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Evidence of mortality salience and psychological defenses in bottled water campaigns

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ABSTRACT

Environmental campaigns provide information to encourage people to alter their behaviors but with mixed success. Terror Management Theory (TMT)—and the influence of mortality reminders—offers a useful framework for understanding environmentally significant behaviors, and provides critical insights for developing more effective environmental communications. TMT indicators guided our analysis of Canadian corporate, pro-bottled water advertising, and public, anti-bottled water campaigns. We found that pro-bottled water advertisements had a greater capacity to manage death anxieties because they better support the audiences' self-esteem, provide the audience with opportunities to engage in worldview defense, and symbolically extend the consumers' perceived lifespan.

1. Introduction

Pro-environmental campaigns, intended to minimize environmental harm or maximize ecological health, rely on information-driven initiatives that rarely generate sustained behavioral changes (Kollmuss & Agyeman, 2002; Steg & Vlek, 2009). The assumption has been that awareness leads to behavior changes (Dickinson, 2009; Monroe, 2003). But this information-rationality assumption is problematic: behavioral choices are driven by factors that extend well beyond simple information acquisition and assessment (Kahneman, 2011).

Pro-environmental campaigns need a more nuanced understanding of human behavior to generate sustained behavior change, particularly when their messages must compete with opposing private sector messages. Corporate advertisements promote products and services with messages that target consumers' needs, desires, interests, feelings, and cultural identity (Kyunghhee & Yoon, 2012). Advertisements connect products to individuals' self-esteem and cultural worldviews. This connection—of social psychology, messaging and consumption—helps explain why

consumers continue to make environmentally undesirable choices despite an abundance of pro-environmental information.

Social psychology's Terror Management Theory (TMT) offers a useful framework for exploring consumption messages and consumers' choices. TMT researchers argue that people's efforts to repress death anxiety—negative emotions such as fear and anxiety felt when we are reminded of our mortality—fundamentally influence behaviors (Pyszczynski, Solomon, & Greenberg, 2015). People actively protect and maintain their worldviews (culturally derived beliefs about reality) and their self-esteem (sense of personal value) to repress their death anxiety (Solomon, Greenberg, & Pyszczynski, 2004).

While there is extensive research on TMT and environmental preferences, we offer a new application of mortality salience (MS)—triggered when people are explicitly or implicitly reminded of their time-limited existence—on water consumption decisions. We focus on bottled water consumption: in 2013, Canadians bought 2.4 billion liters of bottled water. By 2018, that amount is expected to rise to three billion liters worth CAD\$3.3 billion (Euromonitor, 2014). The bottled water industry is criticized primarily for its environmental impacts, its association with health issues, and high costs (Gleick & Cooley, 2009). Bottled water consumption studies report diverse and inconsistent factors, such as lifestyle factors, demographics and health and safety concerns to influence bottled water consumption. Additionally, while people claim to drink bottled water because they prefer the taste (Dupont, 2005; Dupont, Adamowicz, & Krupnick, 2010; Jones et al., 2007; O'Donnell & Rice, 2012), in blind taste tests tap water regularly wins, or people cannot tell the difference, between these beverages (Royte, 2008; Wilk, 2006). Connections between bottled water, health, self-esteem, and culture suggest that a TMT analysis of bottled water communications might provide a more fundamental and complete understanding about Canadians' water consumption decisions.

In our research, we recognize that the pro-bottled water campaigns will have the financial capacity to vastly outspend the municipal or non-governmental campaigns. We focus not on that economic capacity but on the content and approach that is both explicit and implicit in the campaign materials. We explored whether mortality salience (MS) reminders and terror management indicators were identifiable in Canadian anti- and pro-bottled water campaign documents. We then considered how efforts to repress MS might influence Canadians' drinking water decisions. Finally, we proposed how these insights might generate more effective pro-environmental messages to support pro-tap water campaigns given the significant environmental and social issues these campaigns seek to address.

2. Background and literature

2.1. Corporate (pro) bottled water campaigns

Corporate advertisers attempt to alter consumers' thoughts, feelings, and actions about a product to make it ever more desirable (Dolnicar, Hurlimann, & Grun, 2014;

Kyunghee & Yoon, 2012). Advertisements do not just include basic information, such as price, quality and reputation. Messages are also based on cultural, social, and psychological research to target consumers' implicit desires, needs, and interests (Hirschman & Thompson, 1997).

But consumers do not just passively absorb the advertisements' messages; they use diverse reference "frames" to interpret and process messages' meanings (Hirschman & Thompson, 1997). Reference frames may inform a sense for what is a "good life," what constitutes a desirable appearance, and opinions on recognized celebrities (McCracken, 1989).

