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More than words: Contemplating death enhances positive emotional word use ☆

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ABSTRACT

Four experiments, three cross-sectional and one longitudinal, tested the hypothesis that contemplating one's own death produces a shift toward the use of positive emotion words. Participants who wrote about their own death, compared with those who wrote about dental pain, uncertainty, and meaningless, used more positive emotions words in their narratives (Experiments 1a and 1b). Experiment 2 found that contemplating one's own death enhanced positive emotional word use across different mortality salience manipulations and remained consistent over the course of a 6-day study. Experiment 3 showed that the more positive emotion words participants used when contemplating their mortality, the greater worldview defense they showed. These results suggest that word use offers insight into how the mind responds to the salience of mortality.

1. Introduction

Words and death are among the most common and inevitable parts of life. But they are more than banal and fated parts of human existence—word use and awareness of death offer insight into the architecture of the human psyche. Most people are unaware of how their word use reflects their personality and current life situation. Humans, while aware of their own mortality, are often oblivious to the fact that a wide range of their thoughts and behaviors may protect them from the potential for debilitating anxiety that accompanies awareness of death's inevitability (Pyszczynski, Greenberg, & Solomon, 1999; Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004).

The present work sought to demonstrate that contemplating one's own death promotes the use of positive emotion words. Grounded in Terror Management Theory (TMT), our first hypothesis was that when mortality is made salient by instructing people to consider their own death, there would be an increase in positive emotion word use in a writing task. Our second hypothesis was that compared with contemplation of a topic unrelated to death, people would increase positive emotional word use each time they contemplate their own death (i.e., continual reoccurrence of defensive reactions). Our third hypothesis was that greater positive emotion word use might be a healthy strategy in the immediate aftermath of contemplating one's death, but as time goes on, other immature, coping strategies might be activated to deal with unresolved death anxiety.

1.1. Words as fingerprints into the motivated mind

Freud (1989) believed that the words people use reveal critical information on the inner workings of the psyche. Cognitive psychologists have shown that words are "embodied" in that their meaning is intimately linked with motor movements (Siakaluk, Pexman, Aguilera, Owen, & Sears, 2008). Social psychologists have shown that word choice has substantial effects on social relationships and well-being (e.g., DeWall, Pond, Campbell, & Twenge,

☆ Findings from the Experiment 2 data set were published in *Personality and Social Psychology Bulletin* (Lykins, Segerstrom, Averill, Evans, & Kemeny, 2007) and the Experiment 3 data set were published in the *Journal of Personality and Social Psychology* (Niemiec et al., 2010), but those investigations did not include any analyses regarding word use. Todd B. Kashdan was financially supported by the Center for the Advancement of Well-Being, George Mason University.

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2011; Pennebaker, Mehl, & Niederhoffer, 2003). These findings suggest that word use relates to a variety of psychological processes.

Relatively little research, however, has investigated how acute awareness of one's mortality influences positive emotion word use. TMT proposes a framework for how the mind defends itself against the dread of contemplating an inevitable demise (Pyszczynski et al., 1999). In the short term, *proximal defenses* such as suppression attempts push death-related thoughts outside of conscious awareness. When these proximal defenses are unsuccessful, existential dread manifests at the unconscious level. *Distal defenses*, such as affirmation of one's cultural worldview, serve as another line of defense to protect against the accessibility of death-related thoughts. A cultural worldview provides an explanation for existence and a set of values about how to behave in a socially acceptable way. By acting in accordance with the dominant values of one's culture, such as showing favoritism for one's in-group and hostility toward one's out-group, people can feel a sense of security and stability that in turn, temporarily wards off the threat of death (Burke, Martens, & Faucher, 2010).

The current experiments tested the hypothesis that when people are confronted with a conscious reminder of their eventual death, their word use would shift to include positive emotion words. Although the original TMT formulation does not draw a connection between positive word use and defensive reactions to death reminders, prior work suggests that mortality salience causes people to become attuned to positive emotional information and direct their attention away from painful stimuli. People who contemplated their own mortality, compared with those who contemplated dental pain, completed more word fragments with positive emotion words and gave greater weight to positive emotion in their judgments of word similarity (DeWall & Baumeister, 2007). When people were primed with death-related words (vs. pain-related words), they reported a more positive evaluation of their life (King, Hicks, & Abdelkhalik, 2009). Although prior investigations did not examine the effect of mortality salience on word use, they suggest that mortality salience increases attunement to positive thinking while shifting attention away from threatening stimuli.

