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Understanding Materialistic Consumption: A Terror Management Perspective

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ABSTRACT

This study adopted terror management theory (TMT) to explore why people engage in materialistic consumption. By using survey data from a representative sample of the U.S. adult population, the influence of mortality salience on two consumption behaviors—brand name consumption and compulsive consumption—was examined, along with the moderating effects of global self-esteem and ego involvement. This study extends the development of TMT by evidencing mortality salience effects outside of laboratory settings and in consumption behaviors. Results showed that mortality salience increased consumer propensity to engage in materialistic consumption; ego involvement in materials moderated the effect of mortality salience, but global self-esteem did not. Implications for academic researchers, advertisers, and consumer educators are discussed.

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Introduction

Most human behavior is directly or indirectly related to consumption. Human beings are, by nature, consumers (Solomon, Greenberg, and Pyszczynski 2004), yet our consumption behavior is not based solely on our physical survival needs. If consumption was dominated merely by rational decisions based on biological need, over-consumption or conspicuous consumption would not exist. The human desire for money and materials indicates that rationality is not the sole factor that drives consumption behavior. Further complicating the landscape of U.S. consumerism are post-September 11 consumption patterns. Business communities worried, because of the magnitude and impact of the terror attack, that the incident would initiate a recession in the United States. American consumers, however, boosted the economy by buying homes, cars, appliances, and luxury products (e.g., RVs, ATVs, and Jet Skis) in record quantities in the immediate aftermath of the September 11 terrorist attack (Hallinan 2002; Zuckerman 2002). An interesting question to pursue is what drove the excessive pursuit of consumer goods after September 11.

Insight regarding possible factors that fueled the post-September 11 rise in consumption can be drawn from recent discussions of terror management theory (Greenberg et al. 1986). Terror Management Theory (TMT) posits that events reminding people of the prospect of their own deaths can create potentially overwhelming anxiety, often called *existential anxiety*. TMT further posits that, when reminded of their mortality, people use dual coping strategies—the defense of cultural worldviews and the enhancement of self-esteem—to alleviate existential anxiety (Greenberg et al. 1997). Applying TMT to a consumer behavior context (Arndt et al. 2004a, 2004b; Maheswaran and Agrawal 2004; Rindfleisch and Burroughs 2004) has allowed researchers to argue that because materialism is a pervasive cultural characteristic in western societies (Arndt et al. 2004b), and because acquisition and possession of material objects confer self-esteem (Mandel and Heine 1999), awareness of death engendered by external, uncontrollable events should therefore intensify materialistic consumption among consumers. These TMT dialogues are timely, given that realizations of their own mortality have become prevalent among American consumers in recent years, especially in light of the September 11 attack and the hurricane Katrina disaster.

Although there has been speculation regarding terror management accounts of materialistic consumption, few studies have empirically tested the impact of mortality salience on materialistic consumption. This study seeks to fill that void by examining the effects of mortality salience provoked by the September 11 terrorist attack on two domains of materialistic consumption: brand name consumption and compulsive consumption. Most TMT studies have been conducted in experimental settings, raising questions as to TMT's validity in other research settings. Thus, this study empirically tests the impact of mortality salience on materialistic consumption using consumer survey data from a representative sample of the U.S. adult population.

Further, we attempt to expand upon previous TMT studies by examining two moderators—global self-esteem and ego involvement in materials (i.e., contingency of self-esteem)—influencing the relationship between mortality salience and materialistic consumption. Although several TMT studies have explored the moderating roles of global self-esteem and contingency of self-esteem separately, only a few have explored how these two factors operate simultaneously against mortality threat (e.g., Taubman-Ben-Ari et al. 1999). The relationship between contingency of self-esteem and global self-esteem is an area that requires further exploration (Crocker and Wolfe 2001); this study, therefore, explores whether or not the two function differently as anxiety buffers.

