

THE EFFECTS OF MORTALITY-SALIENCE INDUCING DIRECT-TO-
CONSUMER PRESCRIPTION DRUG COMMERCIALS ON VIEWER
ATTITUDE TOWARD HIGH AND LOW STATUS BRANDS

A Thesis

presented to

the Faculty of the Graduate School
at the University of Missouri-Columbia

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

by

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MAY 2009

The undersigned, appointed by the dean of the Graduate School, have examined the thesis entitled

THE EFFECTS OF MORTALITY-SALIENCE INDUCING DIRECT-TO-
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ACKNOWLEDGEMENTS

A large group of people contributed to the completion of this thesis. Primarily, I want to thank Dr. Glenn Leshner, my thesis advisor. Dr. Leshner's tireless commitment to and enthusiasm for this research surpassed even mine at times. Through countless hours of assistance, he helped me understand the complexities of the design and data analysis. I always tell prospective thesis students that they cannot afford to get the selection of their committee chair wrong. I tell them this because I know the value of choosing the right person. Dr. Leshner was invaluable. I tried to use as few adverbs as possible in these acknowledgements for him.

The other members of my committee also made significant contributions to this research. Dr. Paul Bolls offered substantial assistance in organizing the facilities for the research and provided his methodological knowledge when I sought it. Dr. Jamie Arndt brought his considerable terror management expertise to the studies. Dr. Amanda Hinnant strengthened the research with her skilled, inquisitive mind.

Without the help and guidance of these four people, my thesis would not have been possible. I am grateful for their time, expertise and support.

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ABSTRACT

This research sought to understand whether or not direct-to-consumer prescription drug ads (DTC ads) made people think about their own death (referred to as mortality salience) and what effects these thoughts had on people's opinions of brands of varying status.

Study 1 used a free-writing questionnaire to collect brands. Study 2 used scales to rate participant attitude toward 12 DTC ads. Study 2 showed the the ads for Cymbalta and Plavix made people the most anxious; the ads for Detrol LA and Crestor made people the least anxious. Study 3 used word completions to measure for mortality salience. Study 3 also provided additional brand ratings. Study 4 used a lexical decision task to measure for mortality salience; results showed that participants who watched the ads for Cymbalta and Plavix responded faster to death words. The status of brand had no effect on how participants rated the brand. Additional signal detection analysis showed participants to be less sensitive to death words after watching the Cymbalta and Plavix ads. Participant criterion bias did not vary across word type or between condition.

I. INTRODUCTION

The Wall Street Journal recently reported on its Web site that drug company spending on advertising fell in 2008 by 8% (Winstein & Vranica, 2009). However, *WSJ*'s headline described the decrease in a way that exhibits how much money the marketing of drugs commands in less uncertain economic times. The word used in the headline was "rare." The current recession has affected many, but before the downturn, the amount of money spent on advertising drugs to the public had been rapidly increasing.

Spending on advertising to market prescription drug ads directly to consumers experienced an explosion until recently. Using industry data, the Government Accountability Office (GAO) reported that spending on direct-to-consumer ads increased from \$1.1 billion in 1997 to \$4.2 billion in 2005 ("Prescription Drugs," 2006). The GAO calculated the average annual percentage increase in spending from 1997 to 2005 to be 19.6 % and the total percentage increase during that period to be 296.4%.

Because of trends like this, I sought to understand commercials for prescription drug ads. The type of ads I studied are commonly referred to as direct-to-consumer (DTC) advertisements and will be referred to as such. The Food and Drug Administration described DTC advertising for prescription medication in this way:

Provided by drug companies, these ads are aimed at a general audience, and not at health care professionals such as doctors, nurses and pharmacists. The ads are broadcast on TV and radio, and published in magazines and newspapers. They also appear online ("Keeping Watch," 2008).

The considerable financial resources invested in creating and disseminating DTC ads demanded further attempts to understand their impact on viewers.

Using terror management theory (TMT) as a theoretical framework, I measured whether or not television prescription drug commercials made a viewer think about his or her own death and what impact those death thoughts had on viewer attitude toward brands associated with varying levels of socioeconomic status. My studies were guided by three questions: 1) Do television ads for prescription medication that portray death result in a viewer thinking about their own death?, 2) If so, what effect do those death thoughts have on viewer response time to brands that are linked with high or low socioeconomic status? and 3) What effect do those death thoughts have on the valence of viewer attitude toward high and low status brands?

I began the research equipped with substantial reason to believe that DTC advertisements would induce death thoughts. Generally, advertisements, though they might be aimed at promoting a product, intend to instill or evoke some emotion in the viewer that can then be correlated with the advertised product (Messaris, 1997). DTC ads are aimed at creating an interest or need for a given medication. Theoretically, this need will lead a viewer to ask their doctor about the medication. To create that need, ads must show or imply an improvement in health or lifestyle as a result of taking the advertised medicine. But before implying such improvement, the ads must first show the negative aspects of the condition the medication treats. Since the extreme negative consequence of sickness is death, one can reasonably assert that DTC ads would occasionally use death-related imagery and words. These images and words show what life is or could be for someone who has the condition that the advertised drug treats. The ad could then present the benefits of the drug and contrast it with the negative aspects of the condition the advertised drug treats. By doing so, the ad will have connected the drug with an

improvement in quality of life. To get from point A to point B, the use of death-related imagery is a reasonable expectation.

DTC advertisements have been subjected to considerable study in the past. Brownfield, Bernhardt, Phan, Williams & Parker (2004) studied a 504-hour block of television programming as it appeared in a southeastern city. More than 18,000 advertisements appeared during this block of time. Nine hundred and seven ads were for over-the-counter drugs, while 428 were for prescription drugs. A person who watches an average amount of television per day could expect to be exposed to over 30 hours of DTC ads per year (Brownfield et al., 2004). Here, I found the ubiquity of these ads.

Kaphingst, Dejong, Rudd & Daltroy (2004) explored the content of television prescription drug ads. The authors recorded six-hour blocks of time on major networks and studied elements of the advertisements, such as how risk and benefit information was presented. In a sample of 23 ads, researchers found that 19 of the ads presented risk information without interruption from other voice or text. The authors also found that 21 of the 23 ads showed positive or neutral images while conveying risk information, which indicates that visual and verbal content have a critical relationship in DTC ads. This research provided valuable context, but it also indicated that the content of these ads merited more extensive research.

TMT is built around the idea that an individual having thoughts about his or her death results in that individual seeking out ways to enhance self-esteem to minimize those death thoughts and the terror that arises from them (Greenberg, Pyszczynski, & Solomon, 1986; Greenberg, Solomon, & Pyszczynski, 1997). TMT asserts that individuals seek out self-esteem enhancement when faced with thoughts about their mortality; I sought to understand whether or

not DTC ads instilled such thoughts and what effect they might have on viewer attitude toward brands that either raised or lowered self-esteem.

Considerable TMT research focuses on the impact of death thoughts on consumer behavior. Arndt, Solomon, Kasser, & Sheldon (2004) provided both a thorough review of this literature and a supplemental rationale for my research. The authors wrote:

To the extent that self-esteem provides protection against concerns regarding death, reminders of mortality should increase those behaviors that an individual believes will result in feelings of self-worth; in short, it should increase labors to live up to the standards of value from which one's self-esteem is derived (Arndt et al., 2004, 201).

Further, Mandel & Heine (1999) found that death thoughts lead participants to evaluate higher status products more positively than low or non-status products. The authors used questionnaires to get viewers to think about either their deaths or a control condition and then let subjects evaluate 4 advertisements, two of which were for high status products (Rolex watches, Lexus cars) and two of which were for low status products (Geo Metro cars, Pringles potato chips). Mandel & Heine (1999) found that the subjects who were made to think about their own deaths evaluated the high status products more positively.

When combined, previous research clearly illustrates both the need for my research and the utility of terror management theory as a theoretical framework for the research.

The literature review that follows begins with a discussion of the fundamentals of terror management theory. After the summary, two relevant theoretical concepts are defined: mortality salience and self-esteem.

TMT suggests that death thoughts lead individuals to seek out a way to enhance their self-esteem and thus reduce the terror that accompanies these thoughts. In my research, the levels of brand status served as a vehicle for individuals to either enhance or not enhance their self-

esteem. A discussion of both brands and status is included in the literature review to illustrate how they correlate with self-esteem.

After defining the relevant terminology, I discuss prominent methodologies used in TMT research. TMT scholars often use delay tasks between the time death-thoughts are induced in a person and the time the accessibility of those thoughts is measured. They do so in order to combat an individual's psychological defenses. TMT also uses word completions to measure mortality salience; a discussion of relevant literature is included to illustrate why I used the same method. TMT researchers also use a lexical decision to measure the accessibility of death thoughts. I used this measure and explain its methodology in the literature review.

Measuring attitudes and attitude accessibility toward high and low status brands will serve as the way to measure the impact of DTC ads. Relevant literature concerning ways to measure attitudes and their accessibility, such as response time measurements, follows the discussion of accepted TMT methodology.

I conducted three pretests (referred to as Study 1, Study 2 and Study 3) in my research. Study 1 investigated the status of various brands. Study 2 measured viewer attitude toward 12 prescription drug advertisements. Study 3 investigated whether or not DTC ads result in viewers thinking about their own death and further measured the status of brands selected from the Study 1 data. The main study (Study 4) used a 2 x 3 experimental design in which the first factor (mortality salience) had two levels (mortality salience/non-mortality salience ad), and the second factor (brand status) had three levels (high, middle and low status).

