USING HUMOR TO "SELL" GOOD LIFE CHOICES

by

JULIE LYNN SCHIRO

B.S., University of Southern California, 2010

A dissertation submitted to the

Faculty of the Leeds School of Business of the

University of Colorado in partial fulfillment

of the requirement for the degree of

Doctor of Philosophy

Department of Marketing

2016

This dissertation entitled:

Using Humor to "Sell" Good Life Choices

written by Julie Lynn Schiro

has been approved for the Department of Marketing

_____

John G. Lynch

_____

Philip M. Fernbach

Date_____

The final copy of this dissertation has been examined by the signatories, and we find that both the content and the form meet acceptable presentation standards of scholarly work in the above mentioned discipline.

IRB protocol #15-0392

Schiro, Julie Lynn (Ph.D. Marketing)

Using Humor to "Sell" Good Life Choices

Dissertation Chair: A. Peter McGraw

Committee Members: John G. Lynch, Philip M. Fernbach, Lawrence E. Williams, Caleb Warren

Traditionally, social marketers motivate people to wear seat belts, give to charity, or say no to drugs with vivid, distressing ads. More recently, many social marketers are shifting toward the use of humor appeals. Humor appeals get attention and are often shared on social media, potentially reaching a large audience. But, are humor appeals as persuasive as their serious counterparts? The literature offers conflicting evidence. Literature on commercial advertising suggests that humor appeals can increase ad liking, which positively influences ad persuasiveness. Other literature suggests that humor appeals can trivialize serious messages, which negatively influences ad persuasiveness. The purpose of this research is to clarify the effect of humor appeals on ad persuasiveness, specifically in the context of social advertising. I find that humor appeals have both positive and negative effects on persuasion. Across four studies, I show that humor appeals do in fact trivialize the serious messages of social ads. Trivialization occurs even if the humor appeal fails at being funny. In addition, I find that humor intensity (funniness) is positively correlated with ad liking, and ad liking is positively correlated with ad persuasiveness. Hence, at high levels of humor, ad trivialization can be offset by ad liking. I conclude that *funny* humor appeals may be a worthwhile strategy for social marketers, not because they are more persuasive, but because of their potential to reach a larger audience.

To Tim, Karen, Cory and S.B.

ACKNOWLEDGMENTS

I would like to thank an exceptional group of people instrumental to the completion of my doctorate. To my advisor, Peter McGraw, thank you. Pete believed in my potential before I joined CU Boulder. He has been in my corner since we met at the Association for Consumer Research in 2010. Pete, I am enormously grateful for your support, both then and now. Your insights have made all my work stronger, especially this dissertation. I appreciate your effort and patience as this document took form. Thank you for serving as chair of my committee and for being my mentor.

To my committee members, John Lynch, Philip Fernbach, Lawrence Williams, and Caleb Warren, your guidance has been immensely valuable. Thank you for the many hours spent reading, thinking, brainstorming, and discussing what is now this document. Your feedback brought clarity to my ideas, and taught me how to be a better thinker.

John Lynch and Gary McClelland, it has been enormous fun learning statistics from you both. Your enthusiasm for the subject matter was utterly contagious, and I hope I can inspire future students with that same fire. I look forward to many more statistics-themed conversations to come. Phil Fernbach and Bart de Langhe, thank you for your patience and enthusiasm as I progressed through the program. You taught me how to be a captivating presenter and a better writer. To the entire faculty—thank you for your encouragement and support. The marketing faculty has a unique bond, and I am glad to have been a part of it.

Christina Kan, Abby Schneider, and Bridget Leonard, thank you for adopting me into your cohort, for making me laugh, and for sharing your wisdom. I look up to you immensely. Erin Percival Carter, Lauren Min, and Andrew Long, you have been a constant source of comic relief, support, and comradery. Justin Pomerance, Joe Harvey, and Sharaya Jones, our time together has been too short! Thank you for cheering me on. I look forward to many years of friendship and collaboration with each of you.

Stefanie Ungphakorn Cowan, your cheerful attitude and candy bowl always make me smile. You are an exceptional PhD program coordinator. Thank you for helping me with my job applications and for keeping everything on track as I completed the final steps in the program. The Leeds School is lucky to have you.

To my parents, Tim and Karen Schiro, I am successful today because of you. Dad, the hours you spent tutoring me in high school formed the basis of my analytical thinking skills. In those hours, you taught me how to teach myself. Mom, our many artistic pursuits formed the basis of my creative thinking skills. To both of you, the effort you put forth in raising me has not gone unnoticed. Your love and support have carried me here. My achievements are your achievements. Thank you for it all.

Cory Barnes, I attribute my success to you as well. Your patience and love made it possible for me to give my best possible effort in this PhD endeavor. Your sense of adventure brought balance to my life. Further, I must note that without you, I surely would have starved during the writing of my dissertation. Cory, your unwavering support and enthusiasm inspires me. I am grateful to you, and my parents, more than I can articulate. Thank you.

CONTENTS

List of Tables

List of Figures

CHAPTER I

INTRODUCTION

Traditionally, social marketers motivate people to wear seat belts, give to charity, or say no to drugs with vivid, distressing ads (e.g., this is your brain on drugs; Partnership for a Drug-Free America 1987). However, social marketing is in the midst of a major paradigm shift. Instead of being scary or depressing, many social marketers are being funny (Stanley 2015). In one social ad, for instance, actor Ryan Reynolds teaches men how to check their "man berries" for testicular cancer, while wearing a superhero costume (Reynolds 2016). Another ad features a montage of funny cat videos, including one of "Shark Cat" riding on a Roomba® in his trademark shark outfit, to argue that secondhand smoke harms pets (truth 2016). Even President Obama is following suit. During a staged interview with comedian Zack Galifinakus, President Obama discusses the importance of health care while Galifinakus mumbles funny asides to the camera (Funny or Die 2014).

Done well, humor appeals get attention, especially online (Eisend 2009; Guadagno et al. 2013b; Gulas and Weinberger 2006; Madden and Weinberger 1982; Purcell 2010). For instance, over 126 million people have watched "Dumb Ways to Die," a funny Australian ad on train safety (Cain Communications 2015; Jardine 2015). Over two million people have watched Reynold's cheeky ad on how to check oneself for testicular cancer (Reynolds 2016). Clearly, humor appeals can increase the reach of social ads, but how do humor appeals compare to more traditional distress-based appeals? Can humor appeals motivate people to quit smoking or conserve earth's resources?

The literature offers conflicting evidence. Literature on commercial advertising suggests that humor appeals can increase ad liking, which positively influences ad persuasiveness (Duncan and Nelson 1985; Eisend 2011; Strick et al. 2012; Strick et al. 2009). Other literature suggests that humor appeals can trivialize serious messages, which negatively influences ad persuasiveness (McGraw, Schiro, and Fernbach 2015a; McGraw, Warren, and Kan 2015b; Nabi, Moyer-Gusé, and Byrne 2007; Young 2008). The purpose of this research is to clarify the effect of humor appeals on ad persuasiveness, specifically in the context of social advertising.

I predict that humor appeals have both positive and negative effects on ad persuasiveness in the context of social advertising. Specifically, I predict that humor appeals, when funny, will have a positive impact on ad liking (Eisend 2009), and ad liking will have a positive impact on ad persuasiveness (Duncan and Nelson 1985; Eisend 2011; Strick et al. 2012; Strick et al. 2009). Hence, funnier humor appeals will be more persuasive than unfunny humor appeals.

I predict that unfunny humor appeals will be especially *unpersuasive* relative to most other types of appeals, since in general people dislike unfunny humor appeals (Beard 2008; Flaherty, Weinberger, and Gulas 2004). Given the predicted positive correlation between ad liking and ad persuasiveness, unfunny humor appeals should be less persuasive relative to other types of appeals insofar as unfunny humor appeals are less likable. Based on these predictions, one might conclude that in the context of social advertising, humor appeals will be persuasive as long as they are funny. However, these hypotheses capture only half of the story.

I also predict that humor appeals will have a *negative* impact on persuasion, irrespective of the appeal's likability. Specifically, I predict that people will interpret a humor appeal as a signal that they need not take the message seriously (Nabi et al. 2007; Young 2008). In other words, the

presence of a humor appeal will act as a "discounting cue" (Nabi et al. 2007; Young 2008). The discounting cue should be especially strong for people who find the appeal funny; people may infer that because they feel amused, they must not take the message seriously (Schwarz 2004, 2010).

Taken together, my predictions suggest that humor appeals will have opposing effects on the persuasiveness of social ads. The interplay between ad likability and message trivialization should therefore determine the persuasiveness of a social ad. Across four studies, I find support for my hypotheses. I show that humor appeals do in fact trivialize the serious messages of social ads, but at high levels of humor, message trivialization can be offset by ad liking. Although liking counteracts message trivialize, the opposing forces negate each other, resulting in humor appeals being no more or less persuasive than non-humor appeals. Still, I conclude that *funny* humor appeals may be a worthwhile strategy for social marketers, not because they are more persuasive, but because of their potential to reach a larger audience.

DEFINITIONS

Social marketing

Social marketing is the use of marketing concepts to engender healthful or prosocial behaviors (Andreasen 1995, 2001, 2006; French and Gordon 2015). Despite widely-held misperceptions among practitioners and academics alike, social marketing encompasses more than just advertising (Andreasen 2006, 2012; French and Gordon 2015; Rothschild 1979; Stead et al. 2007; Wiebe 1951/1952). Social marketing incorporates the entire marketing mix. For

example, the "product" is the behavior that the social marketer is encouraging (e.g., exercise), the "price" is the cost that the consumer incurs in doing the behavior (e.g., effort, gym membership), the "place" is the location where the consumer can do the behavior (e.g., a gym), and the "promotion" is the means by which the social marketer communicates their message (e.g., advertisements, public relations). Hence, the field of social marketing is analogous to the general field of marketing, except for a focus on welfare versus profit (Andreasen 2012).

Social advertising

This research focuses on social advertising—advertising with a social marketing agenda (Andreasen 1994; Stead et al. 2007). Typically, social ads are made by government and nonprofit sectors (e.g., the Partnership for a Drug Free America). However, social ads are sometimes made by commercial sectors as well. For instance, Budweiser has several ads urging viewers to drink responsibly (e.g. "Friends Are Waiting;" Anheuser-Busch 2014). Of course, these *commercial social* ads have a conflict of interest. While Budweiser wants people to drink responsibly, Budweiser also wants people to buy beer. Nonetheless, I consider commercial social ads to be social ads in the context of this research.

Humor

There is some ambiguity in the meaning of the word humor because people so often use the word to convey different things. Consider a sentence that claims: Old Spice "uses humor" to sell deodorant. In this example, the word humor can refer to two distinct meanings. The word humor can mean that Old Spice uses [sarcasm, wordplay, jokes, et cetera] to sell deodorant, in which

case the word humor refers to a set of techniques meant to be funny—a humor appeal. Alternatively, the sentence can mean that Old Spice uses [amusement, laughter, smiling] to sell deodorant, in which case the word humor refers to a set of responses (e.g., amusement) that Old Spice is leveraging to some marketing aim (e.g., purchase intent, brand awareness). The key distinction between the two meanings is whether the word humor refers to an attempt at being funny, or a response to something that *is* funny.

In this paper, I use the word humor as a noun which means a person's response to a successful humor appeal. Humor involves the cognitive appraisal that something is funny, the behavioral response of laughing or smiling, and the emotional response of amusement (Martin 2007; McGraw et al. 2015a; McGraw and Warren 2010; Veatch 1998; Warren and McGraw 2015b). I use the words humorous or funny as adjectives which describe a humor-eliciting stimulus. Finally, I use the phrase "humor appeal" as a noun which describes someone or something (e.g., an ad) that attempts humor (but may or may not succeed at being humorous).

CHAPTER II

THE CLASSIC SOCIAL MARKETING FORMULAS

In order to "sell" healthful or prosocial behavior (e.g., water conservation, smoking cessation) social marketers most commonly use distress-based appeals (Andreasen 1995, 2001, 2006; French and Gordon 2015; Stead et al. 2007). These appeals are motivating because people are highly averse to experiencing distress or witnessing distress in others, and will take rapid action to resolve their (or others') distress (Batson 1990; Batson et al. 2005; Lazarus 1991; Shelton and Rogers 1981). Fear appeals are one type of distress-based appeal that scholars have investigated extensively (De Hoog, Stroebe, and de Wit 2007; Earl and Albarracín 2007; Floyd, Prentice-Dunn, and Rogers 2000; Milne, Sheeran, and Orbell 2000; Peters, Ruiter, and Kok 2013; Sheeran, Harris, and Epton 2014; Tannenbaum et al. 2015; Witte and Allen 2000).

FEAR APPEALS

Psychologists have long known that when people feel scared, they are highly motivated to seek resolution (Lazarus 1991). Fear appeals attempt to scare the viewer, then offer a way for viewers to resolve their fear via the call to action (e.g., buckle up; Floyd et al. 2000; Maddux and Rogers 1983; Milne et al. 2000; Pechmann et al. 2003; Rippetoe and Rogers 1987; Rogers 1975;

Rogers, Cacioppo, and Petty 1983; Tanner, Day, and Crask 1989; Tanner, Hunt, and Eppright 1991). For instance, a particularly well-known fear appeal likens the effects of drug use on the brain to a frying egg (Partnership for a Drug-Free America 1987). By abstaining from drugs (as the call to action recommends) people can avoid harming their brain. There are several theories to explain how fear appeals motivate people to action in the context of social advertising. Below, I review the most prominent theories in chronological order, starting with Janis' classic fear-as-acquired-drive model (Janis 1967; Janis and Feshbach 1953; Ray and Wilkie 1970).

Fear-as-acquired-drive model

According to the fear-as-acquired-drive model, only moderate levels of fear scare people to action (Janis 1967; Janis and Feshbach 1953; Ray and Wilkie 1970). If too little fear is present, people will not address the problem. If too much fear is present, people will avoid the problem entirely. In other words, the theory posits that the relationship between fear and motivation is curvilinear. Later scholars, however, found little support for a curvilinear effect of fear on action, which prompted a number of new theories (Leventhal 1970; Maddux and Rogers 1983; Witte 1992).

Parallel response model

As a replacement to the fear-as-acquired-drive model, Leventhal (1970) offered his parallel response model. According to the parallel response model, fear activates two coping processes, one maladaptive (fear control) and one adaptive (danger control). Fear control prompts actions that reduce the fear but not the problem. Saying "it won't happen to me" is an

example of fear control. Danger control prompts actions that *actually* reduce the problem. Quitting smoking is an example of danger control. Leventhal argued that fear and danger control could operate in parallel. However, his model does not predict when one will supersede the other. The protection motivation theory filled this gap.

Protection motivation theory

Protection motivation theory (PMT) is among the most used and built-upon theories of fear appeals (Floyd et al. 2000; Ho 1998; Milne et al. 2000; Tanner et al. 1991; Weinstein 1993; Witte 1992). According to PMT, people's responsiveness to a problem depends on their appraisal of the problem and their appraisal of the available coping responses (Maddux and Rogers 1983; Rippetoe and Rogers 1987; Rogers 1975; Rogers et al. 1983; Rogers and Mewborn 1976). People's appraisal of a problem depends on the perceived severity of the problem (+), perceived vulnerability to the problem (+), and motivated reasoning (- ; "cigarettes are fun…they can't be *that* bad"). The coping appraisal depends on the perceived efficacy of the available solutions (+, "response-efficacy"), perceived ability to enact these solutions (+, "self-efficacy"), and perceived costs of enacting these solutions (- ; e.g., effort). Together, people's appraisal of the problem and the available coping responses predicts *protection motivation*—people's motivation to address a problem.

Once people are motivated to resolve a problem, their actions can be adaptive (e.g., eating healthy) or maladaptive (e.g., wishful thinking). An important contribution of PMT is that it predicts when one happens over the other using the coping appraisal (Maddux and Rogers 1983; Rippetoe and Rogers 1987). When people are frightened without a means to resolve the problem

(i.e., low self-efficacy), they cope by discounting the problem. This is analogous to Leventhal's fear control process. When people are frightened, but have a means to resolve the problem (i.e., high self-efficacy), they cope by addressing the problem itself. This is analogous to Leventhal's danger control process. Two meta-analyses confirm that self-efficacy is the most important PMT predictor of adaptive responses to fear appeals (Floyd et al. 2000; Milne et al. 2000).

Revisions to the protection motivation theory

One criticism of PMT is that it does not model the role of fear (Tanner et al. 1991; Witte 1992). PMT focuses primarily on people's cognitions rather than their feelings. Fear only matters insofar as it informs people's cognitive appraisal of danger (Rogers et al. 1983, p. 169). Tanner and colleagues disagreed and argued that fear focuses people's attention on information that will help them cope, such as the call to action. Hence, according to Tanner and colleagues, fear can improve response-efficacy and self-efficacy, thereby increasing adaptive responses.

A second criticism of PMT is that it does not model the role of appraisal sequence (Tanner et al. 1991). According to PMT, a person's appraisal of the problem and their appraisal of the coping responses happens simultaneously (Tanner et al. 1991). In contrast, Tanner and colleagues argued that the problem appraisal occurs first. If people do not perceive a problem, they stop progressing through the PMT model. Witte (1991) made a similar observation. Tanner and colleagues named their revised version of PMT the *ordered protection motivation theory* (OPMT).

A third criticism of PMT is that it does not model the role of social norms (Berger and Rand 2008; Ho 1998; Tanner et al. 1991). Yet, according to several scholars, social norms influence

the kinds of behaviors germane to social marketers (French and Gordon 2015; Goldstein, Cialdini, and Griskevicius 2008; Ho 1998; Pechmann et al. 2003; Tanner et al. 1991). For instance, Pechmann and colleagues found that among 194 anti-smoking ads aimed at adolescents, ads that presented smoking as a *social* risk were more effective than ads that presented smoking as a physical risk. While the young participants discounted the physical risks as "it won't happen to me," they did not discount the social risks. Apparently, adolescents do not consider themselves immune to social criticism and ostracism. Further, Goldstein et al. (2008) found that hotel guests were more likely to reuse their towels when they learned that other guests were reusing theirs. In a similar vein, Berger and Rand (2008) found that identity signaling matters. When unhealthy foods were associated with an unfavorable social group, participants preferred the healthy alternatives. Ho (1998) formally revised PMT to include the influence of social risks and norms.

Extended parallel process model

Witte (1992) developed the extended parallel process model (EPPM) to better explain instances of adaptive and maladaptive coping responses to fear appeals. The model draws heavily from Leventhal's parallel response model and Roger's PMT. The factors that distinguish EPPM are twofold. First, it predicts that a person's processing of fear-arousing stimuli stops if they do not perceive a problem, regardless of other factors (e.g., efficacy). This is reminiscent of Tanner's (1991) ordered PMT. Second, it predicts that as fear goes up, so does maladaptive coping. This is reminiscent of Janis' (1967) fear-as-acquired-drive model. Otherwise, the model resembles PMT.

Stage model of processing of fear-arousing communications

The stage model shares many assumptions of PMT and EPPM (Das, De Wit, and Stroebe 2003; De Hoog, Stroebe, and De Wit 2005; De Hoog et al. 2007). Like PMT, the stage model predicts people's behavior from their problem and coping appraisals. Like EPPM, it models sequence; the problem appraisal comes before the coping appraisal. But unlike PMT or EPPM, the stage model argues that people *reappraise* the problem based on their coping appraisal. When people appraise the problem, they initially discount its severity and their vulnerability to it out of motivated reasoning. Next, they evaluate their coping alternatives. When a problem seems manageable (i.e., response-efficacy and self-efficacy are high), people relax their motivated reasoning and reappraise the problem more realistically. When a problem seems unmanageable, they discount the problem further.

Also unlike PMT or EPPM, the stage model argues that severity and vulnerability—the subcomponents of problem appraisals—have different effects on attitudes. Severity predicts attitudes towards the call to action, while vulnerability does not; people can appreciate a solution (e.g., immunization in Africa) without being personally vulnerable to the problem (e.g., typhoid fever). However, severity and vulnerability have similar effects on behavior (De Hoog et al. 2007).

Effectiveness of fear appeals overall

While there are many models that attempt to explain how fear appeals motivate viewers to action, the results of several meta-analyses conclude that overall, fear appeals are an effective means to motivate people towards healthful behaviors (De Hoog et al. 2007; Earl and Albarracín

2007; Floyd et al. 2000; Milne et al. 2000; Peters et al. 2013; Sheeran et al. 2014; Tannenbaum et al. 2015; Witte and Allen 2000).

OTHER DISTRESS-BASED APPEALS

Social marketers typically use fear appeals to motivate viewers to engage in healthful behaviors (e.g., quit smoking, eat healthy; De Hoog et al. 2007; Earl and Albarracín 2007; Floyd et al. 2000; Milne et al. 2000; Peters et al. 2013; Sheeran et al. 2014; Tannenbaum et al. 2015; Witte and Allen 2000). When the goal is to motivate viewers to help others, social marketers use more general distress-based appeals that highlight the suffering of others (Bagozzi and Moore 1994; Batson 1990, 2010; Batson, Ahmad, and Tsang 2002; Batson and Coke 1981; Batson et al. 1981; Batson, Early, and Salvarani 1997a; Batson et al. 2003; Batson et al. 2005; Batson et al. 1983; Batson and Powell 2003; Batson et al. 1997b; Batson et al. 1995; Carlson and Miller 1987; Cialdini, Baumann, and Kenrick 1981; Cialdini et al. 1997; Cialdini, Darby, and Vincent 1973; Cialdini et al. 1987; Coke, Batson, and McDavis 1978; Lerner 1965, 1977; Lerner and Miller 1978; Manucia, Baumann, and Cialdini 1984; Miller 1977; Shelton and Rogers 1981; Small and Verrochi 2009; Toi and Batson 1982).

Why does seeing another's plight motivate people to help others? Three theories offer slightly different explanations. According to the just world hypothesis and the negative state relief model, seeing another's plight is *personally* distressing, either because the misfortune of others makes people question their belief in a just world or because people experience another's distress vicariously (Carlson and Miller 1987; Cialdini et al. 1981; Cialdini et al. 1997; Cialdini

et al. 1973; Cialdini et al. 1987; Lerner 1965, 1977; Lerner and Miller 1978; Manucia et al. 1984; Miller 1977). According to these theories, people help others to the extent that helping relieves their own distress. In contrast, according to the empathy-altruism hypothesis, seeing another's plight activates an instinctual and altruistic drive to help that person. I review these theories in detail below.

Just world hypothesis

An important finding of Lerner and colleagues is that another's plight can threaten personal well-being by calling into question their belief in a just world (Furnham 2003; Lerner 1965, 1977; Lerner and Miller 1978; Miller 1977).

> Individuals have a need to believe that they live in a world where people generally get what they deserve…people are very reluctant to give up this belief, and they can be greatly troubled if they encounter evidence that suggests that the world is not really just or orderly after all (p. 1030-1031).

When people's belief in a just world is threatened, they go out of their way to restore justice, which can take the form of helping others (Hafer 2000). A recent example is the public's reaction to the case of Steven Avery, a man who served eighteen years for a rape he didn't commit, and then was charged with murder on questionable evidence. The case was the subject of a Netflix documentary (Ricciardi and Demos 2015), which portrayed Avery as the victim of a severe miscarriage of justice. The documentary was so compelling that it motivated over 125,000 people to sign a petition for his pardon (Messer 2016). The documentary also generated a flood of gifts and support from the public for Avery and his family (Fox News 2016; Grubbs 2015). So

impassioned was the public's outrage that even the White House was forced to respond (Howard 2016).

The apparent injustice suffered by Steven Avery caused people to question their own safety under the criminal justice system (Reddit 2016). People's impassioned efforts to bring Avery justice was also a fight for their own peace of mind according to the just world hypothesis. Corroborating the just world hypothesis, Lee and colleagues found that people are less motivated to help others who are seen as responsible for their own plight (Lee, Winterich, and Ross 2014). In such a case, there is no threat to justice—the person got what he or she deserved.

Negative state relief model

The negative state relief model offers a different explanation of how another's plight motivates prosocial behavior (Cialdini et al. 1981; Cialdini et al. 1997; Cialdini et al. 1973; Cialdini et al. 1987). According to this model, seeing another's distress is *vicariously* distressing. People help others to the degree that it relieves their own distress. For instance, in one experiment participants witnessed a confederate spill a box of cards, but were unable to help. Participants later had an opportunity to help someone else. Help offered was a function of participants' lingering distress. When participants received a mood-booster (money, praise) before their opportunity to help, they offered less help than participants who received nothing. Presumably, the mood-booster was sufficient to dispel lingering negative feelings and so helping was no longer necessary (Cialdini et al. 1973). Later papers validated the negative state relief model using different paradigms (Carlson and Miller 1987; Cialdini et al. 1981; Cialdini et al. 1997; Cialdini et al. 1987; Dickert, Sagara, and Slovic 2011; Manucia et al. 1984; Small and

Lerner 2008; Smith, Keating, and Stotland 1989).

Empathy-altruism hypothesis

The empathy-altruism hypothesis offers a third explanation of prosocial behavior. While the just world hypothesis and the negative state relief model argue that helping is egoistic, the empathy-altruism hypothesis argues that helping is *altruistic* (Batson 1990, 2010; Batson et al. 2002; Batson and Coke 1981; Batson et al. 1981; Batson et al. 1997a; Batson et al. 2003; Batson et al. 2005; Batson et al. 1983; Batson and Powell 2003; Batson et al. 1997b; Batson et al. 1995; Toi and Batson 1982). The difference lies in the helper's end-goal. If the helper assists others with the motivation to feel good or show-off, then his helping is egoistic. If the helper assists others to improve another person's welfare rather than his own, then his helping is altruistic. While Batson and colleagues recognize that both motives can co-exist, they argue that altruistic motives dominate.

Distress-based appeals work because the more distressing the victim's plight seems, the more compassion, sympathy, and concern people feel for the victim. These "empathic emotions" trigger an instinctual drive to nurture and care for others (Batson et al. 2005). For instance, in one experiment participants volunteered to take electric shocks for Elaine, a supposed peer getting painfully shocked in the next room. In opposition to what the negative state relief model would predict, participants still wanted to trade places with Elaine even when they could mitigate their own (supposed) personal distress through easier, unpainful means (Batson and Coke 1981). Helping was mediated by empathic emotion for Elaine, but not negative affect, offering further support for the empathy-altruism hypothesis rather than the negative state relief model.

The case for genuine altruism has raised much debate in the literature (Batson et al. 2002; Batson et al. 1983; Batson et al. 1997b; Cialdini et al. 1997; Cialdini et al. 1987; Dovidio, Allen, and Schroeder 1990; Lynch and Cohen 1978). The general consensus among scholars is that both egoistic and altruistic motives exist and can drive helping behavior (Batson 2010; Cialdini et al. 1997; De Waal 2008). Other research corroborates the effect of empathic emotion on helping, without taking a strong stance on whether the helping is egoistic or altruistic (Bagozzi and Moore 1994; Chang and Lee 2009; Fisher and Ma 2014; Shelton and Rogers 1981; Small and Verrochi 2009; Smith, Faro, and Burson 2013).

THE IMPORTANCE OF PROBLEM PERCEPTION

Regardless of the ad's agenda (i.e., help self, help others) or the theory behind the approach (e.g., PMT, empathy-altruism hypothesis), problem perception plays a major role in motivating people to action. For instance, in Roger's PMT, and several similar models that followed, problem perception is a necessary first step if people are to experience *protection motivation* (i.e., motivation to protect oneself; Das et al. 2003; Rogers et al. 1983; Tanner et al. 1991; Witte 1992). In Lerner's belief in a just world hypothesis and Cialdini's negative state relief model, people are motivated to help others when another's plight poses a problem to their own well-being (e.g., makes them question their belief in a just world or makes them vicariously distressed, respectively; Cialdini et al. 1981; Lerner 1965, 1977; Lerner and Miller 1978). Finally, in Batson's empathy-altruism hypothesis and other similar models that focus on empathic emotion specifically, people are motivated to help others based on the perceived

severity of another's plight (Bagozzi and Moore 1994; Batson and Coke 1981; Batson et al. 1981; Chang and Lee 2009; Fisher and Ma 2014; Shelton and Rogers 1981; Small and Verrochi 2009; Smith et al. 2013).