Background

Terror Management Theory

TMT has explained a wide range of human thoughts and behaviors since the theory was first proposed in 1986 (see Greenberg et al. 1997 for an extensive literature review). According to TMT, humans are aware of their own existence and also aware of the inevitability of death. The juxtaposition of a biological desire for life and the awareness of death's inevitability creates the potential for paralyzing anxiety. TMT posits that humans build a dual defensive system of cultural worldview and self-esteem to deal with this existential terror (Greenberg et al. 1997). Cultural worldviews—shared beliefs about the nature of reality—assuage existential anxiety by providing meaningful explanations of life and the world. For example, religion can confer one with literal immortality via the belief in eternal life. Cultures, such as nations or ethnic groups, can help one obtain symbolic immortality “by being part of

something larger, more significant, and more enduring than” oneself, which continues to exist after one’s death (Pyszczynski 2004, p. 831). Self-esteem, or feelings of self-worth, also functions as an anxiety buffer against existential terror. Self-esteem is obtained, in part, by believing in one’s cultural worldviews and perceiving that one lives up to cultural standards. The understanding that one lives up to important cultural values (i.e., having high self-esteem) mitigates existential anxiety by providing symbolic immortality (Pyszczynski 2004). Subsequently, when people are aware of the inevitability of their own deaths (i.e., mortality salience), they increase efforts to cling to their cultural worldviews and to strive for self-esteem to alleviate existential anxiety. These kinds of symbolic defenses occur against the unconscious awareness of mortality, not the conscious awareness of mortality (Greenberg, Pyszczynski, Solomon et al. 1994).

Abundant empirical studies have shown the effects of mortality salience on cultural worldviews and self-esteem across various domains. Mortality salience has been shown to increase prejudice, ethnocentrism, and aggression against people with different worldviews, deployed as a means of defending one’s cultural worldview (e.g., Greenberg et al. 1990; McGregor et al. 1998). Mortality salience has also been shown to induce various self-esteem-striving behaviors, such as overestimation of social consensus (Pyszczynski et al. 1996; Taubman-Ben-Ari et al. 1999). Recent TMT studies have extended the impact of mortality salience on cognitive processes, such as selective exposure to information and cognitive dissonance (Friedman and Arndt 2005; Jonas et al. 2003; Lavine et al. 2005).

Materialism and Terror Management Theory

Scholars have recently begun to explain materialistic tendencies from a terror management perspective. Materialism is a “set of centrally held beliefs about the importance of possessions in one’s life” (Richins and Dawson 1992, p. 308), and has been considered an important life value (Kasser and Ryan 1993; Mick 1996; Richins and Dawson 1992). TMT scholars explain materialism as a means of obtaining symbolic immortality in a culture where materialism is considered a life value (Arndt et al. 2004b; Solomon et al. 2004). To provide evidence of the ways in which human beings pursue material objects to veil their final fate and to obtain feelings of security, Solomon et al. (2004) turned to records of human history. From anthropology, these researchers concluded that procurement of wealth and possessions comes from a human thirst for power over death. Materialistic possession functions as an ideology of immortality, allowing one to veil death and to develop a feeling of personal uniqueness (Solomon et al. 2004). When the ideology that the procurement of wealth and possessions will lead to a meaningful and happy life is culturally nurtured, consumption can signify that one is living a meaningful life by complying with the cultural standard. Such meaningful life continues to exist symbolically after our deaths. As a result, “To the extent that the widespread cultural message of consumption and materialism becomes internalized at the individual level,” we can understand humans’ desire for material objects as a veiled effort to overcome the existential anxiety provoked by awareness of mortality (Arndt et al. 2004b, p. 203). In other words, existential terror exacerbates individual materialistic tendencies in a society where materialism is a pervasive cultural value.

Several experimental studies have provided supporting evidence that mortality salience increases the appeal of money and material goods (e.g., Kasser and Sheldon 2000; Solomon and Arndt 1993). Solomon and Arndt (1993) found that mortality salient people were more excited about the prospect of finding a \$20 bill on the street than people in the control group. Similarly, Kasser and Sheldon (2000, Study 1) found that people elevated fiscal expectations following a mortality salience induction. The zeal for material pursuit

driven by mortality salience even made people over-consume scarce natural resources. Kasser and Sheldon (2000, Study 2) used a forest-harvesting simulation and found that mortality salient individuals reported an intent to harvest significantly more of the available acres of forest than people in the control condition. In sum, in a culture where possession of materials is valued, acquisition of material objects can buffer one's existential anxiety because a materialistic culture promotes the symbolic significance of materials.