In Study 4, participants were placed into two conditions in which they viewed two of four ads. One pair of ads comprised the mortality-salient (MS) condition; the other two ads comprised the non-mortality salient (Non-MS) condition. Because of the methodological shortcomings of

Study 3, I employed a lexical decision task to understand whether or not the ad each participant viewed induced mortality salience. Finally, I asked participants to rate whether or not they wanted a collection of brands of varying status and to indicate their confidence in that decision.

Participants for Studies 1 through 4 were undergraduate and graduate students from the University of Missouri.

II. REVIEW OF THE LITERATURE

Terror Management Theory

TMT is built upon the foundational work of scholar Ernest Becker. Drawing from numerous disciplines, Becker (1973) wrote about the unmatched power that thoughts of death have over individuals and, as a result of that power, the universal preference among humans to avoid these thoughts. In fact, death thoughts are so powerful that individuals are incapacitated by terror if they are unable to shift them from primary focus (Becker, 1973). Through reinterpreting how these robust thoughts affect people and what people will do to avoid them, the original TMT scholars formed their theory.

Greenberg et al. (1986) first wrote about TMT, which revolves around an individual's need or desire to preserve self-esteem in order to minimize anxiety about their mortality. Within this theory, culture plays a critical role. Culture has two purposes: 1) to reaffirm an individual's self-esteem by presenting the world as meaningful, permanent and something that all participants can believe in and 2) to allow individuals to manage the terror that would arise from the clash between one's knowledge of his or her mortality and the intense desire to remain alive (Greenberg et al., 1986).

Further, Greenberg et al. (1997) wrote that TMT hinges on the premise that "self-esteem and cultural worldviews" act as an individual's protection from a terror that could result from the conflict between a person knowing about death's unavoidable nature and that same person's basic desire to live as long as possible (66). That idea is the central premise of terror management theory. Within this premise exist two fundamental concepts: mortality salience and self-esteem.

Mortality Salience

Because of their interest in how individuals interact with or choose to avoid the reality of their own death, terror management theorists study the concept of mortality salience. Mortality salience (MS) is defined as a reminder of one's mortality (Greenberg et al., 1997). In other words, a person who is thinking about their own death is said to have mortality salient in their mind.

Newcomb, Turner & Converse (1965) described information that is salient as being stored and then called up by some element of an individual's present surroundings and related to other information that is presented. For example, every human knows that he or she will die. That information is stored in the mind. But humans do not often obsess about their mortality; rather, thoughts of death generally arise when individuals are presented with situations or images that remind them of their mortality. Stimuli that include images or verbal messages concerned with mortality can result in an individual thinking about his or her death or, to use the relevant terminology, having mortality salient in their minds. In my research, I investigated whether or not DTC advertisements induced MS.

TMT scholars assert that once mortality is salient in an individual's mind, that individual will use defense mechanisms to combat thoughts of their own death. There are two types of these defense mechanisms. The first is an immediate response which involves distracting oneself or reminding oneself of the relative unlikelihood of death; the second mechanism, which is characterized by the death thoughts being managed by the unconscious mind and the individual seeking out ways to reaffirm self-esteem, is employed after the initial defense passes (Greenberg et al., 1997).

As TMT scholars assert, self-esteem elevation is a critical vehicle for the individual defense against MS.

Self-Esteem

As TMT states, individuals minimize terror resultant from mortality salience by enhancing their self-esteem. Greenberg et al. (1997) defined self-esteem as “the perception that one is a valuable member of a meaningful universe” (66). Greenberg et al. (1986) listed the components of self-esteem as it exists to deter anxiety; these components are a belief in a culture that both gives meaning to human existence and provides a person with the impression that he or she has an important place in that world.

Bettinghaus (1980) defined people who have high self-esteem as individuals that view themselves as capable, feel good about themselves and their abilities and have low anxiety, while those with low self-esteem tend to worry about decision-making and often confer with other people before making a big decision.

In my research, self-esteem had a two-pronged definition. First, self-esteem was defined as the way one feels about oneself and his or her abilities. Owing directly to TMT, self-esteem was also defined as the belief that one is important and is part of a society, and a world, that is both significant and meaningful. The concept of self-esteem was important within this research because the status of the brands presented to participants served as a means to enhance self-esteem.

Based upon previous research (Mandel & Heine, 1999), my theory was that mortality salience (in the form of the DTC ads) was a challenge to self-esteem and would result in participants seeking out self-esteem enhancing tactics (responding quickly and positively to high

status brands). To understand why a person would use brands to elevate his or her self-esteem, one must understand the relationship between status and brands.

Status and Brands

Status or rank within a commercial society is manifested in one's financial success, which is shown through enjoying leisure and freely and openly buying products (Veblen, 1899). And brands contribute to the decisions consumers make when purchasing products. Because products have become so similar, the brand can determine the success or failure of a product (Leiss, Kline, Jhally, & Boterrill, 2005). In other words, brands have replaced products; it is brands, not always products, that are sold to consumers. From a TMT perspective, brands are a significant part of the culture from which individuals derive self-esteem, for the advertisements help individuals correlate the products that one purchases, or is financially able to purchase, and feelings of self worth (Berger, 2000).

In my research, high status brands were those that were rated as such by participants. Generally speaking though, high status brands are correlated with personal wealth and thus a high-ranking social position. These are the brands of expensive products, relative to other products in the same category. For example, BMW would be considered a high status brand within the product category of cars. As Veblen (1899) and Berger (2000) have stated, the ability to purchase expensive products contributes to both where an individual is ranked within a society and how that individual feels about him or herself.

Low status brands were those rated as such by participants. Again, generally speaking, low status brands are correlated with inadequate financial strength. These are the brands of less expensive products, relative to other products in the same category. Kia would be considered a

low status brand within the product category of cars. Since it has been established that worry-free consumption and buying only the most expensive products can elevate an individual's social ranking and self-esteem, it stands to reason that not being able to do so would result in a lower social ranking and thus lower self-esteem. By connecting themselves with high status brands through quick, positive evaluations of those brands, I hypothesized that participants would increase their self-esteem as a way to minimize the mortality salience caused by the DTC ads. To quantify a participant's evaluation of a given brand, their attitude toward that brand was measured through both response times and confidence levels .

Using previous research as a guide, I selected the product categories for inclusion in Study 1. O'Cass and Frost (2002) conducted a study to try to understand brand status among youth. Before doing so, the researchers had to determine the proper brands to use. They chose clothing and sunglasses, because of their expressive qualities and previous research which supported the decision. That is, one can express themselves through their clothes. Also, as mentioned earlier, Mandel & Heine (1999) used Rolex and Lexus as high status products and Geo Metro and Pringles as low status products. These previous selections, in combination with a consideration for what products were likely to be of importance to student participants, informed the selection of product categories.

Finally, Dobni & Zinkhan (1990) named free writing about brands as one common way to understand certain attributes of those brands. This research directly informed my methodological choices in Study 1.

Study 2 involved participants rating the ads on 10-item scales. Its purpose was to provide data to inform the choice of ads in Study 3. For Studies 3 and 4 however, I employed many of the commonly used TMT methodologies for measuring mortality salience.

Mortality Saliency Measures and Delay Mechanisms in TMT Research

The standard method for inducing MS is called the Mortality Attitudes Personality Survey and was developed by Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon (1989). The induction is a two-item questionnaire. The first item asks individuals to write about what they think will happen to them when they physically die; the second item asks individuals to write about what feelings they have when thinking about their own death (Rosenblatt et al., 1989). The questions are open-ended and allow subjects to provide their responses with specificity and length.

After people respond to these questions, TMT researchers either measure for MS or how the MS induced by these questions affect a person's desire to enhance their self-esteem. Within these studies, TMT researchers often use a delay mechanism in order to combat the mind's defenses against death thoughts. The delay mechanism is typically administered between the MS induction and the measure for death thoughts.

Greenberg, Pyszczynski, Solomon, Simon & Breus (1994) used the standard two item questionnaire and variations of it in their research. They were also the first to use a delay mechanism. The second study in their article involved 7 groups. The first group was given the two-item mortality saliency questionnaire; the second group received the questionnaire with television replacing the topic of one's own death. For example, the first item on the questionnaire asked subjects to write about what they thought would happen to them while they were physically watching television. Two control groups, who received questionnaires in which the topic of death was replaced by either "experiencing intense pain" or "giving a speech in front of a large audience" (Greenberg et al., 1994, 631), were also included. After filling out their

questionnaires, each of these four groups was given the Positive and Negative Affect Schedule (PANAS), a mood assessment developed by Watson, Clark & Tellegen (1988).

The other three groups of participants were given the two-item mortality salience questionnaire and a delay task, the content of which depended upon which condition they had been assigned to. The first group, referred to as the distraction group, was asked to pretend that they were television executives at a conference and were charged with noting any discussion that concerned television. Their delay task consisted of trying to find television-related words in two word search puzzles, each of which represented a room at the conference.

The second group of participants, called the mortality salience continued death focus condition, was given a word search puzzle with death-related words, while the third, called the mortality salience free thought condition, was asked to write about anything they wanted to. Each group was given three minutes to complete their respective task and was instructed that there was no expectation that they would find every word within the allotted time.

Participants then read two essays about America, used in previous research, written by foreign students. The content of one essay was pro-America; the content of the other was anti-America. Finally, participants in the distraction and continued death focus conditions were asked to remember as many words as they could from their search puzzles. After doing so, the participants in these three delay conditions filled out the PANAS.

The distraction tactic enhanced the impact of mortality salience on participant perceptions of the two essay writers (Greenberg et al., 1994). The members of the distraction condition had a higher opinion of the writer of the pro-America essay. Those participants that were forced to continue to think about their deaths through the death word search puzzle did not exhibit such preference.