And products are not simply of practical and commercial value; they also embody cultural meanings that people "consume" to inform their self-identity (Choi, Kwon, & Lee, 2007). In a well-crafted advertisement, meaning is attributed to goods, services, and ideas through the cultural symbols affixed to the product (Kyunghee & Yoon, 2012).

Bottled water advertisements and branding effectively transfer meaning to develop and direct consumers' product associations (Dolnicar et al., 2014). For example, Perrier's brand is associated with healing properties and high social status. This connection originated from its historical association with European mineral spas, waters that were perceived to have healing powers for the affluent leisure class (Wilk, 2006). In North America, these associations were extended through advertisements that linked their product to sophisticated European culture, lifestyles, and luxury. Perrier has also sponsored the New York City Marathon, which connected their product to the American ideals of human health and wellbeing, perseverance, and public success (Royte, 2008).

Effective meaning transfer allows Perrier's consumers to internalize these associations of health, wealth, class, and status as part of their personal identity. Thus, meaning transfer can make any product—including lowly municipal water infused with carbon dioxide and repackaged as a luxury accessory of the wealthy and healthy—immensely desirable. Corporate bottled water campaigns have shown the power of emotional appeals and branding (Dolnicar et al., 2014; McKenzie-Mohr, 2000).

2.2. Public (anti) bottled water campaigns

As bottled water sales increased, anti-bottle campaigns have been designed to discourage bottled water consumption. These campaigns are much narrower in scope and message diversity. They are more likely to focus on facts about the negative environmental impacts and bottled waters' higher cost. Underlying these campaigns is the assumption that more information generates greater awareness and a corresponding increase in pro-environmental behaviors, i.e., fewer bottles purchased (Kollmuss & Agyeman, 2002). For example, the Canadian Federation of Students (2014a) stated about Canadians' bottled water consumption "...we believe once people understand the issues and are given a chance to make a decision about them, they'll back the tap." But research suggests that these information-driven

campaigns do not effectively generate behavior changes (Kollmuss & Agyeman, 2002; McKenzie-Mohr, 2000; Monroe, 2003; Steg & Vlek, 2009).

In response, we draw on social psychology's Terror Management Theory (TMT), which has shown that individuals' unacknowledged death anxiety may be an unrecognized barrier to environmentally sustainable behavior change. TMT researchers have shown that efforts to repress death anxiety can motivate excessive material consumption and brand affiliation (Arndt, Cook, & Routledge, 2004a; Das, Duiven, Arendsen, & Vermeulen, 2014; Kasser & Sheldon, 2000). By extension, if death anxiety motivates bottled water consumption, this unrecognized factor could block the efforts to shift consumers away from bottled water consumption and toward tap water use. Assessing bottled water consumption using TMT will deepen and extend our understanding of Canadians' consumption decisions.

2.3. Terror Management Theory and environmental behaviors

Based on the work of anthropologist Ernest Becker (1973), Terror Management Theory has empirically shown that efforts to repress our death anxiety influences motivation and ultimately behavior (Pyszczynski, Greenberg, & Solomon, 1997; Solomon et al., 2004). Terror Management Theory research has been used in North America, Europe, and Israel cases to explain both sustainable and unsustainable human behavior including: pro-environmental attitudes (Fritsche, Jonas, Kayser, & Koranyi, 2010); environmental concern (Vess & Arndt, 2008); species conservation and climate change responses (Dickinson, 2009); human motivation to protect the environment (Fritsche & Hafner, 2012); and material consumption (Arndt, Solomon, Kasser, & Sheldon, 2004b; Das et al., 2014; Fransen, Fennis, Pruyn, & Das, 2008; Fritsche et al., 2010). While scholarly debate exists about the relative influence of mortality salience, self-esteem, and uncertainty in decision-making, TMT provides a useful framework for examining environmental outcomes (Crocker & Nuer, 2004; Echebarria-Echabe, 2013; van den Bos, Poortvliet, Maas, Miedema, & den Ham, 2005).

According to established TMT research, the environmental outcomes mentioned above emerge because people manage their death anxieties using two cognitive defense systems (Pyszczynski, Greenberg, & Solomon, 1999). *Proximal defenses* immediately remove death thoughts from consciousness through rationalization, denial, and distraction mechanisms. These defense mechanisms provide a sense of security by pushing death thoughts into a distant and undefined future (Pyszczynski et al., 1999).