The dramatic increase in discretionary income and an abundance of consumer goods, especially in the past 150 years in the United States, has allowed the masses to pursue psychological well-being via consumption of goods (Belk 1985). The drive for material goods has increased in Western societies (Kasser and Kanner 2004), and this trend has also spread to many Eastern countries, such as Japan (Belk and Pollay 1985). Materialism is considered one of the core values in American culture (Friedman 1985; Spiggle 1986; Lerman and Maxwell 2006), and a pervasive feature of American cultural worldviews (Arndt et al. 2004b). Among American consumers, therefore, mortality salience may likely stimulate materialistic consumption. In this study, we focus on two domains of materialistic consumption that are deemed consumption behaviors that manifest materialism, i.e., brand name consumption and compulsive consumption.

Brand Name Consumption and Compulsive Consumption as Materialistic Consumption

Brand Name Consumption

Consumption of goods can communicate symbolic meaning (Grubb and Grathwohl 1967). Each material object can have its own meaning (i.e., power and wealth for gold), and these meanings are socially created and shared. By possessing a material object, people attempt to possess the symbolic meaning attached to the object (Hirschman and Holbrook 1980; Levy 1959; Solomon 1983) and define their identity (Piacentini and Mailer 2004; Mittal 2006).

In modern society, branding serves as a way to imbue unique and symbolic meaning to material objects. While brand names may have practical utility in signifying the quality of products, they are also devices that attach cultural value to products and signal social and economic status (Escalas and Bettman 2003; McCracken 1988). Marketing communications—especially advertising—play a critical role in creating and disseminating brand meaning (Krahmer 2005; Elliott and Wattanasuwan 1998). Through marketing communications, the symbolic meaning of brands is shared by society members, thus allowing consensual validation of the meaning. As symbolic meaning is attached to a brand and as that meaning is shared by members of a society, brand consumption allows for conspicuous consumption which confers signs of status and wealth (Krahmer 2005). Given that symbolic meaning is obtained through the consumption of material objects, brand consumption reflects the pursuit of materialism as a cultural worldview. Not surprisingly, Delaney et al. (2005) found that materialistic individuals prefer brand names that manifest materialism.

TMT literature allows us to infer the potential link between brand consumption and terror management. TMT scholars have argued that relentlessly striving for material objects leads to conspicuous consumption as an attempt to resolve existential concerns by engaging in death denial (Solomon et al. 2004). Because mortality threat increases the need for symbolic immortality, and because brand consumption allows consumers to obtain symbolic meaning,

it is likely that the mortality threat increases brand name consumption. By transferring socially attributed meanings of a brand to oneself, brand consumption helps to maintain a belief that one is meeting the standards valued in a materialistic society. As a result, consumption of a well-known or prestigious brand can serve as a means for individuals to meet the cultural standards in a particular society. Therefore, we hypothesize:

Hypothesis 1a: Mortality salience will increase brand name consumption.

Compulsive Consumption

Compulsive consumption is another type of consumer behavior pertinent to materialism, and is defined as “chronic, repetitive purchasing that becomes a primary response to negative events or feelings” (O’Guinn and Faber 1989, p. 155). Although the conceptualization of compulsive buying varies, in general it is characterized as a buying behavior that is “impulsive, excessive, and uncontrolled” (Dittmar 2005, p. 834). Individuals typically have varying levels of compulsive buying tendencies; when these tendencies exceed a certain point and become a repetitive behavior, the behavior is classified as a clinical condition (Faber and O’Guinn 1992). Among various explanations about the causes of compulsive buying behavior, some scholars have suggested that compulsive buyers tend to be materialistic (Dittmar et al. 1996; Mowen and Spears 1999; O’Guinn and Faber 1989). Compulsive buying behavior is found to be positively related to materialism (Dittmar 2005; Yurchisin and Johnson 2004), and compulsive consumers have stronger beliefs about money’s symbolic ability to enhance self-esteem. Compulsive consumers also tend to attribute more importance to money as a solution to problems (Hanley and Wilhelm 1992).

Given that compulsive buying behavior manifests materialism and that materialism is pervasive in western cultures, it is likely that mortality salience will increase the tendency of compulsive consumption among American consumers. Therefore, we predict:

Hypothesis 1b: Mortality salience will increase compulsive consumption.

Moderating Role of Self-esteem and Ego Involvement in Materials

Although mortality salience exacerbates cultural behavior, TMT studies have suggested at least two moderating effects of mortality salience: self-esteem and domain relevance of a self-esteem target behavior. Self-esteem literature refers to the former as global self-esteem, while the latter deals with contingency of self-esteem (Rosenberg et al. 1995). As discussed earlier, self-esteem can act as a psychological defense system providing protection against existential terror. As for contingency of self-esteem, we employ the concept of ego involvement in materials, which reflects the extent to which one’s self-esteem is contingent on possessions. The following section addresses the moderating role of global self-esteem and contingency of self-esteem with the mortality salience effect.