Establishing problem perception

Establishing problem perception is not as simple as telling people there is a problem. James Balog, photographer for National Geographic and founder of the Extreme Ice Survey, recognized this in relation to global warming: "The public doesn't want to hear about more statistical studies, more computer models, more projections. What they need is a believable understandable piece of evidence—something that grabs them in the gut" (Balog 2012). Balog's intuition was definitively correct. In terms of convincing people that there is a threat to the self or others, statistics fall flat. The problem with statistics is that they fail to stir emotions. Consequently, statistics mask the magnitude of the threats they convey (Kogut and Ritov 2005; Slovic 2007; Small and Loewenstein 2003; Small, Loewenstein, and Slovic 2007).

The role of imagery

One way social marketers can convince people of a problem is to create social ads with vivid, disturbing imagery (Bagozzi and Moore 1994; Chang and Lee 2009; Shelton and Rogers 1981; Small and Verrochi 2009). Disturbing imagery can generate empathic emotions. For instance, Shelton and Rogers (1981) found that participants felt greater sympathy and concern for whales after watching a graphic whale-hunting clip versus its nongraphic counterpart. These empathic emotions predicted participants' intentions to donate time and money to Greenpeace.

Positive imagery is not good at convincing people of a problem (Fisher and Ma 2014; Small and Verrochi 2009). For example, Fisher and Ma (2014) found that charity appeals with attractive children were less effective than charity appeals with unattractive children. Apparently, when the ad featured attractive versus unattractive children, people assumed that the children were less needy, consistent with the "beautiful is good" stereotype (Eagly et al. 1991). Similarly, Small and Verrochi (2009) found that participants donated less money to charities whose flyers featured images of smiling versus frowning children; the happy images made people less sympathetic to the children's plight as compared to the sad images.

CHAPTER III

THE SHIFT TOWARDS HUMOR APPEALS

Despite a long tradition of making viewers distressed, social marketers are attempting a different strategy: making viewers laugh (Stanley 2015). The shift towards humor appeals reflects a desire among advertisers to increase the reach of their ads by creating content that "goes viral" (Stanley 2015). Although viral content is difficult to predict, it does ascribe to some general principles. One principle is that positive content is more likely to go viral than negative content, especially if the negative content is depressing (Berger and Milkman 2012). As a result, humor appeals have become a popular alternative to more classic distress-based appeals (Stanley 2015).

Some of the biggest names in social advertising are using humor appeals. For instance, truth®—one of the strongest social marketing brands to date (French and Gordon 2015)—recently debuted an anti-smoking ad featuring rainbow-vomiting unicorns and meme sensation ERMAHGERD girl to make the point that social smoking is a rabbit hole to more smoking (truth 2015). There are countless other examples. In a recent video, First Lady Michelle Obama and Saturday Night Live's Jay Pharaoh rap about the importance of going to college (CollegeHumor 2015). Another features the tongue-in-cheek "man therapist" Dr. Rich Mahogany, who urges male viewers to visit the man-therapy clinic (i.e., mantherapy.org) for help with depression and suicidal thoughts (Cactus 2016). Humor appeals have even appeared on traffic signs. In December 2015, the departments of transportation for Iowa, Utah, Arizona, and Colorado played

off the Star Wars Episode VII hype by programming messages such as “Aggressive driving is the path to the dark side,” and “Road Rage? Let the Wookie win” (Ducey 2015).

Research on commercial advertising highlights many benefits of humor appeals. Humor appeals capture people’s attention (Eisend 2009; Gulas and Weinberger 2006; Madden and Weinberger 1982). Humor appeals are also popular online (Guadagno et al. 2013b; Purcell 2010). People actively seek out humorous content, even if that content is an advertisement (Warren, Barsky, and McGraw 2016). For instance, Dollar Shave Club produced a hilarious video entitled “Our Blades are F***ing Great” to promote their shavers. Over 22 million people have watched the ad on YouTube (Dollar Shave Club 2012). People are even starting to substitute serious news sources (e.g., CNN) with humorous ones (e.g., The Dailey Show; Feldman and Young 2008). Hence, humor appeals help marketers stay competitive within the modern, digital marketing landscape (Bernoff and Li 2008).

Humor appeals are also easier for people to recall relative to serious appeals (Carlson 2011; Chung and Zhao 2003; Duncan and Nelson 1985; Hansen et al. 2009; Krishnan and Chakravarti 2003; Murphy, Cunningham, and Wilcox 1979; Schmidt 1994, 2002). The memorability of humor appeals is due in part to the ability of humor appeals to hold people’s attention. Krishnan and Chakravarti (2003) found that participants processed and encoded humor appeals more than serious appeals, and therefore had improved memory for the ad’s brand claims. The degree of funniness also influences memory. Carlson (2011) found that participants’ memory for humor-attempting photographs, keywords, and phrases increased with the funniness of the stimuli.

People also like humor appeals more than serious appeals, as long as the humor appeals are funny (Beard 2008; Flaherty et al. 2004). Ad likability is important because it is positively

correlated with ad persuasiveness (Duncan and Nelson 1985; Eisend 2009; Eisend 2011; Speck 1987; Weinberger and Gulas 1992). For instance, when people liked an ad, they were less likely to counter argue the message (Eisend 2011; Griskevicius, Shiota, and Neufeld 2010a; Nabi et al. 2007; Strick et al. 2012; Young 2008). Ad likability is also positively correlated with purchase intention and product choice. One study found that when people liked a radio ad, they were subsequently more interested in buying the advertised product (Duncan and Nelson 1985). Similarly, Strick and colleagues (2009) found that people liked products more when the products were associated with a humorous cartoon. Product liking mediated people's actual product choices. The positive correlation between ad liking and ad persuasion is consistent with broader findings from the psychology literature demonstrating that people are persuaded by people or things that they like (Cialdini 2001, 2003; Frenzen and Davis 1990; Goei et al. 2003; Guadagno et al. 2013a; Hepler and Albarracin 2014; Regan 1971; Reinhard, Messner, and Sporer 2006).

DOWNSIDES OF HUMOR APPEALS FOR SOCIAL ADS

Despite the potential benefits of humor appeals, there are also downsides. A major determinant of a social ad's persuasiveness depends on how well the social ad establishes that a problem exists (Andreasen 1995, 2006; Fisher and Ma 2014; French and Gordon 2015; Kogut and Ritov 2005; Rogers et al. 1983; Slovic 2007; Small and Loewenstein 2003; Small et al. 2007; Small and Verrochi 2009; Smith et al. 2013). Despite the potential benefits of humor appeals as outlined in the previous section, there is substantial research to suggest that in the context of social advertising, humor appeals may undermine the very problems they seek to

establish. When serious information is conveyed humorously, people often discount the importance and significance of the underlying information (McGraw et al. 2015a; McGraw et al. 2015b; Nabi et al. 2007). If humor appeals decrease viewers' impression of the problem they depict, then social ads that use humor appeals could suffer substantially in terms of their persuasiveness. Below, I review theoretical and experimental evidence that when serious information is conveyed humorously, people discount the importance and gravitas of the information.

An evolutionary account of humor

According to evolutionary psychologists, humor serves an important communicative function—that of safety (Gervais and Wilson 2005; Provine 2004). Laughter, for instance, presumably evolved to signal that some threat (e.g., a snake) is in fact not a problem (false-alarm, the "snake" is a stick; Ramachandran 1998). Further, according to several theorists including Freud, laughter is the physical manifestation of relief (Freud 1905/1960; McCauley et al. 1983; Morreall 1983; Spencer 1860). Not surprisingly, then, the situations most conducive to humor are those that are playful or safe (Apter 1982; Devereux and Ginsburg 2001; Eastman 1936; Gervais and Wilson 2005; Martin 2007; Provine 2001; Ramachandran 1998; Rothbart 1973; Ziv 2010).[1] Hence, the humor-safety link is deeply ingrained in mankind at the instinctual level.

[1] An exception is aggressive or mean humor attempts (e.g., teasing). I return to this in the general discussion, where I describe how teasing may benefit social ads.

Arousal-safety theory

According to the arousal-safety model, something has to seem "safe" for people to find it funny (Rothbart 1973). The basic concept of arousal-safety theory is that humor occurs when a person deems that an emotionally arousing situation is also safe. The theory began with the writings of Herbert Spencer, who proposed that laughter, specifically, reflected the release of nervous energy (Spencer 1860). Freud built on Spencer's theory by specifying the source of this nervous energy: repressed aggressive and sexual urges (Freud 1905/1960). Together, these ideas became known as "relief theory."

Later scholars changed the specifications for arousal. Rather than being from repressed aggression or sexuality, Berlyne argued that arousal could come from the joke, itself, via anticipation of the punchline. In a review of the literature, however, McGhee (1971) criticized Berlyne's theory for being vague in terms of the nature and constituents of "arousal," specifically how it differed from other kinds of arousal such as fear or curiosity. To address these issues, Rothbart (1973) formally introduced the modern version of arousal-safety theory:

> The model proposes that laughter occurs when a person has experienced heightened arousal but at the same time (or soon after arousal) evaluates the stimulus as safe or inconsequential (Rothbart 1973, p. 249).

Similar to Janis' curvilinear theory of fear, Rothbart proposed a curvilinear theory of humor based on arousal level. Arousal level can be thought of as a state of surprise. Small surprises are not funny because they lack the tension that, when resolved, generates humor. Large surprises are not funny because they contain too much tension to be rendered benign. Moderate surprises,

however, are just right for humor. Moderate surprises are intriguing enough to build tension, but safe enough to approach and resolve, resulting in humor.

Benign-violation theory

The benign-violation theory is similar to the arousal-safety theory in its requirement of a safety appraisal for humor to occur (McGraw and Warren 2010; Veatch 1998). However, the theory also integrates pieces of other prominent theories (superiority theory, incongruity theory) to form a more comprehensive and precise theory of humor. The general idea is that humor occurs when two simultaneous, contradictory appraisals are held in the mind: something is wrong *and* okay—a violation is benign (McGraw and Warren 2010; Veatch 1998; Warren and McGraw 2015b; Warren and McGraw 2015a). For instance, consider the recent viral YouTube video showing cats purposely knocking over toddlers (Shortlist Magazine 2015). The violation is that cats are attacking defenseless children, but the violation is benign because no children were actually harmed in the "attacks." Note that, if instead, the cats were actually harming the toddlers, the clip would cease to be funny because it would cease to be benign.

The nature of amusement

Amusement is the positive, emotional component of humor (Martin 2007; McGraw et al. 2015a; McGraw and Warren 2010; Veatch 1998; Warren and McGraw 2015b). Amusement shares a positive valence with other positive emotions (e.g., joy, awe). Positive emotions, in general, can decrease problem perception. Positive emotions signal that one's situation is acceptable; no immediate action is required (Schwarz 1990; Schwarz and Bless 1991; Schwarz,

Bless, and Bohner 1991b). Positive emotions can also make people more optimistic about future risk (Johnson and Tversky 1983; Wright and Bower 1992) and resistant to negative information (Andrade 2005; Isen and Simmonds 1978). For instance, participants in a positive mood thought they were less vulnerable to future bad events (e.g., illness, car accident) than participants in a negative mood (Johnson and Tversky 1983; Wright and Bower 1992).

There is emerging evidence that amusement, in particular, decreases problem perception more so than other positive emotions (Griskevicius et al. 2010a; Strohminger, Lewis, and Meyer 2011). For instance, Stohminger and colleagues (2011) found that amusement activated irreverence, while elevation (a feeling of moral goodness) activated virtue. Amused participants were substantially more likely than elevated participants to sacrifice strangers in sacrificial moral dilemmas. Thus, humor appeals may undermine problem perception more than other positive-but-not-humorous appeals.

Humor decreases problem perception

Based on evolutionary theories of humor, the arousal-safety theory of humor, the benign-violation theory of humor, and the nature of amusement, it follows that humor may decrease problem perception. Several papers find overt evidence of this (Griskevicius et al. 2010a; McGraw et al. 2015a; McGraw et al. 2015b; Moyer-Gusé, Mahood, and Brookes 2011; Nabi et al. 2007; Young 2008). Nabi and colleagues found that people discount humorous news (e.g., The Dailey Show) as being "just a joke," despite the seriousness of the underlying content (Nabi et al. 2007). McGraw and colleagues (2013a) find similar results in the realm of complaints. Humorous complaints received less sympathy and less redress than their serious counterparts

because the presence of a humor appeal made the problem seem benign.

There is also evidence that humor appeals in social ads, specifically, cause people to discount the problem (Conway and Dube 2002; McGraw et al. 2015a; Moyer-Gusé et al. 2011; Mukherjee and Dubé 2012). In the context of fear appeals, this is actually useful. Several scholars note that by combining humor appeals with fear appeals, the depicted problem is made safe enough for people to approach and consider (Conway and Dube 2002; Mukherjee and Dubé 2012; Yoon 2015). However, other scholars are less optimistic about the persuasiveness of humor appeals in social ads. For instance, Moyer-Guse and colleagues found that humor appeals trivialized the consequences of unprotected sex (Moyer-Gusé et al. 2011). Similarly, McGraw and colleagues found that humor appeals decreased problem perception and information search across a range of social issues (McGraw et al. 2015a).

CHAPTER IV

THE PRESENT RESEARCH

There is conflicting evidence that humor appeals may both increase and decrease the persuasiveness of social ads. Humor appeals may increase the persuasiveness of social ads by making the ads more likeable (Duncan and Nelson 1985; Eisend 2009; Eisend 2011; Flaherty et al. 2004; Speck 1987; Weinberger and Gulas 1992). However, humor appeals may decrease the persuasiveness of social ads by trivializing the importance of the message (McGraw et al. 2015a; McGraw et al. 2013a; Moyer-Gusé et al. 2011; Nabi et al. 2007). Given the evidence for and against humor appeals, the goal of this research is to clarify the persuasiveness of humor appeals in the context of social advertising.

Do people like social ads that employ humor appeals?

Humor appeals tend to increase people's liking of *commercial* ads as a function of perceived humor (Beard 2008; Eisend 2009; Eisend 2011; Flaherty et al. 2004; Speck 1987; Weinberger and Gulas 1992; but for an exception, see Warren and McGraw forthcoming). Although people may find it inappropriate to joke about serious issues (McGraw, Schwartz, and Tetlock 2012a; Vox 2016), the online popularity of humorous social ads seems to indicate the public's affinity for them (Stanley 2015). I thus predict that humor appeals will increase people's liking of *social* ads as a function of perceived humor.

H1: Humor appeals will increase people's liking of social ads as a function of perceived humor.

However, I also predict that humor appeals can *decrease* the likeability of social ads relative to other types of appeals (e.g., distress-based, positive) if the humor appeals fall flat, i.e., are unfunny (Beard 2008; Flaherty et al. 2004). Flaherty and colleagues (2004) found that unfunny humor appeals were less liked than funny humor appeals. However, they did not test whether failed humor appeals were less liked than *non-humor* appeals. Do people especially dislike ads that attempt humor and fail? Regarding social ads, I propose the answer is yes. Social ads that attempt humor and fail may seem in poor taste, given the sensitive nature of their subject matter (McGraw et al. 2012a; Vox 2016; Warren and McGraw forthcoming).

H2: Humor appeals that fail to be funny will be less liked relative to non-humor appeals.

Does ad liking lead to persuasion?

In the context of social advertising, I consider persuasion to have occurred if the ad increases problem perception, intentions to act, and actual behavior (Andreasen 1995, 2001, 2006; French and Gordon 2015). From the commercial literature, there is substantial evidence that people are more persuaded by ads they like (Duncan and Nelson 1985; Eisend 2009; Eisend 2011; MacKenzie, Lutz, and Belch 1986; Speck 1987; Weinberger and Gulas 1992). But, to what extent will people be more persuaded by *social* ads they like?

Several scholars doubt whether persuasive *commercial* tactics will be persuasive in *social* ads. Social ads have calls to action that are consistently more complex and unpleasant (e.g., quit smoking, give blood) than those in commercial ads (Andreasen 1993, 2012). Further, the benefits that a person can expect by following a social ad's call to action are often in the distant future (e.g., long-term health) or received by a third party (e.g., needy families). Hence, it seems realistic to expect that ad liking will play a smaller role in the persuasiveness of social ads relative to commercial ads. However, I predict that ad liking will still play *some* role in the persuasiveness of social ads. Research in general psychology highlights a broad range of scenarios substantiating that people's liking of someone or something influences their subsequent behaviors (Cialdini 2001, 2003; Frenzen and Davis 1990; Goei et al. 2003; Guadagno et al. 2013a; Hepler and Albarracin 2014; Regan 1971; Reinhard et al. 2006).

H3: The more people like a social ad, the more persuaded they will be by the ad.

Based on H1 – H3, one might logically conclude that humor appeals will be more persuasive than non-humor appeals, as long as the appeals are funny. Presumably, funnier appeals are better liked than non-humor appeals (H1 & H2), and better liked appeals are more persuasive (H3). However, H1 – H3 ignore the fact that humor appeals can trivialize serious messages (Griskevicius et al. 2010a; McGraw et al. 2015a; McGraw et al. 2015b; Moyer-Gusé et al. 2011; Nabi et al. 2007; Young 2008). The persuasiveness of social ads depends in large part on how well the ad convinces people that a problem exists (Andreasen 1995, 2006; Fisher and Ma 2014; French and Gordon 2015; Kogut and Ritov 2005; Rogers et al. 1983; Slovic 2007; Small and

Loewenstein 2003; Small et al. 2007; Small and Verrochi 2009; Smith et al. 2013). Without problem perception, people will have little motivation to address the issue (Batson and Coke 1981; Cialdini et al. 1981; Das et al. 2003; Lerner 1977; Lerner and Miller 1978; Rogers et al. 1983; Tanner et al. 1991; Witte 1992). Hence, in the context of social advertising, humor appeals may undermine problem perception, thereby decreasing people's motivation to address the issue.

Several papers already demonstrate that humor appeals can trivialize an ad's message (Conway and Dube 2002; McGraw et al. 2015a; Moyer-Gusé et al. 2011; Mukherjee and Dubé 2012). However, the literature is vague in describing when humor appeals are most trivializing. For instance, do humor appeals trivialize an ad's message just by being associated with the ad? Or, do humor appeals have to be funny to trivialize the ad's message? Below, I outline my specific predictions.

When do humor appeals trivialize an ad's message?

I propose two ways that humor appeals trivialize an ad's message. First, humor appeals may trivialize the message of social ads as a function of their mere presence in the ad. People are generally accustomed to jokes occurring in playful, non-threatening situations. According to evolutionary psychologists, humor evolved as a basic means to communicate the safety of a given situation (Gervais and Wilson 2005; Provine 2004). People may thus interpret a humor appeal as a signal that the underlying message is trivial and unproblematic. If so, humor appeals that fall flat may be just as trivializing as humor appeals that succeed (i.e., are funny).

H4: In the context of social advertising, the mere presence of a humor appeal trivializes the

importance of the depicted issue, thereby undermining people's motivation to address the issue.

Second, perceived humor of a humor appeal may predict the degree to which people discount the importance of the depicted issue. Humor involves positive affect (i.e, the emotion of amusement). Positive affect can decrease risk perception by acting like a pair of rose-colored glasses (Schwarz 1990; Schwarz and Bless 1991; Schwarz et al. 1991b; Tversky and Kahneman 1983; Wright and Bower 1992). Further, humor involves the cognitive appraisal that something is funny (Martin 2007; McGraw et al. 2015a; McGraw and Warren 2010; Veatch 1998; Warren and McGraw 2015b). People may infer from this cognitive appraisal and their degree of felt amusement that they must not take the message seriously; otherwise they would not find the content funny. In other words, people may be influenced by their meta-cognitions about being amused (i.e., thoughts about thoughts; Schwarz 2004; Schwarz et al. 1991a; Smith and Schwarz 2012).

H5: In the context of social advertising, the funnier the humor appeal, the more trivializing and demotivating the appeal is.

Is message trivialization unique to humor appeals?

If humor appeals trivialize serious messages as a function of positive affect, more generally, then any positive appeal (e.g., joy, awe) should trivialize serious messages. The alternative is that

there is something uniquely trivializing about humor appeals. I propose the latter. Although humor shares a positive valence with other emotions, it is now well established that emotions of the same valence can have distinct effects on judgments and decisions (Agrawal, Menon, and Aaker 2007; Algoe and Haidt 2009; Bartlett and DeSteno 2006; Bosmans and Baumgartner 2005; Griskevicius, Shiota, and Nowlis 2010b; Han, Lerner, and Keltner 2007; Kim et al. 2010; Lerner and Keltner 2000, 2001; Lerner, Small, and Loewenstein 2004; Lerner and Tiedens 2006; Oveis, Horberg, and Keltner 2010; Rudd, Vohs, and Aaker 2012; Schwarz and Clore 1996; Strohminger et al. 2011; Wilcox, Kramer, and Sen 2011). The explanation for within-valence differences is that discrete emotions activate unique cognitions and motivations, known as "appraisal tendencies" (Han et al. 2007; Lerner and Keltner 2000).

Several papers note that the appraisal tendencies of elevation (a feeling of moral goodness), admiration, and gratitude are actually conducive to prosocial behaviors (Algoe and Haidt 2009; Algoe, Haidt, and Gable 2008; Bartlett and DeSteno 2006; Clark, Northrop, and Barkshire 1988; McCullough et al. 2001; Rudd et al. 2012; Tesser, Gatewood, and Driver 1968; Tsang 2006). For instance, gratitude activates kindness towards others irrespective of indebtedness (Algoe and Haidt 2009; Bartlett and DeSteno 2006; Clark et al. 1988; Tsang 2006), while elevation activates virtue (Algoe and Haidt 2009).

It is difficult to imagine that amusement will activate similar virtuous and moral constructs, and in fact, one paper notes that amusement activates the opposite: irreverence (Strohminger et al. 2011). Specifically, Strohminger and colleagues (2011) note that the appraisal tendencies of amusement may be to "increase irreverence and remove the gravitas of otherwise serious ideas" (p. 2). Considering the evidence above, I propose that there is something especially trivializing

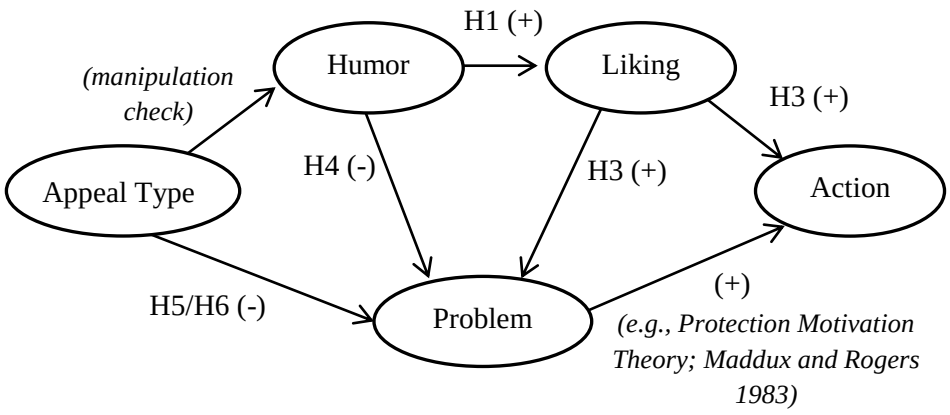
about humor above and beyond what one would expect from humor's association with positive affect.

H6: Humor appeals trivialize the importance of the depicted issue, thereby undermining people's motivation to address the issue, more so than positive-but-not humorous appeals.

What will be the net effect of humor appeals on social ad persuasiveness?

H1 – H3 imply that humor appeals increase the persuasiveness of social ads, while H4 – H6 imply that humor appeals decrease the persuasiveness of social ads. What, then, is the net effect of these opposing forces on persuasion? The answer depends on the relative strengths of humor's upsides and downsides (see Figure 1).

Figure 1. Theoretical model of the hypotheses



Note that appeal type assumes the following coding: 0 = non-humor/positive appeal, 1 = humor appeal. H1 predicts that people's liking of a social ad will increase as a function of perceived humor. H2 (not shown) predicts that people will especially dislike unfunny humor appeals relative to non-humor appeals. H3 predicts that the more people like a social ad, the more persuaded they will be by the ad. H4 predicts that the mere presence of a humor appeal signals to the viewer that the underlying message need not be taken seriously. H5 predicts that the funnier people find a social ad, the more trivial the problem will seem. H6 predicts that positive-but-not-humorous appeals lead to less message discounting than humor appeals.

Previous work suggests that the downsides of humor appeals (e.g., message trivialization) overshadow its upsides (McGraw et al. 2015a; McGraw et al. 2015b). For instance, McGraw et al. (2015a) found that humor appeals in social ads decreased problem perception and, subsequently, people's motivation to address the depicted issue. In contrast, other work suggests that the upsides and downsides of humor appeals cancel out for a seemingly null effect of appeal type (i.e., non-humor appeals vs. humor appeals) on persuasion (Moyer-Gusé et al. 2011; Nabi et al. 2007). Thus, in addition to characterizing the nature of humor's upsides and downsides (i.e., H1 – H6), the other main objective of this paper is to clarify the net persuasiveness of humor

appeals in social ads.

STUDY 1

Study 1 tests H1 – H5 using a set of twenty social ad-videos curated by McGraw et al. (2015a). In the set, ten of the ads use humor appeals, while ten of the ads use "non-humor" appeals, which I define as any appeal that is *not* a humor appeal. The non-humor appeals in the present set are, more specifically, a mixture of positively and negatively valenced appeals. For instance, one of the non-humor appeals features a crying child and is distressing to watch. Another features happy children and is uplifting to watch. A brief description of the twenty social ads, reprinted from McGraw et al. (2015a), appears in Table 1. Note that the humor appeals and non-humor appeals are paired on a given topic (e.g., teen pregnancy, drunk driving).

Table 1. Descriptions of study 1 stimuli

Social Issue	Humor Appeal	Non-humor Appeal
Teen pregnancy	Pretend ad for the ravaged-looking "Teen Mommy Darcy" Barbie Doll	Bristol Palin talks about the consequences of teen pregnancy
Drunk driving	Drunk driving is like kicking a sleeping grizzly bear	Child and mother cry as police inform them of father's death
Seat belt use	Two men sit upside down in a wrecked car and congratulate each other on not getting a "click it or ticket" ticket	Wife and daughter hug father and act as a seat belt that protects him from harm
Adoption	Adoptive parent vacuums up pet hamster, but kids still love her	Montage of children playing in the grass
Pet adoption	Business man calls home to talk to cat, not wife	Montage of shelter animals
Safe sex	Band mates of Vampire Weekend discuss condoms on a public bus	Young adults discuss sex
Prescription drug abuse	Accessible prescription drugs is like having bear traps around the house	Daughter steals father's prescription drugs
CPR	Actor Ken Jeong and sexy actresses perform CPR	Actress Janine Turner describes CPR
Heart disease	Actress Elizabeth Banks has a heart attack	Woman in car has a heart attack
Obesity	French fry discusses junk food	Feeding a child junk food is like giving a child heroin

Method

I paid 509 participants on Amazon's Mechanical Turk (mTurk) a small sum to take an online survey (54% male, M_{age} = 34).[2] I removed 18 participants who failed an attention check; their removal did not affect the significance of the results. The study employs a 2 (appeal: humor appeal, non-humor appeal) x 10 (topic: teen pregnancy, drunk driving, seat belt use, adoption, pet adoption, safe sex, prescription drug abuse, CPR, heart disease, obesity) between-subjects design.

I randomly assigned participants to view one of the twenty social ads. After viewing the ad, participants judged the severity of the depicted problem and their intentions to act using a seven-point Likert scale (disagree/agree; see Table 2). I use the problem and intention questions as proxies for the ad's overall persuasiveness.

[2] Throughout the paper, I only recruit mTurk participants residing in the United States.

Table 2. List of measures for study 1

Measures	Items
Intentions (α = .83)	• I would like to learn more about how [topic] impacts society* • I would like to learn more about what I could do to help combat [topic] • I would be interested in making a $3 donation to fund organizations that combat [topic]
Problem perception (α = .78)	• [Topic] is a problem • Relative to other social issues, we should prioritize the issue of [topic] • Organizations that combat [topic] are in need of our help
Vulnerability (α = .87)	• [Topic] hits close to home for me • [Topic] is an issue that is relevant to me, personally • [Topic] is an issue that threatens my physical or emotional well-being
Response Efficacy	• There are ways that society can address the issue of [topic]
Self-Efficacy	• There are ways that I, personally, can address the issue of [topic]
Social Norms	• My friends care about [topic] and take action to address it
Liking (α = .94)[#]	• I liked this ad (*affection/ affinity*) • The style of this ad resonated with me (*affection/affinity*) • I would get along with the makers of this ad (*rapport*)
Humor (α = .96)^	• Was this ad trying to be funny regardless of whether it succeeded? [yes/no] • This ad made me laugh or smile • This ad made me feel amused • This ad was funny

** Items are measured on a seven-point scale with endpoints "disagree" and "agree" unless otherwise noted*

[#] Note that the liking questions reflect Cialdini's (2003) conceptualization of liking: that it is a function of affinity, rapport, and affection for someone or something.