But even once removed from consciousness, our unconscious death thoughts remain highly accessible, percolating just below the surface. These implicit mortality reminders activate our *distal defenses* (Solomon et al., 2004). Distal defenses motivate us to strengthen and maintain our self-esteem, identities, and commitments to a particular worldview (Arndt & Solomon, 2003). Worldviews provide us with an established structure to guide our daily beliefs and actions—philanthropy, creative expression, parenthood—that we believe will help to extend our existence beyond a

limited, physical lifespan. To achieve this “immortality,” individuals must adhere to the standards valued by their worldview culture.

A dominant western worldview associates material wealth with self-worth and a meaningful and happy life. Within this worldview, death fears and consumers’ consumption behavior have adverse environmental consequences (Kasser & Sheldon, 2000). Individuals respond to mortality reminders by accumulating wealth, seeking self-esteem and security in this life, and symbolic immortality after death (Das et al., 2014). The result is ever greater demands on ecosystems and environmental degradation.

Researchers have shown that both explicit and implicit mortality salience (MS) primes influence material consumption (Ferraro, Shiv, & Bettman, 2005; Fransen et al., 2008). Explicit MS initiates proximal death anxiety defenses, and motivates consumers to buy items that will potentially improve their health or lengthen their lives. When MS is implicit, distal defenses make people more likely to make purchases that support their cultural worldview and maintain their self-esteem, regardless of the products’ ability to influence health (Arndt et al., 2004b; Ferraro et al., 2005). McCabe, Vail, Arndt, & Goldenberg (2014) demonstrated the difference between proximal (conscious) and distal (unconscious) defenses to mortality salience vis-a-vis bottled water. Participants with conscious mortality awareness rated bottled water more favorably and drank more if a medical professional endorsed it. When death is on our minds, the assumption is that we generally do what is best for our health by listening to the medical expert. Participants whose mortality awareness had time to recede to unconsciousness—because of a delay task in the testing—were more likely to find celebrity endorsement of bottled water compelling. With their mortality awareness successfully shunted away, participants were more likely to try to emulate celebrity norms. But the story of mortality salience and the environment is not always simple: other studies have shown that MS can also produce stronger environmental compliance and identity (Fritsche et al., 2010; Vess & Arndt, 2008). Our research contributes to this work on TMT and environmental outcomes by examining the evidence of mortality reminders and associated defenses in bottled water campaigns.

3. Methods

We identified MS reminders in Canadian anti- and pro-bottled water campaign documents and then considered how consumers’ efforts to repress mortality awareness might influence bottled water consumption. For methodological details about our data collection and organization process, please refer to [Appendix A](#). We used content analysis to assess data drawn from websites, photographs, and videos that revealed implicit and explicit meanings (Krippendorff, 2013; White & Marsh, 2006). Content analysis was the best analytical method because we could identify and disaggregate the marketing appeals used to target consumers’ values and purchase incentives. Our findings and discussion provide insights about bottled water media messages and a TMT assessment of how consumers may read these messages.

4. Discussion

Our data findings are presented in [Appendix B](#). We found that pro-bottled water campaigns focused mainly on consumers' safety perceptions, water aesthetics, and lifestyle factors while generally acknowledging connections between self-esteem, health, and culture (Dupont, 2005; Jones et al., 2007; York, Barnett, Wutich, & Crona, 2011). We argue that these connections hint that mortality reminders and death anxiety underpin bottled water consumption. For example, safety and aesthetics related to consumers' explicit and implicit risk assessments. The lifestyle factors are indirect nods to awareness that to sustain our health—and avoid death—we need to drink water; bottled water makes doing so more convenient. Below we highlight the specific TMT defenses of self-esteem seeking, worldview defense, risk denial, and mortality awareness.

4.1. Self-esteem seeking

Product messages that appeal to consumers' self-esteem effectively manage consumers' death anxieties and direct their consumption behaviors (Choi et al., 2007; Das et al., 2014; Mandel & Heine, 1999). Our results indicated that both campaign types appealed to individuals' self-esteem. But since individuals achieve a sense of personal value through multiple strategies, campaigns' success depends on the audiences' perceived self-esteem and priorities (Cornelis, Cauberghe, & De Pelsmacker, 2014; Ferraro et al., 2005).