To summarize, the distraction group subjects exhibited highly accessible death thoughts after the delay and sought to reaffirm their self-esteem by favoring the writer who supported America, or the culture from which the participants derived their self-esteem (Greenberg et al, 1994). These findings formed the basis for my inclusion of a delay in Study 3, because they illustrated that mortality salience has the greatest effect on opinion of subsequent stimuli if a delay exists between the mortality salience induction and the introduction of the stimuli being studied. The delay mechanism distracts the individual and combats his or her initial defense mechanism. After the delay task is completed, the individual has the death thoughts in their mind, but they are handled by the unconscious.

In the fourth experiment included in their article, Greenberg et al. (1994) presented a death-thought accessibility measure used in my research. Participants in the experiment were given packets that included the two-item mortality salience induction or a television-salience induction. Then, participants completed a mood assessment similar to the PANAS and either read a neutral passage and then completed the death thought accessibility measure or completed a death thought accessibility measure and then read a neutral passage. The order was varied as a way to create a distraction condition; those that completed the death thought accessibility measure before reading the passage were not distracted after receiving their mortality or television salience induction. The death thought accessibility measure required participants to complete 20 word fragments that were missing two letters; six of the words could be completed as death-related words. The words used by Greenberg et al. (1994) were: “coffin, grave, dead, skull, corpse and stiff” (634). The use of the passage as a delay mechanism resulted in higher death thought accessibility in the distraction group. Here is an example of both the utility of the delay mechanism in TMT research and the word completions as a measure of mortality salience.

Arndt, Cook, Goldenberg & Cox (2007) used a variation of this measurement technique. Arndt et al. (2007) studied whether or not making cancer salient would result in high death-thought accessibility; they also used a delay mechanism. The authors induced mortality salience using the standard mortality salience induction and then variations on it to make cancer and dental pain salient. The researchers then administered the television-related word search puzzle used by Greenberg et al. (1994) as their delay mechanism. After completing the puzzle, participants were given a word completion task in which the completions could be filled out as words associated with death or words that had no such association. Results showed that making cancer salient did not increase the accessibility of death thoughts, but mortality salience induction followed by the delay resulted in greater death-thought accessibility (Arndt et al., 2007). Unlike previous research, Arndt et al. (2007) used a completion task with more total words (26) and more possible death words (8). The potential death words were “buried, dead, killed, skull, murder, stiff, coffin and grave” (Arndt et al., 2007, 15).

In my research, Study 3 used word completions to measure whether mortality salience was induced by the prescription drug ads; previous research suggested that this would be an effective way to measure mortality salience.

In addition to word completions, TMT research has also used a task in which participants determine whether or not a string of letters is a word to measure for the presence of mortality salience. This type of task is referred to as a lexical decision task, which I used in Study 4.

A lexical decision task requires participants in the task to look at collections of letters and determine whether or not what is presented is a word or not. Generally, they are asked to do so as quickly as possible. A large body of TMT research (Arndt, Greenberg, & Cook, 2002; Hayes,

Schimel, Faucher, & Williams, 2008) has used lexical decision tasks to explore the intricacies of mortality salience and self-esteem with considerable success.

Particularly, Schimel, Hayes, Williams, & Jahrig (2007) used a lexical decision task to illustrate that an attack on an individual's cultural worldviews results in a higher accessibility of death thoughts.

To reach their conclusion, Schimel et al. (2007) presented participants with a webpage that denegated their native country, in this case Canada, or a foreign country, in this case Australia. Participants were then tasked with determining whether a collection of death, negative, neutral and nonsense words were words or not. In an effort to control for differences among the words, the researchers selected words that were similar in their length and frequency of use in normal speech. Participant response time was recorded and used to understand the accessibility of death thoughts; that is, faster response times indicate higher accessibility.

Participants that viewed the webpage that disparaged Canada exhibited faster mean response times to the death words than to the negative and neutral words. Additionally, there was no significant difference between the mean response times to the negative and neutral words for participants that viewed the anti-Canada webpage. Because of these differences, the researchers were able to say that mortality salience was induced. These findings supported both the researchers' hypothesis and my decision to use a lexical decision task as a way to measure death-thought accessibility in Study 4.

Along with the word completions and the lexical decision task, participants in my research also rated the tone of advertisements in Study 3 using the Perceived Message Sensation Value (PMSV) as developed by Everett & Palmgreen (1995).

Everett & Palmgreen (1995) studied the reactions of two types of people (those that were attracted to novelty in stimuli and those that were attracted to more traditional stimuli) to varying types of public service announcements (PSAs) about cocaine. The PSAs were categorized based upon their sensation value (high and low). In order to determine this sensation value, researchers conducted pretesting and had participants rate the ads on a scale of 17 adjective pairs. Use of the scales resulted in researchers obtaining significantly different high and low sensation values. Additionally, the reliability of the scale as it pertained to each PSA in the pretest exceeded .86. A complete discussion of the scale can also be found in the research of Palmgreen, Stephenson, Everett, Baseheart, & Francies (2002).

In my research, the purpose of having participants complete the PMSV was to further measure the ads to include only those in Study 4 that were similar in every possible way but the level of mortality salience induced. Obviously, the necessity of these measurements hinged on the presence of ads that induced mortality salience.

The dependent variable in my research was brand status. In order to understand participant attitude toward these brands, I used common methodology for measuring attitudes and attitude accessibility.

Attitudes and Attitude Accessibility

Newcomb et al. (1965) defined attitudes as both “an organization of valenced cognitions” and, a person’s “predisposition to be motivated” by an object (40). There are two fundamental components of attitudes. The first is valence, the positive or negative characteristic of the attitude (a person who feels good about something has a positive attitude toward it); the second is the extremity of the attitude (someone who chooses Diet Pepsi as their favorite drink may rate their

attitude toward it as “very good”) (Newcomb et al., 1965). For example, take an individual who frequently eats Cheetos. If asked exclusively whether their opinion of Cheetos is either positive or negative, that individual might respond that his or her attitude is positive. That is an example of the valence of an attitude. If that same individual is asked how positive their attitude is toward Cheetos on a scale that ranges from “Not Positive at All” to “Extremely Positive,” that individual might say that their attitude is “Extremely Positive.” That is an example of the extremity of an attitude. When combined, these two ratings indicate that the individual has a strong, positive attitude toward Cheetos.

In my research, individuals indicated their attitude toward brands through their response time to a question concerning whether or not they wanted a certain brand in Study 4. They further indicated their attitude via a response time to a question about their confidence level in their decision. Through these measures, I was able to determine the strength of the attitude.

In addition to valence and extremity, the association that an individual has between a product and the attitude toward it will show the strength of his or her attitude. Fazio, Chen, McDonel, & Sherman (1982) defined an attitude as “an association between a given object and a given evaluative category” (341). To continue with the Cheetos example, if an individual says that he or she likes Cheetos, he or she has a positive attitude toward the product. The individual has a connection between the object (Cheetos) and the positive evaluation of it (he or she “likes” it). Additionally, how quickly individuals can recall that attitude from memory, or access it, speaks to the attitude’s strength.

The accessibility of an attitude correlates directly with the strength of the link between the item and the evaluation that a person has of it; the stronger the association between the attitude and the evaluation of the object, the easier an attitude can be retrieved from an

individual's memory (Fazio et al., 1982). If an individual eats Cheetos everyday and describes them as his or her favorite food, the attitude toward Cheetos will be highly accessible. When someone asks the person whether or not he or she likes Cheetos, the person will quickly respond with a highly positive evaluation of Cheetos. My research used the accessibility of attitudes toward brands to measure the impact of the DTC ads on the viewer. I also used accessibility measures in the lexical decision task in Study 4.

The ways in which attitudes, their strength and accessibility are measured are through the use of response time measurements and attitudinal scales. Roskos-Ewoldsen, Yu, & Rhodes (2004) used response times as a way to measure attitude accessibility. Participants, who were female, were split into four groups and presented with audio messages, with varying levels of fear appeal and usefulness content, concerning breast cancer and breast self-exams. As a way to measure attitude accessibility about breast cancer and the self-exams, the researchers gave participants five 20-word blocks and instructed them to press one of two buttons. One button corresponded with liking a given item; another button corresponded with disliking it. The first four blocks of twenty words acquainted the participants with the process. During the fifth block of words, the words the researchers sought to measure response time, or attitude accessibility, for ("breast cancer" and "breast self exams") appeared. After completing the response time measures, participants rated how they were feeling while originally listening to the message. Next, to measure attitudes toward breast cancer and the utility of breast self exams, participants completed attitude scales that required them to rate how they felt about the two terms through a series of pair words that correlated with numbers on a scale (from -3 to +3). Roskos-Ewoldsen et al. (2004) found that the greater the level of usefulness of breast self-exams portrayed in a message, the more accessible viewer attitudes toward those exams were. The authors also found

that high threat messages about breast cancer resulted in lower attitude accessibility. In these messages, efficacy did not have a significant effect. This research illustrates the utility of response time measurements and attitudinal scales in attitude research.

Fazio, Powell & Williams (1989) also used response times and attitude scales while studying attitude accessibility and individual attitudes toward products. The researchers used pretesting to select 10 products. Participant attitude toward these ten products was measured in the study. The researchers also included 90 other filler products to make a sample of 100 products that subjects would evaluate. Participants saw images of each of the 100 products and were told to press a button on a computer keyboard, which would correspond either with a feeling of “like” or “dislike.” Response times to the millisecond were recorded. Then, participants completed several questionnaires, only the first of which was for the purposes of the study. This first questionnaire presented participants with scale ratings for the same 100 products that they had just seen. The scale went from 1 (extremely bad) to 7 (extremely good). Finally, since the study was also concerned with the connection between attitude and behavior, participants were told to take five products, from a selection of 10, as a gift for their time. The ten products from which participants could choose were those that were selected in the pretest. Using response time measurements and attitudinal scales, Fazio et al. (1994) found that attitude accessibility has a substantial impact on product choice behavior. Their work showed the efficacy of response time measurements and attitudinal scales for measuring attitude accessibility and attitudes toward products.