^ Dichotomous measure not included

After responding to the problem and intention questions, participants judged their personal vulnerability to the problem, their awareness of possible solutions (response-efficacy), their ability to enact the solution (self-efficacy), their friend's impressions of the problem (social norms), their liking of the ad, whether the ad was supposed to be funny, and the degree to which

they found the ad funny (refer to Table 2). Question order was randomized. Finally, participants gave demographic information, were debriefed, and thanked. For reference, a correlation table of all measures appeals in Appendix A.

Results

Manipulation checks. A chi-square test confirmed that participants who viewed a humor appeal judged the appeal as "trying to be funny" more than participants who viewed a non-humor appeal (90% vs. 7%, $\chi^2 = 344.26$, $p < .0001$). An ANOVA also confirmed that the humor appeals were funnier than the non-humor appeals (4.93 vs. 1.88, t (489) = 21.43, $p < .0001$). Rerunning the ANOVA with topic as a random factor did not change the significance or nature of the result (Judd, Westfall, and Kenny 2012).[3]

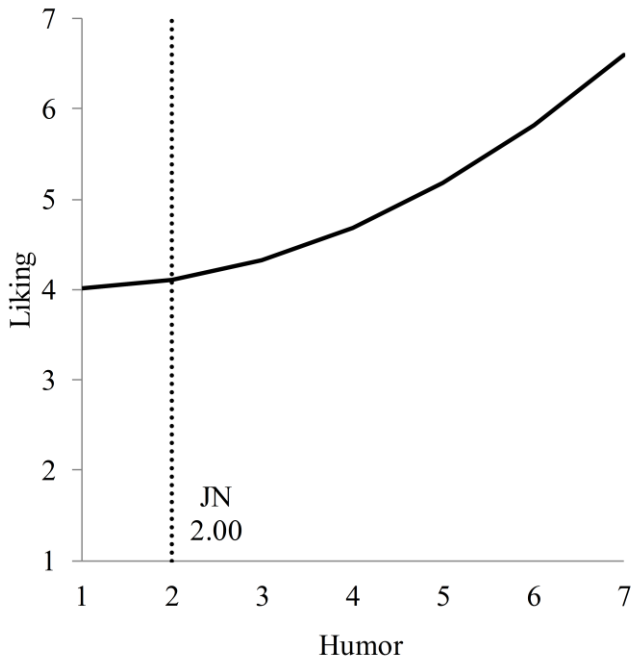
Appeal on vulnerability, efficacy, and norms. Participants' judgments of personal vulnerability, response-efficacy, self-efficacy, and social norms did not differ as a function of whether they viewed a humor appeal or a non-humor appeal.

Humor on liking. In support of H1, I found evidence of a positive relationship between perceived humor and liking judgments ($\beta = .39$, t (489) = 12.12, $p < .0001$). The residuals of the model, however, indicated a degree of non-linearity. The linear model underestimated liking judgments at the high range of perceived humor. I thus reran the ANOVA including the variable humor*humor, which tests whether the relationship between humor and liking is curvilinear. Indeed, the curvilinear effect was significant ($\beta = .07$, t (488) = 3.40, $p < .001$). To characterize

[3] Note that in studies 1, 2, and 4, which contain multiple stimulus replicates, I reran each ANOVA as a mixed model that treated stimulus replicates as a random factor (Judd, Westfall, and Kenny 2012). The mixed models gave similar results to the simpler ANOVAs, which collapsed over stimulus replicates. Throughout the paper, I report the basic ANOVAs for simplicity and note whenever a random effects model implies a different conclusion.

the nature of the humor*humor interaction, I ran follow-up simple effects tests (Spiller et al. 2013). I found a Johnson-Neyman (JN) point of 2.00; below the JN point, changes in perceived humor (e.g., 1 to 2) did not affect liking. Above the JN point, changes in perceived humor increased liking at an increasing rate (see Figure 2).

Figure 2. Curvilinear relationship between humor and liking

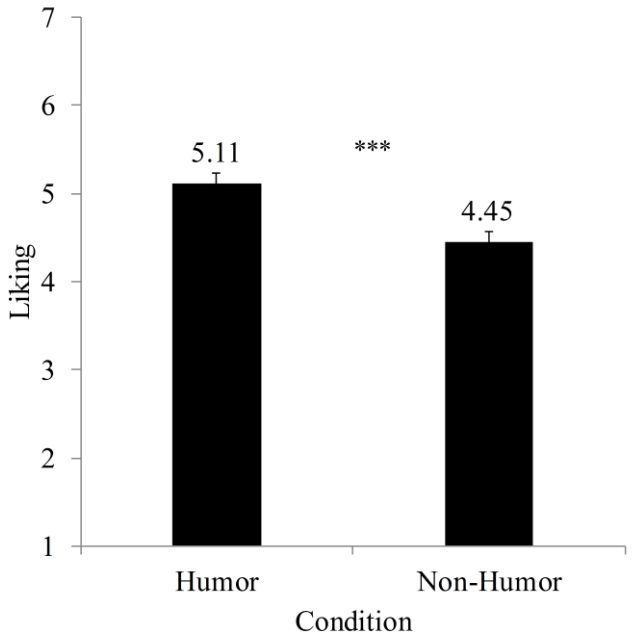


*The figure graphs the humor*humor interaction on liking judgments. Humor and liking were measured on a seven-point scale with endpoints disagree/agree. The Johnson-Neyman (JN) point of 2.00 marks the level of humor at which the simple slopes of humor on liking (i.e., the tangent line to the curve) become significantly non-zero.*

Given that the humor appeals were more humorous than the non-humor appeals, and given that perceived humor predicts liking judgments, the humor appeals should be better liked than the non-humor appeals. As expected, an ANOVA revealed that participants who viewed a humor

appeal liked the ad more than participants who viewed a non-humor appeal (5.11 vs. 4.45, t (489) = 4.21, $p < .0001$). Figure 3 graphs the mean liking scores by condition.

Figure 3. Mean liking by appeal type



**** Indicates p < .001. Humor and liking are measured on a seven-point scale with endpoints disagree/agree.*

Perceived humor mediated the difference in liking between the humor appeals and non-humor appeals (β = 1.67, 95% CI [1.38, 1.98]). To test for mediated, I used the PROCESS macro for SAS (Hayes 2013). PROCESS follows best practices in statistics by computing all indirect (i.e., mediational) effects using bootstrapping (Zhao et al. 2010). Note that all mediational models in this paper employ 5,000 bootstrapping samples.

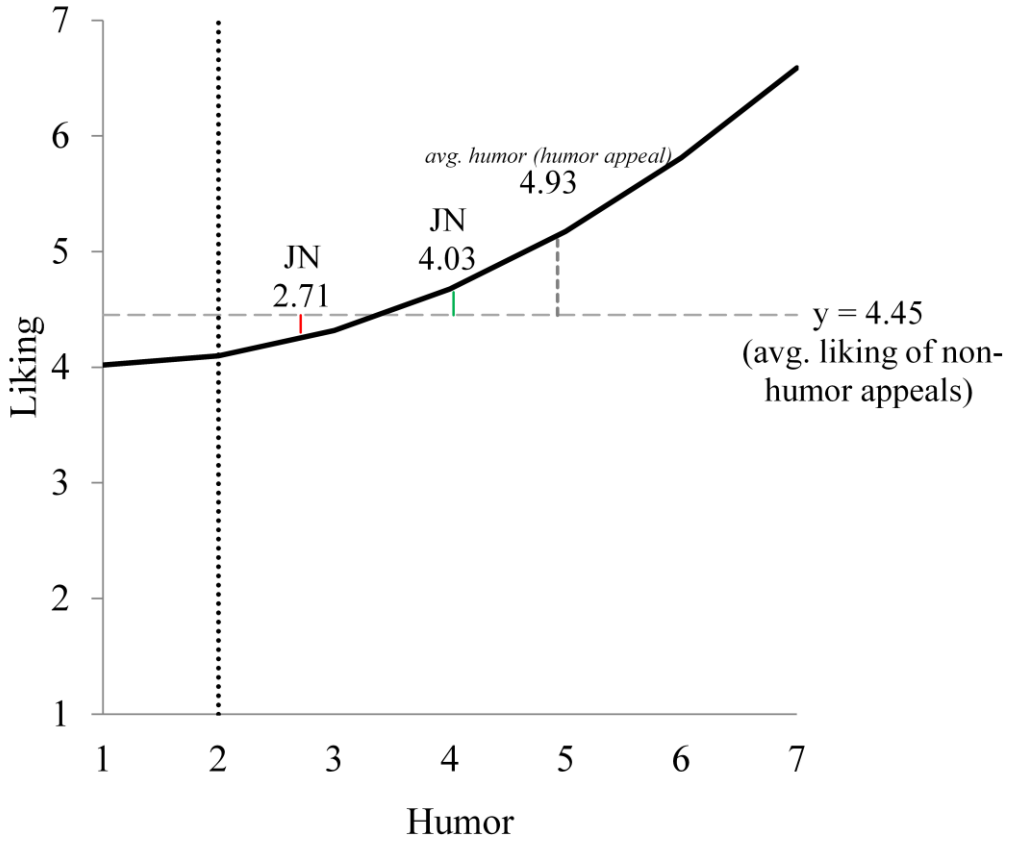
While the humor appeals were better liked *on average* relative to the non-humor appeals, I hypothesized that when participants perceived little humor in a humor appeal, they would

actually like the appeal *less* than a non-humor appeal (H2). One way to test H2 would be to run an ANOVA regressing liking on perceived humor, appeal type, and humor*appeal type. The interaction would test whether the effect of appeal type on liking depends on perceived humor. However, the appeal type*humor interaction is misleading because the non-humor appeals are (predominantly) non-humorous; there are few cases of non-humor appeals scoring high on perceived humor.[4] An alternative way to test H5 would be to compare the average liking of the non-humor appeals (i.e., 4.45) to the average liking judgments *at each level of perceived humor*.[5] For instance, when humor = 1, liking = 4.02. When humor = 2, liking = 4.10. The proposed analysis tests whether 4.02 is significantly lower than 4.45, whether 4.10 is significantly lower than 4.45, and so on (see Figure 4).

[4] I thank the committee for bringing this to my attention.

[5] Note that using 4.45 as a benchmark is imperfect because it ignores that the non-humor appeals do vary on perceived humor (i.e., SD = 1.37). However, the alternative analysis—regressing liking on humor, appeal type, and humor*appeal type—is relatively more imperfect because of the lack of high humor observations in the non-humor appeal condition. Ultimately, I ran both models (the one reported here and the interactive model). Both implied in similar conclusions.

Figure 4. Relative ad likeability at each level of humor



*The figure graphs the humor*humor interaction on liking judgments. Humor and liking are measured on a seven-point scale with endpoints disagree/agree. The dotted line y = 4.45 marks the average liking judgment of participants exposed to a non-humor appeal. There are two Johnson-Neyman points. Below humor = 2.71, points on the curve are significantly lower than 4.45. Above humor = 4.03, points on the curve are significantly higher than 4.45. The average* humor score *in the humor appeal condition is 4.93.*

The analysis involved manipulating the zero-point of both the liking and humor variables (Spiller et al. 2013). I centered the liking variable at 4.45 (i.e., I subtracted 4.45 from all liking judgments such that the new average was 0). I then ran several iterations of ANOVAs regressing the centered liking variable on humor and humor*humor. The humor variables were centered at 1, 2, 3,...7 (as well as increments between the integers, e.g., 2.5). The intercept of these

ANOVAs tested whether the liking judgment at a given level of humor differed from 4.45. I found two JN points. When perceived humor was below 2.71, participants gave liking judgments that were significantly lower than 4.45 (the average likeability of the non-humor appeals). When perceived humor was above 4.03, participants gave liking judgments that were significantly higher than 4.45 (the average likeability of the non-humor appeals). In summary, unfunny humor appeals were less liked than similar non-humor appeals, while funny humor appeals were more liked than similar non-humor appeals.

Ad liking on persuasion. I measured persuasion in terms of problem judgments and intentions to act. According to H3, people are more persuaded by ads they like. Consistent with H3, liking judgments predicted judgments of problem severity (β = .29, t (489) = 10.26, p < .0001) and intentions to act (β = .49, t (489) = 13.39, p < .0001).

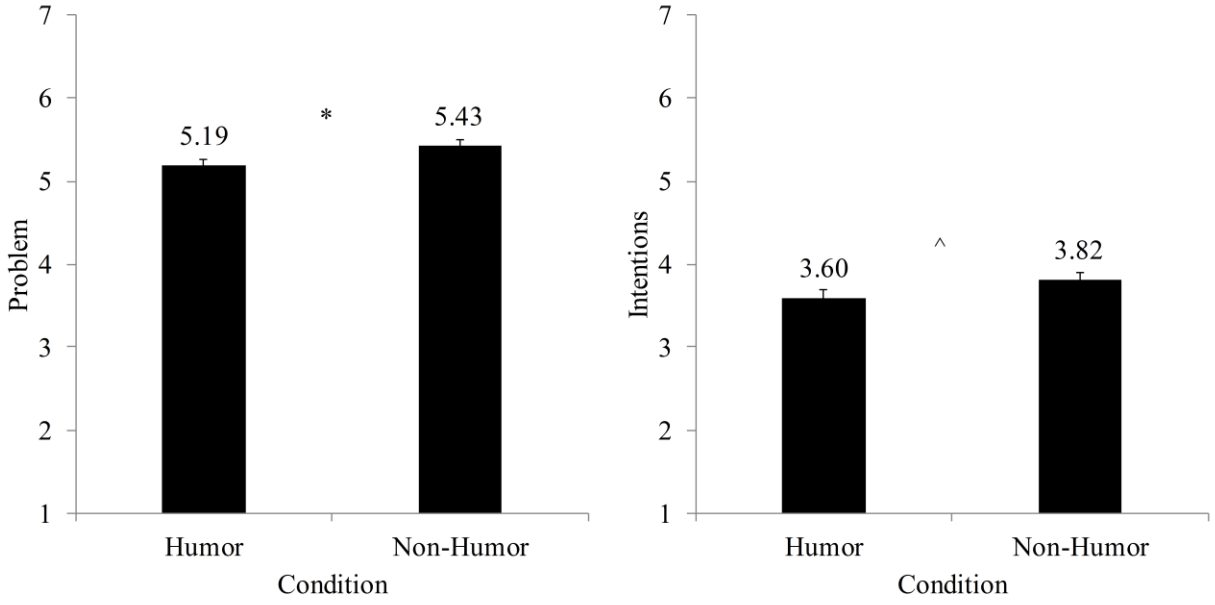
Appeal type on persuasion. Given that liking predicts persuasion, and participants liked the humor appeals more than the non-humor appeals, one might logically conclude that the humor appeals would be more persuasive than the non-humor appeals. However, the effect of appeal type on problem judgments (5.29 vs. 5.32; t (489) = -.32, p = .75) and intentions to act (3.78 vs. 3.65; t (489) = .76, p = .45; see Figure 5) was null.

Figure 5. Appeal type on the persuasion measures

Humor and liking are measured on a seven-point scale with endpoints disagree/agree.
There were no significant differences between the means.

Despite their increased likeability, the humor appeals were not more persuasive. The reason, I hypothesize, is that humor appeals also exert a *negative* influence on persuasion. Specifically, I hypothesized that humor appeals trivialize serious messages, either by their mere presence in the ad (H4) and/or as a function of the appeal's funniness (H5). The observed null effect of appeal type on the persuasion measures may thus reflect a cancelling out of the positive effects of humor appeals (i.e., likeability) on the persuasion measures and the hitherto hidden *negative* effects of humor appeals (i.e. message trivialization) on the persuasion measures. I thus reran the ANOVAs regressing the persuasion measures on appeal type controlling for liking judgments. As expected, appeal type became significant; the humor appeals led to significantly lower problem judgments (5.19 vs. 5.43, t (488) = -2.32, $p < .05$) and marginally lower intentions to act (3.60 vs. 3.82, t (488) = -1.65, $p = .10$; see figure 6).

Figure 6. Appeal type on the persuasion measures controlling for liking



** Indicates p < .05, ^ indicates p = .10. Humor and liking are measured on a seven-point scale with endpoints disagree/agree.*

The results above offer support that humor appeals have an *unpersuasive* component. To clarify whether humor appeals lead to message trivialization as a function of their mere presence in the ad (H4) or as a function of their funniness (H5), I tested whether perceived humor mediated the effect of appeal type on the persuasion measures. A significant direct effect of appeal type on the persuasion measures would offer support for H4, while a significant indirect effect of appeal type on the persuasion measures via perceived humor would offer support for H5. The results are summarized in Table 3.

Table 3. Results of mediation of appeal type on persuasion via humor

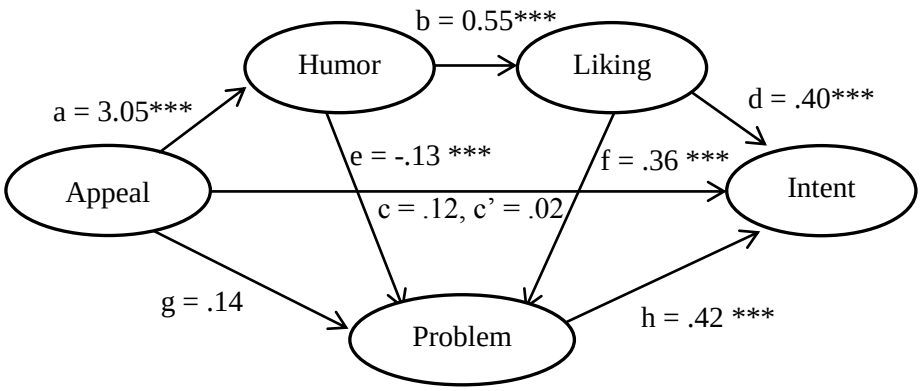
Test	Result
Appeal Type → Humor → Problem Perception	β = -.37, 95% CI [-.58, -.17]
Total Effect c	β = -.23, *t* (488) = -2.78, *p* < .01
Direct Effect c'	β = .14, *p* = .33
Appeal Type → Humor → Intentions to Act	β = -0.29, 95% CI [-.58, -.02]
Total Effect c	β = -.22, *t* (488) = -1.65, *p* = .10
Direct Effect c'	β = .07, *p* = .68

*Appeal type is coded as 0 = non-humor appeal, 1 = humor appeal. Significant mediation is indicated by a confidence interval that does not include 0. The mediation models control for liking judgments. Mediation was conducted using PROCESS model 4. The nature and significance of the results replicates when using the humor*humor interaction to mediate the effect of appeal type on the persuasion measures.*

I found evidence of indirect-only (i.e., "full") mediation. The indirect effects were significant, but the direct effects (c') were not (Zhao, Lynch, and Chen 2010). The results of the mediation analyses thus support H5 (perceived humor correlates with message trivialization) but not H4 (humor appeals lead to message trivialization as a function of their mere presence in the ad).

Testing the causal sequence of the predictors. As a final step in my analysis, I ran a structural equation model to test the causal sequence of the predictors (PROCESS model 6; Hayes 2013). Based on my hypotheses, I generated the following sequence of the predictors as shown in Figure 7.

Figure 7. Triple serial mediation of appeal type on intentions



*Note: Appeal is coded as 0 = non-humor appeal, 1 = humor appeal. The lowercase letters beside the paths denote the beta for an ANOVA that regresses the proceeding variable (e.g., liking) on the previous variable (e.g., humor) controlling for variables that appear previously in the causal sequence (e.g., appeal type). Path c represents the total effect of appeal type on problem perception while c' represents the direct effect of appeal type on problem perception. The asterisks indicate the level of significance with * corresponding with p <.05, ** corresponding with p < .01, and *** corresponding with p < .001.*

The model tests the significance of seven indirect paths; I was specifically interested in two of them: appeal type → humor → liking → problem → intent, and appeal type → humor → problem → intent. As expected, the indirect path appeal type → humor → liking → problem → intent was significantly positive (β = .25, 95% CI [.17, .36]). The humor appeals increased perceived humor, which increased liking judgments, which increased problem judgments, which increased intentions to act. Also as expected, the indirect path appeal type → humor → liking → problem →intent was significantly negative (β = -.41, 95% CI [-.64, -.20]). The humor appeals increased perceived humor, which *decreased* problem judgments, which decreased intentions to

act after controlling for liking judgments. The estimates of all seven paths appear in Table 4; note that the results replicate when substituting humor for humor*humor.[6]

Table 4. Indirect effects for triple serial mediation model

Path	Estimate	95% Confidence Interval
appeal type → humor → intentions	-.15	-.47, .14
appeal type → humor → liking → intentions*	.67	.49, .89
appeal type → humor → problem perception → intentions*	-.17	-.29, -.08
appeal type → humor → liking → problem perception → intentions*	.25	.17, .36
appeal type → liking → intentions*	-.40	-.61, -.24
appeal type → liking → problem perception → intentions*	-.15	-.24, -.09
appeal type → problem → intentions	.06	-.07, .19

** significant at p < .05*

The total (c) and direct (c') effects of appeal type on intentions were not significant, suggesting that the positive (i.e., likeability) and negative (i.e., message trivialization) components of humor appeals cancelled out.

Confound in the appeal type comparison. Note that the indirect effect of appeal type → liking → problem perception→ intentions, which controls for humor, was significantly negative (β = -.15, 95% CI [-.24, -.09]). Conceptually, this result suggests that the non-humor appeals were more likable than the humor appeals for reasons not tied to humor. In other words, appeal type may be confounded by another variable that influences ad likability (e.g., production value).

Net effect of perceived humor on persuasion. The analysis suggests that perceived humor can both increase intentions to act (via ad liking) and decrease intentions to act (via message

[6] For the structural equation model that tests humor*humor, the most correct version would also include the linear effect (humor) as a covariate. However, PROCESS does not have the capacity to model both the continuous linear and quadratic effects simultaneously (A. Hayes, personal communication, January 10, 2016). Hence, the model includes only the humor*humor interaction, not humor *and* humor*humor.

trivialization). What, then, is the ultimate effect of *perceived* humor on the persuasion measures? An ANOVA revealed a null effect between perceived humor and problem judgments (β = .03, t (489) = 1.09, p = .30), and a positive effect between perceived humor and intentions to act (β = .12, t (489) = 3.48, p < .001). The positive effect between perceived humor and intentions to act was mediated by liking judgments (β = .21, 95% CI [.17, .26].

Discussion

Summary of findings. In support of H1, I found evidence of a positive relationship between perceived humor and liking judgments. I also found evidence of a curvilinear relationship between perceived humor and liking judgments. Participants who indicated that the appeal was a "1" on humor did not like the ad any more or less than participants who indicated that the appeal was a "2" on humor. Above a humor score of 2, perceived humor increased liking judgments at an increasing rate. On average, the humor appeals were liked more than the non-humor appeals because people found the humor appeals funnier than the non-humor appeals.

While the humor appeals were *on average* better liked than the non-humor appeals, the degree to which the humor appeals were more or less liked compared to the non-humor appeals depended on perceived humor (H2). When participants indicated that the appeal was a "2.71" or lower on humor, they liked the ad less than participants who viewed a non-humor appeal. When participants indicated that the appeal was a "4.03" or greater on humor, they liked the ad more than participants who viewed a non-humor appeal.

Participants' liking judgments predicted their problem judgments and their intentions to act (H3). In other words, participants were more persuaded by ads they liked. Given that humor

leads to liking and liking leads to persuasion, one might logically conclude that humor appeals lead to persuasion. However, I did not find a main effect of appeal type on the persuasion measures. Instead, I found that in addition to a persuasive component (i.e., likeability), humor appeals also had an *unpersuasive* component: message trivialization. After controlling for the positive effect of liking, the humor appeals led to lower problem perception, thereby lowering intentions to act (as indicated by the serial mediation model), relative to the non-humor appeals. To clarify whether humor appeals lead to message trivialization as a function of their mere presence in the ad (H4), or as a function of their funniness (H5), I tested whether perceived humor mediated the effect of appeal type on the persuasion measures. I found evidence of indirect-only (i.e., "full") mediation, offering support for H5 (perceived humor correlates with message trivialization) but not H4 (humor appeals lead to message trivialization as a function of their mere presence in the ad).

I included measures for vulnerability, response-efficacy, self-efficacy, and social norms given that these measures influence the effectiveness of social ads (Bandura 1977; Ho 1998; Maddux and Rogers 1983; Pechmann and Knight 2002; Tanner et al. 1991; Witte 1992). However, I found no evidence that the humor appeals influenced these measures any differently than the non-humor appeals.

Relation to prior research. Overall, my results indicate that humor appeals are no more or less persuasive than non-humor appeals because the positive (i.e., likeability) and negative (i.e., message trivialization) components of humor appeals cancel out. The lack of a main effect of appeal type on the persuasion measures fails to replicate the findings of some prior work (McGraw et al. 2015a; McGraw et al. 2015b). However, my results are consistent with other

work that shows a more nuanced relationship between humor and persuasion—one that involves both positive and negative influences on persuasion that can negate each other (Moyer-Gusé et al. 2011; Nabi et al. 2007).

Limitations. This study has several limitations. First, with twenty replicates conveying ten topics, the stimuli are satisfactory from a generalization perspective, but insufficient from a control perspective. There was evidence that appeal type was confounded on likability; after controlling for humor, participants rated the ads that attempted humor as less likable than the ads that did not attempt humor. Further, the "non-humor" appeals were more heterogeneous than the humor appeals; the appeals were comprised of a range of styles, from distress-based appeals to positive appeals. I address these issues in study 2 by designing a smaller, but more tightly controlled, stimulus set of six social ads against texting while driving.

STUDY 2

Study 2 aims to replicate study 1 using a set of six print ads against texting while driving. I chose this topic, specifically, because texting while driving is a contemporary and widespread problem in society (Ad Council 2016). Teenagers and adults alike admit to texting while driving, which increases the chance of an accident by 23 times (Ad Council 2016; Madden and Rainie 2010).

Stimuli

The premise of the ads is that if people text and drive, their last text could become their last

words. The ads feature a large tombstone inscribed with the deceased's final text message, i.e., their last words. I designed the ads myself, enlisting the help of hypothesis-blind mTurk participants to generate and select funny and serious last words for the ads.

Phase 1: generating last words. I paid 46 mTurk participants a small sum to write a text message that would be [funny/serious] if it were a person's last words. Task assignment [funny/serious] was random. Participants saw a blank version of the ad for reference (see Figure 8).

Figure 8. Blank tombstone print ad

To make the ad look professional, I sourced the tombstone image from Adobe Stock Images and designed a logo for my fictional brand, "The Killer Text Project," using a free online logo-maker (logomakr.com).[7]

[7] Car graphic by Freepik from Flaticon is licensed under CC BY 3.0.

I asked participants' permission to use their entries in future studies; all agreed. After collecting the data, I removed any duplicates entries, leaving a total of 36 entries for further testing.

Phase 2: selecting last words. Next, I paid 46 mTurk participants a small sum to evaluate the 36 entries and select the five most (funny/serious) entries. Task assignment (funny/serious) was random. After collecting the data, I counted the number of "votes" each entry received to identify the five funniest and five most serious entries (see Table 5).

Table 5. Top five humorous and serious entries

	Participants' Objective	
	Vote target: humor	Vote target: serious
Top Five Funny Entries		
Omg kill me now	31	7
100 mph and texting, #yolo*.	20	11
#YOLO	19	10
Why is there a tree in the middle of the road?	19	4
Did you see the cat video on YouTube?	14	5
	103	37
Top Five Serious Entries		
Be there soon	2	28
I'll be home soon	5	25
I'll be there in 5 min	5	21
I'll see you in a few	7	21
Be right there	5	19
	24	114

** "YOLO" is a slang acronym for "you only live once"*

Some participants disagreed with the majority as to whether entries were funny or serious. For instance, several participants indicated that "#YOLO" was serious while other participants indicated that "be right there" was funny. However, votes for the top five funny entries

predominantly came from participants whose objective was to identify funny entries, while votes for the top five serious entries predominantly came from participants whose objective was to identify serious entries (χ^2 (1, N = 278) = 88.40, p < .0001). Note that the serious entries are substantially more homogeneous than the funny entries.

Phase 3: pretesting last words. Using the top three funny and serious entries identified in phase 2, I created six ads.[8] Examples appear in Figure 9.

[8] In retrospect, I should have created ten ads, five that featured the top five funny entries and five that featured the top five serious entries. Selecting the "top three" is arbitrary because the third-place entries received a similar number of votes to the forth-place entries.