Anti-bottled water documents primarily appealed to Canadians' environmental consciousness: these messages suggested it was environmentally selfish to bottled water. Other dominant self-esteem appeals included frugality—tap water saves consumers' money—and ethics because drinking tap water allowed Canadians to help protect human rights. For example, see these Polaris Institute and Council of Canadians fact sheets. Pro-environmental generosity, frugal, and ethical behaviors are interrelated and characteristic of “sustainability-oriented” individuals who self-identify as environmentally responsible (Verdugo, 2012). But by appealing to sustainability-oriented individuals, anti-bottled water campaigns target people who are already most likely to consume tap water; many tap water drinkers do not purchase bottled water because they see it as environmentally, economically, and ethically irresponsible (Gleick, 2010; Wilk, 2006).

Pro-bottled water advertisers also appeal to the self-esteem of sustainability-inclined individuals by positioning their product as an environmentally responsible choice. Nestle Waters emphasizes that they harvest water sustainably and have a minimal carbon footprint with LEED Gold certified facilities (Nestle Waters Canada, 2014). Bottled water companies actively and aggressively compete with tap water suppliers for environmentally inclined consumers.

But pro-bottled water advertisers use their self-esteem appeals to target a much more diverse range of potential consumers. Our results demonstrate that corporate campaigns also appeal to people who measure their personal value by their physical

appearance, fitness levels, material and financial wealth, class, and status; all characteristics considered important within a secular Western worldview (York et al., 2011). Our research extends this understanding by offering mortality awareness as an explanation for why—at the individual level—wealth, class, and status are such powerful but under articulated drivers of bottled water consumption.

Bottled water advertisements using self-esteem appeals may be more effective than anti-bottled water campaigns because their self-esteem messages are more varied and have the capacity to motivate a greater range of potential consumers. Anti-bottled water campaigners might develop more diverse messages because less sustainability-inclined consumers will require very different self-esteem triggers to change their water consumption decisions.

4.2. Worldview defense

Campaign documents use worldview defense opportunities to direct consumers' purchases. Both anti- and pro-bottled water campaigns position their organizations as "Canadian!" and emphasize the importance of environmental responsibility. These two worldview flags—patriotism and environmental awareness—allow consumers to defend their worldviews by aligning either water consumption choice with their identities and beliefs.

In anti-bottled water campaigns, the worldview defenses reflect the tension between public/private water control and ethics. Tap water supporters claim to be committed to the government's provision of drinking water and request that consumers do the same. Consumers are—explicitly or implicitly—called on to reject water's commodification and sale as a means to protect human rights to water. The Canadian Federation of Students (2014b) directly asked people to join the "Back the Tap" movement to "challenge the bottled water industry," "defend public water systems against privatization," and "promote safe drinking water for all." If this is true, then individuals who support public sector services would consume tap in defense of their worldview related to government, market forces, and resource control. The campaign also demonstrates a belief that water is a public good, a human right. It should not be bottled and sold for profit by corporations. Consumers with similar beliefs can defend their worldview by aligning themselves with this campaign.

By promoting their organizations' environmental values, as well as ethical and institutional values and beliefs, anti-bottled water documents once again target Canadians who most likely already choose tap water. These campaigns consistently expressed negative messages by criticizing the bottled water industry and its supporters. Unfortunately these negative messages are unlikely to motivate the behavior change of established bottled water consumers (Arndt et al., 2004a). TMT helps explain the findings of O'Donnell and Rice (2012) where American university students more likely to purchase bottled water had greater trust in traditional institutions—including religious and political leaders, corporations, and mainstream media—but lower trust in environmental and science institutions. It is unlikely that these bottled water consumers would be motivated by negative

arguments that disparage private corporations. The campaigns' limited appeals to nationalism represent just one limited opportunity for individuals' worldview defense and is unlikely to change bottled water consumption.

Pro-bottled water campaigns use both patriotism and environmental awareness but also appeal to consumers' local identity. Bottled water companies claim to be embedded in and supportive of the community where they extract or process the water. For example, the video on Whistler Water's website outlines the Canadian company's principles and values. Whistler Water is highlighted as a 100% Canadian, family owned company that feels a tremendous sense of place in Whistler." A company that strives to be a good local and global citizen is one that believes and invests in their community. With this message, consumers can defend their worldview by consuming products from a company with a similar sense of place. By appealing to the community where they extract and provide employment, bottled water companies offer worldview defense opportunities for their target audience. Bottled water advertisements provide greater number of worldview defense opportunities, and therefore may be persuasive to more individuals than anti-bottled water efforts.