Finally, previous research (Fazio, Sanbonmatsu, Powell, & Kardes, 1986) used response time measurements as a way to understand the accessibility of attitudes from memory. Fazio et al. (1986) conducted four experiments to understand how attitudes could be expressed

automatically from memory. The first experiment had two parts. First, subjects were asked to rate words of varying types (people, places, things) as to whether they were good or bad. They did so by pressing one of two buttons that corresponded with each of the two ratings. Their response times and answers were recorded. This portion of the experiment served only to establish what the authors called primes to be used in the second portion of the experiment. The authors looked at the response times and ratings. Those words that received the fastest good rating were classified as strong positive primes; those that received the fastest bad ratings were strong negative primes. The words that had the slowest good and bad ratings served as the weak positive and negative primes. Sixteen words, and four strings of letters for control purposes, were chosen for the next portion of the experiment. The total number of prime words was 20. Next, 20 adjectives, ten that were good and ten that were bad, were chosen as target words.

In the experiment, subjects saw one of the 20 prime words and then an adjective directly following the prime word. They rated each adjective as good or bad by pressing a key on a computer and then repeated the prime word aloud. This verbal repetition allowed researchers to ensure that participants paid attention to the prime word. Fazio et al. (1986) found that individuals evaluated the adjectives more quickly (i.e. their response time was faster) only if the adjective was similar in its valence. These findings indicate that response time measurements are a useful way to measure attitude activation from memory.

Previous research (Fazio, 1990) has provided a guide for how to conduct response time research to maximize efficiency. For instance, instructions to participants can help minimize variability of response times; instructing participants to respond as quickly as possible without sacrificing accuracy is the recommended technique. Practice runs and filler runs (trials that do not include material being tested) are also recommended.

The goal of my research was to understand whether or not DTC ads induced mortality salience in viewers, and, if so, what influence that mortality salience had on viewer attitude toward high, middle and low status brands. My research questions, along with the corresponding hypotheses, are included below.

RQ1: Do DTC ads that portray death induce MS?

H1: DTC ads that portray death will induce MS as evidenced by a high number of word completions completed as death words.

RQ2: If so, what effect does that MS have on viewer response time toward high, middle and low status brands?

H2: Participants that view the MS inducing ads will provide their responses faster to high status brands than they do to middle or low status brands. They will also respond faster than those who view non-MS inducing ads do to either high, middle or low status brands.

RQ3: What effect does MS have on the valence of viewer attitude toward high, middle and low status brands?

H3: Participants that view the MS-inducing ads will respond more positively to high status brands than they do to middle or low status brands. They will also respond more positively to high-status brands than participants who view non-MS inducing ads do to either high, middle or low status brands.

Combining **H2** and **H3**, I hypothesized that participants that viewed the MS-inducing ads would respond faster and more positively to high status brands than they did to middle or low status brands. These participants would also respond faster and more positively to high status brands than participants who viewed non-MS inducing ads did to either high, middle or low status brands.

III. METHODOLOGY

Because prescription drug ads promote a product that can delay the arrival of death, it is logical to assume that some of these advertisements would employ images of death or negative physical outcomes to illustrate what the advertised medication can prevent. To better understand these ads and their effects, I conducted four studies to understand what brands students thought were of high and low status, whether or not DTC ads induced MS and what effect these ads had on viewer attitude toward brands of varying status.

Study 1

Study 1 measured which brands students considered high status (HS) and low status (LS). The goal of the study was to generate data to inform my selection of approximately 60 brands for Study 3.

Participants were given a free-writing exercise and 10 minutes to complete it. Within nine product categories, participants were instructed to write the names of as many brands as they could think of that they thought were HS and LS. The categories were for products that students were likely to consume or have knowledge or an opinion of.

I informally hypothesized that certain brands (Rolex, Mercedes) would appear in the HS column of their product category and other brands (Timex, Kia) would appear in the LS column. Still, gathering the Study 1 data was necessary because of the lack of previous available market research.

Method

Participants and design. Thirty-three students at the University of Missouri participated in Study 1. I personally recruited participants.

Due to one participant incorrectly filling out the questionnaire, only 32 participants were included in the final analysis. Of the 32 participants, 23 were women, and nine were men. The average age of the participants was 21.97 years (SD=2.06).

Procedure. Study 1 consisted of a questionnaire that had nine product categories: Automobiles, Clothes, Cell Phones, Computers, Soda, Footwear, Televisions, Potato Chips and Watches. Below the name of each product category were the words “High Status” and “Low Status” along with the necessary space for participants to write as many brand names in each column as they were able to.

Once a participant agreed to complete the questionnaire, he or she was told about the nature of the research and asked to place a check mark at the top of the questionnaire to indicate his or her consent. Participants were instructed to read the directions and ask any questions that they had. Participants were then given 10 minutes to complete the questionnaire; at the conclusion of the 10 minutes, the questionnaire was collected. Participants were thanked for their time and excused.

Study 2

Study 2 measured participant attitude toward prescription drug commercials. I used these ratings to determine which ads to include in Study 3. Each of the 10 participants watched 12 ads, chosen by me. I had a disc of ads, which was obtained from a pharmaceutical company, and a few more that I found on the Internet. The ads chosen for inclusion in Study 2 were picked

because of their content; that is, I chose ads that I thought were likely to either cause or not cause participants to think about their own deaths. As criteria, I used imagery, what the voices in the ads said and tone to inform my informal selections.

Method

Participants and design. I recruited 10 students at the University of Missouri to participate in Study 2; each participant watched 12 commercials and rated them using a 10-item scale. Of the 10 participants, five were men, and five were women. The average age was 26.2 years (SD= 4.50).

Procedure. Participants were presented with a packet of twelve 10-item scales, or one for each ad to be viewed. The first page in the packet contained directions and an example of how participants were to fill out a sample scale item. Participants were informed about the nature of the research and signed the first page of the packet to indicate consent. The ads, viewed on my computer, were presented in two different orders with five participants viewing the ads in each order.

The ads viewed are listed here, and in cases where there was more than one ad for a given medication, the number two follows the drug name. The ads were for Plavix (2), Crestor, Lipitor (2), Cymbalta (2), Detrol LA (2), Aricept, Celebrex and Zolofit.

The rating scale included 10 items, several of which came directly from the Perceived Message Sensation Value scale developed by Everett & Palmgreen (1995). The items were Frightened-Not Frightened, Worrisome-Not Worrisome, Happy-Sad, Intense-Not Intense, Arousing-Not Arousing, Stimulating-Not Stimulating, Emotional-Unemotional, Powerful Impact-Weak Impact, Graphic-Not Graphic and Exciting-Boring. With the exception of Happy-

Sad, the first word in the pair corresponded with an answer of “1,” and the second word corresponded with an answer of “7.” Happy-Sad was reverse coded during data analysis.

Once participants finished watching the ads, they were thanked for their time and excused.

Study 3

Study 3 used word completions to measure what level of MS, if any, the four ads chosen from those rated in Study 2 induced in participants. The study also used the PMSV scale to measure the emotional tone of the ads and a 9-point scale to measure the status levels of 61 brands.

Method

Participants and design. Thirty-six students from the University of Missouri participated in Study 3. They were recruited through class visits and a Web-based database of studies. Participants were given extra credit for their participation. Two of the 36 participants were disqualified due to problems with the study software or researcher error. Of the 34 participants included in data analysis, 24 were women, and 10 were men. The average participant age was 20.97 (SD =2.43)

Study 3 used a 2 x 2 experimental design. The level of anxiety induced by the ads (and thus the level of MS each ad could be predicted to induce) was run between subjects, and the status level of brands (HS and LS) was run within.

Procedure. Participants were assigned to one of the two conditions (MS or Non-MS). Sixteen of the 34 participants were in the MS condition; eighteen were in the Non-MS condition. Within the

two conditions, there were two separate orders for how the experiment was presented to reduce the likelihood of order effects.

Study 3 used Dell personal computers running MediaLab software and took place in a computer lab at the Missouri School of Journalism.

Upon arriving at the testing location, participants were informed about the nature of the research and provided their oral consent.

The study began with the consent script. Participants indicated their consent by pressing the ENTER key and were advanced to a screen of study directions. Next, participants watched the first of the two ads based upon their condition. In the MS condition, participants watched the ads for Cymbalta and Plavix. In the Non-MS condition, participants saw the ads for Crestor and Detrol LA.

After the first ad finished playing, participants were given directions for completing a word search puzzle. At the side of each workstation was a manila envelope with two word-search puzzles downloaded from the Internet. Each puzzle served as a delay mechanism between the intended MS induction (the ad) and the measurement of that MS (the word completions). Previous research (Arndt et al., 2007; Greenberg et al., 1994) showed that delay tasks such as these are a successful way to neutralize the mind's defenses against death-thoughts.

As in the previous research, participants in Study 3 were given three minutes to do the delay task. MediaLab kept track of this time and switched screens when the three minutes elapsed. After finishing work on the puzzle, participants were presented with 26 word completions called, for discussion purposes, Word Completions #1. Eight of the 26 words were death-related words used in previous research (Arndt et al., 2007, Greenberg et al., 1994). The death words were buried, skull, dead, coffin, stiff, grave, killed and murder.

After completing Word Completions #1, participants were asked to rate the first ad using the PMSV scale (Everett & Palmgreen, 1995). The scale contains seventeen 7-point scales and measures how a viewer classifies a stimulus.