Global Self-Esteem

Global self-esteem refers to one’s overall or global sense of self-worth (Crocker and Wolfe 2001). Previous TMT studies found that those with high self-esteem were less susceptible to mortality threat, and thus less prone to increase worldview defense. Greenberg et al. (1993) found that a high level of global self-esteem reduces the extent of death-denying defensiveness. Similarly, Harmon-Jones et al. (1997) and Arndt and Greenberg (1999) found

that participants who received bogus positive personality feedback, which supposedly enhanced their self-esteem, showed reduced worldview defense after mortality salience induction compared to participants who received neutral feedback.

The moderating role of global self-esteem is also expected to apply to materialistic consumption behaviors. Consumer behavior literature shows that compulsive consumption and brand name consumption are closely related to self-esteem. Empirical studies have found that compulsive buyers tend to have a higher level of adverse self-awareness (Faber 2004; Faber and O'Guinn 1992), and low self-esteem is found to be an antecedent to compulsive buying (d'Astous 1990; Hanley and Wilhelm 1992). Scholars have also suggested that brand name consumption can be understood as a way of enhancing self-esteem (Herrmann and Huber 2000; Strebinger et al. 1998).

Because self-esteem offers emotional benefits, it can function as a motivational force: People with both low and high self-esteem are motivated to increase their levels of self-esteem or to avoid decreases in self-esteem (Crocker and Park 2004). However, Crocker and Park suggested that although individuals with low and high self-esteem try to enhance self-esteem, they respond differently to self-esteem threats. Although individuals with high self-esteem typically pursue self-esteem through active strategies (e.g., "by emphasizing their abilities, dismissing negative feedback, seeking competency feedback, and becoming more independent"), individuals with low self-esteem employ passive self-esteem strategies (e.g., seeking acceptance "focusing on their social qualities, seeking interpersonal feedback") (Crocker and Park 2004, p. 397).

The difference in self-esteem pursuing styles might be reflected in materialistic consumption, such as brand name consumption and compulsive consumption. Striving for self-esteem through materialistic consumption is more likely adopted by individuals with low self-esteem because materialistic consumption can be seen as a passive strategy of enhancing self-esteem. People who pursue self-esteem through brand name and compulsive consumption do not strive for self-esteem based on self-competency; rather, they try to boost self-esteem by obtaining symbolic prestige conferred by others (i.e., by seeking social acceptance). Crocker and Wolfe (2001) reported that people who base their self-esteem on external sources (e.g., on appearance or on others' approval) tended to have lower global self-esteem, while self-esteem based on internal sources (e.g., competency) was positively related to global self-esteem.

Because TMT suggests that self-esteem is one of the dual defense mechanisms providing protection against existential anxiety, the impact of mortality salience on brand name consumption and compulsive consumption may be more prominent among people with low global self-esteem. That is, we expect people with low self-esteem to engage in brand name consumption and compulsive consumption when they are reminded of their fate (i.e., death):

Hypothesis 2a: The effect of mortality salience on materialistic consumption, specifically brand name consumption, will be greater when self-esteem is low.

Hypothesis 2b: The effect of mortality salience on materialistic consumption, specifically compulsive consumption, will be greater when self-esteem is low.

Ego Involvement in Materials

Values vary across cultures and even within a culture. Therefore, a particular domain of behavior may lead to self-esteem for some, but not for others (James 1890; Coopersmith 1967; Crocker, Luhtanen, Cooper et al. 2003; Crocker and Wolfe 2001). Whether success and failure boost or decrease self-esteem depends on the domains in which one's self-worth or value is contingent, such as appearance, approval, competence, and virtue (Crocker and Wolfe 2001).