While anti-bottled water documents contained significantly higher frequency counts for worldview defense, the indicators' type—from a TMT perspective—means they are unlikely to reduce bottled water consumption. Our analysis suggests that that tap water campaigns may be more successful if they switch to positively framed messages that provide more frequent and diverse opportunities for consumers to support their self-esteem and engage in worldview defense. For example, in worldview defense, adding the "local" identity aspect by highlighting the selfless service, commitment, and embeddedness of municipal technicians who ensure safe and abundant drinking water would be one easy and effective message. The campaigns could also better promote tap water as an implicit means for consumers to promote their health and well-being, thereby implicitly extending their lifespan into the future.

4.3. Risk denial

People use "logic" to deny risks, to remove death thoughts from consciousness, and avoid death anxiety (Pyszczynski et al., 1999). Products or behaviors that protect or improve peoples' health, and thereby provide a strategy to deny their vulnerability, will be perceived as especially desirable (Arndt et al., 2004a). Communications that highlight the health benefits associated with bottled or tap water will motivate desired consumption behaviors (Das et al., 2014).

In our findings, over half of the campaigns and advertisements explicitly or implicitly linked to protection or improvement of Canadians' health. Pro-bottled water advertisers used this appeal much more frequently and robustly. Their advertisements claimed that the product is safe, high quality, and healthy. But beyond that, it even has the power to extend life. Consider Evian's "baby and me" campaign, which suggests people will become youthful by drinking their water. Two commercials

that stand out include the “baby and me” and “Baby Bay” commercials. This message is reinforced by the slogan “Evian, live young.”

Bottled water’s message of “purity” can be interpreted in two different ways: first, the natural world is dangerous but technology has removed natural dangers on behalf of the consumer, The second purity interpretation is that the bottled water is unmodified from its natural state, that is, a nature is benevolent and industrial processes are unnatural perspective.

The second purity perspective—bottled water in its natural, pristine form—was most common and advertisements depicted pristine natural environments. This imagery also associated bottled water with historic springs known for healing properties and youthful vitality. These desirable characteristics are then protected from external corruption by the bottles’ security seals (Wilk, 2006). Consider Fiji Water, with a website that boasts “Earth’s finest water. Bottled at the source, untouched by man” and portrays images of a green, lush isolated island. These messages make bottled water a powerful mechanism to minimize death anxiety. They also give context for related studies that found increased bottled water sales due to Canadians’ belief that bottled water is safer than tap water (Jones et al., 2007).

Canadians’ faith in tap water’s safety has declined since *E. coli* O157:H7 bacteria contaminated Walkerton’s drinking water (May 2000), leaving seven people dead and thousands more ill. This tragedy generated national awareness about water quality and health (Dupont et al., 2010). Canadians’ reduced confidence in their tap water limits the potential for health-related messages to motivate tap water consumption (Dupont, 2005; Dupont et al., 2010; Jones et al., 2007; Royal Bank of Canada (RBC), 2014; Wilk, 2006). The Royal Bank of Canada’s (2014) Water Attitudes Study found that only 38% of Canadians strongly agreed that their local water source is safe to drink. Another 37% somewhat agreed, 11% neither agreed nor disagreed, and 9% somewhat disagree (RBC, 2014, p. 63).

Concerns about tap water safety are attributed to recognized waterborne illness and boil water advisories—both underappreciated mortality reminders. In response, tap water campaigns, and especially municipal websites, will explicitly say that tap water is safe and high quality; but they often only implicitly suggest that tap water can improve health and wellbeing. These life-extending, health-enhancing messages—which the pro-bottled water campaigns have mastered—are not frequently used, nor are they diverse, robust, or powerful in comparison with the pro-bottled water messages. Since Canadians are not confident that their tap water is safe and turn to bottled water, they will not be convinced by lackluster messages that tap water is safe, healthy, and high quality. Recognizing this lost opportunity and incorporating the life and health-enhancing aspects of bottled water would be a useful—and still ethical—tool for the anti-bottled water campaigns.

4.4. Mortality awareness

Death reminders in both anti-bottled water campaigns and pro-bottled water advertisements were almost always accompanied by messages of self-esteem, worldview

defense, or delayed death. Bottled water advertisements are more effective because this powerful message combination simultaneously generates death fears and provides a mechanism for death anxiety management. However, the capacity for death fears to motivate desired change depends on the type of health, self-esteem, and worldview defense appeals used in the advertisements. Since anti-bottled water campaigns are developed for a narrow target audience and are not as powerful for pushing death fears into the future, mortality reminders in anti-bottled water campaigns may not be as effective as they could be.