Figure 9. Example "tombstone" ads

The leftward ad is one of the humor appeal replicates. The rightward ad is one of the non-humor appeal replicates.

I paid 105 mTurk participants (61% male, M_{age} = 32.25) a small amount to evaluate one of the six ads in a 2 (appeal type: humor appeal, non-humor appeal) x 3 (replicate: version 1, version 2, version, 3) between-subjects design. After participants viewed one of the ads, they judged the extent to which the ad made them amused, smile, laugh, offended, sad, scared, and sympathetic on a seven-point scale (disagree/agree).

I collapsed over stimulus replicate; the replicates did not differ across the measures. Table 6 presents the simple correlations.

Table 6. Pretest results for study 2

Study 2 Pretest Simple Correlations, N = 105					
	Humor[$]	Sad	Scared	Sympathetic	Offended
Appeal[#]	0.34***	-0.44***	-0.31***	-0.34***	-0.01
Humor		-0.57***	-0.33***	-0.26**	0.17^
Sad			0.55***	0.64***	-0.08
Scared				0.43***	0.05
Sympathetic					-0.09

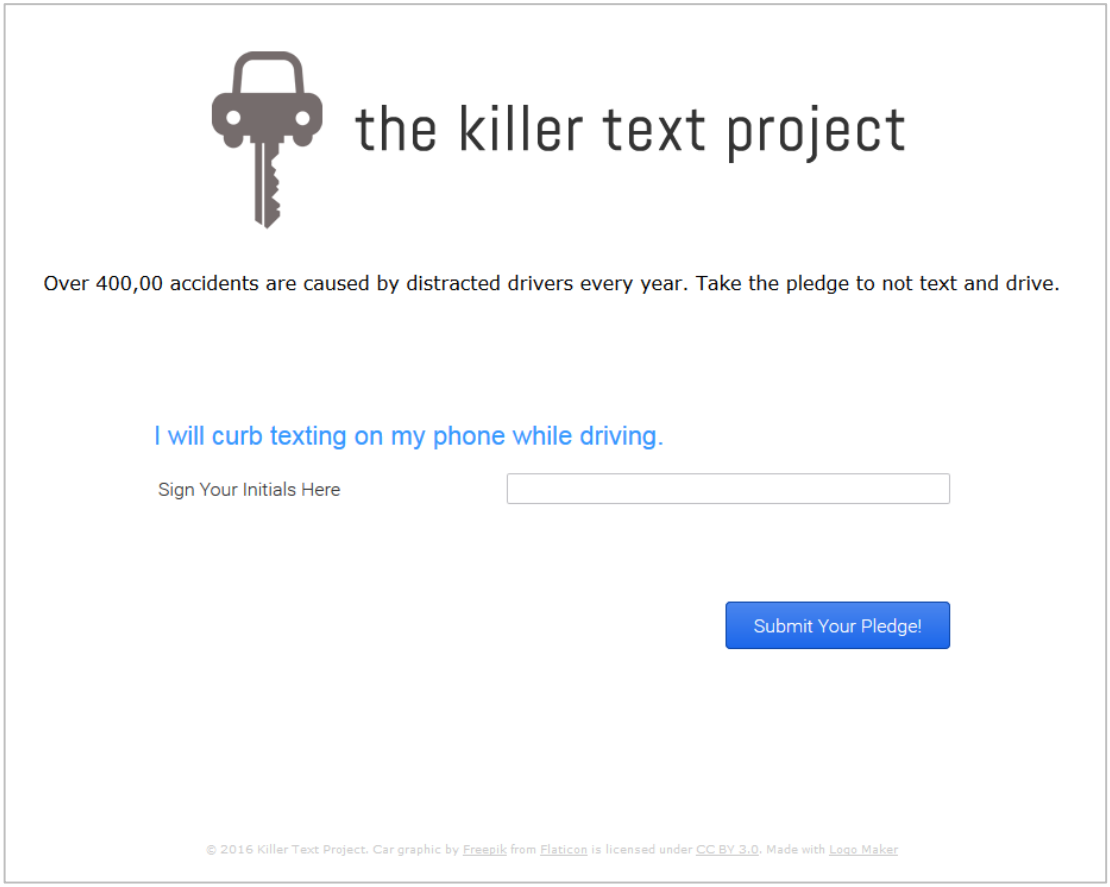
[$] *α = .93*
[#] *appeal (0 = non-humor appeal, 1 = humor appeal)*
^ *p < .10*
* *p<.05*
** *p<.01*
*** *p<.001*

As expected, participants judged the humor appeals as funnier than the non-humor appeals (3.72 vs. 2.38; t (103) = 3.65, p < .001). Participants also judged the humor appeals as less sad (3.05 vs. 4.89; *t* (103) = -4.96, *p* < .0001), less scary (2.38 vs. 3.60; *t* (103) = -3.36, *p* < .01), and less sympathetic (2.94 vs. 4.36; *t* (103) = -3.67, *p* < .001) than the non-humor appeals.

Other characteristics of the tombstone ads

Note that the tombstone ads feature two calls to action: don't text and drive, and take the pledge (to not text and drive) on killtertexts.org. Killertexts.org is a simple website that I programmed to support the cover story (see Figure 10).

Figure 10. Killertexts.org website screenshot



At killertexts.org, participants could take the pledge against texting while driving. The pledge data was recorded and stored by an embedded Qualtrics survey.

The pledge call to action was inspired by AT&T's "It Can Wait" campaign against texting and driving. The campaign urges people to visit itcanwait.org and pledge to keep their eyes on the road instead of their phone (AT&T 2015). Social marketers employ the pledge call to action for other issues as well. For instance, the Plastic Pollution Coalition asks people to pledge to refuse single use plastics (e.g., disposable water bottles, grocery bags) at plasticpollutioncoalition.org. The organization It's On Us asks people to pledge to intervene in

instances of unwanted sexual contact at itsonus.org. The pledge call to action harnesses the persuasion principle of *consistency*: people are more likely to comply with a request when they make a public and voluntary commitment to comply with the request (Cialdini 2001, 2003). Thus, signing a pledge should have some impact on people's subsequent behaviors.

Main experiment

I paid 255 mTurk participants a small sum to take an online Qualtrics survey (61% male, M_{age} = 31.28). I removed 20 participants who failed an attention check; their removal did not affect the significance of the results. The study employs a 2 (appeal type: humor appeal, non-humor appeal) x 3 (replicate: version 1, version 2, version 3) between-subjects design.

I randomly assigned participants to view one of the six tombstone ads. Participants who saw a humor appeal read that the ad was meant to be funny. Participants who saw a non-humor appeal read that the ad was meant to be serious. After viewing the ad, participants judged the severity of the depicted problem and their intentions to act using a seven-point point Likert scale (disagree/agree). Question order was randomized. The questions follow a similar format to those of study 1, although the wording reflects a focus on texting while driving (see Table 7).

Table 7. Study 4 measures

Measures	Items
Action	• After this experiment, I plan to reduce the number of times I check or answer texts while driving. • There are apps that can help remove the temptation to text and drive. For instance, the app DriveMode can reply to incoming texts with an automated reply when your car is moving at more than 25 mph. After this experiment, I see myself researching apps like this. • At killertexts.org, you can sign the pledge to stop texting while driving. After this experiment, I see myself visiting killertexts.org to take the pledge against texting while driving.
Problem Perception	• Relative to other social issues, non-profit and government bodies should prioritize addressing the issue of texting while driving. • Texting while driving is a prevalent problem in the US. • On average, texting while driving increases people's risk of getting into an accident.
Current [#] Texting Behaviors	• How often do you check or send texts while driving? (please be honest, it's okay! We want to know how widespread texting while driving is (all the time/sometimes, like when my phone goes off/ infrequently, only when there is something really important I have to attend to/never)

Items are measured on a 7-point scale with endpoints "disagree" and "agree" unless otherwise noted.

[#] *Dichotomous measure.*

After, participants judged the extent to which the ad made them amused, smile, laugh, offended, sad, scared, and sympathetic on a seven-point scale (disagree/agree). Question order was randomized. Finally, participants indicated how often they text behind the wheel (refer to Table 7), gave demographic information, were debriefed, and thanked. For reference, a correlation table of all measures appeals in Appendix B.

Results

Prevalence of texting while driving in sample. Ninety-nine percent of participants in my sample indicated that they send or check texts while driving at least some of the time. From an experimental standpoint this is good; the ads address an issue that is relevant to the majority of participants personally. The full distribution of self-reported texting while driving appears in Table 8.

Table 8. Self-reported frequency of texting while driving

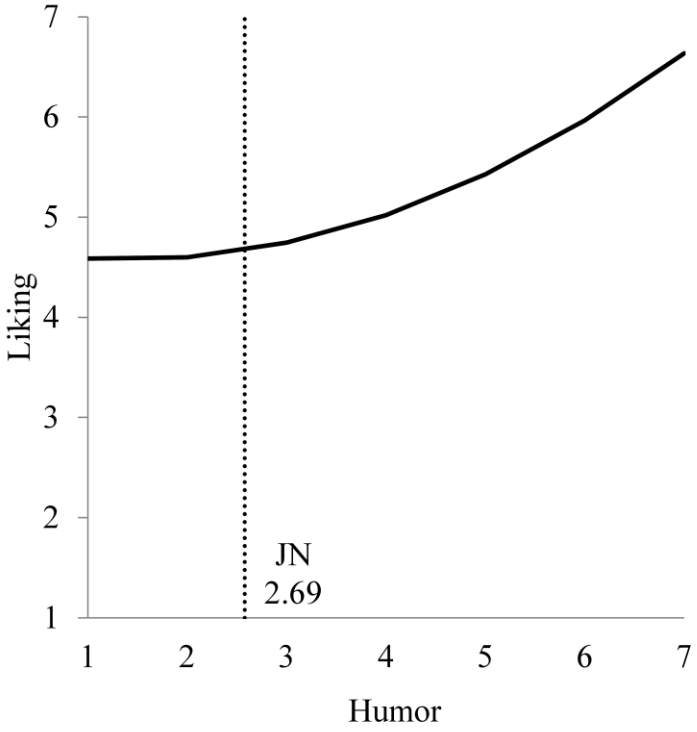
Self-Reported Frequency of Texting While Driving		
	Frequency	Percent
All the time	18	8%
Sometimes, like when my phone goes off	90	38%
Infrequently, only when there is something really important I have to attend to	124	53%
Never	3	1%

Manipulation checks. An ANOVA confirmed that participants judged the humor appeals as funnier ($\alpha = .94$) than the non-humor appeals (3.23 vs. 2.29, t (233) = 4.12, p <.0001). Replicating the pretest, participants also judged the humor appeals as less sad (3.38 vs. 4.42; t (233) = -4.27, $p < .0001$), less scary (3.41 vs. 4.15; t (233) = -2.96, $p < .01$), and less sympathetic (3.60 vs. 4.38; t (233) = -3.29, $p < .01$) than the non-humor appeals. Rerunning the ANOVA with topic as a random factor did not change the significance or nature of the results in this study (Judd et al. 2012).

Humor on liking. In support of H1, I found evidence of a positive relationship between perceived humor and liking judgments ($\beta = .25$, t (489) = 4.48, $p < .0001$). Replicating study 1, I also found a marginally significant curvilinear relationship between perceived humor and liking

judgments (β = .07, t (234) = 1.76, p = .08). To characterize the nature of the humor*humor interaction, I ran follow-up simple effects tests (Spiller et al. 2013). I found a Johnson-Neyman (JN) point of 2.69; below the JN point, changes in perceived humor (e.g., 1 to 2) did not affect liking. Above the JN point, changes in perceived humor increased liking at an increasing rate (see Figure 11).

Figure 11. Curvilinear relationship between humor and liking



*The figure graphs the humor*humor interaction on liking judgments. Humor and liking were measured on a seven-point scale with endpoints disagree/agree. The Johnson-Neyman (JN) point of 2.69 marks the level of humor at which the simple slopes of humor on liking (i.e., the tangent line to the curve) become significantly non-zero.*

Given that the humor appeals were more humorous than the non-humor appeals, and given that perceived humor predicts liking judgments, the humor appeals should be better liked than

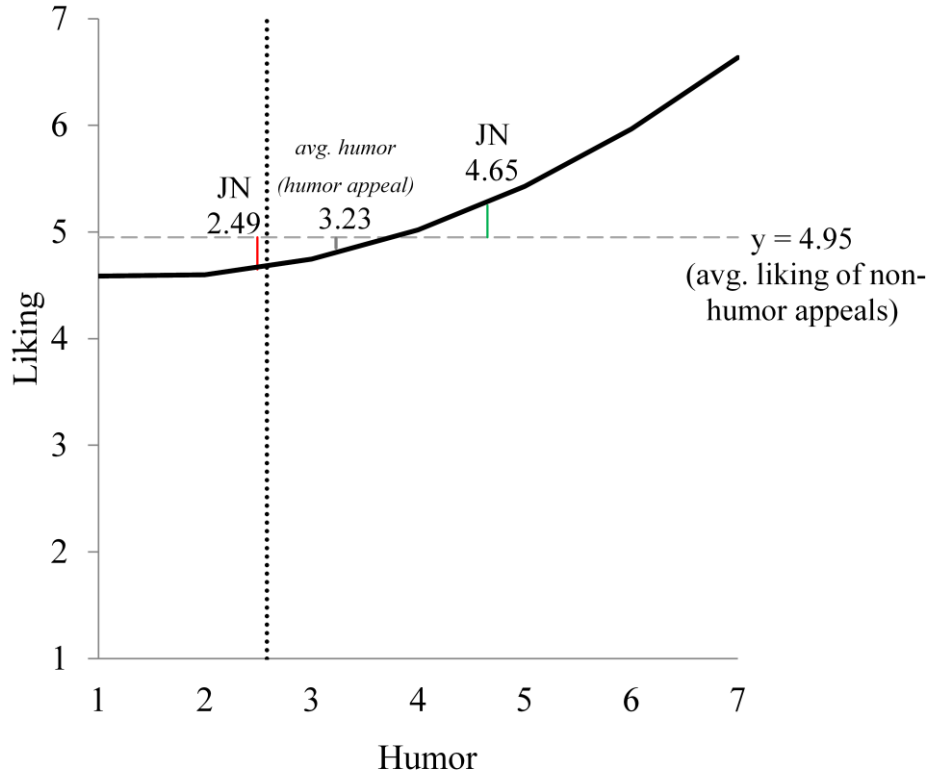
the non-humor appeals. However, an ANOVA revealed no difference of appeal type (0 = non-humor appeal, 1 = humor appeal) on liking judgments; participants gave similar liking judgments regardless of viewing a humor appeal or a non-humor appeal (4.88 vs. 4.95, t (233) = -.35, p = .73). Given that participants judged the humor appeals as funnier than the non-humor appeals (i.e., 3.23 vs. 2.29), and given that perceived humor and liking judgments are positively correlated (i.e., β = .25), why are the humor appeals not more liked than the non-humor appeals?

Presumably, the humor appeals were simply not funny enough to increase liking judgments. According to H2, humor appeals will increase liking judgments relative to non-humor appeals only when participants find the humor appeals funny. Recall that based on the curvilinear model of humor on liking, I found a Johnson-Neyman (JN) point of 2.69; below the JN point, changes in perceived humor (e.g., 1 to 2) did not affect liking. On average, the humor appeals scored a 3.23 on humor, which is close to the JN point of 2.69.

Further, according to H2, when participants perceive little humor in a humor appeal, they actually like the appeal *less* than a non-humor appeal (H5). To determine the exact levels of perceived humor that lead to decreased/increased liking relative to the non-humor appeals, I ran an analysis identical to that of study 1: I compared the average liking judgment of the non-humor appeals (i.e., 4.95) to average liking judgments *at each level of humor* (i.e., 1, 2…7). Recall that the analysis involved manipulating the zero-point of both the liking and humor variables (Spiller et al. 2013). I centered the liking variable at 4.95 (i.e., I subtracted 4.95 from all liking judgments such that the new average was 0). I then ran several iterations of ANOVAs regressing the centered liking variable on humor and humor*humor. The humor variables were centered at 1, 2, 3,...7 (as well as increments between the integers, e.g., 2.5). The intercept of these ANOVAs

tested whether the liking judgment at a given level of humor differed from 4.95. I found two JN points (see Figure 12).

Figure 12. Relative ad likeability at each level of humor



*The figure graphs the humor*humor interaction on liking judgments. Humor and liking are measured on a seven-point scale with endpoints disagree/agree. The dotted line y = 4.95 marks the average liking judgment of participants exposed to a non-humor appeal. There are two Johnson-Neyman points. Below humor = 2.49, points on the curve are significantly lower than 4.95. Above humor = 4.65, points on the curve are significantly higher than 4.95. The average* humor score *in the humor appeal condition is 3.23. Note that this value falls between the JN points [2.49, 4.65]. In other words, the humor appeals are not significantly more or less liked than the non-humor appeals. Theoretically, the humor appeals would have to have scored greater than 4.65 on perceived humor to be more liked than the non-humor appeals.*

When perceived humor was below 2.49, participants gave liking judgments that were

significantly lower than 4.95 (the average likeability of the non-humor appeals). When perceived humor was above 4.65, participants gave liking judgments that were significantly higher than 4.95 (the average likeability of the non-humor appeals). Participants exposed to a humor appeal rated it a 3.23 on perceived humor, on average. Based on the JN points, the humor appeals would have had to score above a 4.65 on perceived humor to be better liked relative to the non-humor appeals. Hence, the humor appeals were simply not funny enough to increase liking judgments.

Ad liking and persuasion. As before, I measured persuasion in terms of problem judgments and intentions to act. According to H3, people are more persuaded by ads they like. Consistent with H3, liking judgments predicted judgments of problem severity (β = .38, t (233) = 9.65, p < .0001) and intentions to act (β = .58, t (233) = 10.46, p < .0001).

Appeal type on persuasion. The effect of appeal type on problem judgments (5.66 vs. 5.66; t (233) = -0.00, p = .99) and intentions to act was null (4.19 vs. 4.48; t (233) = -1.31, p = .19; see Figure 13).

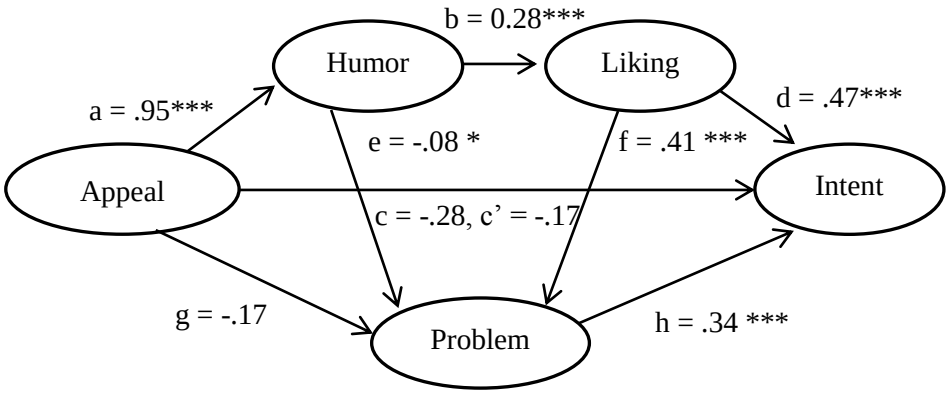
Figure 13. Appeal type on the persuasion measures

Humor and liking are measured on a seven-point scale with endpoints disagree/agree. There were no significant differences between the means.

The null effect is surprising given that the humor and non-humor appeals are similarly liked. Recall that in study 1, the humor appeals were *better* liked, which masked a negative effect of the humor appeals on the persuasion measures. Here, the ads are similarly liked, and so, the negative effect of the humor appeals should be plainly visible. I thus failed to find support for H1. I did, however, find that *perceived* humor negatively correlated with the persuasion measures after controlling for liking judgments. Humor judgments negatively predicted judgments of problem severity (β = -.07, t (232) = -2.01, $p < .05$) and intentions to act (β = -.12, t (232) = -2.43, $p < .05$), supporting H5.

Testing the causal sequence of the predictors. As a final step in my analysis, I ran a structural equation model to test the causal sequence of the predictors (PROCESS model 6; Hayes 2013). The model appears in Figure 14.

Figure 14. Triple serial mediation model



*Note: Appeal is coded as 0 = non-humor appeal, 1 = humor appeal. The individual paths represent an ANOVA that regresses the proceeding variable (i.e., liking) on the previous variable (i.e., humor), controlling for any other variables behind the independent variable in the causal structure (i.e., appeal type). The regression coefficient for the previous variable (e.g., liking) appears above the arrow. Further, note that path c represents the total effect of appeal type on problem perception while c' represents the direct effect of appeal type on problem perception. The asterisks indicate the level of significance with * corresponding with p <.05, ** corresponding with p < .01, and *** corresponding with p < .001.*

The results were remarkably similar to study 1. As expected, the indirect path appeal type → humor → liking → problem → intent was significantly positive (β = .12, 95% CI [.05, .20]). The humor appeals increased perceived humor, which increased liking judgments, which increased problem judgments, which increased intentions to act. Also as expected, the indirect path appeal type → humor → liking → problem →intent was significantly negative (β = -.08, 95% CI [-.17, -.01]). The humor appeals increased perceived humor, which *decreased* problem judgments and

thereby decreased intentions to act after controlling for liking judgments. The estimates of all seven paths appear in Table 9. Note that the nature and significance of the results replicate when substituting humor for humor*humor.

Table 9. Indirect effects for triple serial mediation model

Path	Estimate	95% Confidence Interval
appeal type → humor → intentions	-.08	-.23, .01
appeal type → humor → liking → intentions*	.12	.06, .25
appeal type → humor → problem perception → intentions*	-.03	-.08, -.01
appeal type → humor → liking → problem perception → intentions*	.04	.01, .09
appeal type → liking → intentions	-.16	-.39, .03
appeal type → liking → problem perception → intentions	-.05	-.13, .00
appeal type → problem perception → intentions	.04	-.05, .15

** significant at $p < .05$*

Net effect of perceived humor on persuasion. The analysis suggests that perceived humor can both increase intentions to act (via ad liking) and decrease intentions to act (via message trivialization). What, then, is the ultimate effect of *perceived* humor on the persuasion measures? An ANOVA revealed a null effect between perceived humor and problem judgments ($\beta = .03$, t (233) = .68, $p = .50$), and a null effect between perceived humor and intentions to act ($\beta = .03$, t (233) = .53, $p = .60$).

Discussion

Replicating study 1, and in support of H1, I found evidence of a positive linear and curvilinear relationship between perceived humor and liking judgments. Unlike study 1, I did not find that the humor appeals were better liked relative to the non-humor appeals; the humor appeals were simply not funny enough to increase liking relative to the non-humor appeals. The

degree to which the humor appeals were more or less liked than the non-humor appeals depended on perceived humor (H2). When participants indicated that the appeal was a "2.49" or lower on humor, they liked the ad less than participants who viewed a non-humor appeal. When participants indicated that the appeal was a "4.65" or greater on humor, they liked the ad more than participants who viewed a non-humor appeal. The humor appeals, on average, scored a "3.23" on humor—not low or high enough to significantly influence liking judgments relative to the non-humor appeals.

Replicating study 1, and in support of H3, liking judgments predicted the persuasion measures—problem perception and intentions to act. Unlike study 1, I did not find a main effect of appeal type on the persuasion measures when liking was constant. I thus failed to support H4. Replicating study 1, I found a negative effect of perceived humor on the persuasion measures after controlling for liking judgments (H5). Finally, and replicating study 1, the serial mediation model offered evidence that humor appeals exert opposing effects (i.e., + ad likeability, - problem perception) on intentions to act. Apparently, these opposing paths cancelled out; appeal type had no total or direct effect on intentions to act.

Relation to prior research. As in study 1, my results indicate that humor appeals are no more or less persuasive than non-humor appeals because the positive (i.e., likeability) and negative (i.e., message trivialization) components of humor appeals cancelled out. The lack of a main effect of appeal type on the persuasion measures fails to replicate the findings of some prior work (McGraw et al. 2015a; McGraw et al. 2015b), but are consistent with other work that shows humor appeals have both positive and negative influences on persuasion that negate each other (Moyer-Gusé et al. 2011; Nabi et al. 2007).

Limitations. One limitation of study 2 is that participants found the humor appeals only moderately funny (i.e., 3.23 on a seven-point scale), and only slightly funnier than the non-humor appeals (i.e., 3.23 vs. 2.29). The lack of variance between the humor and non-humor appeals hurt the power of all tests involving the variable *appeal type* (Judd, McClelland, and Ryan 2011). Further, the lack of *high* perceived humor hurt the power of all tests of humor intensity (i.e., funniness) on the persuasion measures.

A second limitation, which also applies to study 1, is that many of the conclusions are based on correlational versus causal relationships. Hence, I cannot rule out a reverse-causation explanation of my findings. For instance, I predicted that perceived humor drives problem judgments, but the reverse may also be true: problem judgments may drive perceived humor. People may be more inclined to find a social ad funny when they already deem the subject matter somewhat safe or benign (McGraw and Warren 2010; McGraw et al. 2012b; McGraw, Williams, and Warren 2013b; Rothbart 1973; Veatch 1998). Studies 3 and 4 address the issue of reverse-causation by manipulating (versus measuring) humor and liking (Bullock, Green, and Ha 2010).

STUDY 3

Study 3 manipulates ad funniness and likability experimentally to address the reverse-causation concerns in studies 1 and 2 (Bullock et al. 2010). Study 3 also measures actual behavior in response to the ads. Below, I describe how I designed and tested the liking and humor manipulations. After, I present the main experiment.

Liking manipulation

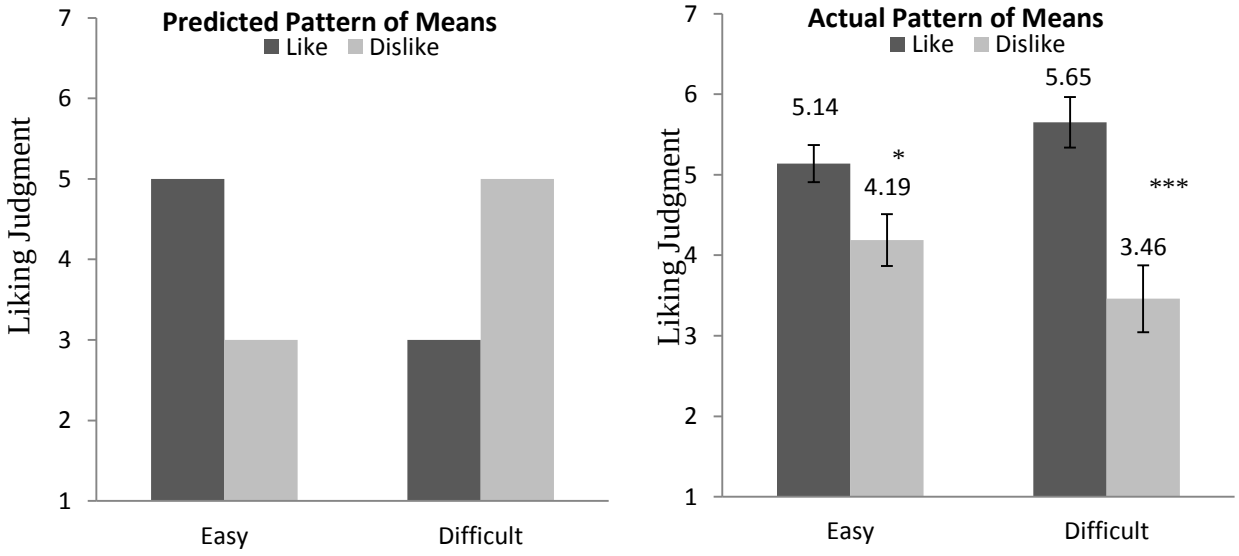
To manipulate liking, I adapted a paradigm from Schwarz and colleagues (1991). Schwarz and colleagues found that they could manipulate people's impressions of their assertiveness by manipulating how easy or difficult it was for people to recall situations in which they were or were not assertive. In one study, participants were asked to recall either six or twelve instances in which they were assertive. Recalling six instances was easy, which led people to infer that they were assertive. Recalling twelve instances was hard, which led people to infer that they were not assertive. When participants were asked to recall either six or twelve instances in which they were *not* assertive, recalling six instances was easy, which led people to infer that they were *not* assertive. Recalling twelve instances was hard, which led people to infer that they *were* assertive.