The scale was included to allow me to control for the emotional tone of the ads if they induced MS. After completing the PMSV, participants watched the second ad and repeated the tasks that followed the first ad with two exceptions. First, the word search puzzle was different from the one participants worked on after the first ad. Second, a different set of word completions followed the second ad. Using guidelines from and one of the words (corpse) used in previous research, I created this second set called, for discussion purposes, Word Completions #2. There were 26 total words with 8 death words included in the set. The death words were corpse, bone, ghost, blood, casket, shroud, grief and drown. Additionally, the presentation of the two sets of word completions was switched for the second half of each condition. That is, in the MS condition, the first seven participants saw Word Completions #1 after the first ad; the rest of the group saw Word Completions #2 after the first ad. This manipulation applied to the Non-MS condition as well. The purpose here was to minimize the influence of order on the results.

After completing the PMSV scale for the second ad, participants rated 61 brands. Using a 9-point scale, participants rated the brands by pressing a number between 1 and 9 on their keyboard. A response of “1” corresponded with an answer of “Low Status;” an answer of “9” corresponded with an answer of “High Status.”

After completing the study, the participants were debriefed, thanked for their time and excused.

Study 4

The original goal of Study 4 was to determine the effect of MS-inducing prescription drug ads on viewer attitude toward HS and LS brands. That purpose remained but to it was added the goal of Study 3: to determine whether or not the four ads being studied induced MS. In Study 4, I used a lexical decision task (LDT) to measure for MS. Also, the delay task used in Study 3 was removed because of the subliminal nature of the messages in my stimuli. My hypothesis about the LDT task was similar to my hypothesis about the word completions. That is, I hypothesized that participants who watched the ads in the MS condition (Cymbalta and Plavix) would respond faster to death words than any other type of word.

Method

Participants and design. One hundred and six students at the University of Missouri participated in Study 4. The participants were recruited through visits to classes where extra credit was offered for study participation. Participants were also recruited through a Web-based database of studies. Several participants were recruited directly by me, and these participants did not receive any course credit.

Because of researcher error or software malfunction, six participants were excluded from the population. Of the remaining 100 participants, 69 were women, and 31 were men. The average participant age was 19.7 years (SD= 3.22).

Study 4 used a 2 x 3 experimental design. MS was run between subjects, and brand status (HS, LS and MidS) was run within subjects.

In order to analyze the words in the Study 4 LDT, I factor analyzed mean response times (RTs) for the 12 words assigned to the death or negative categories on the word list used in

previous research (Schimel et al., 2007). This analysis extracted 3 factors. Ten items loaded on the first factor (Eigenvalue= 4.30, Percent Variance Explained=35.80), and 2 items loaded on the second factor (Eigenvalue=1.19, Percent Variance Explained=9.90). None of the items loaded most heavily on the third factor (Eigenvalue=1.07, Percent Variance Explained=8.88). The results of this data reduction are in Table 1.

Table 1

Item Loadings on Three Factors in Factor Analysis of 12 Death and Negative Word Mean Response Times

<u>Item</u>	<u>Factor I</u>	<u>Factor II</u>
Wrong	.678	
Skull	.486	
Fail	.686	
Fight	.602	
Grave	.573	
Suffer	.584	
Buried	.697	
Dead	.603	
Coffin	.606	
Jerk	.678	
Killed		.534
Punish		.570

Using this reduction, I constructed a death-word index ($\alpha=.67$). This new index contained the following 5 words: Wrong, Killed, Grave, Coffin and Suffer. These were the death words in my study.

Procedure. Study 4 used Dell computers running DirectRT software and took place in a computer lab in the Missouri School of Journalism. Participants arrived at the testing location and were informed about the nature of the research. They provided their oral consent and began the study. The first screen in the study included the consent information again and required the participant to press ENTER to provide their consent before beginning. Participants were then

presented with directions and pressed ENTER to view the advertisement. The advertisement was displayed for 64 seconds. Since the ads were a little more than one minute in length, this amount of time allowed for the ad to finish and the screen to advance. Next, participants were presented with instructions for the practice LDT. The directions told participants to press the left ALT key if the collection of letters they saw on the screen was a word or the right ALT key if the collection of letters they saw was not a word. The instructions included the direction “Please respond as quickly as possible without sacrificing accuracy.” These directions and the method of using two keys on the keyboard have been used in previous research (Schimel et al., 2007). Additionally, colleagues in the University of Missouri psychology department provided directions used in previous lexical decision task research as a template to follow (Arndt, personal communication, March 3, 2009).

Each participant completed five practice trials presented in a random order. The five trials were Balmy, Crid, Pattur, Jeans and Ralp. After completing the practice, participants were presented with directions for the 70-trial study LDT. These directions mirrored those shown before the practice trial. The LDT presented death words, negative words, neutral words, and non-words in random order. The list of words was used in previous research (Schimel et al., 2007).

After completing the 70-trial study LDT, participants saw instructions for the brand ratings portion of the study. As in the lexical decision task, participants used the left and right ALT keys to indicate their responses. By pressing the left ALT key, participants indicated that they wanted the brand on the screen; by pressing the right ALT key, they indicated that they did not want the brand shown. Participants were instructed to respond as quickly as possible without sacrificing accuracy for this question. After indicating whether or not they wanted the brand,

participants were asked to rate how confident they were in their decision by pressing a number between 1 and 9 on the keyboard. An answer of 1 corresponded with an answer of “Not Confident At All”; an answer of 9 indicated an answer of “Very Confident.” Participants were instructed to take as much time as necessary to answer this second question.

Each participant saw 20 brands. As the brand name came up on the screen, they hit the left or right ALT key. The brand remained on the screen until the participant made a decision. Next, the question “How confident are you in your decision?” appeared on the screen. Participants answered by pressing the number keys. This two-question series repeated for all 20 brands.

After rating all 20 brands, participants were presented with the debrief script on their screen and pressed ENTER to end the experiment. Participants were then read the debrief script, provided time to ask questions, thanked for their time and excused.

Signal detection measures. Two parameters of recognition performance were computed for a signal detection analysis: sensitivity and criterion bias (Macmillan & Creelman, 2005). Sensitivity is a ratio of hits to false alarms and has the advantage over relying solely on accuracy computations in that it factors in the ability of the participant to discriminate targets from foils. In my research, the non-words served as foils, and the other three categories of words (neutral, negative and death words) served as targets. The second parameter, criterion bias, indicates confidence in the decision of whether or not an item was previously seen. A conservative or higher criterion bias means that there will be fewer false alarms for type of word (i.e. saying that a non-word is in fact a word), but there will also be more misses (i.e. saying that a word is not a word). Contrarily, if a participant adopts a liberal (or lower) criterion, there will be more hits (i.e. saying that words are words), but there will also be more false alarms. Nonparametric measures

for sensitivity (A') and criterion bias (B'') were used in my study. These measures are advantageous in that they don't require assumptions of normality for target (words) and foil (non-words) distribution (Shapiro, 1994).

IV. RESULTS

Study 1

High and Low Status Brands. To understand which brands were rated as high status (HS) and low status (LS), I counted the number of times a given brand appeared in each classification within the 9 product categories. The brands chosen for inclusion in Study 3, along with the frequencies and column (HS or LS) in which each was listed, are in Table 2.

Table 2

High Status (HS) and Low Status (LS) Brands Selected for Study 3 from the Free-Writing Questionnaire

<u>HS (Frequency)</u>	<u>LS (Frequency)</u>
BMW (24)	Target (5)
Apple (28)	RC Cola (9)
Coca-Cola (25)	Acer (6)
Panasonic (7)	Reebok (6)
Lay's (14)	Nokia (8)
Mercedes (16)	Vizio (4)
Rolex (24)	Pringles (2)
Blackberry (23)	Kia (9)
Gucci (11)	Old Navy (9)
Pepsi (18)	Sketchers (9)
Adidas (12)	WalMart (17)
Lexus (14)	Toshiba (4)
Dolce & Gabbana (8)	Timex (8)
Puma (7)	Fritos (3)
Nike (19)	Mountain Dew (4)
Banana Republic (6)	Forever 21 (4)
Porsche (9)	Saturn (3)
Audi (8)	Hyundai (7)
Versace (5)	Kmart (3)
Uggs (10)	Gateway (5)
Jaguar (4)	Starter (2)
Prada (5)	
Manolo Blahnik (4)	
Armani (7)	
Bentley (3)	
Cadillac (6)	
Coach (4)	

Ruffles (5)
LG (7)
Sony (21)
Swatch (5)
Fossil (5)
Samsung (12)
Abercrombie & Fitch (7)
Lacoste (3)
Nine West (5)
Gap (3)
J. Crew (5)
IBM (4)
Dr. Pepper (4)

To clarify, the number following each brand name indicates the highest number of designations associated with that brand. Pepsi, for example, was rated as HS 18 times and as LS three times. Because Pepsi appeared with greater frequency in the HS column of the Sodas product category, it is listed as HS in Table 2.

Because Study 1 did not generate 60 brands that were clearly rated HS and LS, brands were selected for inclusion in Study 3 using two other criteria. First, brands that are generally thought to be HS or LS (such as Lacoste or Acer) but that may not have been clearly indicated as such in Study 1 were included in Study 3. The purpose of this was to allow future ratings (Study 3) to clarify the brand's status. Second, brands that were rated as both HS and LS with some discrepancy (e.g. Gateway, HS=5 and LS=1) were chosen to again see if further testing would clarify the brand's status. Future studies would benefit from collecting similar data in a more focused manner.

Study 2

Results

Anxiety. To understand how the ads affected the participants, I created an index variable called *anxious*. To compute this variable, I first created 10 new variables by taking the mean of each participant's response to each item on the scale across all 12 ads. These new variables and means are in Table 3.