Death reminders in pro-bottled water advertisements are likely more successful because these communications specifically encourage consumption. Terror Management Theory research has shown that consumers manage death anxiety by engaging in consumptive behavior and defending a materialistic worldview. For example, Das et al. (2014) found that participants subjected to advertisements containing unconscious death reminders demonstrated greater purchase intentions. Anti-bottled water campaigns simply discourage bottled water purchases but miss the opportunities to promote tap water consumption as a means to manage mortality salience. These opportunities include everything from encouraging consumers to buy attractive-but-refillable water bottles to offering legacy donations for water protection to public recognition for individuals who champion tap water consumption with the next generation.

5. Conclusion

Terror Management Theory insights are complementary to existing behavioral change frameworks and can help us understand environmental behaviors and shape environmental communications.

As a means of assessing Canadians' water consumption decisions, TMT usefully extends earlier demographic and perception research on bottled water. We found that bottled water consumption due to health and safety concerns and lifestyle factors can be understood as an effort to manage death anxiety. Specifically, pro-bottled water advertisements have been designed to help consumers push death into the future while reinforcing their self-esteem and worldviews. Bottled water advertisements have a greater capacity to support the audience's self-esteem, provide consumers with opportunities to defend their worldviews, and potentially extend their lifespan.

We found substantive differences between the corporate advertisements and public education campaigns; these differences include fundamental assumptions about the target audience and the influence of knowledge transfer. Pro-bottle water advertisements rely heavily on branding, celebrity, and feel-good emotion. Anti-bottled water campaigns have responded with "thou-shalt-not" communications that discourage bottled water consumption based primarily on dismal environmental arguments. Unacknowledged death anxiety poses an important barrier to motivating Canadians to drink tap water. This barrier should be considered when designing new communications aimed at altering Canadians' water consumption decisions.

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Appendix A: Data Collection and Organization Process

We analyzed English language documents from both corporate pro-bottled water campaigns and government or non-governmental (NGO) anti-bottle campaigns, including their promotional material designed to further or achieve specific goals

(Cox, 2013). We identified this data using eight search terms: bottled water; tap water; bottled water campaign; 88 PPM bottled water; aqua-nor treated bottled water; Evian natural spring water; Pure Life bottled water; and Whistler Water. The five bottled water brand names in the search were randomly selected from a list of 36 brands, which produce and distribute 85% of the bottled water sold in Canada (Canadian Bottled Water Association (CBWA), 2013a, 2013b). The general search terms—bottled water, tap water, and bottled water campaign—were used in Google to capture websites unrelated to the five specific bottled water brand names searched. All links that appeared on the first results page were examined for relevance. These primary links or documents were recorded in a spreadsheet with descriptive, identifying information. Every additional document or link attached to the primary link also deemed relevant was included in the sample.

The initial search generated 193 relevant documents associated with 21 different campaigns that met our criteria for inclusion. We constrained the first sample by limiting sources to those documents created and distributed within Canada after 1980 and that explicitly encouraged or discouraged bottle water consumption, that is, were designed for consumers. We further constrained the sample based on an assessment of the topic or arguments presented in the source compared to the other sampled documents. This constraint reduced repetition and ensured diverse campaigns and messages.

Every data source had a unique coding sheet including the sampling date; descriptive information, such as document type and bottled water brand name; and written detail to identify, describe, and explain how, what, and why written or visual textual units were coded. All data collected from a single document were recorded on one form to ensure that the context information important for interpreting data was not separated, which could influence study validity. Our publically available codebook also standardized the coding process, which improved study transparency, replicability, objectivity, and coder reliability. One individual coded all of the campaign documents to ensure internal consistency.

We used four TMT codes: Self-esteem, Worldview Defense, Denial of Risk, and Mortality Saliency; each are described in the Results section. Text and images were coded for data that could trigger conscious or unconscious mortality saliency and supported or undermined death anxiety defenses. Relevant written or visual text that did not fit within the pre-existing codebook was also recorded on the coding sheet. The TMT literature was consulted to determine whether the identified data were irrelevant, could fit within a predetermined code, or if a new indicator or code was required (White & Marsh, 2006). If codebook revisions were needed, the codebook was updated and then reapplied to all previously coded campaign documents.

Indicator counts were recorded in two spreadsheet documents, one for anti-bottled water documents and another for bottled water advertisements. Within the Excel file, individual spreadsheets were dedicated to each TMT code to calculate total frequencies and, consequently, determine code presence, absence, and relative importance (White & Marsh, 2006). The codes' frequencies can be compared because this method involves the assumption that all content units have equal

weight. Frequency counts were examined, along with coded textual examples, to generate insights about messages within communications (Sayre, 1992).