I tested whether I could adapt Schwarz and colleague's (1991) general paradigm to manipulate liking. I paid 87 mTurk participants a small sum to take a Qualtrics survey (49% male; M_{age} = 33.67). The design was a 2 (task difficulty: easy, difficult) X 2 (liking manipulation: like, dislike) X 2 (appeal type: non-humor appeal, humor appeal) X 3 (replicate: version 1, version 2, version 3) between-subjects design.

I randomly assigned participants to view one of the six tombstone ads. On the next screen, I asked participants to list either two (easy condition) or eight (hard condition) reasons they liked or disliked the ad, based on random assignment. After, participants judged the extent to which they liked the ad using the same scales as studies 1 and 2. Participants then indicated the extent to which the ad made them amused, smile, laugh, offended, sad, scared, and sympathetic on a seven-point scale (disagree/agree). Question order was randomized.

I expected to find a crossover interaction between the task difficultly (easy, difficult) and the liking manipulation (like, dislike) that replicated the pattern of Schwarz and colleagues (see left frame, Figure 15). I ran an ANOVA regressing the liking judgments on task difficulty, the liking manipulation, and their interaction. The interaction was significant (β = 1.25, t (83) = 1.96, p = .05), but the pattern of means did not resemble those of Schwarz and colleagues (see right frame, Figure 15).

Figure 15. Predicted vs. actual results of liking manipulation



*Note: The asterisks indicate the level of significance with * corresponding with p <.05, ** corresponding with p < .01, and *** corresponding with p < .001.*

On average across task difficulty, participants gave higher liking judgments when asked to list reasons for liking versus disliking the ads (5.40 vs. 3.90, t (85) = 4.68, p < .0001). However, the effect was most pronounced when the task was difficult (5.65 vs. 3.46, t (83) = -4.61, p < .0001).

I also checked whether the liking manipulation unintentionally manipulated other judgments (e.g., humor). The liking manipulation was not significantly correlated with any measures

besides liking (all *p's* > .16), except on their feelings of offense. Participants who listed reasons they liked the ad were less offended by it than participants who listed reasons they disliked the ad (r = -.27, p < .05). The full correlation table appears in Table 10.

Table 10. Liking pretest correlations

Study 3 Liking Pretest Correlations, N=87							
	List[$]	Liking	Humor	Offended	Sad	Scared	Sympathetic
Difficulty[#]	.09	.03	.15	.04	-.15	.02	.04
Focus		.45***	.12	-.27**	-.03	-.02	.12
Liking			.2^	-.45***	.28**	.27**	.34***
Humor				.08	-.34***	-.21*	-.09
Offended					-.03	.08	-.15
Sad						.58***	.57***
Scared							.36***

[$] *Liking (0 = dislike, 1 = like)*
[#] *Difficulty (0 = difficult, 1 = easy)*
^ *p < .10*
* *p<.05*
** *p<.01*
***p<.001*

The goal of the pretest was to identify the strongest manipulation of liking. The strongest manipulation of liking occurred when participants listed eight reasons for liking or disliking the ad. Thus, in study 3, I manipulate liking by having participants list eight reasons for liking or disliking the ad.

Humor manipulation

I tested whether I could manipulate humor the same way I manipulated liking, i.e., by asking participants to list reasons the ad was funny or serious. The design was identical to the liking pretest, with the exception that I removed the three serious tombstone ads from the survey given that it would be difficult to interpret the last words of these ads (e.g., "be home soon") as funny.

I was specifically interested in manipulating three levels of humor: low humor, moderate humor, and high humor. The low humor condition entailed listing two reasons the ad was serious. The reason this condition is "low" humor instead of "no" humor is that the ads are somewhat humorous to start (e.g., #YOLO). The moderate humor condition entailed listing one reason the ad was humorous and one reason the ad was serious. The high humor condition entailed listing two reasons the ad was humorous. I kept the listing task short due to the fact that articulating why a joke is funny can, ironically, make the joke unfunny (McGraw and Warner 2014; White 1954).

I paid 108 mTurk participants a small sum to take a Qualtircs survey (37% male; M_{age} = 34.56). The design is a 3 (humor manipulation: low humor, moderate humor, high humor) X 3 (ad replicate: version 1, version 2, version 3) between-subjects design.

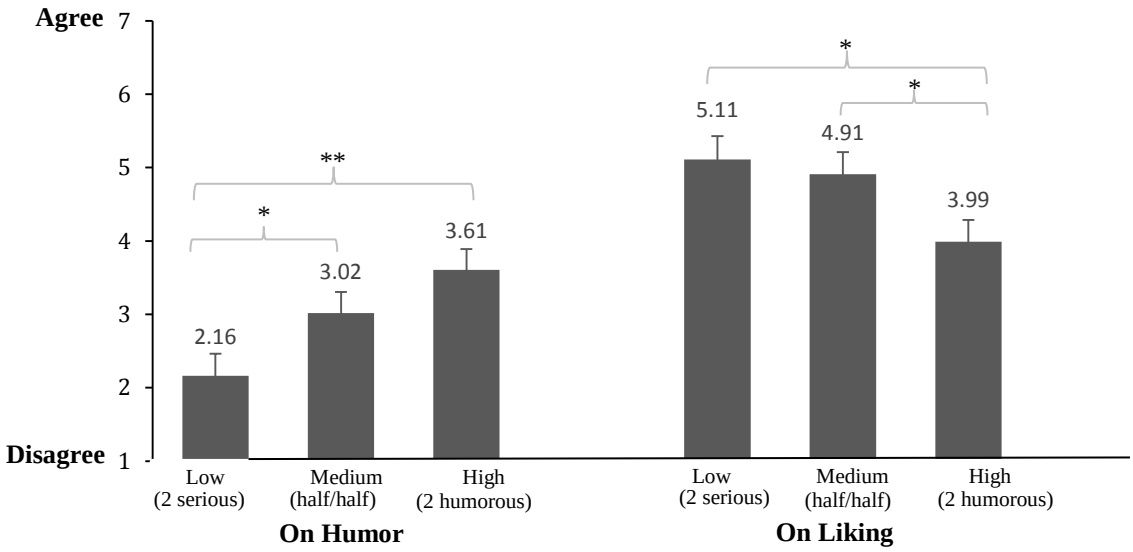
I randomly assigned participants to view one of the three tombstone ads. On the next screen, I asked participants to list either two reasons the ad was serious, two reasons the ad was funny, or one reason the ad was serious and one reason the ad was funny, based on random assignment. After, participants judged the extent to which the ad made them amused, smile, laugh, offended, sad, scared, and sympathetic on a seven-point scale (disagree/agree). Question order was randomized.

The humor manipulation worked as intended. Pairwise comparisons revealed that participants in the low humor condition rated the ad as less funny than participants in the moderate condition (2.16 vs. 3.01, t (105) = 2.05, $p < .05$) or participants in the high humor condition (2.16 vs. 3.61, t (105) = 3.49, $p < .001$). Participants in the moderate humor condition

rated the ad as less funny than participants in the high humor condition, although the difference was not significant (3.02 vs. 3.61, t (105) = 1.46, p = .15).

I also checked whether the liking manipulation unintentionally manipulated other judgments (e.g., liking). Surprisingly, participants indicated the greatest ad liking in the low humor condition (see Figure 16).

Figure 16. Pretest means on humor, liking



*Note: The asterisks indicate the level of significance * corresponding with p <.05.*

Specifically, participants in the high humor condition rated the ad as less likable than participants in the moderate humor condition (3.99 vs. 4.91, t (107) = -2.18, p < .05) and participants in the low humor condition (3.99 vs. 5.11, t (107) = -2.59, p < .05). The moderate and low humor conditions were not significantly different on liking judgments (p = .64). Yet, perceived humor was positively correlated with liking judgments (r = .27, p < .0001). Why, then, would participants in the high humor condition judge the ad as less likable than participants in

the low humor condition? My intuition is that participants disliked elaborating on reasons that a person's "last words" were funny, which translated to lower ad liking.

The humor manipulation was also negatively correlated with feeling scared (r = -.19, p < .05) and feeling sad at marginal significance (r = -.17, p < .10) A full correlation table appears in Table 11.

Table 11. Pretest correlations for study 3

	Sad	Scared	Offended	Sympathetic	Liking	Humor
Humor Manip[#]	-.17^	-.19*	.15	-.03	-.25**	.32***
Sad		.64***	.22*	.72***	.28***	-.21*
Scared			.24**	.52***	.31***	-.03
Offended				.10	-.17^	.18^
Sympathetic					.37***	.02
Liking						.27***

[#] *Humor Manipulation (-1 = low, 0 = medium, 1 = high)*
^ *p < .10*
* *p<.05*
** *p<.01*
***p<.001*

Main experiment

The main experiment is a 2 (liking manipulation: like, dislike) x 3 (humor manipulation: low, medium, high) between-subjects design. The procedure for the liking manipulation is identical to the pretest. The procedure for the humor manipulation is identical to the pretest, except that I asked participants to list four, not two, reasons the ad was serious, funny, or half and half. My goal was to further differentiate the humor manipulations. Given that in the liking pretest, listing eight versus two reasons more strongly manipulated liking, my intuition was that a

similar finding would apply for the humor manipulation.[9] Further, for simplicity, all participants viewed the #YOLO ad, which I thought would resonate most with the college population and was directionally the most humorous in the pretest.[10]

Method

I recruited 186 undergraduates to take part in a lab study for partial course credit (51% male, M_{age} = 20.51). I removed 8 participants for failing an attention check; their removal did not affect the significance of the results.

All participants spent a few moments reviewing the #YOLO ad. On the next screen, participants were asked to recall and list 8 reasons they (liked/disliked) the ad, based on random assignment. After, participants were asked to recall and list 4 reasons the ad was (serious/humorous/half and half), based on random assignment. Note that I did not counterbalance the manipulations; based on the pretest, the liking manipulation does not influence humor, but the humor manipulation influences liking. Thus, it made sense to start with the liking manipulation.

After the liking and humor manipulations, participants were asked their interest in learning more about apps that help prevent texting while driving, their interest in taking the pledge against texting while driving at killertexts.org, their intentions to stop texting while driving, and their judgment of problem severity. Question order was randomized (see Table 12).

[9] Note that I actually tested a humor manipulation where participants listing *eight* reasons that the ad was serious, serious/humorous, or humorous. However, participants left comments indicating that the task was frustratingly difficult. Many had simply given up. The result was that the mean differences actually shrank (presumably due to noise in the data).

[10] In retrospect, I should have used all three humorous ads.

Table 12. Study 3 dependent measures

Measures	Items
Learn More	• There are apps that can help remove the temptation to text and drive. For instance, the app DriveMode can reply to incoming texts with an automated reply when your car is moving at more than 25 mph. Would you like to learn more?
Pledge	• At killertexts.org, you can take the pledge to curb texting and driving by typing your initials. Are you interested in doing this? *If Yes. Cool! You indicated that you would be willing to take the pledge! Please click killertexts.org to go to the website and sign it. Only takes 2 seconds. (Note: link opens in new window. Signing the pledge is completely optional and confidential. If you've changed your mind, you can simply click the arrow key to skip and continue).*
Intentions	• After this experiment, I plan to reduce the number of times I check or answer texts while driving. [*7-point scale, disagree, agree*]
Problem Perception	• Relative to other social issues, non-profit and government bodies should prioritize addressing the issue of texting while driving. • Texting while driving is a prevalent problem in the US. • On average, texting while driving increases people's risk of getting into an accident.

If participants indicated that they wanted to learn more about cell phone apps that deter texting while driving, they proceeded to a new screen that featured thumbnail images of five real cell phone apps. These apps employ a myriad of strategies to discourage the driver from texting, including locking the phone at speeds of 25 mph or more, auto-responding to text messages, and giving points for good driving behavior that the driver can use to purchase things. Participants read that they could click on a thumbnail to reveal a brief description of that app. I measured how many apps they clicked and how long they spent on the page. Table 13 lists the thumbnails and their descriptions (note that the descriptions were hidden unless participants clicked on the thumbnail).

Table 13. Thumbnails and descriptions of apps for study 3

Apps that Prevent or Discourage Texting While Driving	
	DriveMode: This app from AT&T, a company that's been particularly vocal about the dangers of texting and driving, automatically launches once the car is moving at more than 25 mph. The app responds to all incoming texts and emails, letting the sender know the recipient is driving and will get back to them soon. All beeps and other tempting sounds that indicate a new message will be temporarily disabled. Any calls to the phone are sent directly to voicemail. The free app is available for AT&T customers with Android and BlackBerry devices.* (Mashable 2012)
	Drivesafe.ly: Drivesafe.ly announces callers by name, reads text messages and emails aloud, and can be set to auto-respond without the driver needing to touch the device.* (Shamoon and Verizon Wireless)
	SafeDrive: SafeDrive rewards you for not texting while driving. Simply open the app whenever you're behind the wheel, and it will automatically start rewarding you with points you can use toward discounts at participating stores if you're traveling at least 6 mph. The app tracks the number of points based on driving speed, time spent in traffic, and distance traveled.* (Shamoon and Verizon Wireless)
	DriveOFF: The Android app by car insurance company Esure can detect when drivers are traveling at more than 10 mph, and will shut off other apps that could be distracting, as well as temporarily halt incoming calls and text messages.* (Mashable 2012)
	Live2Txt : Live2Txt is an app that lets you block incoming texts and calls while driving. Turn the app on when you get behind the wheel, and you'll silence your smartphone from incoming notifications, texts and calls. When you receive a message, the app will alert the sender with a customized message that you're unable to respond at the moment.* (Shamoon and Verizon Wireless)

** Descriptions are verbatim from Mashable or Verizon Wireless*

If participants indicated that they wanted to sign the pledge against texting while driving killertexts.org, they proceeded to a new screen with a link to killertexts.org. At that point, participants had the option to follow the link and sign the pledge, or change their mind and move forward without signing the pledge. I recorded whether participants clicked on killertexts.org. Because killertexts.org is independent from the lab survey, I can only roughly confirm whether participants actually signed the pledge by comparing the number of participants who clicked on the link to the number of signatures on killertexts.org.

Next, participants judged the extent to which the ad made them amused, smile, laugh, offended, sad, scared, and sympathetic on a seven-point scale (disagree/agree). Question order was randomized. Finally, participants indicated how often they text behind the wheel (same wording as in study 2), gave demographic information, were debriefed, and thanked. For reference, a correlation table of all measures appeals in Appendix C.

Results

Prevalence of texting while driving in sample. Ninety-percent of participants indicated that they send or check texts while driving at least some of the time. From an experimental standpoint this is good; the ad addresses an issue that is relevant to the majority of participants personally. The full distribution of self-reported texting while driving appears in Table 14.

Table 14. Self-reported frequency of texting while driving

Self-Reported Frequency of Texting While Driving		
	Frequency	Percent
All the time	16	9%
Sometimes, like when my phone goes off	76	43%
Infrequently, only when there is something really important I have to attend to	68	38%
Never	18	10%

Manipulation checks. The liking manipulation manipulated liking judgments as expected. Participants who listed reasons that they liked the ad liked it more than participants who listed reasons that they disliked the ad (4.67 vs. 3.86, t (176) = 3.33, $p < .01$). Unfortunately, and unlike as in the pretest, the liking manipulation also manipulated perceived humor. Participants who listed reasons that they liked the ad found it funnier than participants who listed reasons that they disliked the ad (3.44 vs. 2.52, t (176) = 3.71, $p < .001$).

The humor manipulation partially manipulated perceived humor. Participants who listed reasons that the ad was serious (low humor condition) found it less funny than participants who listed reasons that the ad was funny (high humor condition), at marginal significance (3.24 vs. 2.70, t (175) = 1.70, $p = .09$). Participants who listed reasons that the ad was serious and funny (moderate humor condition) were not significantly different than participants who listed just reasons the ad was serious or just reasons the ad was funny.

Further, the humor manipulation had an unintentional effect on liking judgments. Participants who listed reasons that the ad was serious liked it more than participants who listed reasons that the ad was funny (4.73 vs. 4.09, t (175) = -2.08, $p < .05$), or participants who listed reasons that the ad was serious and funny (4.02 vs. 4.73, t (175) = 2.37, $p < .05$). There was

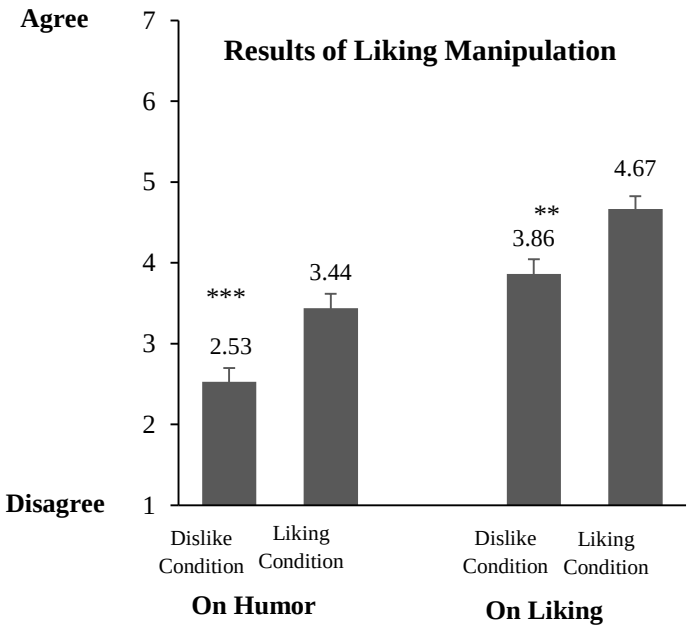
evidence of a curvilinear effect *opposite* the pattern observed in studies 1 and 2. Moving from low humor to moderate/high was significant (4.73 vs. 4.05, t (175) = 2.03, $p < .05$), but moving from moderate humor to high humor was not significant (4.02 vs. 4.09, t (175) = -.25, $p = .80$

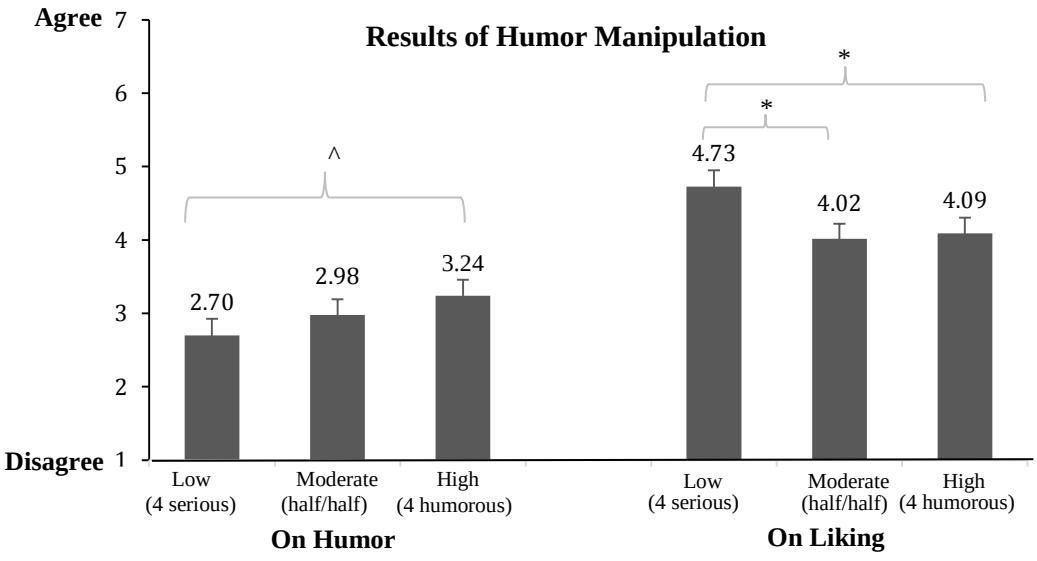
One explanation for the counterintuitive effect of the humor manipulation on liking judgments is that participants disliked thinking about reasons the tombstone ad was funny, and that disliking of the task translated to disliking of the ad. Indeed, participants who listed reasons that the ad was serious found it less offensive than participants who listed reasons that the ad was funny (1.73 vs. 2.44, t (175) = 2.40, $p < .05$), or participants who listed reasons that the ad was serious and funny (1.73 vs. 2.44, t (175) = 2.37, $p < .05$). However, offensiveness judgments did not mediate the effect of the humor manipulation on liking judgments.

Note that as in studies 1 and 2, perceived humor still positively predicted liking judgments ($\beta = .38$, t (176) = 5.64, $p < .0001$). Unlike studies 1 and 2, however, the curvilinear effect humor*humor was not significant ($\beta = .06$, t (175) = 5.64, $p < .0001$). Given that perceived humor and liking were positively correlated, yet the humor manipulation and liking were *negatively* correlated, the humor manipulation may a) not manipulate humor, instead reflecting a demand effect, and b) may manipulate unintentional constructs such as annoyance or disgust, thereby decreasing liking.

Given the similarities between the moderate and high humor conditions, I collapsed these conditions in the following analyses for simplicity. Figure 17 graphs the results of the manipulation checks.

Figure 17. Results of humor and liking manipulations





*Note: The asterisks indicate the level of significance with ^ corresponding to p < .10, * corresponding with p <.05, ** corresponding with p < .01, and *** corresponding with p < .001.*

The results of the manipulation checks suggest that the liking and humor manipulations are confounded. I attempt to account for the confound statistically using covariates in the following analyses.

Results of liking manipulation. As noted above, participants who listed reasons for liking the ad found it funnier than participants who listed reasons for disliking the ad. While H1 argues that humor causes liking, this result suggests, unexpectedly, that liking causes humor. In looking at participant's reasons for liking the ad, it is apparent that many of them referred to the ad's humorousness as reason for liking the ad. Hence, it is not surprising that the liking manipulation manipulated perceived humor.

Inconsistent with H2, the liking manipulation (0 = dislike, 1 = like) was not correlated with any of the measures of persuasion including problem perception (r = .04, p = .63), intentions to act (r = -.04, p = .59), choosing to learning more (r = -.03, p = .73), time spent learning more (r = .04, p = .73), number of apps clicked (r = .07, p = .58), or signing the pledge (r = .04, p = .56). Given that the liking manipulation was confounded with humor, I reran the correlations controlling out the effect of humor. However, the same null series of correlations held. Controlling for self-reported frequency of texting also did not change the results of the liking manipulation. Hence, hypothesis 1b was not supported.

However, note that liking judgments (not the liking manipulation) *did* predict problem judgments (β = .08, t (172) = 1.76, p = .08), intentions to act (β = .31, t (172) = 3.74, p < .001), choosing to learn more (β = .17, *Wald* χ^2 (1, 172) = 2.89, p = .09), and signing the pledge (β = .24, *Wald* χ^2 (1, 172) = 5.26, p < .05). It is thus surprising that the liking manipulation, which did successfully manipulate liking, did not have a significant effect on the persuasion measures. My

intuition is that the test was underpowered, although I cannot rule out a reverse-causation explanation of the liking correlations.

The results of the humor manipulation. According to H4, attempting humor is a cue to viewers to discount the message regardless of the ad's funniness or likability. According to H5, humor is negatively correlated with persuasion. To test H4 and H5, I ran several ANOVAs and logistic regressions regressing the five measures of persuasion (problem perception, intentions to act, choosing to learn more, time spent learning more, number of apps clicked on, and signing the pledge) on the humor manipulation (0 = low humor, 1 = humor), liking, and self-reported frequency of texting. I included liking judgments as a covariate, given the liking confound in the humor manipulation (i.e., that the moderate/high humor conditions corresponded with lower liking scores). I also included self-reported frequency of texting as a covariate (coded with Helmert contrast codes). Whenever the humor manipulation was significant, I ran a mediation analysis to test whether its effect was independent of perceived humor (H4) or due to perceived humor (H5). The results are summarized in Table 15.

Table 15. Humor manipulation on persuasion

DV	Predictor	Comparison/Beta	F or Wald	df	Significance	Mediated by Humor?	Indirect Effect	Sig. of c'
Problem Perception	Humor Manipulation[#]	6.22 vs. 5.94	F = 2.87	172	p = 0.11	NA	NA	NA
	Liking	β = .08	F =3.10	172	p = 0.08			
Intentions to Act	Humor Manipulation	5.40 vs. 4.79	F =4.23	172	p < .05	No	β = -.11, CI 95% [-.34, .01]	p = .10
	Liking	β = .31	F =14.01	172	p < .001			
Chose to Learn More (0 = no, 1 = yes)	Humor Manipulation	68% vs. 49%	W = 4.97	172	p < .05	No	β = .01, CI 95% [-.15, .23]	p < .05
	Liking	β = .17	W = 2.89	172	p = .09			
Time Spent (log-transformed)	Humor Manipulation	39 vs. 37[$]	F =.27	61	p = .60	NA		
	Liking	β = .07	F = 1.74	61	p =.19			
Clicks on Apps (square-root transformed)	Humor Manipulation	2.48 vs. 2.35[@]	F = .13	61	p =.72	NA		
	Liking	β = .08	F = .90	61	p =.35			
Sign Pledge (0 = no, 1 = yes)	Humor Manipulation	31% vs. 33%	W = .37	172	p = .55	NA		
	Liking	β = .24	W = 5.26	172	p < .05			

Note: all models control for frequency of texting (orthogonally contrast-contrast coded)

[#] *Humor Manipulation (0 = low, 1 = medium/high)*

[$] *Comparison is in raw seconds*

[@] *Comparison is in raw number of clicks*

c' denotes the direct effect of the humor manipulation on the dependent variable, controlling for liking and frequency of texting.

The moderate/high humor manipulations decreased participants' intentions to act (4.79 vs. 5.40, t (172) = 2.06, $p < .05$) and their choice to learn more (49% versus 68%, *Wald* χ^2 (1, 172) = 4.97, $p < .05$) relative to the low humor condition. These results replicate with or without liking and frequency of texting in the models. Perceived humor did *not* mediate these effects. Hence, unlike studies 1 and 2, this study supports H4 (i.e., regardless of the ad's funniness or likability, social ads that attempt humor signal to viewers that the message is inconsequential), *not* H5 (perceived humor correlates with message trivialization).

The remaining comparisons were not significant. It appeared that once participants chose to learn more, the manipulation ceased to matter in terms of how long they spent learning about the apps or how many apps they clicked on. There was no effect of the humor manipulation on whether participants chose to sign the pledge at killertexts.org.

Discussion

The results of study 3 are the first to support H4: that humor appeals trivialize the message and demotivate viewers as a function of their mere presence in the ad. Participants in the moderate/high humor condition indicated lower intentions to act and chose to learn about apps that deter texting while driving less than participants in the low humor condition. These results held after controlling for the liking confound (i.e., that liking judgments were lower in the moderate/high humor conditions), and self-reported frequency of texting while driving. I did not find support for H5: that humor appeals trivialize serious messages as a function of how funny the appeal is. Perceived humor did *not* mediate the effect of the humor manipulation on the persuasion measures.

In contrast to the findings of previous studies, the results of study 3 do not support H1. According to H1, humor causes liking. In contrast, the results of study 3 indicate an unlikely outcome: that liking causes humor. Participants who listed reasons for liking the ad found it funnier than participants who listed reasons for disliking the ad. Further, the humor manipulation *harmed* liking judgments. Participants who listed reasons that the ad was funny liked it less than participants who listed reasons that the ad was serious.

I propose that the inconsistent findings of study 3 are due to issues with the humor and liking manipulations, which did not manipulate the constructs as intended. Unlike in the pretest, the liking manipulation unintentionally manipulated humor. The impact on humor makes sense when evaluating participants' reasons for liking the ad; many listed humor as a reason they liked the ad. However, it is unclear why the liking manipulation did not manipulate humor in the pretest. One explanation is the use of different samples (mTurk versus undergraduates).

The humor manipulation was even more flawed than the liking manipulation. Not only did the humor manipulation unintentionally manipulate liking judgments, it manipulated liking judgments *opposite* to H1 (i.e., that humor and liking are positively correlated). Specifically, participants in the moderate/high humor conditions gave *lower* liking judgments than participants in the low humor condition. One explanation is that participants disliked thinking of reasons that the morbid tombstone ad was funny, especially if they did not find the ad funny originally. Presumably, their disliking of the task translated to a disliking of the ad. A second issue with the humor manipulation is that the manipulation only weakly manipulated humor (in the pretest) and failed to manipulate humor in the main experiment. In future work, the humor

manipulation should be eschewed in favor of other manipulations that better distinguish between varying degrees of humor.[11]

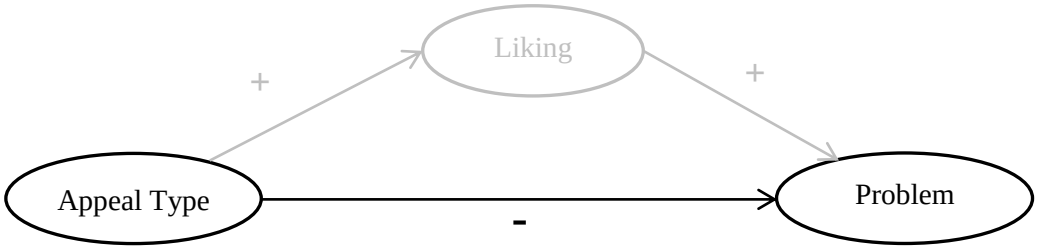
Hence, the conclusions of study 3 are tentative at best. Future scholars interested in evaluating humor and liking on persuasion should consider manipulating humor and liking across separate studies, given that these constructs often influence each other. It may in fact be nearly impossible to manipulate humor and liking orthogonally. Further, future scholars should manipulate humor while holding liking constant and vice versa. Consistent with this advice, study 4 manipulates humor while holding liking constant at the stimulus level.