Table 3

New Variable Means and Standard Deviations in Study 2

Name	N	M	SD
Emotional	10	4.61	.64
Powerful Impact	10	4.15	.97
Graphic	10	5.52	1.22
Exciting	10	4.52	.76
Frightened	10	5.34	.88
Worrisome	10	4.92	.97
Happy	10	3.58	.48
Intense	10	4.58	.88
Arousing	10	4.94	1.22
Stimulating	10	4.29	1.07

Note: With the exception of Happy, lower means indicate higher levels of the feeling indicated by the variable name.

I then reduced the new variables into an index via a factor analysis. Seven of the new variables (Emotional, Powerful Impact, Graphic, Frightened, Worrisome, Intense and Stimulating) loaded on one factor (Eigenvalue=5.784, Percent of Variance Explained= 57.84, $\alpha=.94$). The remaining three items (Exciting, Happy and Arousing) loaded on a second factor (Eigenvalue=2.273, Percent of Variance Explained= 22.726). I then reverse coded Happy into a variable called NewHappy (M=4.43, SD=.48). After reverse coding Happy, the new three-item index proved reliable ($\alpha=.64$). The full loadings are in Table 4.

Table 4

Loadings by Factor for the 10 Scale Items in Study 2

<u>Item Name</u>	<u>Factor 1</u>	<u>Factor 2</u>
Emotional	.790	
Powerful Impact	.811	
Graphic	.826	
Frightened	.963	
Worrisome	.974	
Intense	.871	
Stimulating	.718	
Exciting		.775
Happy		-.910
Arousing		.741

I then calculated the new variable, anxious, for each ad. To do this, I computed the mean for each of the seven items that loaded heavily on the first factor in the factor analysis. These items were Emotional, Powerful Impact, Graphic, Frightened, Worrisome, Intense and Stimulating. Again, the loadings and thus the seven item names can be found in Table 4. I computed anxious for each of the 12 ads viewed by Study 2 participants. Descriptives for anxious by ad name can be found in Table 5.

Table 5

Descriptives of 12 Ads for Anxious in Study 2

<u>Product Name</u>	<u>N</u>	<u>Mean</u>	<u>SD</u>
Aricept	10	4.60	1.12
Celebrex	10	5.49	1.27
Crestor	10	5.59	1.00
Cymbalta1	10	3.61	1.11
Cymbalta2	10	3.63	1.10
DetrolLA1	10	5.56	.88
DetrolLA2	10	5.46	.88
Lipitor1	10	5.03	1.31
Lipitor2	10	4.99	1.33
Plavix1	10	4.26	1.03
Plavix2	10	4.51	.99

Study 3

Results

Mortality salience. I hypothesized that prescription drug ads with death imagery would induce MS. To test this hypothesis, I used word completions in Study 3 and hypothesized that participants who viewed the ads in the MS condition in Study 3 would exhibit a higher number of completions of death words.

But to understand how the ads affected viewers, I first had to quantify the word completions. I took the 16 words (8 per set of completions) that could be completed as death words or non-death words and coded the responses into ones and zeroes. A “1” was entered if the word was completed as a death word; a “0” was entered if the word was completed as anything else. Some participants provided only the letters they needed to complete the word rather than typing out the whole completed word. For example, if K I _ _ E _ was the completion presented, the participant responded with the letters “LLR” which would complete the word as KILLER. I counted responses such as these as death words.

The descriptives for each ad and each set of completions are in Table 7.

Table 7

Death Word Completions by Word Set and Ad Name in Study3

Ad	N	Σ	M1	V1	M2	V2
Crestor	18	30.00	2.00 (1.15)	1.33	1.45 (.82)	.67
Detrol	18	32.00	2.45 (1.13)	1.27	.71 (.95)	.91
Cymbalta	16	24.00	2.00 (.71)	.50	1.27 (1.01)	1.02
Plavix	16	27.00	1.55 (1.12)	1.27	2.00 (1.41)	2.00

Note: M1 and M2 represent the mean number of death word completions for each of the two sets of completions. Standard deviations are presented parenthetically after the means. V1 and V2 represent the variance for the two sets of word completions.

A high number of completed death words would indicate that an ad induced MS. Table 7 illustrates the absence of the necessary sums. My hypothesis was not supported because the ads that I placed in the MS condition (Cymbalta and Plavix) based upon Study 2 data did not result in participants who viewed the ads completing more words as death words. Contrarily, the ads in the Non-MS condition (Crestor and Detrol LA) resulted in the higher number of completions.

The MS condition did contain two fewer people than the Non-MS condition; however, given the apparent failure of the word completions as a measure of MS, adding two more participants would probably not significantly alter the results. Results of the comparison of the mean word completions across condition are in Table 8.

Table 8

Comparison of Mean Number of Word Completions by Condition in Study 3

Condition	N	M	SD	t	df	p
Non-MS	18	3.44	1.62	.449	32	.33
MS	16	3.19	1.72			

Note: p is one-tailed.

As a result of the shortcomings of word completions as a measure of MS, I decided to include a lexical decision task (LDT) in Study 4.

PMSV. Once it was determined that the word completions were not a sensitive enough measure to determine whether or not the ads induced MS, analyzing the PMSV data was not necessary. Future studies would benefit from excluding the PMSV if for no other reason than to reduce participant fatigue.

Brand Status. Participants used a 9-point scale to rate the status of 61 brands. Brands with the highest means were classified as HS; brands with the lowest means were classified as LS. To provide 20 total brands for Study 4, I chose to include brands that were of middle status (MidS)

as indicated by the responses of Study 3 participants. Descriptives for the brands chosen for Study 4 are in Table 9.

Table 9

Brand Status Determined in Study 3

<u>Brand Status</u>	<u>Mean</u>	<u>SD</u>
<u>High Status (HS)</u>		
Gucci	8.65	.65
Porsche	8.53	.92
Rolex	8.50	.86
Armani	8.41	.73
Manolo Blahnik	7.76	3.58
Apple	7.68	1.13
<u>Middle Status (MidS)</u>		
Panasonic	5.62	2.00
Reebok	5.47	2.74
IBM	5.44	4.38
Nokia	5.29	2.52
Pepsi	5.29	3.12
Gap	5.24	1.40
Lay's	5.12	1.81
Dr. Pepper	5.03	1.83
<u>Low Status (LS)</u>		
Timex	4.38	3.27
Kia	3.97	3.12
Sketchers	3.88	2.23
Starter	3.56	2.38
Acer	3.24	2.37
Kmart	2.35	2.48

The choices for which brands to include in Study 4 were based on more than the data. Many brands with the highest means were for clothing lines, and I had to have product variety in Study 4. I did not want to simply look at viewer response to HS clothing brands.

Gucci, Porsche, Rolex and Armani were included in the HS category because they all had mean ratings greater than 8.00. The remaining four brands with mean ratings greater than 8.00 were all car brands (Mercedes, Bentley, Jaguar and BMW). In order to maintain variety in the pool of Study 4 brands, I included the two brands that had the greatest means but were not car brands. These were Manolo Blahnik (M=7.76), a brand of shoe, and Apple (M=7.76), a brand of electronics.

For the LS category, I selected Kia, Sketchers, Starter, Acer and KMart because they had mean ratings below 4. To counterbalance the presence of Rolex (M= 8.50) in the HS category, I included Timex (M= 4.38) in the LS category.

For the MidS category, I chose brands with mean ratings between 5 and 6. I chose the brands based upon the types of products that were in the HS and LS category. That is, I wanted similar products.

Study 4

Results

Mortality salience and the lexical decision task. I hypothesized that participants would respond faster to death words in the MS condition than in the Non-MS condition. Additionally, I hypothesized that these response times (RTs) would be significantly different, and that the difference between the mean RTs for the non-, negative and neutral words would not be

significant between the two conditions. The lexical decision task (LDT) in Study 4 tested these hypotheses.

Before analyzing the response time data from the LDT, the outlier RTs had to be handled. Previous research (Schimel et al., 2007) used truncation to reduce the influence of extreme responses. To do this, I generated descriptive statistics for a new variable calculated by taking the mean RTs of all 70 trials for each subject. The resulting descriptives ($M=735.68$, $SD=152.53$) allowed me to conservatively truncate the RTs out to four standard deviations or 1346 milliseconds (ms). Across the 70 trials, sixty-five trials contained maximum RTs in excess of 1346 ms. Within those 65 trials, a total of 259 responses exceeded 1346 ms. A total of 100 participants saw 70 trials each, which resulted in 7000 total trials; therefore, 259 out of 7000 trials (3.7 %) had to be truncated.

After truncation, new variables were created to compare the mean RTs of the four types of words across the two conditions of DTC ads, MS and Non-MS. To do this, I took the mean RTs of the non-words, the neutral words, the negative words, and the death words as groups to create new variables. I then compared the mean RTs for the death, negative, neutral and non-words. The word-type means and results of this comparison are in Table 10.

Table 10

Descriptive Statistics and Comparison of Mean RTs by Condition for the Four Word Types in Study 4

Word Type		N	M	SD	t	df	p
Death	Non-MS	50	681.80	132.61	1.759	98	.04*
	MS	50	638.58	112.28			
Non-Word	Non-MS	50	769.39	124.81	.899	98	.19
	MS	50	745.19	143.75			
Neutral	Non-MS	50	646.10	101.55	.570	98	.38
	MS	50	634.89	95.04			
Negative	Non-MS	50	643.63	113.42	-.468	98	.64
	MS	50	654.95	127.92			

Note: p is one-tailed.