Appendix B: Findings Sample Description

The final sample included 67 documents extracted from 21 campaigns. Our sample size is within the accepted range of 50 to 200 documents for manual coding of advertisements as data sources (Carley, 1993). The sample contained an equal distribution of both positive or negative bottled water perspectives and campaigns for national or local audiences. Five (45%) anti-bottled water campaigns and five (50%) bottled water campaigns were national. Six (55%) anti-bottled water campaigns and six (54%) bottled water campaigns targeted specific communities within British Columbia and Ontario.

Evidence of Terror Management Theory indicators

We found that 65 documents, from the total data set of 67 documents, contained terror management indicators. Documents were coded for text and images that either appealed to the audience's self-esteem, revealed that the advertisers' self-esteem was impacted, or provided information on both perspectives. These elements are discussed below.

Self-esteem indicator

Self-esteem is an individual's sense of personal value (Solomon et al., 2004). Text and images that communicate to the audience that they are living up to cultural standards, or are behaving in a way that generates personal value, were coded as self-esteem. The City of Guelph stated, "Guelph residents can take pride in their drinking water." Since a sense of pride is associated with self-esteem, the City of Guelph is directly linking local tap water to their residents' sense of value (Heatherton & Wyland, 2003). Alternatively, Nestle uses the phrase "Drink Better. Live Better." in their Pure Life campaign, telling the audience that by drinking bottled water, they will be better people, and therefore have a reason to feel good about themselves.

The self-esteem indicator was coded in 25 (83%) of the anti-bottled water documents and in 29 (78%) of the pro-bottled water advertisements. Text that might appeal to consumers' self-esteem was identified 107 times total (i.e., the combined values from the audience only and both audience and advertiser perspectives) in anti-bottled water documents and 107 times total in pro-bottled water advertisements.

Environmentally related self-esteem appeals, which suggest to consumers that drinking tap or bottled water benefits, or at least does not harm, the environment was the most popular appeal in both anti-bottled water and pro-bottled water documents (Tables B1 and B2).

However, the other self-esteem appeals used by pro- and anti-bottled water campaigns differed. Anti-bottled water campaigns mostly appealed to being ethically responsible and saving money. Bottled water advertisers appealed to an individual's physical appearance, desire for wealth, class and status, and their personal fitness levels.

Worldview defense indicator. Words and images were coded as opportunities for consumers to defend their own worldview by supporting a tap or bottled water organization that claimed to have similar worldviews to the consumers' own. The Springhill Freshwater Company indicated

Table B1. Self-esteem appeals communicated to the audience in anti-bottled water documents.

Self-esteem appeals	# text characterized by these appeals
Environmental conscience (i.e., behaving in an environmentally responsible manner)	66 (62%)
Ethical consciousness (i.e., protecting equal access to water and human rights)	23 (21%)
Saving money	14 (13%)
Achieving a sense of pride	5 (5%)
Nationalism (i.e., being a “good” Canadian)	3 (3%)
Fighting against privatization	3 (3%)
A positive “can-do” attitude	2 (2%)
Use of negative connotations (e.g., bottled water drinkers are described as silly, senseless individuals)	2 (2%)
Physical appearance	2 (2%)
Status	1 (1%)
Supporting their local community	1 (1%)

Table B2. Self-esteem appeals communicated to the audience in pro-bottled water documents.

Self-esteem appeals	# text characterized by these appeals
Environmental conscience	45 (42%)
Physical appearance	21 (20%)
Wealth, class, and status	20 (19%)
Fitness	12 (11%)
Being a good parent	7 (7%)
Nationalism	6 (6%)
Ethical conscience	5 (5%)
Achieving a sense of pride	4 (4%)
Purchasing local	4 (4%)
Being involved in an “on-the-go” North American lifestyle	1 (1%)
Feeling “good”	1 (1%)
Being a “better” person	1 (1%)
Power and authority	1 (1%)

its commitment to environmental sustainability and Whistler Water (2014) wrote that they were “firm believers in recycling.” These messages allow consumers who consciously believe it is important to be environmentally sensitive to defend that worldview while purchasing bottled water from these two companies. Such statements mitigate some of the uncomfortable cognitive dissonance associated with bottled water consumption. Anti-bottled water campaign developers and corporate bottled water advertisers reflected similar beliefs and values, and therefore largely appeal to consumers with similar worldviews (Tables B3 and B4).

Both groups expressed environmental values and appealed to a Canadian worldview by adopting a Canadian identity. Whistler Water claimed to be “Purely Canadian” and “locally Canadian

Table B3. Worldviews, core values, and beliefs potentially defended through bottled water campaigns.

