

He Who Dies with the Most Toys Wins: The Effect of Death Anxiety on Environmental Behaviours

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May 2011

Introduction

In his Pulitzer Prize winning *Denial of Death* (1973), Ernest Becker argued that human culture is a symbolic defence against unconscious anxieties caused by the terror of ultimate death. Subsequently, Terror Management Theorists developed an empirical program to test how human behaviour is affected when death anxiety is aroused outside one's focal attention.

Fear of death may be aroused by external events: for example theorists have studied the effects of death anxieties following the 2001 attacks on the US World Trade Centre and Pentagon (Pyszczynski, Solomon, & Greenberg 2003). Such effects included increased patriotism and hostility towards outsiders.

This paper deals with another external trigger of death anxiety. It was motivated by the idea that messaging on environmental problems

may elicit unconscious death anxieties, which foster counterproductive behaviours such as excessive consumption that exacerbate environmental degradation. Recent messaging on climate change and general environmental degradation certainly embody dire warnings. (See for example Hamilton, 2010.) Much messaging, however, focuses on collective rather than individual threats, and presents the threat as one primarily affecting future generations (Fritsche, Jonas, Niesta Kayser, & Koranyi, 2010). Thus is it not clear if climate messaging could trigger death anxiety, and reportedly this has not yet been studied (Dickinson, 2009). Feinberg and Willer (2011), however, found evidence that dire climate change messages threaten just-world beliefs, resulting in people being less willing to counteract climate change.

Given the paucity of research on whether environmental messaging triggers death anxiety, this paper focuses on the second part of the equation by examining evidence that death anxiety may contribute to humans engaging in materialistic consumption and other unsustainable practices. In the first section, I describe Terror Management Theory (TMT) and its tenets, including the psychological structures used to manage death anxiety, and the defence mechanisms invoked when these structures are threatened. While defence mechanisms include those invoked when death thoughts are in focal attention, the main interest here is what happens

when such thoughts are not in one's consciousness. In the second section, I examine findings on whether death anxiety affects environmental behaviours. I conclude with suggestions for further research.

Terror Management Theory

Animals have an instinct for self-preservation. Unlike other species, humans are self-conscious: they realise their own death is inevitable. Becker called this the "existential paradox" (1973, p. 26). He claimed that humans create a symbolic identity for themselves, allowing humans to view themselves as outside of nature – even to contemplate the realm of the universe. Yet humans are definitively part of nature: they are mortal and ultimately mere "food for worms" (p. 26). Thus humans' search for symbolic significance is ultimately meaningless. This existential paradox, Becker argued, leads to a terror of death. Because the inevitability of death exposes the meaninglessness of one's symbolic self, this terror is quite unlike other fears that humans experience, such as fear of pain or social rejection. The effects of death anxiety are not found to be replicated when other fears are induced (Burke, Martens, & Faucher, 2010).

Terror Management Theory (TMT) posits that certain human behaviours arose to enable humans to manage this terror of death. As humans evolved, they created an anxiety buffer, which provided a

sense of immortality by allowing humans to regard themselves valuable players in a meaningful world. This anxiety buffer has two key components: creating meaning through belief in a cultural worldview; and creating a sense of value through self-esteem, which is maintained by living up to the standards of one's cultural worldview (Pyszczynski, Greenberg, & Solomon, 1999). A cultural worldview may offer immortality literally, such as is found in religions. Typically, cultural worldviews offer symbolic immortality: the sense of being part of something that transcends the individual, such as the family or other ongoing institutions (Pyszczynski, Greenberg & Solomon, 2000). This may, of course, include pro-environmental behaviours, such as being part of institutions that foster ecological stewardship.

These effects of death anxiety operate primarily at the unconscious level, and are acquired as a child develops. Solomon, Greenberg, and Pyszczynski (2004) argued that as a child grows, parental affection becomes more contingent on the child engaging in socially acceptable behaviours and refraining from unacceptable behaviours. If a parent withdraws affection when the child engages in socially unacceptable behaviour, the child connects this to the prospect of being abandoned. Thus unacceptable social behaviour becomes associated both implicitly and explicitly with anxiety and insecurity, and socially acceptable behaviour becomes associated with feelings of security. This socialisation occurs well before children can

understand intellectually or emotionally why their parents are placing restrictions on their behaviour. As children grow, they become aware that their parents are mere mortals who cannot provide them with security forever. The connections between their behaviour and feelings of security are then transferred to the culture at large. As adults, they will then gain a sense of security by adhering to the standards of value imparted by their cultural worldview.

Humans may be confronted with thoughts of death that quite conscious, such as those arising from a health scare, an accident, or a natural disaster. TMT posits that when people are consciously aware of their own mortality they invoke proximal defence mechanisms, including suppression of such thoughts or rationalisation to deny vulnerability. Unconscious death thoughts, however, invoke distal defence mechanisms, which are not rationally related to the inevitability of death, and involve clinging to a cultural worldview and striving for self-esteem (Pyszczynski et al, 2000).

Much empirical work in TMT focuses on two hypotheses. The anxiety-buffer hypothesis states that death anxiety and behaviours arising from this should be reduced by strengthening self-esteem. The mortality salience hypothesis states that being reminded of one's mortality should lead to increased need for the psychological structures that protect one against death anxiety. Thus mortality

reminders, it is hypothesised, should lead to increased defence of one's worldview, including more negative evaluations of ideas and people that threaten this worldview, and more vigorous striving for self-esteem (Pyszczynski et al, 1999; Arndt & Vess, 2008).