Whether or not mortality salience motivates a worldview-defensive behavior depends on the behavior meeting value standards in domains that are important potential sources of individual self-esteem (Ferraro et al. 2005). Previous TMT studies have explored how self-esteem contingency plays a role in the mortality salience effect. For example, Ferraro et al. found that the impact of mortality salience on indulgent food choice depended on whether or not physical appearance was an important source of self-esteem. Although women with high body-esteem (i.e., women whose appearance was an important source of self-esteem) became more self-regulatory and chose to eat fruit; women with low body-esteem became less self-regulatory and chose to eat more indulgent foods. Taubman-Ben-Ari et al. (1999) found that people for whom driving was a source of self-esteem reported increased intention to drive more recklessly after mortality salience than people who were low on driving-relevant self-esteem. Similar results were found by Routledge et al. (2004, Study 2), where willingness to engage in tanning, as a means of symbolic defense against existential terror, depended upon the extent to which appearance was a source of self-esteem and tanned skin was associated with beauty. In sum, whether or not a behavior is influenced by mortality salience depends on the extent to which the behavior is relevant to the domain important to self-esteem.

In the context of materialistic consumption, we suggest ego involvement in material objects as a concept reflecting contingency of one's self-esteem on materialism. Ego involvement in materials is conceptualized as the extent to which acquisition and possession of material objects are important sources of individual self-esteem. Values about money and material objects vary depending on culture and on individual beliefs. Striving for material goods does not enhance self-esteem if one does not see material goods as an extension of the self and as a source of self-esteem. As a result, mortality salience may lead people to seek material objects to the extent that they see possession of materials as a self-esteem source. Therefore, it is construed that ego involvement in material objects will moderate the effects of mortality salience on brand name consumption and compulsive consumption. Based on this reasoning, we hypothesize that:

Hypothesis 3a: The effect of mortality salience on materialistic consumption, specifically brand name consumption, will be greater when ego involvement in materials is high.

Hypothesis 3b: The effect of mortality salience on materialistic consumption, specifically compulsive consumption, will be greater when ego involvement in materials is high.

Method

To test the study hypotheses, we employed data from the 2003 Life Style Study conducted by DDB, an international marketing communications firm. The survey was sent to adult members of the Market Facts Consumer Mail Panel in 2002, chosen using an annual standing-panel quota sample similar to the U.S. adult population in terms of age, gender, income, geography, and other demographics. Of 5,000 questionnaires, usable responses were received from 1,440 males (48%) and 1,581 females (52%), for a response rate of 60.4%. The data set included a wide range of questions encompassing attitudes, interests, opinions, activities, and mass media use. The DDB Life Style Study data have been used in diverse research areas, including communication studies and consumer psychology (Holbert et al. 2004; Shah et al. 2002). This data set is deemed appropriate to explore the effects of unconscious awareness of mortality, not an conscious fear of death because: (1) the survey data were not collected immediately after the 9/11 incident and (2) it is not likely that participants were *consciously* reminded of their own mortality whenever they went shopping during the 12 months before the survey was conducted.

Independent Variable

Mortality salience served as an independent variable in our study. Most previous studies manipulated mortality salience by making participants contemplate their own deaths (Greenberg et al. 1997). Recent studies have shown that a reminder of the September 11 terrorist attack also functions as a mortality salience prime equivalent to traditional mortality salience manipulation (Ferraro et al. 2005; Landau et al. 2004). For example, Landau et al. (2004) reported that thinking about terrorism increased the accessibility of death-related thoughts among participants. In our study, mortality salience was assessed by participant responses to the following statement: "I worry about myself and someone I know becoming a victim of terrorism." Responses on a six-point scale ranged from 1 (definitely disagree) to 6 (definitely agree). Responses were classified into the two groups by mean split: 1–3 for low, 4–6 for high.

When people are reminded of the September 11 tragedy and other terrorist attacks, they tend to worry about becoming victims of terrorism. Because terrorist attacks typically result in many deaths, worrying about becoming a victim reflects awareness of one's own death. In particular, because the question our study used was included in the survey after the September 11 terrorist attack, it is reasonable to assume that the item might have reflected death anxiety provoked specifically by the September 11 attack. To ensure that the measurement reflects death anxiety brought on by this event, we asked 38 undergraduate students (28 females, 10 males) at a major Midwestern university what it would mean to them to become a victim of terrorism. Participants listed words they associated with becoming a victim of terrorism: 14 (36.8 %) students mentioned death-related words, such as "death," "killed," and "died"; 22 students (57.9%) mentioned September 11-related words, such as "airplane," "9/11," and "World Trade Center." In total, about three fourths of participants (76.3 %) listed either "death-" or "9/11"-related words at least once. Although they did not specifically mention death, the remaining one-third listed terrorism-related words (e.g., Middle East) or reported emotional arousal (e.g., fear). The survey results support our contention that the question used measured the degree of fear of death caused by terrorist attacks.