STUDY 4

In study 4, I test my hypotheses using a set of social ads that differ on funniness, but not on likability. Recall my prediction that humor has opposing effects on persuasion; humor increases persuasion by increasing ad likability, but decreases persuasion by trivializing the message. In studies 1 and 2, I found no main effect of humor appeals on persuasion because these opposing forces cancelled each other out. By holding ad liking constant experimentally, I should be able to find a main effect of appeal type (non-humor appeal versus humor appeal) on problem judgments (see Figure 18).

[11] However, note that it is difficult to manipulate humor while holding stimuli constant. I tested several other humor manipulations, not reported here, which all failed. These manipulations included 1) having participants watch a funny vs. neutral video before the main experiment, 2) having participants write about a funny, happy, sad, or neutral memory before the main experiment, and 3) having participants listen to several laugh tracks (vs. ambient café noise). These manipulations had no effect on participants' subsequent perceived humor of the tombstone ads.

Figure 18. Theoretical model with liking constant



Appeal type assumes that non-humor appeals are coded as 0 and humor appeals are coded as 1. In a stimulus set where the appeals do not differ on likability, the path appeal type→liking→persuasion will be "off". The result should be a significant negative main effect of appeal type on problem judgments.

What kind of "non-humor" appeals are similarly likable to humor appeals? I predicted that positive appeals would be. Positive appeals make people feel upbeat, inspired, moved, or uplifted. Similar to humor appeals, positive appeals are relatively new to social advertising (Stanley 2015). Also, similar to humor appeals, positive appeals are preferentially viewed and shared online (Berger and Milkman 2012; Stanley 2015). I predicted that similar to (funny) humor appeals, positive appeals would also be well liked. Thus, I comprised a set of humor appeals and positive appeals to test my hypotheses in study 4. The stimulus set of study 4 also lends itself to testing H6: that positive appeals do not lead people to discount the ad's message in the same way as humor appeals. That is, that humor appeals ads are uniquely trivializing.

Stimuli

To source a set of closely matched humor appeals and positive appeals, I started with the ten humor appeals from study 1 and hired 98 mTurk participants for a small sum to find positive appeals on the ten corresponding topics. Participants also had the opportunity to earn a $20

bonus if their ad best fulfilled the criteria outlined below.

I instructed participants to find a social ad addressing a topic (teen pregnancy, drunk driving, seat belt use, adoption, pet adoption, safe sex, prescription drug abuse, CPR, heart disease, or obesity) on YouTube that featured a positive appeal. Topic assignment was random. I defined positive appeals as those that were "heartwarming" and generated "warm fuzzies" but were not funny. As an example, I showed participants two positive appeals. The first was the recent "Love Has No Labels" ad based on footage from a live stunt in Santa Monica, CA (Ad Council 2015; Stanley 2015). Hidden film crews captured bystanders' reactions to a curious, large X-ray screen of skeletons playing and hugging. The surprise came when real people jumped out from behind the screen. The "skeletons" were people of different races, religions, and sexual orientations, yet were friends or couples. The stunt challenged viewers to confront their prejudice and accept one another. The second ad was on seat belt safety. In the ad, a man mimes a car crash from his living room couch. In the throes of the crash, his wife and daughter run over and hug him, acting as a seat belt that protects him from harm (Alexander, Cox, and Sussex Safer Roads 2010).

Following the format of McGraw et al. (2015a), I told participants the ad should be unique (i.e., not the first hit on YouTube) and produced within the last five years. I also re-empathized that the ad should not be funny. When participants found an ad that satisfied the above criteria, they pasted their link into a text box. After collecting the data, I asked the same hypothesis-blind coder used by McGraw et al. (2015a) to pick the final positive ad for each topic based on production quality and similarity to its humorous mate. After the set was finalized, I picked my personal favorite positive ad and paid the finder a bonus of $20. Table 16 summarizes the storylines of the ten new positive ads alongside a description of the original humor appeals of

McGraw et al. (2015).

Table 16. Brief descriptions of study 2 stimuli

Social Issue	Humorous Ad	Positive Ad
Teen pregnancy	Pretend ad for the ravaged-looking "Teen Mommy Darcy" Barbie Doll	Young couple cheerfully demonstrate pregnancy statistics
Drunk driving	Drunk driving is like kicking a sleeping grizzly bear	Man lives to care for his puppy because he did not drink and drive
Seat belt use	Two men sit upside down in a wrecked car and congratulate each other on not getting a "click it or ticket" ticket	Little girl reminds dad to wear his seat belt
Adoption	Adoptive parent vacuums up pet hamster, but kids still love her	Adoptive parents help kids get back up after falling down.
Pet adoption	Business man calls home to talk to cat, not wife	Ad ode to famous shelter pets (e.g., "Lil Bub") and how much they are loved
Safe sex	Band mates of Vampire Weekend discuss condoms on a public bus	College students play with condoms
Prescription drug abuse	Accessible prescription drugs is like having bear traps around the house	Young adults, once addicts, explain how they get a natural high
CPR	Actor Ken Jeong and sexy actresses perform CPR	Wife saves the life of her husband by using CPR
Heart disease	Actress Elizabeth Banks has a heart attack	People describe what inspires them to make healthy choices
Obesity	French fry discusses junk food	Family plays in the park and eats healthy food

Pretests

I ran a pretest to establish that the ads were similarly likable, yet different on funniness. I recruited 104 undergraduates to participate in a study for partial course credit (56% male, M_{age} = 20.21). I removed 5 participants who failed an attention check. I randomly assigned participants

to view one of the twenty social ads. After viewing the ad, participants judged the extent to which the ad made them amused, smile, laugh, offended, sad, scared, and sympathetic on a seven-point scale (disagree/agree). They also indicated their liking of the ad (questions identical to previous studies). Question order was randomized. The results are summarized in Table 17.

Table 17. Study 4 pretest means

	Humorous Ads	Positive Ads
Humor (α = .82)	4.74	3.21***
Offended	1.66	1.43
Sad	2.30	3.22*
Scared	2.20	2.88^
Sympathetic	3.98	4.94*
Liking (α = .90)	5.35	5.21

^ *p < .10*
* *p<.05*
** *p<.01*
****p<.001*

As expected, the humor appeals were significantly funnier than the positive appeals (4.74 vs. 3.24; t (97) = 3.88, $p < .001$), but not better liked (5.35 vs. 5.21; t (97) = .42 = .68). The humor appeals also generated less sympathy (3.98 vs. 4.94, t (97) = -2.26, $p < .05$), less sadness (2.30 vs. 3.22, t (97) = -2.40, $p < .05$), and marginally less fear than the positive appeals (2.20 vs. 2.88, t (97) = -1.77, $p = .08$).

Main experiment method

I recruited 81 undergraduates to take part in a lab study for partial course credit (44% male, M_{age} = 20.90, 0% had seen had seen the ad before). The methods were identical to study 1 except that I added questions to measure felt happiness, compassion, and concern (seven-point scale,

agree/disagree). I use the happiness measures as a proxy for generic positive affect (Algoe and Haidt 2009). Compassion and concern, together with sympathy, measure "empathic emotion" (Bagozzi and Moore 1994; Batson and Powell 2003; Chang and Lee 2009; Fisher and Ma 2014; Shelton and Rogers 1981; Small and Verrochi 2009; Smith et al. 2013). I also added a measure of production quality. The measure included three items: the ad I watched had a high production value, the ad I watched was well-made, and the ad I watched was professionally produced (seven-point scale, agree/disagree). For reference, a correlation table with all measures appears in Appendix D.

Results

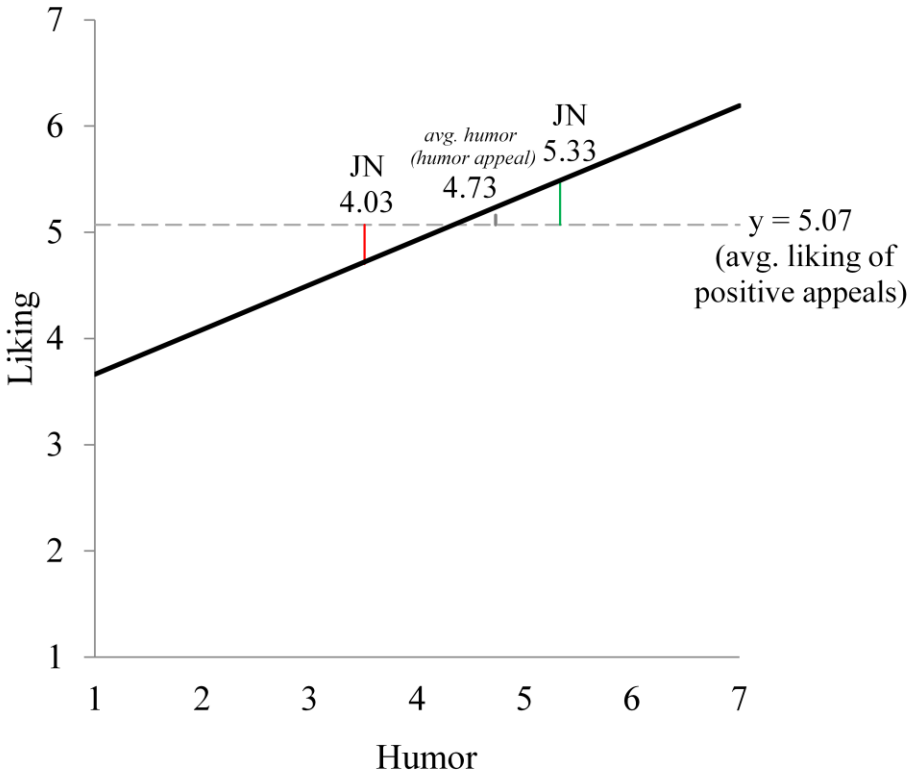
Manipulation checks. Despite my attempt to match the appeals on extraneous factors, the appeals differed on production quality. Participants judged the humor appeals to be of lower quality than the positive appeals (4.32 vs. 5.12, t (79) = -1.94, p = .06). In all subsequent tests, I include production quality as a covariate. Rerunning all ANOVAs with topic as a random factor do not change the significance or nature of the results in this study (Judd et al. 2012).

As expected, the appeals did not differ on likability (4.95 vs. 4.86, t (78) = .30 p = .77). Unexpectedly, the humor manipulation check failed. Participants judged the humor appeals as funnier than the positive appeals, but the difference was not significant (4.24 vs. 3.67, t (78) = 1.44, p = .15).

Humor on liking. In support of H1, perceived humor was positively correlated with liking judgments (β = .42, t (79) = , p < .0001). However, unlike studies 1 and 2, there was not a significant curvilinear effect (i.e., humor*humor) on liking judgments (β = -.00, t (78) = -01, p <

.99). Thus, to test H2, I compared the average liking of the positive appeals to the average liking judgment that corresponded to *each level of humor* (i.e., 1, 2…7; see Figure 19).

Figure 19. Relative ad likeability at each level of humor



The figure graphs the linear effect of perceived humor on liking judgments. Humor and liking are measured on a seven-point scale with endpoints disagree/agree. The dotted line y = 5.07 marks the average liking judgment of participants exposed to a positive appeal. There are two Johnson-Neyman points. Below humor = 4.07, points on the line are significantly lower than 5.07. Above humor = 5.33, points on the curve are significantly higher than 5.07. The average humor score *in the humor appeal condition is 4.73.*

Recall that the analysis involved manipulating the zero-point of both the liking and humor variables (Spiller et al. 2013). I centered the liking variable at 5.07 (i.e., I subtracted 5.07 from

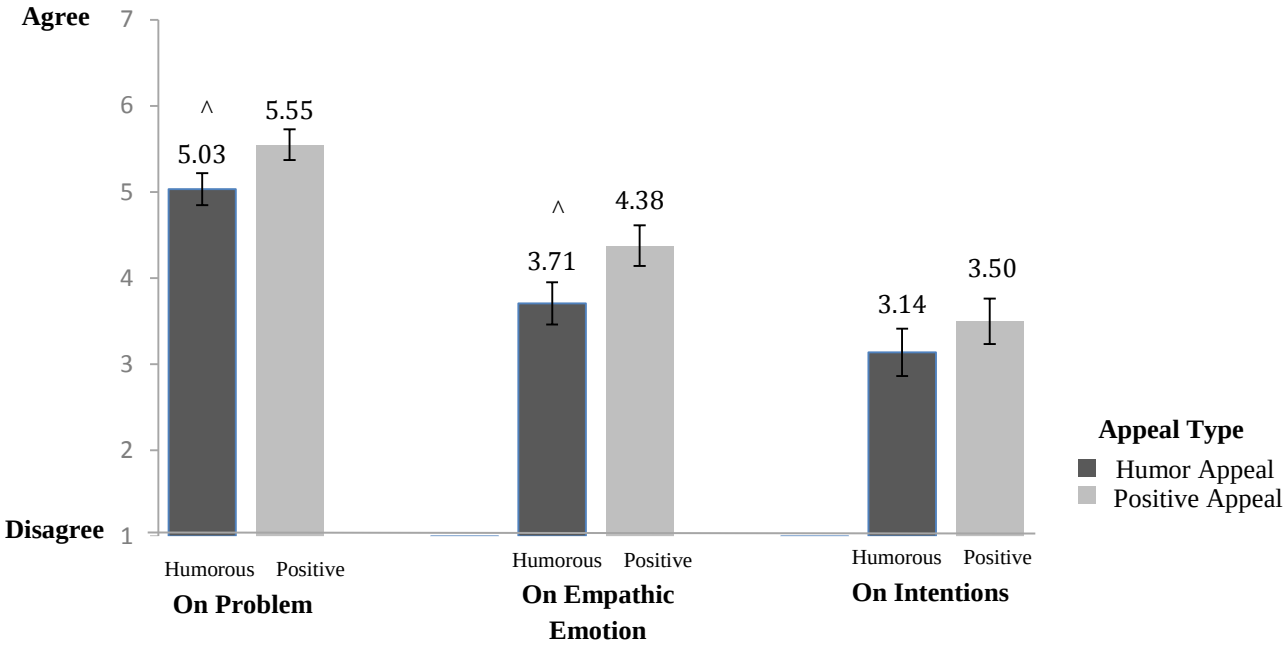
all liking judgments such that the new average was 0). I then ran several iterations of ANOVAs regressing the centered liking variable on humor. The humor variables were centered at 1, 2, 3,...7 (as well as increments between the integers, e.g., 2.5). The intercept of these ANOVAs tested whether the liking judgment at a given level of humor differed from 5.07. I found two JN points. When perceived humor was below 4.03, participants gave liking judgments that were significantly lower than 5.07 (the average likeability of the positive appeals). When perceived humor was above 5.33, participants gave liking judgments that were significantly higher than 5.07 (the average likeability of the positive appeals). In summary, unfunny humor appeals are less likeable than similar non-humor appeals, while funny humor appeals are more likeable than similar non-humor appeals. However, there was no main effect of appeal type on liking judgments because the average funniness of the humor appeals was only 4.73—not high enough to increase liking relative to the non-humor appeals, but also not low enough to decrease liking relative to the non-humor appeals.

Ad liking and persuasion. As before, I measured persuasion in terms of problem judgments and intentions to act. According to H3, people are more persuaded by ads they like. Consistent with H3, liking judgments positively predicted problem judgments (β = .34, t (79) = 4.86, p < .0001), empathic emotion (β = .58, t (79) = 5.81, p < .0001), and intentions to act (β = .33, t (79) = 3.02, p < .01).

Appeal type on persuasion. According to H4 and H5, humor appeals trivialize their subject matter. In previous studies, the trivializing nature of the humor appeals was offset by increased ad liking relative to the non-humor appeals. Given that the humor appeals were similarly liked relative to the positive appeals, the trivializing nature of humor should be plainly visible in an

ANOVA regressing problem judgments on appeal type. Indeed, participants who viewed a humor appeal gave lower problem judgments than participants who viewed a positive appeal (5.03 vs. 5.55, t (78) = -1.97, p = .05). The humor appeals also led to lower empathic emotion than the positive appeals (5.03 vs. 5.55, t (78) = -1.97, p = .06), as well as (directionally) lower intentions to act (3.14 vs. 3.50, t (78) = -.93, p = .36). A graph of the means appears in Figure 20.

Figure 20. Role of appeal type on the dependent measures



Note: The carrot indicates the level of significance with ^ corresponding to p < .10.

When rerunning the ANOVA's as mixed models treating topic as a random factor, all p values became slightly smaller. Of note, the p value in the test of appeal type on empathic emotions decreased from .06 to .05. Perceived humor did not mediate the effect of appeal type on the persuasion measures, offering support for H4 (humor appeals trivialize by their presence in an ad) over H5 (perceived humor correlates with message trivialization).

An alternative explanation of the decreased persuasiveness of the humor appeals relative to the positive appeals is that the humor appeals generated more positive affect than the positive appeals. In other words, insofar as positive affect, not humor, trivializes the serious message of the appeal and demotivates viewers, the appeal generating the most positive affect should be the least persuasive. Contrary to this alternative explanation, the humor appeals actually generated *less* positive affect (as measured by happiness) than the positive appeals (2.87 vs. 4.14; t (78) = -2.86, $p < .001$).

Test of H1-H3. Consistent with H1, perceived humor was positively correlated with liking judgments ($\beta = .42$, t (79) = 4.47, $p < .0001$). However, unlike studies 1 and 2, there was not a significant curvilinear effect (i.e., humor*humor) on liking judgments ($\beta = -.00$, t (78) = -01, $p < .99$). To test H2, I thus compared the average liking of the positive appeals to points on the *linear* line between perceived humor and liking judgements. Consistent with studies 1 and 2 and H3, liking judgments were positively correlated with problem judgments ($\beta = .34$, t (79) = 4.86, $p < .0001$), empathic emotion ($\beta = .58$, t (79) = 5.81, $p < .0001$), and intentions to act ($\beta = .33$, t (79) = 3.02, $p < .01$).

Discussion

Recall that I predict humor has opposing effects on persuasion; humor increases persuasion by increasing ad likability, but decreases persuasion by trivializing the message. In studies 1 and 2, the effect of humor appeals on the persuasion measures was not significant, presumably because the opposing forces cancelled each other out. One goal of study 4 was to isolate the negative effect of humor appeals on the persuasion measures by holding liking constant

experimentally. Indeed, I found that humor appeals had a negative effect on the persuasion measures. Participants who viewed a humor appeal judged the problem as less severe, felt less empathic emotion, and indicated marginally lower intentions to act. Perceived humor did not mediate the effect of appeal type on the persuasion measures, offering support for H4 (humor appeals lead to message trivialization as a function of their mere presence in the ad) over H5 (perceived humor correlates with message trivialization). Further, the results of study 4 are also consistent with H6: humor appeals hurt persuasion not because of their association with positive affect, but because of something specific to humor appeals.

META ANALYSIS

Across four studies, I found mixed support for my hypotheses. For instance, studies 1 and 2 found support for H5 (perceived humor correlates with message trivialization), while studies 3 and 4 found support for H4 (humor appeals lead to message trivialization as a function of their mere presence in the ad). Table 18 summarizes the support for each hypothesis.

Table 18. Summary of hypothesis results

Hypothesis	Summary of Results Study 1 N = 491	Study 2 N = 235	Study 3 N=178	Study 4 N=81
H1 (linear): Humor appeals will increase people's liking of social ads as a function of perceived humor.	Supported	Supported	Not Supported	Supported
H1 (curvilinear): Humor appeals will increase people's liking of social ads as a function of perceived humor.	Supported	Supported	Not Supported	Not Supported
H2: Humor appeals that fail to be funny will be less liked relative to non-humor appeals.	Supported	Supported	NA[1]	Supported
H3: The more people like a social ad, the more persuaded they will be by the ad	Supported	Supported	Not Supported	Supported
H4: In the context of social advertising, the mere presence of a humor appeal trivializes the importance of the depicted issue, thereby undermining people's motivation to address the issue.	Not Supported	Not supported	Supported	Supported
H5: In the context of social advertising, the funnier the humor appeal, the more trivializing and demotivating the appeal is.	Supported	Supported	Not Supported	Not Supported
H6: Humor appeals trivialize the importance of the depicted issue, thereby undermining people's motivation to address the issue, more so than positive-but-not humorous appeals.	NA[2]	NA[2]	NA[2]	Supported
Net effect of appeal type on the persuasion measures? (0 = non-humor, 1 = humor)	Null	Null	NA[1]	Negative [3]
Net effect of perceived humor on the persuasion measures?	Mixed	Null	Negative [4]	Null

[1] *Test not possible because there is not a comparison of humor/non-humor appeals.*

[2] *Test not possible because there is no factor for positive appeals*

[3] *Non-humor appeal versus positive appeal*

[4] *Test confounded by liking; the humor manipulation negatively influenced liking judgments*

To bring clarity to the conflicting findings, I conducted a meta-analysis (Lipsey and Wilson 2001). I ran a total of seventeen regression models across each of the four studies. Four of the regression models tested the net effect of appeal type and perceived humor on the persuasion measures. Thirteen of the regression models tested one of the hypotheses (i.e., H1, H2, et cetera). Note that some of the hypotheses required several regression models (e.g., H1 required a linear and curvilinear model). For each regression, I recorded the partial *r* for each predictor of interest. I performed a Fisher transformation on these partial correlations and multiplied them by the inverse variance weight to determine the weighted effect size within each study, for each predictor. I calculated the mean effective size for a given predictor by dividing the sum of the weighted effect sizes by the sum of the inverse variance weights. To calculate the standard error of the mean effect size, I took the square root of one over the sum of the inverse variance weights for each predictor. Using the mean and standard error, I computed the 95% confidence interval around the effect size and the corresponding Z – score. Table 19 summarizes the results of the meta-analysis.

Table 19. Results of the meta-analysis

Summary of Results				
Hypotheses	Effect Size[1]	95% CI	Z-value	p-value
H1 (linear): Humor appeals will increase people's liking of social ads as a function of perceived humor.	.34	.30, .41	10.68	< .0001
H1 (curvilinear): Humor appeals will increase people's liking of social ads as a function of perceived humor.	.13	.06, .19	2.40	< .05
H2: Humor appeals that fail to be funny will be less liked relative to non-humor appeals.	.13	.06, .20	3.68	<.001
H3: The more people like a social ad, the more persuaded they will be by the ad	Problem: .40 Intent: .46	.34, .47 .40, .52	12.56 14.34	< .0001 <.0001
H4: In the context of social advertising, the mere presence of a humor appeal trivializes the importance of the depicted issue, thereby undermining people's motivation to address the issue.	Problem: -.07 Intent: -.05	-.14, -.00 -.11, .01	-2.25 -1.55	< .05 *n.s.*
H5: In the context of social advertising, the funnier the humor appeal, the more trivializing and demotivating the appeal is.	Problem: -.15 Intent: -.11	-.21, -.09 -.17, -.05	-4.61 -3.46	< .0001 <.001
Net effect of appeal type on the persuasion measures? (0 = non-humor, 1 = humor)	Problem: -.04 Intent: -.06	-.11, .03 -.13, .01	-1.09 -1.70	*n.s.* *n.s.*
Net effect of perceived humor on the persuasion measures?	Problem: -.00 Intent: .05	-.07, .06 -.02, .11	-.13 1.51	*n.s.* *n.s.*

Note: there is no meta-analysis for H6 because only study 4 tests H6.

[1] *Fisher's Z based on partial r*

[2] *Interaction of appeal type*humor on liking judgments.*

Key findings. The meta-analysis revealed a significant linear and curvilinear relationship between perceived humor and liking judgments (H1). Whether the humor appeals were better liked than the non-humor appeals depended on the perceived humor of the humor appeals (H2).[12] Further, liking judgments mattered in terms of persuasion. The more participants liked an ad, the higher their problem judgments and intentions to act (H3).

Humor appeals decreased problem judgements relative to non-humor appeals as a function of their mere presence in the ad (H4). That is, when holding constant ad likeability or perceived humor, the humor appeals led to lower problem judgments than the non-humor appeals. The meta-analysis did not find evidence, however, that humor appeals decreased intentions to act relative to non-humor appeals. Humor appeals also decreased problem judgments as a function of the appeal's funniness. The funnier people found a social ad, the lower their problem judgments and intentions to act *after* controlling for ad liking, which can mask the negative effects of humor (H5).

Hence, the meta-analysis supports my suggestion that humor appeals exert opposing forces on the persuasiveness of social ads. The final tests in the meta-analysis assess the *net* effect of humor appeals/perceived humor on persuasion. If the good (i.e., ad likeability) outweighs the bad (i.e., message trivialization), then humor appeals/perceived humor should exert an overall positive effect on persuasion. If the bad outweighs the good, then humor appeals/perceived

[12] The meta-analytic test of H2 is imperfect; it relies on the significance of the humor*appeal type interaction which, is problematic because few non-humor appeals scored high on perceived humor. However, the alternative analysis (i.e., comparing the average liking of the non-humor appeals to the average liking judgments *at each level of perceived humor*) does not lend itself to a straightforward or logical meta-analytic test. The test of the interaction humor*appeal type does, however, capture the essence of the more correct analysis.

humor should exert an overall negative effect on persuasion. If the good and bad are roughly the same strength, there should be a null effect of humor appeals/perceived humor on persuasion. I find evidence of the third scenario; without covariates in the models, the main effect of appeal type on the persuasion measures was null, as was the main effect of perceived humor on the persuasion measures. Thus, it appears that humor appeals do not have a persuasive advantage over non-humor appeals.

CHAPTER V

GENERAL DISCUSSION

Why can't you sell brotherhood and rational thinking like you sell soap?

-Wiebe 1951

In 1951, Wiebe challenged the marketing community to apply commercial marketing tactics in a social marketing context, i.e., to sell brotherhood and rational thinking like soap. Nearly seventy years later, best practices in social marketing recommend that social marketers borrow effective tactics from commercial marketers (Andreasen 2001, 2006, 2012; French and Gordon 2015). The implicit assumption is that the tactics that drive success in commercial advertisements will also drive success in social advertisements. Yet, several scholars have questioned this assumption, noting that social ads "sell" behaviors that are more complex and involved than most commercial ads (Andreasen 1993, 2012; Rothschild 1979). Further, few papers actually test how commercial marketing tactics perform in social ads. It is therefore unclear whether commercial marketing tactics will be effective in a social marketing context.

This research investigated the effectiveness of a specific commercial marketing tactic—humor appeals—in the context of social advertising. There are many benefits associated with using humor appeals in commercial ads. In particular, humor appeals can increase ad likability, assuming they are funny (Beard 2008; Flaherty et al. 2004; Vox 2016). Ad likeability is important because people are more persuaded by ads they like (Duncan and Nelson 1985; Eisend

2011; Griskevicius et al. 2010a; MacKenzie et al. 1986; Nabi et al. 2007; Strick et al. 2012; Weinberger and Gulas 1992; Young 2008). Based on prior literature, it was unclear whether the benefits of humor appeals observed for *commercial* ads would translate to *social* ads (Andreasen 1993, 2012; Rothschild 1979; Wiebe 1951/1952). The results of this paper suggest that in the context of social advertising, perceived humor is positively correlated with ad liking (H1). Additionally, the meta-analysis revealed a reliable curvilinear effect of perceived humor on liking judgments. When perceived humor increased from 1 to 2 on a seven-point scale, liking judgments were unaffected. When perceived humor increased from 3 upwards, liking judgments increased at an increasing rate. Thus, minimally funny humor appeals may be no more likable than unfunny humor appeals.

However, whether a humor appeal was better liked relative to another type of appeal (e.g., distress-based appeal, positive appeal) depended on the funniness of the humor appeal (H2). At low levels of perceived humor, participants liked the humor appeals *less* than non-humor appeals. At moderate levels of perceived humor, participants liked the humor appeals similarly to non-humor appeals. It was only at high levels of perceived humor that participants liked the humor appeals more than the non-humor appeals.