The results in Table 10 indicate that participants in the MS condition responded faster to the death words than any other type of word. This finding supported my hypothesis concerning participants in the MS condition responding more quickly to death words. What these results suggest is that death thoughts were highly accessible in participants in the MS condition. Here, an important distinction between the concepts of accessibility and salience must be made.

Previous research (Greenberg et al., 1997; Newcomb et al., 1965) has defined information that is salient as being present in one's mind, or consciousness. Other research (Fazio et al., 1982; Newcomb et al., 1965) has defined information that is accessible as being capable of being called up out of an individual's unconscious mind as a result of the surroundings or stimuli presented; additionally, the ease with which an individual accesses information is informed directly by the strength of the stimulus or the relationship between the object in question and the individual's attitude toward it. The results of Study 4 indicate that the ads in the MS condition made death thoughts highly accessible. Participant responses to the brands of varying status support this conclusion. As shown below in the brands data analysis, participants in the MS condition did not respond faster or more positively to the HS brands.

Based upon TMT, if MS was induced, participants should have responded faster and more positively to HS brands as a way to enhance self-esteem. Because of the absence of such responses, it is more reasonable to say that the ads in the MS condition made death thoughts accessible in participants' minds.

Brand Status. With respect to brand status, I hypothesized that participants in the MS condition would respond faster and more positively to high status brands than participants in the Non-MS condition. The brand RTs and brand preference measures in Study 4 measured this hypothesis.

Like the word RTs, the brand RTs had to be truncated to remove extreme responses. To determine where to truncate the RTs, I created a new variable by taking the means of all participant responses to the question of whether or not they wanted a given brand across all 20 brands. The new variable, allbrandsRT (M=1948.06, SD=680.3), was the basis for determining the truncation point for the RTs. Because of the extreme responses, I had to truncate to 4 standard deviations or 4669 ms. Each of the 100 participants rated 20 brands on this question for a total of 2000 responses. Of the 2000 responses, 67 responses (3.35%) required truncation.

After truncation, new variables were created to compare the mean RTs for the three categories of brands: High Status, Low Status and Mid Status. An independent samples t-test of the three brand-type RT means revealed that there was no difference between them. The results are in Table 11. As discussed briefly above, my hypothesis about brand status RTs vis-à-vis condition was not supported.

Table 11

Descriptive Statistics and Comparison of Mean RTs by Condition for the Three Brand Types in Study 4

Brand Type		N	M	SD	t	p
HS	Non-MS	50	1802.40	593.41	1.175	.24
	MS	50	1661.48	605.97		
LS	Non-MS	50	2120.88	640.10	1.670	.10
	MS	50	1912.48	607.33		
MidS	Non-MS	50	1821.79	591.31	-.236	.81
	MS	50	1851.19	649.09		

Note: p is two-tailed.

Participants were able to indicate their preference for HS, LS and MidS brands and their confidence in their decision. I hypothesized that participants in the MS condition would have greater preference (as indicated through their responses to the question “Do you want this brand?”) for HS brands than participants in the Non-MS condition. There was no significant difference ($t=.242$, $p=.809$, 2-tailed) between brand preference for HS brands with respect to condition. There was also no significant difference for brand preference by condition for middle or low status brands.

A final measure of participants’ attitudes toward the brands was their confidence level in the decision as to whether or not they wanted the brand. I hypothesized that participants in the MS condition would exhibit greater confidence in their decisions about preference for the HS brands than any of the other types. The mean confidence in decisions for HS brands was higher in the Non-MS condition ($M=7.72$, $SD=1.12$) than in the MS condition ($M=7.49$, $SD=1.86$). There was no significant difference between the mean confidence for HS brands across condition ($p=.46$, 2-tailed). Again, my hypothesis was not supported.

The valence of participant attitude toward brands was indicated by their RTs, preference and confidence. Because none of the differences across condition for any brand type for any of

these three measures was significant, it is evident that condition, and thus the different ad pairs, had no effect on valence of attitude.

Additional Analyses

To further explore the results of Study 4, I employed analysis commonly used in signal detection theory research. I hypothesized that the sensitivity to death words would be higher in the MS condition than in the Non-MS condition.

Because Study 4 involved an LDT with what were essentially yes or no answers, I calculated non-parametric measures for sensitivity (A') and criterion bias (B'') for each type of word. The non-words in the lexical decision task served as the foil in Study 4, and thus it was unnecessary to calculate the A' for them. I removed three participants from the sample because they seemed to have understood the task incorrectly; that is, they repeatedly pressed the key to indicate that something was a word when it was not and the key to indicate that a non-word was in fact a word with regularity. Because of the exclusion, N fell to 97; the three participants that were removed were in the MS condition.

Analysis of the three word types (death, negative and neutral) showed a lower degree of sensitivity in the MS condition for all three types of words. Only in the case of death words was the difference between conditions significant, such that participants in the Non-MS condition were more sensitive in distinguishing death words as words than non-words. Since this result is in the opposite direction of the hypothesis, it was not supported. The results of this analysis are in Table 12.

Table 12

Comparison of Mean Sensitivity to Word Type Across Condition in Study 4

Word Type	M-Non-MS	M-MS	t	df	p
Death	.98 (.02)	.97 (.05)	1.968	95	.05*
Negative	.98 (.02)	.98 (.03)	.789	95	.43
Neutral	.98 (.02)	.98 (.02)	.1366	95	.18

Note: p is 2-tailed.

To understand what criterion participants used to make their decision as a function of condition, I calculated B'' for all three word types. I hypothesized that participants in the MS condition would exhibit a more conservative criterion bias for death words than those in the Non-MS condition.

Initially, when calculating B'' could not be computed for 37 participants because their denominator was zero. Therefore, .001 was added to the denominator in the B'' term for all participants. B'' was not statistically significant between condition or across word type.

Participants exhibited a moderately liberal criterion bias regardless of condition. The results of this analysis are in Table 13.

Table 13

Comparison of Mean B'' for Each Word Type and Condition

Word Type	M-Non-MS	M-MS	t	df	p
Death	-.58 (.53)	-.50 (.68)	-.635	95	.53
Negative	-.52 (.61)	-.52 (.62)	.014	95	.99
Neutral	-.46 (.57)	-.40 (.70)	-.463	95	.64

Note: p is two-tailed. Standard deviations are presented parenthetically after the means.

The results of both the A' and B'' analyses show that condition had a significant impact on participant sensitivity only in the case of death words. In that instance, participants were more sensitive to death words in the Non-MS condition than they were in the MS condition which

goes against my hypothesis. Of more interest is the fact that participants were less sensitive to death words in the MS condition.

Participant accuracy was also calculated to further understand the decision-making process across word type and condition. These results are in Table 14.

Table 14

Comparison of Mean Accuracy for Each Word Type and Condition

Word Type	M-Non-MS	M-MS	t	df	p
Death	.99	.94	2.21	95	.03*
Non-Word (Foil)	.05	.05	.77	95	.77
Neutral	.99	.97	2.04	95	.05*
Negative	.98	.96	.71	95	.48

Note: p is 2-tailed.

Of most interest here is the significant difference between the accuracy for death words across condition. Participants in the MS condition were significantly less accurate than those in the Non-MS condition. This difference indicates that the contents of the two ads in the MS condition had some effect on participant conduct toward death words, which resulted in the decreased accuracy.

V. DISCUSSION

My studies provide insight into both how students appraise brands and the effects of DTC advertisements. In Study 1, participants listed a predictable group of brands as high status (HS) and low status (LS). The brands listed as HS with the most frequency were often those of expensive products (BMW, Rolex) or products with iconic brands (Coca-Cola, Nike). Predictably, the brand listed as LS with the most frequency was Wal-Mart (17), which is known globally for its low prices.

Additionally, the brand listed as LS with the most frequency (Wal-Mart) was listed once more than only the 9th most frequently listed HS brand (Mercedes). This finding indicates that participants had a much easier time calling up HS brands than LS brands.

Curiously, several participants listed store and generic brands or unfamiliar brands in almost every product category. Invariably, these brands were rated as LS. One participant went as far as to list “Brands I’ve never heard of” as LS in the TVs category. Although a relatively small number of participants offered these types of responses, their presence might indicate a larger truth: It is not necessarily always the brand strength of a given product that dictates its status. Rather, the simple presence of a known brand may be enough. Although the results of Study 1 have little theoretical implication, they do offer brand status research that could be of use in future scholarship.

In Study 2, the high level of anxiety induced by the Cymbalta ads was expected; Cymbalta treats depression, and depression is a relevant condition to younger people. Peculiarly, the ad for Zoloft ($M=4.54$, $SD=1.34$), another depression medication, did not induce a similar level of anxiety. Future research on just these two advertisements (Cymbalta and Zoloft) could

yield a greater understanding of the difference between them and thus what aspects of each either engenders or reduces anxiety. The Plavix ad, which also induced a relatively high level of anxiety, contains a foreboding announcer and dark overtones, so the high levels of anxiety induced are reasonable as well, even if blood clots may not be a condition relevant to student-aged participants.

What the results of Study 2 illustrate is that the content of DTC ads merits further study. Although the ads for Cymbalta and Plavix instilled the most anxiety in participants, the drugs that the two ads promote are decidedly different. The Cymbalta ad is rife with somber tones and sounds; the Plavix ad contains a threatening narrator and hints that even tiny, undetected problems can be problematic for a person's health. These elements might have made participants nervous; however, blood clots are not expected to be on the minds of college students. Future research is tasked with understanding whether the product being advertised or the nature of the advertisement has a greater impact on viewer response to the ad.