Moderating Variables

Based on the Rosenberg (1965) self-esteem scale, six statements were selected to measure self-esteem: "I have more self-confidence than most of my friends." "I can easily handle whatever tough things come my way." "When I look in the mirror I like what I see." "My opinions on things do not count very much" (reverse-coded). "I am the kind of person who knows what I want to accomplish in life and how to achieve it." "I am very satisfied with the way things are going in my life these days." Responses on a six-point scale ranged from 1 (definitely disagree) to 6 (definitely agree). The items are deemed to be an appropriate measure of self-esteem as they tap the primary contents of Rosenberg's measure, e.g., self-confidence, self-satisfaction, self-respect, and self-deprecation. Cronbach's coefficient alpha for self-esteem was .68. Bagozzi and Yi (1988) and Hair et al. (1998) suggested .6 of Cronbach's alpha score for exploratory purposes of research such as the use of secondary data. Thus, a Cronbach's alpha score of .6 was used as a guideline to assess satisfactory reliability in our study. Responses to the six questions were summed, and the summed scores were used to classify respondents into high and low by the mean score, 23.13.

Ego involvement in materials was measured by combining responses to the following four statements: "The brands I buy are a reflection of who I am." "The clothes I wear reflect who I am as a person." "My home is a reflection of who I am." "The car I drive is a reflection of who I am." Responses on a six-point scale ranged from 1 (definitely disagree) to 6 (definitely agree). High and low groups were classified by the mean score, 14.42. This scale had acceptable internal consistency, with an alpha coefficient of .63.

Dependent Variables

Two dependent variables were tested: brand name consumption and compulsive consumption. Brand name consumption was measured by combining responses to the following two statements: "I try to stick to well-known brand names" and "I prefer to buy products with designer names." Responses on a six-point scale ranged from 1 (definitely disagree) to 6 (definitely agree). The correlation for these two items was .29 ($p = .000$).

Compulsive consumption was measured by responses to three items: "I frequently buy things even when I can't afford them." "I pretty much spend for today and let tomorrow bring what it will." "I am an impulse buyer." Responses on a six-point scale ranged from 1 (definitely disagree) to 6 (definitely agree). The coefficient alpha of the three items was .66.

Covariates

We included income and anxiety as covariates in the analysis to control their potential effects on the dependent variables, because: (1) there might be a linear relationship between income and brand name consumption and (2) numerous studies suggest that anxiety is an emotional cause of compulsive buying (e.g., Christenson et al. 1994; Faber and O'Guinn 1992). Income was measured by asking the following question: "Into which of the following categories does your annual household income fall?" Responses were coded into eight categories from 1 being "under \$20,000" to 8 being "\$100,000 or more." For anxiety, respondents were asked to indicate whether they felt anxious or not during the four-week period before the survey was conducted.

Analysis and Results

A Multivariate Analysis of Covariance (MANCOVA) was conducted to test the three hypotheses. The independent variable and the moderating variables included in the analysis were mortality salience, ego involvement in materials, and self-esteem. Income and anxiety were included as covariates. The influence of these variables was tested on two materialistic consumption dependent variables: brand name consumption and compulsive consumption. Our analysis revealed that both income and anxiety were significant covariates: $F(2, 2591) = 18.539, p = .000$ and $F(2, 2704) = 19.562, p = .000$, respectively. Specifically, income appeared to be related to both brand name consumption, $F(1, 2592) = 18.710, p = .000$, and compulsive consumption, $F(1, 2592) = 11.677, p = .001$. Similarly, anxiety was associated with both dependent variables: $F(1, 2592) = 11.463, p = .001$ on brand name consumption, and $F(1, 2592) = 33.578, p = .000$ on compulsive consumption.

The MANCOVA revealed a significant main mortality salience effect on both brand name consumption and compulsive consumption. As proposed, brand name consumption (BNC) and compulsive consumption (CC) were found to be greater— $F(1, 2592) = 50.137, p = .000$ and $F(1, 2592) = 4.874, p = .027$, respectively—when mortality salience was high ($M_{BNC} = 6.338, M_{CC} = 8.217$) rather than when it was low ($M_{BNC} = 5.758, M_{CC} = 7.915$). Therefore, both Hypotheses 1a and 1b were supported: Mortality salience appears to increase materialistic consumption.