Corroborating the commercial marketing literature, I found that ad likeability influenced the ad's persuasiveness (H3). The more participants liked a social ad, the more they agreed that a given issue was a problem, leading to higher intention to act. One might conclude that because *funny* humor appeals increase ad liking, and because ad liking increases persuasion, funny humor appeals will be more persuasive than other less liked types of appeals (e.g., distress-based

appeals). Yet, I found evidence that humor appeals also have an *unpersuasive* element: message trivialization.

Corroborating the humor literature, which shows that humor trivializes serious content (Griskevicius et al. 2010a; McGraw et al. 2015a; McGraw et al. 2015b; Moyer-Gusé et al. 2011; Nabi et al. 2007; Young 2008), I find that humor appeals can decrease problem perception and demotivate viewers in the context of social ads. This can happen in at least two ways. First, humor appeals can decrease problem perception just by being associated with the ad; after controlling for perceived humor and ad liking, participants interpreted the humor appeal as a signal that they need not take the message seriously (H4). Second, humor appeals can decrease problem perception as a function of humor intensity (i.e., funniness); after controlling for the positive effect of humor on ad liking (and hence, the persuasion measures), participants who found the ad funnier gave lower problem judgments (H5). I further found that humor appeals were more trivializing than positive-but-not-humorous appeals. In other words, there is something uniquely trivializing about humor appeals above and beyond an association with positive affect (H6).

My findings suggest that humor appeals have opposing effect on the persuasiveness of social ads. Humor appeals can increase ad persuasiveness by increasing ad likeability, yet decrease ad persuasiveness by making the problem seem trivial. What, then, is the net effect of humor appeals in social ads? The meta-analysis suggests that overall, the positives and negatives counteract each other, resulting in a null effect of appeal type (i.e., humor appeals vs. other types of appeals) on persuasion, as well as a null effect of perceived humor on persuasion. However, when I discuss implications for practitioners below, I suggest that humor appeals may still be a

successful strategy for social marketers by increasing the ad's reach (Guadagno et al. 2013b; Purcell 2010; Warren et al. 2016).

Limitations

There are two overarching limitations of the present research. First, many of the findings are correlational rather than causal (Bullock et al. 2010). Consider the support for H1: that perceived humor increases ad liking. In all but study 3, I measured rather than manipulated perceived humor. Although I suggest that humor causes liking based on the results of studies 1, 2, and 4, the data may also support an unintuitive, opposite outcome; that liking causes humor. Similar reverse-causation concerns exist for other findings (e.g., that ad persuasiveness increases ad liking). In study 3, I manipulated perceived humor and ad liking to address reverse-causation concerns of my findings. However, the humor and liking manipulations were not orthogonal as expected, making it difficult to draw any meaningful conclusions from the data.

A second limitation is that the humor appeals were, on average, only moderately funny. With few observations in the "hilarious" range, statistical tests involving the perceived humor variable were substantially underpowered (Judd et al. 2011). Further, my conclusion that humor appeals are no more or less persuasive than non-humor appeals may overstate the results; perhaps hilarious humor appeals are *more* persuasive than non-humor appeals. A more modest conclusion is that *moderately* humorous humor appeals are no more persuasive than non-humor appeals.

Implications for practitioners

Overall, I find that humor appeals are no more or less persuasive than non-humor appeals. However, there are several other benefits of humor appeals relative to non-humor appeals that are not captured by my data: increased attention (Eisend 2009; Gulas and Weinberger 2006; Madden and Weinberger 1982), increased reach (Damon 2013; Guadagno et al. 2013b; Purcell 2010), and increased memory for the ad (Carlson 2011; Chung and Zhao 2003; Duncan and Nelson 1985; Hansen et al. 2009; Krishnan and Chakravarti 2003; Murphy et al. 1979; Schmidt 1994, 2002).

Increased attention could lead to increased comprehension of and memory for a social ad's message (Carlson 2011; Krishnan and Chakravarti 2003). Insofar as humor appeals are better remembered than non-humor appeals, humor appeals could become more persuasive *over time* due to a "sleeper effect" (Nabi et al. 2007; Pratkanis et al. 1988). A sleeper effect occurs when a discounting cue (e.g., recognition that the source is not credible) fades or becomes dissociated from the message itself in memory over time. That is, people may remember a message with a diminished discounting component. Given that humor appeals trigger a discounting cue, humor appeals may be conducive to a sleeper effect (Nabi et al. 2007). Humor appeals could thus become *more* persuasive than their serious counterparts after a delay.

Further, when people recall information, they infer the importance of the recalled information from their ease of recall (Schwarz 2004; Smith and Schwarz 2012). For instance, Smith and Schwarz (2012) manipulated how easy it was for participants to recall various charity organizations. When a charity was easy to remember, participants inferred that they must like

and value that charity. To the extent that people find it easy to remember humor appeals over time, people may infer that they value the appeal's message and find it important, more so than during their initial impression. Again, the implication is that humor appeals could become *more* persuasive than their serious counterparts after a delay.

Hence, I suggest that although humor appeals may trivialize their message, they may still be a worthwhile strategy for social marketers insofar as they capture more attention, reach more people, and are better remembered than non-humor appeals. However, more research is needed before social marketers conclude that humor appeals will effectively facilitate social marketing goals. I outline some important questions that need clarification below. Further, it is important to reiterate that social advertising is only one part of a successful social marketing initiative. Even the most successful social ads may ultimately fail at changing viewer's behavior if the other elements of the marketing mix are not well engineered (Andreasen 1995, 2006; French and Gordon 2015).

Future directions

Humor appeals on attention and memory. A major strength of humor appeals is that they attract attention and are often shared on social media, potentially reaching a large audience. However, there is some uncertainty in the literature about what, specifically, people pay attention to in humor appeals. Several studies note that humor appeals can distract attention away from the ad's serious content, such as the brand or the call to action (Eisend 2011; Krishnan and Chakravarti 2003; Madden and Weinberger 1984; Sternthal and Craig 1973; Strick et al. 2010; Zillmann et al. 1980). A "distraction effect" is most likely when a humor appeal is thematically

unrelated to the ad's message (Beard 2008). The results of a recent meta-analysis highlight another concern: humor appeals decrease people's cognitive processing overall (Eisend 2011). Hence, decreased cognitive processing may lead to decreased encoding of the ad's arguments.

There is similar uncertainty in the literature about what, specifically, people remember regarding humor appeals. Several scholars note that people remember the jokes of humor appeals, but not the serious message or the featured products (Cantor and Venus 1980; Hansen et al. 2009; Krishnan and Chakravarti 2003; Schmidt 1994). Presumably, people's poor memory for the serious arguments of humor appeals may be due to their failure to encode the information during initial exposure.

The potential for a sleeper effect. Nabi and colleagues (2007) found initial evidence of a sleeper effect in the context of stand-up comedy routines. Participants listened to either stand-up comedy or serious commentary on several serious issues (e.g., gun control, drug legalization). Immediately after participants listened to the message, the humorous and non-humorous messages were similarly persuasive. However, after a weeks' time, Nabi and colleagues found partial evidence that the humorous messages were *more* persuasive (i.e., a sleeper effect). Although they do not offer process evidence, they suggest that their findings reflect evidence of increased elaboration of the humorous message over time, and decreased application of the discounting cue. Future work should investigate the potential for a sleeper effect in the domain of humorous social advertising.

Increasing ad likability. This paper suggests that ad liking can offset the trivializing nature of humor appeals. It is therefore important for future research to investigate how to construct humor appeals that maximize ad liking. Results of this paper offer initial insight: make the

humor appeal as funny as possible. However, Warren and McGraw find that even if people find a humor appeal funny, humor appeals can generate negative affect if they are threatening (Warren and McGraw forthcoming). According to the benign-violation theory, humor is the result of two simultaneous, contradictory cognitive appraisals: something is wrong *and* okay—a violation is benign (McGraw and Warren 2010; Veatch 1998; Warren and McGraw 2015b; Warren and McGraw 2015a). Violations can range from mild (e.g., word play) to severe (e.g., offensive). Warren and McGraw (forthcoming) found that brand attitudes suffered when a violation was severe. In one condition, participants saw an ad for a plain red child's shirt with a goofy smiley face (mild violation). In another, participants saw an ad for a plain red child's shirt with nipple tassels (severe violation). Participants who saw the nipple tassel shirt felt more negative affect and liked the brand less than participants who saw the goofy-face shirt. In the context of social advertising, insofar as humor appeals are offensive, people may like the ad less even, if they find the appeal funny. This finding may explain why the humor appeals in studies 2 and 3 only were relatively less liked than the other studies; the tombstone and/or topic of the ads may have been too morbid for people to like them (Goldenberg and Arndt 2008). Future research should investigate additional factors that determine the likeability of humor appeals in social ads.

Mitigating message trivialization. Future research should also investigate how to construct humor appeals that minimize message trivialization. I propose that the *type* of humor appeal may be important in this regard. Marketers can employ irony, sarcasm, wordplay, slapstick, teasing, and cynicism to construct a humor appeal (Beard 2008; Gulas and Weinberger 2006; Martin 2007). I propose that teasing-based humor appeals may be especially effective at establishing (rather than trivializing) a problem. Pechmann and colleagues (2003) found that people were

more motivated to quit or avoid smoking after learning the *social* risks (e.g., ridicule) as compared to learning about the physical risks (e.g., lung cancer) of smoking. Aristotle believed that teasing could aid social order by bringing shame to wrongdoers (Morreall 1983). Thus, in the context of social advertising, teasing could be particularly useful for highlighting the social risk of a behavior. Several social ads already employ a teasing strategy. For instance, comedians Penn and Teller use vulgar language and throw lemons at little plastic people to explain the absurdity of the anti-vaccination movement (Penn and Teller 2010). Another ad likens social smoking to "social farting" in a disgusting, but funny, fifty seconds of people farting at parties (Quit the Denial 2013).

Superiority of positive appeals? A potentially fruitful alternative to humor appeals may be positive appeals (i.e., appeals that are upbeat, uplifting). In this paper I found evidence that positive appeals were more persuasive than humor appeals at establishing a problem, eliciting empathic emotion, and motivating people to action. My findings are consistent with emerging evidence that certain positive emotions including elevation, gratitude, and admiration, can *increase* prosocial behavior (Algoe and Haidt 2009; Algoe et al. 2008; Bartlett and DeSteno 2006; Clark et al. 1988; McCullough et al. 2001; Rudd et al. 2012; Tesser et al. 1968; Tsang 2006).

Further, positive appeals share many of the benefits of humor appeals without the downsides. People like positive appeals (Algoe and Haidt 2009; Algoe et al. 2008), often sharing them online (Milkman, Rogers, and Bazerman 2009; Stanley 2015). For instance, over 56 million people have watched the Ad Councils' feel-good "Love Has No Labels" social ad (Ad Council 2015). Positive appeals could thus have comparable reach to that of humor appeals.

Future research should investigate how positive appeals compare to distress-based appeals in addition to humor appeals. Positive appeals may retain the benefits of humor appeals (e.g., likability, reach) while also retaining the benefits of distress-based appeals (e.g., problem perception, empathy).

Conclusion

Prominent marketing scholars have challenged consumer behaviorists to focus more research on consumer welfare (Andreasen 1993, 2012; Goldberg 1995; Hirschman 1991; Mick 2006; Mick 2008; Shimp 1994). The challenge has been the subject of several presidential addresses at the Association for Consumer Research (ACR) annual conferences (Andreasen 1993; Hirschman 1991; Mick 2006; Shimp 1994). For instance, in Hirschman's 1991 presidential address, she urged conference attendees to imagine the societal impact their research could have if it addressed "dark side of consumer behavior" (e.g., addiction, overconsumption; Hirschman 1991). More recently, the *Journal of Consumer Research* dedicated a special issue to consumer welfare to encourage more research on the topic (Mick 2008).

The present research adds to the growing body of work on consumer welfare by investigating whether marketers should use humor appeals to "sell" good life choices. My findings suggest that in the context of social advertising, the persuasiveness of a humor appeal depends on its funniness. When a humor appeal flops, people dislike the ad relative to ads that feature other appeals (e.g., distress-based appeals, positive-but-not-humorous appeals). Further, the mere presence of a humor appeal harms persuasion by making the problem seem trivial. Thus, at low levels of perceived humor, people are less persuaded by humor appeals relative to other appeals.

When humor appeals succeed (i.e., are funny), people like the ad *more* relative to ads that feature other appeals. However, increased funniness also corresponds with decreased problem perception. In terms of motivating behavior change, the negative influence of reduced problem perception negates the positive influence of increased ad liking. In other words, funny humor appeals are no more or less persuasive than other appeals. Still, I conclude that *funny* humor appeals are a worthwhile strategy for social marketers, not because funny humor appeals are more persuasive, but because funny humor appeals have the potential to reach a large audience and be remembered.

REFERENCES

Ad Council (2015), "Love Has No Labels," http://www.adcouncil.org/Our-Campaigns/Family-Community/Diversity-Inclusion [accessed on February 16, 2016]).

--- (2016), "Campaign Fact Sheet," (http://stopthetexts.adcouncil.org/campaign-background/ [accessed on March 18, 2016]).

Agrawal, Nidhi, Geeta Menon, and Jennifer L. Aaker (2007), "Getting Emotional About Health," *Journal of Marketing Research*, 44 (1), 100-13.

Alexander, Sarah, Daniel Cox, and Sussex Safer Roads (2010), "Embrace Life - Always Wear Your Seat Belt," https://www.youtube.com/watch?v=h-8PBx7isoM [accessed on April 6, 2016].

Algoe, Sara B. and Jonathan Haidt (2009), "Witnessing Excellence in Action: The 'Other-Praising' Emotions of Elevation, Gratitude, and Admiration," *The Journal of Positive Psychology*, 4 (2), 105-27.

Algoe, Sara B., Jonathan Haidt, and Shelly L. Gable (2008), "Beyond Reciprocity: Gratitude and Relationships in Everyday Life," *Emotion*, 8 (3), 425.

Andrade, Eduardo B. (2005), "Behavioral Consequences of Affect: Combining Evaluative and Regulatory Mechanisms," *Journal of Consumer Research*, 32 (3), 355-62.

Andreasen, Alan R. (1993), "A Social Marketing Research Agenda for Consumer Behavior Researchers," *Advances in Consumer Research*, 20 (1), 1-5.

--- (1994), "Social Marketing: Its Definition and Domain," *Journal of Public Policy & Marketing*, 13 (1), 108-14.

--- (1995), *Marketing Social Change*, San Francisco, CA: Jossey-Bass.

--- (2001), *Ethics in Social Marketing*: Georgetown University Press.

--- (2006), *Social Marketing in the 21st Century*, Thousand Oaks, CA: Sage Publications.

--- (2012), "Rethinking the Relationship Between Social/Nonprofit Marketing and Commercial Marketing," *Journal of Public Policy & Marketing*, 31 (1), 36-41.

Anheuser-Busch (2014), "Budweiser: Friends Are Waiting," https://www.youtube.com/watch?v=6EmIDqGOX44 [accessed on April 2, 2016].

Apter, Michael (1982), *The Experience of Motivation: The Theory of Psychological Reversals*, London: Academic Press.

AT&T (2015), "Close to Home, It Can Wait," https://www.youtube.com/watch?v=OVnRcIXEqaU [accessed on April 8, 2016].

Bagozzi, Richard P. and David J. Moore (1994), "Public Service Advertisements: Emotions and Empathy Guide Prosocial Behavior," *Journal of Marketing*, 58 (1), 56-70.

Balog, James (2012), "Chasing Ice," National Geographic Documentary.

Bandura, Albert (1977), "Self-Efficacy: Toward a Unifying Theory of Behavioral Change," *Psychological Review*, 84 (2), 191-215.

Bartlett, Monica Y. and David DeSteno (2006), "Gratitude and Prosocial Behavior Helping When It Costs You," *Psychological Science*, 17 (4), 319-25.

Batson, C. Daniel (1990), "How Social an Animal? The Human Capacity for Caring," *American Psychologist*, 45 (3), 336.

--- (2010), "Empathy-Induced Altruistic Motivation," *Prosocial Motives, Emotions, and Behavior: The Better Angels of Our Nature*, 15-34.

Batson, C. Daniel, Nadia Ahmad, and Jo-Ann Tsang (2002), "Four Motives for Community Involvement," *Journal of Social Issues*, 58 (3), 429-45.

Batson, C. Daniel and Jay S. Coke (1981), "Empathy: A Source of Altruistic Motivation for Helping," *Altruism and Helping Behavior: Social, Personality, and Developmental Perspectives*, 167-87.

Batson, C. Daniel, Bruce D. Duncan, Paula Ackerman, Terese Buckley, and Kimberly Birch (1981), "Is Empathic Emotion a Source of Altruistic Motivation?," *Journal of Personality and Social Psychology*, 40 (2), 290.

Batson, C. Daniel, Shannon Early, and Giovanni Salvarani (1997a), "Perspective Taking: Imagining How Another Feels Versus Imaging How You Would Feel," *Personality and Social Psychology Bulletin*, 23 (7), 751-58.

Batson, C. Daniel, David A. Lishner, Amy Carpenter, Luis Dulin, Sanna Harjusola-Webb, E. L. Stocks, Shawna Gale, Omar Hassan, and Brenda Sampat (2003), "“... As You Would Have Them Do Unto You”: Does Imagining Yourself in the Other's Place Stimulate Moral Action?," *Personality and Social Psychology Bulletin*, 29 (9), 1190-201.

Batson, C. Daniel, David A. Lishner, Jennifer Cook, and Stacey Sawyer (2005), "Similarity and Nurturance: Two Possible Sources of Empathy for Strangers," *Basic and Applied Social Psychology*, 27 (1), 15-25.

Batson, C. Daniel, Karen O'Quin, Jim Fultz, Mary Vanderplas, and Alice M. Isen (1983), "Influence of Self-Reported Distress and Empathy on Egoistic Versus Altruistic Motivation to Help," *Journal of Personality and Social Psychology*, 45 (3), 706.

Batson, C. Daniel and Adam A. Powell (2003), "Altruism and Prosocial Behavior," *Handbook of Psychology*.

Batson, C. Daniel, Karen Sager, Eric Garst, Misook Kang, Kostia Rubchinsky, and Karen Dawson (1997b), "Is Empathy-Induced Helping Due to Self–Other Merging?," *Journal of Personality and Social Psychology*, 73 (3), 495.

Batson, C. Daniel, Cynthia L. Turk, Laura L. Shaw, and Tricia R. Klein (1995), "Information Function of Empathic Emotion: Learning That We Value the Other's Welfare," *Journal of Personality and Social Psychology*, 68 (2), 300.

Beard, Fred K. (2008), *Humor in the Advertising Business: Theory, Practice, and Wit*: Rowman & Littlefield.

Berger, Jonah and Katherine L. Milkman (2012), "What Makes Online Content Viral?," *JMR, Journal of Marketing Research*, 49 (2), 192.

Berger, Jonah and Lindsay Rand (2008), "Shifting Signals to Help Health: Using Identity Signaling to Reduce Risky Health Behaviors," *Journal of Consumer Research*, 35 (3), 509-18.

Bernoff, Josh and Charlene Li (2008), "Harnessing the Power of the Oh-So-Social Web," *MIT Sloan Management Review*, 49 (3), 36.

Bosmans, Anick and Hans Baumgartner (2005), "Goal-Relevant Emotional Information: When Extraneous Affect Leads to Persuasion and When It Does Not," *Journal of Consumer Research*, 32 (3), 424-34.

Bullock, John G., Donald P. Green, and Shang E. Ha (2010), "Yes, But What's the Mechanism?(Don't Expect an Easy Answer)," *Journal of Personality and Social Psychology*, 98 (4), 550.

Cactus (2016), "Therapy from the Creators of Pork Chops and Fighter Jets," (mantherapy.org [accessed on March 6, 2016]).

Cain Communications (2015), "Metro Trains: Dumb Ways to Die," *Advertising Age: Top Ad Campaigns*, [http://adage.com/lp/top15/#dumbways] accessed on January 27, 2016.

Cantor, Joanne and Pat Venus (1980), "The Effect of Humor on Recall of a Radio Advertisement," *Journal of Broadcasting & Electronic Media*, 24 (1), 13-22.

Carlson, Kieth A. (2011), "The Impact of Humor on Memory: Is the Humor Effect About Humor?," *Humor-International Journal of Humor Research*, 24 (1), 21-41.

Carlson, Michael and Norman Miller (1987), "Explanation of the Relation between Negative Mood and Helping," *Psychological Bulletin*, 102 (1), 91.

Chang, Chun-Tuan and Yu-Kang Lee (2009), "Framing Charity Advertising: Influences of Message Framing, Image Valence, and Temporal Framing on a Charitable Appeal," *Journal of Applied Social Psychology*, 39 (12), 2910-35.

Chung, Hwiman and Xinshu Zhao (2003), "Humour Effect on Memory and Attitude: Moderating Role of Product Involvement," *International Journal of Advertising*, 22 (1), 117-44.

Cialdini, Robert B. (2001), "Harnessing the Science of Persuasion," *Harvard Business Review*, 79 (9), 72-81.

--- (2003), "The Science of Persuasion," *Scientific American Mind*, [http://www.scientificamerican.com/article/the-science-of-persuasion/] accessed on 12.13.2015.

Cialdini, Robert B., Donald J. Baumann, and Douglas T. Kenrick (1981), "Insights from Sadness: A Three-Step Model of the Development of Altruism as Hedonism," *Developmental Review*.

Cialdini, Robert B., Stephanie L. Brown, Brian P. Lewis, Carol Luce, and Steven L. Neuberg (1997), "Reinterpreting the Empathy–Altruism Relationship: When One Into One Equals Oneness," *Journal of Personality and Social Psychology*, 73 (3), 481.

Cialdini, Robert B., Betty Lee Darby, and Joyce E. Vincent (1973), "Transgression and Altruism: A Case for Hedonism," *Journal of Experimental Social Psychology*, 9 (6), 502-16.

Cialdini, Robert B., Mark Schaller, Donald Houlihan, Kevin Arps, Jim Fultz, and Arthur L. Beaman (1987), "Empathy-Based Helping: Is It Selflessly or Selfishly Motivated?," *Journal of Personality and Social Psychology*, 52 (4), 749.

Clark, Hewitt B., James T. Northrop, and Charles T. Barkshire (1988), "The Effects of Contingent Thank-You Notes on Case Managers' visiting Residential Clients," *Education and Treatment of Children*, 45-51.

Coke, Jay S., C. Daniel Batson, and Katherine McDavis (1978), "Empathic Mediation of Helping: A Two-Stage Model," *Journal of Personality and Social Psychology*, 36 (7), 752-66.

CollegeHumor (2015), "Go to College Music Video (with First Lady Michelle Obama!)," [accessed on December 12, 2015].

Conway, M. and L. Dube (2002), "Humor in Persuasion on Threatening Topics: Effectiveness Is a Function of Audience Sex Role Orientation," *Personality and Social Psychology Bulletin*, 28 (7), 863-73.

Damon, Matt (2013), "Matt Damon Takes on Global Water Crisis," in *The Lead with Jake Tapper*, ed. Jake Tapper, http://thelead.blogs.cnn.com/2013/11/15/matt-damon-takes-on-global-water-epidemic/.

Das, Enny H. H. J., John B. F. De Wit, and Wolfgang Stroebe (2003), "Fear Appeals Motivate Acceptance of Action Recommendations: Evidence for a Positive Bias in the Processing of Persuasive Messages," *Personality and Social Psychology Bulletin*, 29 (5), 650-64.

De Hoog, Natascha, Wolfgang Stroebe, and John B. F. De Wit (2005), "The Impact of Fear Appeals on Processing and Acceptance of Action Recommendations," *Personality and Social Psychology Bulletin*, 31 (1), 24-33.

De Hoog, Natascha, Wolfgang Stroebe, and John B. F. de Wit (2007), "The Impact of Vulnerability to and Severity of a Health Risk on Processing and Acceptance of Fear-Arousing Communications: A Meta-Analysis," *Review of General Psychology*, 11 (3), 258.

De Waal, Frans B. M. (2008), "Putting the Altruism Back into Altruism: The Evolution of Empathy," *Annu. Rev. Psychol.*, 59, 279-300.

Devereux, Paul G. and Gerald P. Ginsburg (2001), "Sociality Effects on the Production of Laughter," *The Journal of General Psychology*, 128 (2), 227-40.

Dickert, Stephan, Namika Sagara, and Paul Slovic (2011), "Affective Motivations to Help Others: A Two-Stage Model of Donation Decisions," *Journal of Behavioral Decision Making*, 24 (4), 361-76.

Dollar Shave Club (2012), "Dollarshaveclub.Com - Our Blades Are F***Ing Great," (https://www.youtube.com/watch?v=ZUG9qYTJMsI [accessed on March 29, 2016]).

Dovidio, John F., Judith L. Allen, and David A. Schroeder (1990), "Specificity of Empathy-Induced Helping: Evidence for Altruistic Motivation," *Journal of Personality and Social Psychology*, 59 (2), 249.

Ducey, Doug (2015), "Road Rage? Let the Wookie Win': Star Wars-Themed Traffic Warnings Appear in 4 States," (http://www.wftv.com/news/news/transportation/road-rage-let-wookie-win-star-wars-themed-traffic-/npj2m/ [accessed on January 31, 2016]).

Duncan, Calvin P. and James Nelson (1985), "Effects of Humor in a Radio Advertising Experiment," *Journal of Advertising*, 14 (2), 33.

Earl, Allison and Dolores Albarracín (2007), "Nature, Decay, and Spiraling of the Effects of Fear-Inducing Arguments and HIV Counseling and Testing: A Meta-Analysis of the Short- and Long-Term Outcomes of HIV-Prevention Interventions," *Health Psychology*, 26 (4), 496.

Eastman, Max (1936), *Enjoyment of Laughter*, New York, NY: Simon and Schuster.

Eisend, M. (2009), "A Meta-Analysis of Humor in Advertising," *Journal of the Academy of Marketing Science*, 37 (2), 191-203.

Eisend, Martin (2011), "How Humor in Advertising Works: A Meta-Analytic Test of Alternative Models," *Marketing Letters*, 22 (2), 115-32.

Feldman, L. and D. G. Young (2008), "Late-Night Comedy as a Gateway to Traditional News: An Analysis of Time Trends in News Attention among Late-Night Comedy Viewers During the 2004 Presidential Primaries," *Political Communication*, 25 (4), 401-22.

Fisher, Robert J. and Yu Ma (2014), "The Price of Being Beautiful: Negative Effects of Attractiveness on Empathy for Children in Need," *Journal of Consumer Research*, 41 (2), 436-50.

Flaherty, Karen, Marc G. Weinberger, and Charles S. Gulas (2004), "The Impact of Perceived Humor, Product Type, and Humor Style in Radio Advertising," *Journal of Current Issues & Research in Advertising*, 26 (1), 25-36.

Floyd, Donna L., Steven Prentice-Dunn, and Ronald W. Rogers (2000), "A Meta-Analysis of Research on Protection Motivation Theory," *Journal of Applied Social Psychology*, 30 (2), 407-29.

Fox News (2016), "'Making a Murderer' Subject Steven Avery's Support Grows as Prosecutor Fights Back," (http://www.foxnews.com/entertainment/2016/01/05/making-murderer-subject-steven-avery-continues-to-receive-online-support-as/ [accessed April 2, 2016]).

French, Jeff and Ross Gordon (2015), *Strategic Social Marketing*, London: SAGE.

Frenzen, Jonathan K. and Harry L. Davis (1990), "Purchasing Behavior in Embedded Markets," *Journal of Consumer Research*, 17 (1), 1-12.

Freud, Sigmund (1905/1960), *Jokes and Their Relation to the Unconscious*, New York: WW Norton & Company.

Funny or Die (2014), "Between Two Ferns with Zach Galifianakis: President Barack Obama," (https://www.youtube.com/watch?v=UnW3xkHxIEQ [accessed on 4/2/2016]).

Furnham, Adrian (2003), "Belief in a Just World: Research Progress over the Past Decade," *Personality and Individual Differences*, 34 (5), 795-817.

Gervais, M. and D. S. Wilson (2005), "The Evolution and Functions of Laughter and Humor: A Synthetic Approach," *Quarterly Review of Biology*, 80 (4), 395-430.

Goei, Ryan, Lisa L. Massi Lindsey, Franklin J. Boster, Paul D. Skalski, and Jonathan M. Bowman (2003), "The Mediating Roles of Liking and Obligation on the Relationship Between Favors and Compliance," *Communication Research*, 30 (2), 178-97.