Worldviews and core beliefs and values	# related text
Environmentally conscious	18 (60%)
Canadian worldview	7 (23%)
Local worldview (Whistler BC and Muskoka)	6 (20%)
Being a “good” local and global citizen	2 (6%)
The importance of health and wellness	1 (3%)
An “on-the-go” North American lifestyle	1 (3%)

Table B4. Worldviews, core values, and beliefs possibly defended through tap water campaigns.

Worldviews, core beliefs, and values	# related text
Environmentally conscious	17 (59%)
Canadian worldview	9 (31%)
Committed to the public over private sector	6 (21%)
Ethical worldview (importance of protecting water as a human right and need for access to clean safe water)	3 (10%)
Local worldview (Vancouver, BC and University of Guelph)	2 (7%)
Supports local communities	1 (3%)

Table B5. Messages in pro-bottled water messages that the audience could use to deny their risk of death.

Message communicated to the audience	# Textual units that reference this message
Bottled water is safe.	26 (38%)
Bottled water comes from a pristine environment that is far from human contamination.	18 (26%)
Bottled water is healthy and enhances fitness.	16 (23%)
Bottled water is high quality.	11 (16%)
Bottled water is pure.	8 (12%)
Bottled water makes you youthful.	4 (6%)
Bottled water gives life.	3 (4%)
Bottled water is clean.	1 (1%)
Bottled water has healing abilities.	1 (1%)

owned and sourced.” Canadians can defend their worldview by consuming a product that aligns with their national identity and corresponds with the “buy local” movement.

Denial of risk indicator. Denial of risk is a defense mechanism that is activated in response to conscious death reminders. This indicator was coded in 17 (57%) anti-bottle documents and 24 (65%) pro-bottle documents. Pro-bottle documents predominantly communicated to consumers that their product is safe to consume (Table B5).

The Canadian history of water contamination may make this water safety message—both quality and purity—particularly resonant for consumers. Messages about bottled water’s ability to promote health and fitness were also frequently used. An Evian bottled water commercial showed people walking past a mirror and seeing themselves as babies in the reflection. This commercial tells consumers that they can be young, carefree, healthy—hence far from death—by consuming bottled water.

Anti-bottled water documents had fewer diverse messages related to tap waters’ ability to push consumers’ death further into the future (Table B6).

Thirty-six (88%) texts communicated that tap water is as safe, or safer, to drink than bottled water. Other pro-tap water messages—tap water supports health, is high quality, clean and pure—were only minimally used to help Canadians to push their death further into the future.

Table B6. Messages in anti-bottled water documents that the audience could use to deny their risk of death.

Message communicated to the audience	# Textual units that reference this message
Tap water is safe	36 (88%)
Tap water supports health	7 (17%)
Tap water is high quality	5 (12%)
Tap water is clean	4 (10%)
Tap water is pure	1 (3%)

Table B7. Mortality reminders in anti- and pro-bottled water documents.

Mortality reminder type	# text in anti-bottled water documents	# text in pro-bottled water documents
Explicit	5	6
Implicit	13	7
Total	18	13

Table B8. Direct death reminders in documents that support proximal or distal defenses.

Death anxiety defense type	# Direct death reminders in anti-bottled water documents with evidence of this defense	# Direct death reminders in pro-bottled water documents with evidence of this defense
Denial of risk (Proximal defense)	12 (80%)	7 (100%)
Self-esteem (Distal defense)	10 (67%)	5 (71%)
Worldview defense (Distal defense)	9 (60%)	0 (0%)

Mortality salience indicator. Death reminders are text elements that made mortality salient. Reminders were either explicitly or implicitly associated with death (Table B7).

The word *die* was coded as an explicit reminder while “tap water is contaminated and associated with health issues” implicitly suggests that tap water could negatively impact health. Even more subtle mortality reminders were found: the words *die* and *murderer* were in the background song of the Evian bottled water commercial, which concludes with the tagline “Live Young.” These explicit death reminders provoke conscious death thoughts and are typically found in campaign documents that also provide the audience with a means to manage death anxiety through proximal or distal defenses (Table B8).

The explicit death reminders in anti-bottled and pro-bottled water documents were identified in documents that also contained self-esteem and worldview defense indicators. Self-esteem and worldview defense are two important distal defenses for managing death anxiety triggered by subconscious death thoughts. Our results show that there is ample evidence of mortality salience in both pro and anti-bottled water campaigns. We consider below whether those messages might influence Canadians’ decision to drink tap water or bottled water.