unleash creativity's power in mitigating existential anxiety. Experiment 3 buttressed this point. Conducted among individuals equipped with relevant formal training, Experiment 3 found that mortality salience directed interest toward creative tasks away from uncreative ones, when the creative tasks were within one's skill mastery. Future research can further investigate this issue by manipulating creative self-efficacy. We expect to see that mortality salience drives up creative interest relative to non-creative activities for individuals highly confident about their creative abilities. As managerial implications, targeting the more creatively inclined consumer segment and having products that cater to consumers' skills shall be important for industries that provide creative consumption. Offering training programs that make the creative tasks manageable for consumers is another

strategy, as Michael's has been doing. When these aforementioned conditions are met, a context that induces thoughts about the fundamental issue of human existence (e.g., media programs on certain topics) would increase creative interests.

Impact on Consumer Welfare

To question creativity's initial appeal is in no way to deny its essential power in buffering mortality anxiety over the long run. Creativity is one of the highest fulfilments people can have. Creativity, at its peak, provides "pleasure at a godlike level" (Stegner, 1982, p. 43). Initial appeal and long term impact are often at odds, as we can see from food choices and materialistic pursuits. Retrospective attitudes are frequently inconsistent with on-line or prospective attitudes (e.g., Fredrickson & Kahneman, 1993). Indeed, when Experiment 4 assessed retrospective creative consumption, creative endeavours in retrospect shielded death thoughts more effectively than the more passive activities of shopping and spending. As far as the authors know, the present work is the first in marketing research to employ an experiment to examine creativity's long-term effect on consumer well-being. As a piece of related evidence, the more creatively inclined individuals were less sensitive to death-related words. If creative consumption ameliorates mortality anxiety in retrospect, it implies that creative consumption is able to proffer psychological equanimity and enrich life in an extended horizon. This finding bears implications for long-term consumer welfare. As Csikszentmihalyi (1996) stated, creative activities often contribute to individuals' well-being and leave an outcome that adds to the richness of the future. Future research may investigate whether reminding people of their past creative acts can increase creative consumption's initial appeal.

The fear that arises from the knowledge of an inevitable death needs to be kept at bay for humans to remain calm and functional in everyday life. Previous research on Terror Management Theory has identified various mortality anxiety buffers, many of which spell social dissonance. For instance, existential concerns elevate the appeal of money and status symbols (for a review, see

Arndt, Solomon, Kasser, & Sheldon, 2004). Materialistic individuals form stronger connection to their brands as a response to existential insecurity (Rindfleisch, Burroughs, & Wong, 2009). It engenders derogation of out-groups (Greenberg, Simon, Pyszczynski, Solomon, & Chatel, 1992), and physical aggression against those who attack one's political orientation (McGregor, Lieberman, Greenberg, Solomon, Simon, Arndt, & Pyszczynski, 1998). By comparison, creative consumption probably contains the smallest seed for harmful social consequences. Creativity is positively associated with a more open-minded and flexible orientation to the social world (e.g., Deci & Ryan, 1987). Routledge et al. (2004) found that engaging in creativity, relative to engaging in a non-creative task, following reminders of mortality mitigated the motivation to disparage a world-view threatening other. Our findings indicate that creative consumption is summoned under mortality salience at least for some individuals (i.e., the more creatively inclined), toward some tasks (i.e., the less creatively challenging tasks), and in retrospect. Providing the right creative outlets for some individuals and reminding people of their past creative achievements may help them overcome existential anxiety particularly in difficult times. Thus, our inquiry into the relation between death and creativity points out an accessible way of terror management that is more socially advantageous in a diverse cultural world.

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