The results of Study 3 clarified both the status level assigned to brands by students and also methodological shortcomings of a study using stimuli with less overt death messages. In Study 3, the brands that fell within the HS designation were largely commensurate with those rated as HS during Study 1. This relationship indicates both the strength of these brands and the strength of their position as high status. A brand being consistently rated as HS across two participant pools, albeit from the same population, makes asserting that the brand has high status within our society much more reasonable. The same applies to the LS brands. Their place at the lower end of our society's status scale seems secure. Studies 1 and 3 can provide a basis for future researchers who seek reliable data concerning what brands students consider to be HS and LS.

The failure of the word completions as a measure of MS in Study 3 can be seen in two ways. First, the measure itself could be to blame. That is, word completions were not sensitive enough because of the many ways in which each word could be completed. Additionally, word completions can vary in difficulty, which might also have confounded results. Initially, I thought of the words as being able to be completed in one of two ways (death word v. non-death word), but during the analysis, I found that the words were completed in many different ways. The lack of consistent responses (whole word v. the letters necessary to complete the word) also weakened the power of the test. Second, the stimuli I used might not have included strong enough death imagery or messages to allow for the word completions to successfully measure MS. That is, there were no images of funerals, men gripping their chests in pain or gushing blood. I cannot state that such images would have induced MS in the viewer; rather, it would be worth finding out if such graphic DTC ads exist. Future research would benefit from trying to find more graphic DTC ads should they exist and using those ads to understand whether or not they can be served by word completions as a measure for MS. Because TMT research often uses explicit MS inductions when using word completions as an MS measure (e.g. the two-item questionnaire in which subjects are asked to write specifically about feelings surrounding their own deaths), I should have recognized that the completions were an unfit measure given the lack of explicit death imagery or messages in my stimuli.

The results of Study 4 revealed that the mean RTs for death words were faster among participants in the MS condition than in the Non-MS condition. In that way, my hypothesis was supported. However, these findings do not necessarily indicate that MS was induced; rather, they suggest that death thoughts were made accessible by the ads in the MS condition. The faster mean RTs indicate as much.

Future researchers must consider what elements of these advertisements made death thoughts accessible in these participants. Was it the nature of the disease that the advertised drug treated? Or was it the technical aspects of the commercials? Future researchers would benefit from examining the two ads (Cymbalta and Plavix) shown to participants in the MS condition exclusively in order to better understand them.

The analysis of the brands data in Study 4 showed that ad content had no impact on participant appraisal of brands of any of the three status levels. Rather than question the brands, I believe that the content of the ads was not strong enough to induce the necessary levels of MS to compel participants to seek out self-esteem enhancement through rapidly and positively evaluating HS brands. Again, here is another instance where the nature of my stimuli negatively impacted my study.

From a TMT perspective, the results are curious. Previous research (Mandel & Heine, 1999) has shown that brands are an effective vehicle for self-esteem enhancement. However, that assertion did not bear out in my results. Mandel & Heine (1999) used more explicit MS inductions (they had participants fill out questionnaires concerned at least partially with feelings surrounding death); my intended MS induction (the DTC ads) was not as explicitly death-related. One must wonder about what level of MS a stimulus must induce to generate a self-esteem seeking behavior in participants. Considerable TMT research has shown the utility of a more straightforward MS induction and its effects on participants when it comes to self-esteem enhancing behaviors. Searching for stronger stimuli (in the form of more graphic DTC ads) could help future researchers to understand what impact the DTC ads have on products promoted after them.

Another explanation for participants in the MS condition not seeking out self-esteem enhancement via HS brands could be the nature of the thoughts made accessible by the ads. Specifically, Nelson, Moore, Olivetti & Scott (1997) found that people who were made to think specifically about their own death sought out self-esteem enhancement. In their research, participants who thought only about death in general did not engage in such behaviors. Because the ads in my research only made death-thoughts accessible and not thoughts about personal death salient, participants were likely not inclined to enhance their self-esteem by evaluating HS brands faster and more positively. Here could be an explanation for the lack of self-esteem enhancing behavior I saw in the brands data from Study 4.

The signal detection analysis showed that participants displayed less sensitivity to death words in the MS condition, which is intriguing from a TMT perspective. If the participants responded with less sensitivity to death words (that is they said more non-words were words), the death thoughts made accessible by the ads could be responsible. The accessible death thoughts might have clouded their judgment and influenced their sensitivity. That is, the thoughts might have affected their judgment. Conversely, the anxiety induced by the death thoughts could be to blame. TMT theorists (Greenberg et al., 1986; Greenberg et al., 1997) assert that death thoughts result in anxiety. In Study 4, the anxiety induced by the Cymbalta and Plavix ads might have manifested itself in the form of reduced sensitivity to death words.

These explanations, however, should be tempered by the ceiling effect on sensitivity exhibited in LDT task. Across both conditions, participants showed near-perfect sensitivity, that is, the ability to detect words from non-words. The task of discriminating between words and non-words was apparently very easy. Perhaps future research should consider including an additional task or other cognitive load in the LDT to make the task harder. Perhaps increased

difficulty would result in sensitivity decreasing so as to reduce the ceiling effect and possibly yield a stronger MS effect.

Additionally, the results showed that there was no significant difference between participant decision-making criterion across word-type or condition. These results make sense due to the lack of risk or reward in my study. Logically speaking, a participant would only change their criterion bias if the change benefited them (in the form of receiving a reward or avoiding punishment). Because Study 4 had neither risks nor rewards, it is reasonable to expect the absence of changing criterion bias among participants.

There does appear to be some protective behavior being undertaken by Study 4 participants however. Three pieces of evidence support this conclusion. First, participants in the MS condition responded faster to death words. Second, participants in the MS condition had decreased sensitivity to death words. Finally, participants in the MS condition displayed less accuracy for death words but the number of false alarms remained the same. What this suggests is that participants wanted to get the death words out of their view (or mind) as quickly as possible. Because they knew the necessary steps to take to achieve such removal, they pressed the key necessary to remove the word from the screen as quickly as possible. My suggestion is just one possible explanation. Future researchers would benefit from recreating my study from a signal detection theory perspective to better understand the implications of participant actions.

These four studies have assorted implications for TMT research. Clearly, participants were aware of the status of brands and indicated as much in their responses in Studies 1 and 3. These conclusive results indicate that brand status could be an effective self-esteem enhancing mechanism when used in future research. The only requirement would be more potent stimuli. But how potent would the stimuli have to be? In the case of DTC ads or commercials in general,

must there be images of death and gore for viewers to seek out self-esteem in the form of positively evaluating brands? Or are only well-placed subtleties required? This research could not answer these questions, but future research using ads with varying levels of death imagery perhaps could.

Additionally, my research used several common TMT methodologies and showed when to use each of them. If a researcher's stimulus is less potent with respect to death imagery and messages, word completions might not be the appropriate measure for MS. In retrospect, including a lexical decision task in Study 3 would have been a prudent decision.

Here, I tried to understand what effects the death imagery in commercials has on commercials that follow them. That is, does an ad that makes someone think about his or her own death affect how that person evaluates products that are promoted after it? I was unable to prove that DTC ads did so. Although my results showed that certain DTC ads made death thoughts accessible, participant response to brands did not fall in line with self-esteem enhancing tactics. Although previous research offers explanations for such behavior, future researchers could benefit from replicating my study with different ads to further understand if watching DTC ads can engender self-esteem enhancing behavior in participants.

Practically, the results of Study 4 indicate that the ads for Cymbalta and Plavix have the ability to make death thoughts accessible in viewers. Of more interest to DTC advertisers might be the fact that the majority of the ads studied throughout this research seem to have a more innocuous effect. In Study 4, the two ads in the Non-MS condition did not make death thoughts accessible in viewers. Additionally, in Study 3, the levels of anxiety induced by the 12 ads studied were relatively low. Only two ads (both for Cymbalta) had mean levels of anxiety below 4 (with lower means correlating with a higher level of anxiety) on a 7-point scale. Ten of the

twelve ads had mean levels of anxiety over 4, and five had mean levels over 5. These results show that the DTC ads I studied generally did not induce anxiety as defined in my research.

Limitations

My research had numerous limitations. First, I was limited by the DTC ads at my disposal. I had a disc of ads, which was obtained from a pharmaceutical company, and a few more that I found on the Internet. Surely, there are many more DTC ads than just these. Having access to a larger collection of DTC ads might allow for choosing ads with stronger death imagery if they exist. In addition, studying DTC ads from a historical perspective would clarify both their evolution as a marketing tool and their content.

Second, all of my participants were students. The DTC ads I studied did not feature college-aged actors; rather, the commercials showed adults dealing with the repercussions of the various medical conditions. The age range of my participants might be to blame for the lack of self-esteem enhancing behaviors exhibited in my results. That is, if the population of participants had been of more diverse age, and specifically contained older adults, perhaps the level of accessibility of death thoughts engendered by the ads in the MS condition might have prompted participants to respond more predictably to HS brands. Older participants might have been more affected by the ads and subsequently sought out self-esteem enhancement through quickly and positively evaluating HS brands. Future research would benefit from using participants of varying ages to see if the effects of death thought accessibility on attitude toward brands of varying status varies across age groups.

Perhaps the largest obstacle for my study was my design. Clearly, word completions were not sufficient for measuring MS with respect to my DTC ads. The lexical decision task proved more useful, but employing other measures could also generate useful results.

DTC ads are unique. They promote a product that can directly impact the viewer's health. For that reason alone, they are worth continued study. Moving forward from my results, future researchers would be wise to consider approaching TMT research on DTC ads from either a more general or more specific approach. More generally, researchers could use a wider pool of ads with more rigorous pretesting than I had the resources to undertake. More specifically, they could study just the depression ads that I used to understand their differences or similarities. Regardless of the chosen method, studying how we consume products that can affect our health and how we are sold these products will remain a worthy endeavor.

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