Supporting evidence for Hypothesis 2, which proposed self-esteem's role in moderating the effect of mortality salience, emerged neither for brand name consumption (H2a) nor for compulsive consumption (H2b), which suggests that mortality salience increases brand name and compulsive consumption regardless of self-esteem levels. This result emphasizes the main effect of mortality salience found in testing Hypotheses 1a and 1b.

The proposed moderating effect of ego involvement in materials (Hypothesis 3) was supported for both brand name consumption and compulsive consumption: $F(1, 2592) = 8.509, p = .004$ and $F(1, 2592) = 3.512, p = .061$, respectively. Planned mean comparisons revealed that mortality salience (MS) appears to increase brand name consumption both when ego involvement in materials is high ($M_{MS=low} = 6.185, M_{MS=high} = 7.003, F(1, 2592) = 52.692, p = .000$) and when it is low ($M_{MS=low} = 5.330, M_{MS=high} = 5.673, F(1, 2592) = 8.400, p = .004$). However, further contrast testing suggests the increase at the high ego involvement condition was greater than at the low condition, $F(1, 2592) = 8.509, p = .004$. Similarly, the effect of mortality salience on compulsive consumption seems to be stronger when ego involvement in materials is high ($M_{MS=low} = 8.029, M_{MS=high} = 8.587, F(1, 2592) = 8.763, p = .003$) rather than when it is low ($M_{MS=low} = 7.801, M_{MS=high} = 7.848, F(1, 2592) = .058, p = .810$). Thus, both Hypotheses 3a and 3b were supported.

Discussion and Conclusions

Incorporating the concept of ego involvement in materials (i.e., self-esteem contingency and materialism) with the basic TMT model, our study explored the impact of mortality salience on materialistic consumption (i.e., brand name consumption and compulsive consumption). The results revealed that mortality salience has an impact on materialistic consumption. People with a greater fear of becoming a terrorism victim showed a greater tendency for brand name consumption and compulsive consumption. As mortality salience exacerbates existential anxiety, people use materialistic consumption as a means to buffer such anxiety.

People seem to find comfort in material goods because these goods confer symbolic meaning and allow individuals to transcend their mortal lives through a seemingly enduring cultural artifact. The results evidenced that external, uncontrollable events—such as the September 11 terrorist attack—can have a great impact on materialistic consumption by delivering mortality salience cues.

This study also found that ego involvement in materials indeed moderated the mortality salience effect on brand name consumption and compulsive consumption. People who perceive a threat of terrorism and who see acquisition and possession of material objects in relation to self-concept tended to report greater preference for brand name products and were also more likely to engage in compulsive consumption. On the other hand, contrary to the TMT literature, the effect of mortality salience on consumption behaviors did not differ by level of global self-esteem. Ego involvement in materials has greater explanatory power in predicting mortality salience effects on materialistic consumption than does global self-esteem.

This study extends the application of TMT to consumer behavior. Testing mortality salience effect with secondary survey data, the study evidences that a mortality salience effect exists outside a laboratory. In particular, our findings suggest the critical role of self-esteem contingency on mortality salience. Rindfleisch and Burroughs (2004) argued that future TMT research needs to explore why and when some individuals look to material objects—rather than to other cultural beliefs, such as God or country—when they face natural disasters or acts of terror. Our study partially answers this call by providing evidence that the desire for material objects in response to death anxiety depends on the extent to which self-esteem is contingent upon acquiring and possessing material objects.

Implications

The results of our study provide several practical implications. The study poses ethical challenges to marketers and advertisers. In a speech responding to the September 11 terrorist attack, President Bush encouraged Americans to go shopping and it appears that Americans complied with his call (Arndt et al. 2004a). Although encouraging consumption benefits the economy, it is questionable whether or not it resulted in pro-social consequences at the individual level. Our findings indicate that when people are reminded of their mortality they engage in consumption more compulsively and conspicuously. These consumption behaviors could be accompanied by negative side effects; for instance, after September 11 people tended to increase discretionary spending and consumer debt climbed to the highest level since 1987 (Hallinan 2002). Although such a reaction might be necessary to a certain degree to maintain psychological well-being, it is not productive and serves merely as a symbolic defense rather than a fundamental solution to anxiety.