1.2. Word use and coping with threat

Emerging evidence suggests that words provide useful information on how people cope with threatening events. For instance, as people grow older, they face more reminders that their life will end. Increased awareness of the end of one's life causes people to shift their focus to positive emotional stimuli (Charles, Mather, & Carstensen, 2003), with a premium on repeating activities that successfully increased positive emotions in the past (Carstensen, Isaacowitz, & Charles, 1999). If people change their word use as the awareness of their death becomes increasingly salient, then people may use more positive emotion words as they grow nearer to the end of their lives. This is precisely the case: people use more positive emotion words in their narratives as their age increases (Pennebaker & Stone, 2003). Therefore, we predicted that young people would show increased use of positive emotion words when their own mortality is the focus of their attention.

1.3. Implications of positive emotion word use on distal defensive responses

In response to mortality salience, the use of positive emotion words may be associated with an increase in immature defensive strategies to cope with the threat of death. We tested this possibility in Experiment 3 by having participants evaluate essays that were ostensibly written by foreigners who immigrated to the United States and expressed positive or negative comments about the United States. We predicted that positive emotion word use would interact with mortality salience condition to predict worldview defense, such that a pro-US bias would be stronger among those using a greater frequency of positive words when contemplating their own death.

1.4. Experiments 1a and 1b

Experiments 1a and 1b provided an initial test of the hypothesis that mortality salience produces a shift toward positive linguistic emotional word use. Experiment 1a compared mortality salience with a standard control condition used in TMT research, namely contemplation of experiencing dental pain. Experiment 1b supplemented the dental pain condition with two other control conditions by having some participants contemplate uncertainty in their lives and others contemplate meaninglessness.

2. Method

2.1. Participants

Participants in Experiment 1a ($N = 271$) and 1b ($N = 170$) were undergraduates. All participants received partial course credit for their participation. In Experiment 1a, neither age nor gender were recorded, but the sample was taken from introductory psychology courses in which students are approximately 19 years old and approximately 70% are women. In Experiment 1b, average age was 18.73 years and 53.5% were women.

2.2. Materials and procedure

Participants gave informed consent and then completed a series of questions ostensibly measuring their projective life attitudes, which in reality was the mortality salience manipulation. In Experiment 1a, participants were assigned randomly to one of two conditions: mortality salience or dental pain salience; used frequently in the TMT literature (Burke et al., 2010). In Experiment 1b, we included two additional conditions used by TMT researchers (e.g., Landau, Greenberg, Solomon, Pyszczynski, & Martens, 2006): uncertainty salience and meaninglessness salience.

Participants assigned to the mortality salience condition wrote two brief narratives in response to prompts about their own death ("Please briefly describe the emotions that the thought of your own death arouses in you," "Jot down, as specifically as you can, what you think will happen to *you* as you physically die and once you are physically dead"). Parallel prompts were used in the dental pain (e.g., "Please briefly describe the emotions that the thought of dental pain arouses in you"), uncertainty salience (e.g., "Please briefly describe the emotions that the thought of your being uncertain arouses in you"), and meaninglessness salience (e.g., "Please briefly describe the emotions that the thought of your being meaningless arouses in you") conditions.

To analyze the content of the narratives, we used the Linguistic Inquiry Word Count program (LIWC; Pennebaker, Booth, & Francis, 2007). The LIWC is a well-validated program that counts the percentage of words in a body of text that correspond to various categories (Mehl, 2006). The program uses an internal default dictionary comprised of several word categories according to how much a group of words relate to a particular topic. The LIWC word categories have adequate psychometric properties (Pennebaker et al., 2007). Examples of positive emotion words include "happy" and "good".

3. Results and discussion

Using hierarchical multiple regression analyses, we entered as a covariate the total number of words used in narratives. We also