This paper focuses on studies where mortality salience (MS) is induced. Four methods of inducing MS have been described: (a) subjects writing about what will happen when they die and the emotions this arouses; (b) using subliminal death primes where death-related words are flashed on the screen during another task; (c) surveying subjects using death-related questionnaires; and (d) viewing an incident or reading a story with death themes. Apart from in the subliminal priming method, testing incorporates a subsequent delay and distraction task to remove death thoughts from focal attention. This, according to TMT, enables distal defence mechanisms to be produced (Burke et al. 2010).

TMT experiments have investigated effects of MS induction on a range of outcomes, some relevant to worldview defence and others to self-esteem striving. Examples of worldview defence effects include increased hostility towards out-groups, greater deference towards cultural icons and greater conformity. Effects on self-esteem striving depend on what sources of self esteem are important for the individual (for example body image, fast driving) with MS induction

found to increase the need for this source (Solomon et al., 2004). Given that some people gain self-esteem through their pro-environmental behaviours (Vess & Arndt, 2008), this may shape outcomes, as discussed below.

Mortality Salience and Environmental Behaviours

Is there evidence that mortality salience induces materialistic behaviours? Outcomes of MS induction will depend on a person's cultural worldview and the standard of value that this embodies. Many western cultures emphasise accumulation of money and material consumption as indicators of success, and according to TMT, people who adhere to this may strive for self-esteem through acquiring wealth and purchasing material goods.

Evidence linking MS and materialistic intentions was found in two US studies by Kasser and Sheldon (2000). In the first study, following a mortality salience (MS) induction, subjects reported on their expected financial status 15 years into the future. Compared with the control group, the MS-induced group reported significantly greater expectations in terms of their overall financial worth and their spending on pleasure activities, but not significant differences in the value of possessions.

In their second study, following an MS induction, subjects were tested on responses to a resource dilemma: a "tragedy of the commons"

situation where individual interests conflicted with the common good (Hardin, 1968). Subjects were asked to bid against others to harvest timber in a national forest, and were told that continual large bids could lead to the forest disappearing. Subjects were tested for two constructs, both detrimental to managing resources sustainably: greed, the desire to acquire personal resources at the expense of the common good; and fear, the reluctance to contribute to the common good because others may not do so (Sheldon & McGregor, 2000). Kasser and Sheldon found that MS-induced subjects did not exhibit stronger fear, yet exhibited stronger greed, resulting in them bidding to harvest a significantly higher amount of timber. Thus MS-induced subjects wanted to acquire more than others in a situation where greed could affect not only the common good, but also their long-term income source from timber harvesting. Thus the “tragedy of the commons” dilemma appears to be intensified by MS.

The researchers postulated that MS might affect only individuals who were already oriented towards materialistic goals, that is, individuals with an extrinsic orientation – as opposed to an intrinsic orientation, where self-acceptance and community are valued. Kasser and Sheldon found no evidence, however, that this orientation moderated the MS effects on financial expectations or on greed in the resource dilemma.

MS may induce different types of motivation. Maheswaran and Agrawal (2004) argued that MS induces defence motivation, the desire to hold attitudes consistent with one's beliefs and with one's perceived material interests, and/or impression motivation, the desire to be socially acceptable. Impression motivation is more closely linked to the desire for self-esteem. People who are impression motivated will be more attuned to the opinion of others. Those who are predominantly defence motivated are more likely to continue with existing practices, and are less susceptible to advertising appeals. These two motivations may come into conflict. To illustrate this, Maheswaran and Agrawal cited the example where a foreign product is seen to have higher status, for example German cars. Worldview defense typically leads people to prefer local products, because it invokes patriotic considerations. Self-esteem striving should lead to preferences for higher status goods.

In terms of environmental behaviours, people whose beliefs or interests are in accordance with environmental sustainability could possibly resolve this conflict through greater consumption of "environmentally friendly" goods. The effect of MS on such consumption remains to be tested.

Can Mortality Salience Induce Pro-Environmental Behaviour?

Links between MS and materialism are premised on people deriving their self esteem from material consumption. While materialism is a dominant value in Western societies, pro-environmental behaviour is also increasingly valued. Thus many individuals derive their self-esteem by living up to the standards of a worldview that incorporates environmental sustainability. To investigate how the source of self esteem affects behaviour towards the environment, Vess and Arndt (2008) tested subjects' concerns about adverse environmental impacts following an MS induction. Subjects were also evaluated on to what degree they based their self-esteem on pro-environmental behaviours, determined from the Environmental Contingencies of Self-Worth (ECSW) scale. Subjects with high ECSW reported significantly higher environmental concern following MS induction, compared with controls, while subjects with low ECSW reported significantly lower environmental concern.

The influence of MS on pro-environmental behaviours may also be moderated by salience of pro-environmental norms. Fritsche et al. (2010) conducted a MS induction along with priming on either pro-environmental or anti-environmental norms. Their subjects were significantly more likely to express pro-environmental intentions when both mortality and pro-environmental norms were salient. This suggests that environmental messaging may be more effective if it is mindful of the underlying environmental norms presented.

Cross-Cultural Effects of Mortality Salience

Most research of MS effects has been conducted in the USA, where individualism dominates. Maheswaran and Agrawal (2004) argued that while people in individualist cultures tend to be motivated by self interest and material success is a dominant norm, people in collectivist cultures will tend to favour group affiliations, perhaps valuing them higher than material success. They posit that MS in collectivist cultures may induce behaviours that are more protective of an individual's family and its financial security, such as avoiding excessive consumption.

Conclusion

The findings on whether mortality salience induces materialistic consumption and other environmental damaging behaviours are mixed, particularly as they depend on cultural values and on individuals' sources of self esteem. Inducing pro-environmental norms may ameliorate the effect on consumption. Further research is needed to investigate whether messaging on the dire consequences of environmental damage, particularly around climate change, induces death anxiety. The effect of mortality salience on environmentally friendly consumption also needs to be investigated.

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