The potential negative consequences of mortality salience on consumption behavior challenge the responsibility of advertisers and consumer educators. To guide consumers to behave in a more rational way, consumer educators should make an effort to provide consumers a balanced view of consumption. By educating consumers regarding the relationships between behavior and mortality salience cues, consumers should be better equipped to critically reflect upon their consumption behaviors. Another preventive action might be to launch public service announcement (PSA) campaigns to encourage consumer perception of pro-social behaviors as self-esteem-enhancing behaviors. For example, during a national crisis—such as terrorist attacks or natural disasters—PSAs linking pro-social

behaviors, such as donations and helping others in need, with the image of being good citizens could be aired on television, on radio, and online venues. If such campaigns successfully help consumers perceive pro-social behaviors relevant to self-esteem, pro-social behavior could be promoted. In fact, previous research found that, by priming the importance of certain cultural worldviews to self-esteem, mortality salience can increase the behaviors reflecting the primed cultural worldview (Routledge et al. 2004). Therefore, PSAs which prime pro-social behaviors in conjunction with self-esteem may induce more desirable behaviors in response to mortality salience.

Future Research and Study Limitations

The results of this study suggest that future consumer behavior research should pay more attention to situational cues. Although past and current consumer behavior research places much emphasis on individual characteristics (such as psychographics or demographic factors), this study extends our understanding of consumer behavior by providing explanations about how cues in social context (e.g., terrorism) can activate consumption motivation. The complexity of modern society requires incorporating situational factors to fully understand consumer behaviors.

Future studies can also extend the application of TMT to other consumer behavior domains; for example, studying the effect of mortality salience on consumer ethnocentrism could be a promising endeavor. As mortality salience cues increase ethnocentrism and prejudice toward other social groups (McGregor et al. 1998), events such as terrorist attacks could intensify ethnocentrism among consumers. In fact, September 11 stimulated a climate of “buy American” among consumers (McKegney 2001), and advertisers took advantage of this mood with patriotic advertising campaigns (Lee et al. 2003). Future studies could explore consumer ethnocentrism by employing TMT.

Another goal of future research is to distinguish the effect of state mortality salience from the effect of trait mortality salience. Most TMT studies have examined the effect of a temporary boost in mortality salience (i.e., state mortality salience), but personality literature suggests that there could be stable individual differences in mortality salience (Abdel-Khalek 1997; Loo 1984; Weems et al. 2004). Measures—such as the death anxiety scale (Templer 1970), the death depression scale (Templer et al. 1990), and the existential anxiety scale (Weems et al. 2004)—tap individual differences in anxiety concerning death. Although our measure of mortality salience captured death anxiety aroused by the September 11 terrorist attack, our study was cross-sectional, not longitudinal. All Americans were exposed to the tragedy, but because there could be individual differences in responses to the tragedy depending on trait death anxiety, our measure of mortality salience could reflect both state *and* trait mortality salience. By distinguishing state and trait mortality salience, we can better understand the effects of major social incidents and natural disasters on consumption behaviors.

In addition, the insignificant effect of global self-esteem requires further speculation. The function of global self-esteem and the contingency of self-esteem may differ depending on the type of target behavior. Future studies should further explore the circumstances under which global self-esteem and contingency of self-esteem function as an anxiety buffer separately or together.

A limitation of our study relates to the use of secondary data, which restricts the development of ideal measures. For example, mortality salience in our study was measured

indirectly rather than directly by a single item which captured the extent to which people worry about being a victim of terrorism. One may argue that the finding of our study is attributed to the effect of worries or emotional insecurity rather than to mortality salience. However, the present study's results are convergent with the existing TMT literature and, along with our supplementary data, support our interpretation of the findings as mortality salience effects. Using secondary data enabled us to test TMT on real consumption behaviors, which was one of the main purposes in this study. This goal could not otherwise have been achieved.

Another limitation concerns causality of the findings. As we relied on cross-sectional survey data, not an experiment, the causal relationships implied in this study should be interpreted with caution. Additional evidence from an experimental or longitudinal study will confer confidence in the causal relationships implied in this study.

As one of few attempts to empirically explore mortality salience effects on consumer behavior, this study not only adds empirical evidence to the body of TMT literature but also strengthens theory validity by testing it under field conditions. This showed that mortality salience effects do exist beyond a laboratory and that in real-life situations materialistic consumption is a way of dealing with anxiety. By acknowledging the potential negative effect of mortality salience effect on consumer behavior, we call for future studies to delve into preventive solutions empirically and to address the unresolved questions and issues described above.

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