Goldenberg, Jamie L. and Jamie Arndt (2008), "The Implications of Death for Health: A Terror Management Health Model for Behavioral Health Promotion," *Psychological Review*, 115 (4), 1032.

Goldberg, Marvin E. (1995), "Social Marketing: Are We Fiddling While Rome Burns?," *Journal of Consumer Psychology*, 4 (4), 347-70.

Goldstein, Noah J., Robert B. Cialdini, and Vladas Griskevicius (2008), "A Room with a Viewpoint: Using Social Norms to Motivate Environmental Conservation in Hotels," *Journal of Consumer Research*, 35 (3), 472-82.

Griskevicius, Vladas, Michelle N. Shiota, and Samantha L. Neufeld (2010a), "Influence of Different Positive Emotions on Persuasion Processing: A Functional Evolutionary Approach," *Emotion*, 10 (2).

Griskevicius, Vladas, Michelle N. Shiota, and Stephen M. Nowlis (2010b), "The Many Shades of Rose-Colored Glasses: An Evolutionary Approach to the Influence of Different Positive Emotions," *Journal of Consumer Research*.

Grubbs, Jefferson (2015), "People Want to Help Steven Avery after 'Making a Murderer' Debuts on Netflix," (http://www.bustle.com/articles/131088-people-want-to-help-steven-avery-after-making-a-murderer-debuts-on-netflix [accessed April 2, 2016]).

Guadagno, Rosanna E., Nicole L. Muscanell, Lindsay M. Rice, and Nicole Roberts (2013a), "Social Influence Online: The Impact of Social Validation and Likability on Compliance," *Psychology of Popular Media Culture*, 2 (1), 51.

Guadagno, Rosanna E., Daniel M. Rempala, Shannon Murphy, and Bradley M. Okdie (2013b), "What Makes a Video Go Viral? An Analysis of Emotional Contagion and Internet Memes," *Computers in Human Behavior*, 29 (6), 2312-19.

Gulas, Charles S. and Marc G. Weinberger (2006), *Humor in Advertising: A Comprehensive Analysis*, Armonk, NY: M.E. Sharpe Inc.

Hafer, Carolyn L. (2000), "Do Innocent Victims Threaten the Belief in a Just World? Evidence from a Modified Stroop Task," *Journal of Personality and Social Psychology*, 79 (2), 165.

Han, Seunghee, Jennifer S. Lerner, and Dacher Keltner (2007), "Feelings and Consumer Decision Making: The Appraisal-Tendency Framework," *Journal of Consumer Psychology*, 17 (3), 158-68.

Hansen, Jochim, Madelijn Strick, Rick B. van Baaren, Mirjam Hooghuis, and Daniël H. J. Wigboldus (2009), "Exploring Memory for Product Names Advertised with Humour," *Journal of Consumer Behaviour*, 8 (2-3), 135-48.

Hayes, Andrew F. (2013), *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*: Guilford Press.

Hepler, Justin and Dolores Albarracin (2014), "Liking More Means Doing More: Dispositional Attitudes Predict Patterns of General Action," *Social Psychology*, 45 (5), 391-98.

Hirschman, Elizabeth C. (1991), "Secular Mortality and the Dark Side of Consumer Behavior: Or How Semiotics Saved My Life," *Advances in Consumer Research*, 18 (1), 1-4.

Ho, Robert (1998), "The Intention to Give up Smoking: Disease Versus Social Dimensions," *The Journal of Social Psychology*, 138 (3), 368-80.

Howard, Adam (2016), "White House Weighs in on ‘Making a Murderer’ Petition." (http://www.msnbc.com/msnbc/white-house-weighs-making-murderer-petition [accessed on April 2, 2016]).

Isen, Alice M. and Stanley F. Simmonds (1978), "The Effect of Feeling Good on a Helping Task That Is Incompatible with Good Mood," *Social Psychology*, 41 (4), 346-49.

Janis, I. L. and S. Feshbach (1953), "Effects of Fear-Arousing Communications," *Journal of Abnormal and Social Psychology*, 48 (1), 78-92.

Janis, Irving L. (1967), "Effects of Fear Arousal on Attitude Change: Recent Developments in Theory and Experimental Research," *Advances in Experimental Social Psychology*, 3, 166-224.

Jardine, Alexandra (2015), "Metro Trains: Dumb Ways to Die," http://adage.com/lp/top15/#dumbways [accessed on March 30, 2016].

Johnson, Eric J. and Amos Tversky (1983), "Affect, Generalization, and the Perception of Risk," *Journal of Personality and Social Psychology*, 45 (1), 20.

Judd, Charles M., Gary H. McClelland, and Carey S. Ryan (2011), *Data Analysis: A Model Comparison Approach*: Routledge.

Judd, Charles M., Jacob Westfall, and David A. Kenny (2012), "Treating Stimuli as a Random Factor in Social Psychology: A New and Comprehensive Solution to a Pervasive but Largely Ignored Problem," *Journal of Personality and Social Psychology*, 103 (1), 54.

Kim, Hakkyun, Kiwan Park, Norbert Schwarz, and others (2010), "Will This Trip Really Be Exciting? The Role of Incidental Emotions in Product Evaluation," *Journal of Consumer Research*, 36 (6), 983-91.

Kogut, Tehila and Ilana Ritov (2005), "The" Identified Victim" Effect: An Identified Group, or Just a Single Individual?," *Journal of Behavioral Decision Making*, 18 (3), 157.

Krishnan, H. S. and D. Chakravarti (2003), "A Process Analysis of the Effects of Humorous Advertising Executions on Brand Claims Memory," *Journal of Consumer Psychology*, 13 (3), 230-45.

Lazarus, Richard S. (1991), *Emotion and Adaptation*, New York: Oxford University Press.

Lee, Saerom, Karen Page Winterich, and William T. Ross (2014), "I'm Moral, but I Won't Help You: The Distinct Roles of Empathy and Justice in Donations," *Journal of Consumer Research*, 41 (3), 678-96.

Lerner, J. S., D. A. Small, and G. Loewenstein (2004), "Heart Strings and Purse Strings: Carryover Effects of Emotions on Economic Decisions," *Psychological Science*, 15 (5).

Lerner, Jennifer S. and Dacher Keltner (2000), "Beyond Valence: Toward a Model of Emotion-Specific Influences on Judgement and Choice," *Cognition & Emotion*, 14 (4), 473-93.

--- (2001), "Fear, Anger, and Risk," *Journal of Personality and Social Psychology*, 81 (1).

Lerner, Jennifer S. and Larissa Z. Tiedens (2006), "Portrait of the Angry Decision Maker: How Appraisal Tendencies Shape Anger's Influence on Cognition," *Journal of Behavioral Decision Making*, 19 (2), 115-37.

Lerner, Melvin J. (1965), "Evaluation of Performance as a Function of Performer's Reward and Attractiveness," *Journal of Personality and Social Psychology*, 1 (4), 355.

--- (1977), "The Justice Motive: Some Hypotheses as to Its Origins and Forms," *Journal of Personality*, 45 (1), 1-52.

Lerner, Melvin J. and Dale T. Miller (1978), "Just World Research and the Attribution Process: Looking Back and Ahead," *Psychological Bulletin*, 85 (5), 1030.

Leventhal, Howard (1970), "Findings and Theory in the Study of Fear Communications," *Advances in Experimental Social Psychology*, 5, 119-86.

Lipsey, Mark W. and David B. Wilson (2001), *Practical Meta-Analysis*: Thousand Oaks, CA: Sage Publications.

Lynch, John G. and Jerry L. Cohen (1978), "The Use of Subjective Expected Utility Theory as an Aid to Understanding Variables That Influence Helping Behavior," *Journal of Personality and Social Psychology*, 36 (10), 1138.

MacKenzie, Scott B., Richard J. Lutz, and George E. Belch (1986), "The Role of Attitude Toward the Ad as a Mediator of Advertising Effectiveness: A Test of Competing Explanations," *Journal of Marketing Research*, 130-43.

Madden, Mary and Lee Rainie (2010), "Adults and Cell Phone Distractions," http://www.pewinternet.org/2010/06/18/adults-and-cell-phone-distractions/ [accessed on March 12, 16].

Madden, Thomas J. and Marc G. Weinberger (1982), "The Effects of Humor on Attention in Magazine Advertising," *Journal of Advertising*, 11 (3), 8-14.

--- (1984), "Humor in Advertising-a Practitioner View," *Journal of Advertising Research*, 24 (4), 23-29.

Maddux, James E. and Ronald W. Rogers (1983), "Protection Motivation and Self-Efficacy: A Revised Theory of Fear Appeals and Attitude Change," *Journal of Experimental Social Psychology*, 19 (5), 469-79.

Manucia, Gloria K., Donald J. Baumann, and Robert B. Cialdini (1984), "Mood Influences on Helping: Direct Effects or Side Effects?," *Journal of Personality and Social Psychology*, 46 (2), 357.

Martin, Rod A. (2007), *The Psychology of Humor: An Integrative Approach*, Burlington, MA: Elsevier Academic Press.

Mashable (2012), "5 Apps to Prevent Texting While Driving," (http://mashable.com/2012/12/08/apps-texting-while-driving/#gallery/5-apps-to-prevent-texting-while-driving/53971545b589e42337003211 [accessed on March 23, 2016]).

McCauley, Clark, Kathryn Woods, Christopher Coolidge, and William Kulick (1983), "More Aggressive Cartoons Are Funnier," *Journal of Personality and Social Psychology*, 44 (4), 817.

McCullough, Michael E., Shelley D. Kilpatrick, Robert A. Emmons, and David B. Larson (2001), "Is Gratitude a Moral Affect?," *Psychological Bulletin*, 127 (2), 249.

McGhee, Paul E. (1971), "Development of the Humor Response: A Review of the Literature," *Psychological Bulletin*, 76 (5), 328.

McGraw, A. Peter, Julie L. Schiro, and Philip M. Fernbach (2015a), "Not a Problem: A Downside of Humorous Appeals," Journal of Marketing Behavior.

McGraw, A. Peter, Janet A. Schwartz, and Philip E. Tetlock (2012a), "From the Commercial to the Communal: Reframing Taboo Trade-Offs in Religious and Pharmaceutical Marketing," *Journal of Consumer Research*, 39 (1), 157-73.

McGraw, A. Peter and C. Warren (2010), "Benign Violations: Making Immoral Behavior Funny," *Psychological Science*, 21 (8), 1141-49.

McGraw, A. Peter, Caleb Warren, and Christina Kan (2015a), "Humorous Complaining," *Journal of Consumer Research*, 41 (5), 1153-71.

McGraw, A. Peter, Caleb Warren, Lawrence Williams, and Bridget Leonard (2012b), "Too Close for Comfort, or Too Far to Care? Finding Humor in Distant Tragedies and Close Mishaps," *Psychological Science*, 25 (10), 1215 - 23.

McGraw, A. Peter, Lawrence E. Williams, and Caleb Warren (2013b), "The Rise and Fall of Humor: Psychological Distance Modulates Humorous Responses to Tragedy," *Social Psychological and Personality Science*, 1948550613515006.

McGraw, Peter and Joel Warner (2014), *The Humor Code: A Global Search for What Makes Things Funny*: Simon and Schuster.

Messer, Lesley (2016), "White House Responds to Petition for Steven Avery of 'Making an Murderer', (http://abcnews.go.com/Entertainment/white-house-responds-petition-steven-avery-making-murderer/story?id=36153350 [accessed April 2, 2016]).

Mick, David G. (2006), "Meaning and Mattering through Transformative Consumer Research," *Advances in Consumer Research*, 33 (1), 1-4.

Mick, David Glen (2008), "Introduction: The Moment and Place for a Special Issue," *Journal of Consumer Research*, 35 (3), 377-79.

Milkman, K. L., T. Rogers, and M. H. Bazerman (2009), "Highbrow Films Gather Dust: Time-Inconsistent Preferences and Online Dvd Rentals," *Management Science*, 55 (6), 1047-59.

Miller, Dale T. (1977), "Altruism and Threat to a Belief in a Just World," *Journal of Experimental Social Psychology*, 13 (2), 113-24.

Milne, Sarah, Paschal Sheeran, and Sheina Orbell (2000), "Prediction and Intervention in Health-Related Behavior: A Meta-Analytic Review of Protection Motivation Theory," *Journal of Applied Social Psychology*, 30 (1), 106-43.

Morreall, John (1983), *Taking Laughter Seriously*: Albany, NY: SUNY Press.

Moyer-Gusé, Emily, Chad Mahood, and Sarah Brookes (2011), "Entertainment-Education in the Context of Humor: Effects on Safer Sex Intentions and Risk Perceptions," *Health Communication*, 26 (8), 765-74.

Mukherjee, Ashesh and Laurette Dubé (2012), "Mixing Emotions: The Use of Humor in Fear Advertising," *Journal of Consumer Behaviour*, 11 (2), 147-61.

Murphy, John H., Isabella C. M. Cunningham, and Gary B. Wilcox (1979), "The Impact of Program Environment on Recall of Humorous Television Commercials," *Journal of Advertising (pre-1986)*, 8 (000002), 17.

Nabi, Robin L., Emily Moyer-Gusé, and Sahara Byrne (2007), "All Joking Aside: A Serious Investigation into the Persuasive Effect of Funny Social Issue Messages," *Communication Monographs*, 74 (1), 29-54.

Oveis, Christopher, E. J. Horberg, and Dacher Keltner (2010), "Compassion, Pride, and Social Intuitions of Self-Other Similarity," *Journal of Personality and Social Psychology*, 98 (4).

Partnership for a Drug-Free America (1987), "This Is Your Brain on Drugs," https://www.youtube.com/watch?v=ub_a2t0ZfTs [access on 11/18/2015].

Pechmann, Cornelia and Susan J. Knight (2002), "An Experimental Investigation of the Joint Effects of Advertising and Peers on Adolescents' Beliefs and Intentions About Cigarette Consumption," *Journal of Consumer Research*, 29 (1), 5-19.

Pechmann, Cornelia, Guangzhi Zhao, Marvin E. Goldberg, and Ellen Thomas Reibling (2003), "What to Convey in Antismoking Advertisements for Adolescents: The Use of Protection Motivation Theory to Identify Effective Message Themes," *Journal of Marketing*, 67 (2), 1-18.

Penn and Teller (2010), "Penn and Teller on Vaccinations," https://www.youtube.com/watch?v=RfdZTZQvuCo [accessed on January 10, 2016].

Peters, Gjalt-Jorn Ygram, Robert A. C. Ruiter, and Gerjo Kok (2013), "Threatening Communication: A Critical Re-Analysis and a Revised Meta-Analytic Test of Fear Appeal Theory," *Health Psychology Review*, 7 (sup1), S8-S31.

Pratkanis, Anthony R., Anthony G. Greenwald, Michael R. Leippe, and Michael H. Baumgardner (1988), "In Search of Reliable Persuasion Effects: The Sleeper Effect Is Dead: Long Live the Sleeper Effect," *Journal of Personality and Social Psychology*, 54 (2), 203.

Provine, R. R. (2004), "Laughing, Tickling, and the Evolution of Speech and Self," *Current Directions in Psychological Science*, 13 (6), 215-18.

Provine, Robert R. (2001), *Laughter: A Scientific Investigation*, New York, NY: Penguin Press.

Purcell, Kristen (2010), "The State of Online Video," *Pew Research Center*, http://www.pewinternet.org/2010/06/03/the-state-of-online-video/ [accessed on March 29, 16].

Quit the Denial (2013), "Social Farting," https://www.youtube.com/watch?v=w8762zEOkSo (accessed on 11/07/2015).

Ramachandran, V. S. (1998), "The Neurology and Evolution of Humor, Laughter, and Smiling: The False Alarm Theory," *Medical Hypotheses*, 51 (4), 351-54.

Ray, Michael L. and William L. Wilkie (1970), "Fear: The Potential of an Appeal Neglected by Marketing," *The Journal of Marketing*, 54-62.

Reddit (2016), "Making a Murderer: It Could Happen to Anyone," https://www.reddit.com/r/MakingaMurderer/comments/3yjp65/it_could_happen_to_anyone/ [accessed on April 23, 2016].

Regan, Dennis T. (1971), "Effects of a Favor and Liking on Compliance," *Journal of Experimental Social Psychology*, 7 (6), 627-39.

Reinhard, Marc-André, Matthias Messner, and Siegfried Ludwig Sporer (2006), "Explicit Persuasive Intent and Its Impact on Success at Persuasion—the Determining Roles of Attractiveness and Likeableness," *Journal of Consumer Psychology*, 16 (3), 249-59.

Reynolds, Ryan (2016), "Touch Yourself Tonight," (https://www.youtube.com/watch?v=YZEP6glW4AQ [accessed on January 29, 2016]).

Ricciardi, Laura and Moira Demos (2015), "Making a Murderer," Netflix and Synthesis Films.

Rippetoe, Patricia A. and Ronald W. Rogers (1987), "Effects of Components of Protection-Motivation Theory on Adaptive and Maladaptive Coping with a Health Threat," *Journal of Personality and Social Psychology*, 52 (3), 596.

Rogers, Ronald W. (1975), "A Protection Motivation Theory of Fear Appeals and Attitude Change," *The journal of psychology*, 91 (1), 93-114.

Rogers, Ronald W., John T. Cacioppo, and Richard Petty (1983), "Cognitive and Physiological Processes in Fear Appeals and Attitude Change: A Revised Theory of Protection Motivation," in *Social Psychophysiology: A Sourcebook*, 153-77.

Rogers, Ronald W. and C. Ronald Mewborn (1976), "Fear Appeals and Attitude Change: Effects of a Threat's Noxiousness, Probability of Occurrence, and the Efficacy of Coping Responses," *Journal of Personality and Social Psychology*, 34 (1), 54.

Rothbart, Mary K. (1973), "Laughter in Young Children," *Psychological Bulletin*, 80 (3).

Rothschild, Michael L. (1979), "Marketing Communications in Nonbusiness Situations or Why It's So Hard to Sell Brotherhood Like Soap," *The Journal of Marketing*, 11-20.

Rudd, Melanie, Kathleen D. Vohs, and Jennifer Aaker (2012), "Awe Expands People's Perception of Time, Alters Decision Making, and Enhances Well-Being," *Psychological Science*, 23 (10), 1130-36.

Schmidt, S. R. (1994), "Effects of Humor on Sentence Memory," *Journal of Experimental Psychology-Learning Memory and Cognition*, 20 (4), 953-67.

--- (2002), "The Humour Effect: Differential Processing and Privileged Retrieval," *Memory*, 10 (2), 127-38.

Schwarz, N., H. Bless, F. Strack, G. Klumpp, H. Rittenauerschatka, and A. Simons (1991a), "Ease of Retrieval as Information - Another Look at the Availability Heuristic," *Journal of Personality and Social Psychology*, 61 (2), 195-202.

Schwarz, Norbert (1990), *Feelings as Information: Informational and Motivational Functions of Affective States*: Guilford Press, New York, NY.

--- (2004), "Meta-Cognitive Experiences in Consumer Judgment and Decision Making," *Journal of Consumer Psychology*, *September*.

--- (2010), "Meaning in Context: Metacognitive Experiences," *The Mind in Context*, 105-25.

--- (2011), "Feelings-as-Information Theory," *Handbook of Theories of Social Psychology*, 1, 289-308.

Schwarz, Norbert and Herbert Bless (1991), "Happy and Mindless, but Sad and Smart? The Impact of Affective States on Analytic Reasoning," *Emotion and Social Judgments*, 55-71.

Schwarz, Norbert, Herbert Bless, and Gerd Bohner (1991b), "Mood and Persuasion: Affective States Influence the Processing of Persuasive Communications," *Advances in Experimental Social Psychology*, 24, 161-99.

Schwarz, Norbert and Gerald L. Clore (1996), "Feelings and Phenomenal Experiences," *Social Psychology: Handbook of Basic Principles*, 2, 385-407.

Shamoon, Evan and Verizon Wireless, "Best Apps to Block Texting While Driving," (http://www.verizonwireless.com/mobile-living/home-and-family/apps-to-block-texting-while-driving/ [accessed on March 23, 2016]).

Sheeran, Paschal, Peter R. Harris, and Tracy Epton (2014), "Does Heightening Risk Appraisals Change People's Intentions and Behavior? A Meta-Analysis of Experimental Studies," *Psychological Bulletin*, 140 (2), 511.

Shelton, Mary Lou and Ronald W. Rogers (1981), "Fear-Arousing and Empathy-Arousing Appeals to Help: The Pathos of Persuasion," *Journal of Applied Social Psychology*, 11 (4), 366-78.

Shimp, Terence A. (1994), "Academic Appalachia and the Discipline of Consumer Research," *Advances in Consumer Research*, 21 (1), 1-7.

Shortlist Magazine (2015), "Cats Vs Kids," https://www.facebook.com/ShortListMagazine/videos/10153257201613947/ [accessed on March 28, 2015].

Slovic, Paul (2007), ""If I Look at the Mass I Will Never Act": Psychic Numbing and Genocide," *Judgment and Decision Making*, 2 (2), 79-95.

Small, D. A. and N. M. Verrochi (2009), "The Face of Need: Facial Emotion Expression on Charity Advertisements," *Journal of Marketing Research*, 46 (6), 777-87.

Small, Deborah A. and Jennifer S. Lerner (2008), "Emotional Policy: Personal Sadness and Anger Shape Judgments About a Welfare Case," *Political Psychology*, 29 (2), 149-68.

Small, Deborah A. and George Loewenstein (2003), "Helping a Victim or Helping the Victim: Altruism and Identifiability," *Journal of Risk and Uncertainty*, 26 (1), 5-16.

Small, Deborah A., George Loewenstein, and Paul Slovic (2007), "Sympathy and Callousness: The Impact of Deliberative Thought on Donations to Identifiable and Statistical Victims," *Organizational Behavior and Human Decision Processes*, 102 (2), 143-53.

Smith, Kyle D., John P. Keating, and Ezra Stotland (1989), "Altruism Reconsidered: The Effect of Denying Feedback on a Victim's Status to Empathic Witnesses," *Journal of Personality and Social Psychology*, 57 (4), 641.

Smith, Robert W., David Faro, and Katherine A. Burson (2013), "More for the Many: The Influence of Entitativity on Charitable Giving," *Journal of Consumer Research*, 39 (5), 961-76.

Smith, Robert W. and Norbert Schwarz (2012), "When Promoting a Charity Can Hurt Charitable Giving: A Metacognitive Analysis," *Journal of Consumer Psychology*, 22 (4), 558-64.

Speck, Paul Surgi (1987), "On Humor and Humor in Advertising," unpublished doctoral dissertation, Texas Tech University.

Spencer, Herbert (1860), *The Physiology of Laughter*: Macmillan.

Spiller, Stephen A., Gavan J. Fitzsimons, John G. Lynch Jr, and Gary H. McClelland (2013), "Spotlights, Floodlights, and the Magic Number Zero: Simple Effects Tests in Moderated Regression," *Journal of Marketing Research*, 50 (2), 277-88.

Stanley, T. L. (2015), "Modern PSA's Shock or Amuse Where Classics Only Preached," http://www.adweek.com/news/advertising-branding/modern-psas-shock-or-humor-where-classics-only-preached-165049, (accessed on 11/03/2015).

Stead, Martine, Ross Gordon, Kathryn Angus, and Laura McDermott (2007), "A Systematic Review of Social Marketing Effectiveness," *Health Education*, 107 (2), 126-91.

Sternthal, Brian and C. Samuel Craig (1973), "Humor in Advertising," *The Journal of Marketing*, 12-18.

Strick, Madelijn, Rob W. Holland, Rick B. van Baaren, and A. D. van Knippenberg (2010), "The Puzzle of Joking: Disentangling the Cognitive and Affective Components of Humorous Distraction," *European Journal of Social Psychology*, 40 (1), 43-51.

Strick, Madelijn, Rob W. Holland, Rick B. van Baaren, and Ad van Knippenberg (2012), "Those Who Laugh Are Defenseless: How Humor Breaks Resistance to Influence," *Journal of Experimental Psychology: Applied*, 18 (2), 213-23.

Strick, Madelijn, Rick B. Van Baaren, Rob W. Holland, and Ad Van Knippenberg (2009), "Humor in Advertisements Enhances Product Liking by Mere Association," *Journal of Experimental Psychology: Applied*, 15 (1), 35.

Strohminger, Nina, Richard L. Lewis, and David E. Meyer (2011), "Divergent Effects of Different Positive Emotions on Moral Judgment," *Cognition*, 119 (2), 295-300.

Tannenbaum, Melanie B., Justin Hepler, Rick S. Zimmerman, Lindsey Saul, Samantha Jacobs, Kristina Wilson, and Dolores Albarracín (2015), "Appealing to Fear: A Meta-Analysis of Fear Appeal Effectiveness and Theories," *Psychological Bulletin*, 141 (6), 1178.

Tanner, John F., Ellen Day, and Melvin R. Crask (1989), "Protection Motivation Theory: An Extension of Fear Appeals Theory in Communication," *Journal of Business Research*, 19 (4), 267-76.

Tanner, John F., Jr., James B. Hunt, and David R. Eppright (1991), "The Protection Motivation Model: A Normative Model of Fear Appeals," *Journal of Marketing*, 55 (3), 36.

Tesser, Abraham, Robert Gatewood, and Michael Driver (1968), "Some Determinants of Gratitude," *Journal of Personality and Social Psychology*, 9 (3), 233.

Toi, Miho and C. Daniel Batson (1982), "More Evidence That Empathy Is a Source of Altruistic Motivation," *Journal of Personality and Social Psychology*, 43 (2), 281.

truth ® (2015), "It's a Trap," https://www.youtube.com/watch?v=u4srWvLXZRw [accessed on March 6, 2016].

--- (2016), "#Catmageddon," https://www.youtube.com/watch?v=tLtschJxRy8 [accessed on February 15, 2016].

Tsang, Jo-Ann (2006), "Brief Report Gratitude and Prosocial Behaviour: An Experimental Test of Gratitude," *Cognition & Emotion*, 20 (1), 138-48.

Tversky, Amos and Daniel Kahneman (1983), "Extensional Versus Intuitive Reasoning: The Conjunction Fallacy in Probability Judgment," *Psychological Review*, 90 (4).

Veatch, T. C. (1998), "A Theory of Humor," *Humor-International Journal of Humor Research*, 11 (2), 161-215.

Vox, Ford (2016), "Outrage over SNL'Heroin A.M.' Skit Misses the Point," http://www.cnn.com/2016/04/19/opinions/snl-skit-julia-louis-dreyfus-heroin-vox/index.html [accessed on April 23, 16].

Warren, Caleb, Adam Barsky, and A. P. McGraw (2016), "The Consumption and Production of Humor," *Working Paper*.

Warren, Caleb C. and A. P. McGraw (2015a), "Differentiating What Is Humorous from What Is Not," *Journal of Personality and Social Psychology*.

Warren, Caleb and A. Peter McGraw (2015b), "Opinion: What Makes Things Humorous," *Proceedings of the National Academy of Sciences*, 112 (23), 7105-06.

--- (forthcoming), "When Does Humorous Marketing Communications Hurt Brand Attitudes?," Journal of Marketing Behavior.

Weinberger, Marc G. and Charles S. Gulas (1992), "The Impact of Humor in Advertising: A Review," *Journal of Advertising*, 21 (4), 35.

Weinstein, Neil D. (1993), "Testing Four Competing Theories of Health-Protective Behavior," *Health Psychology*, 12 (4), 324.

White, Elwyn Brooks (1954), "Some Remarks on Humor," *The Second Tree from the Corner*, 173-81.

Wiebe, Gerhart D. (1951/1952), "Merchandising Commodities and Citizenship on Television," *Public Opinion Quarterly*, 15 (4), 679-91.

Wilcox, Keith, Thomas Kramer, and Sankar Sen (2011), "Indulgence or Self-Control: A Dual Process Model of the Effect of Incidental Pride on Indulgent Choice," *Journal of Consumer Research*, 38 (1), 151-63.

Witte, Kim (1992), "Putting the Fear Back into Fear Appeals: The Extended Parallel Process Model," *Communications Monographs*, 59 (4), 329-49.

Witte, Kim and Mike Allen (2000), "A Meta-Analysis of Fear Appeals: Implications for Effective Public Health Campaigns," *Health Education & Behavior*, 27 (5), 591-615.

Wright, W. F. and G. H. Bower (1992), "Mood Effects on Subjective Probability Assessment," *Organizational Behavior and Human Decision Processes (Print)*, 52 (2), 276-91.

Yoon, Hye Jin (2015), "Humor Effects in Shame-Inducing Health Issue Advertising: The Moderating Effects of Fear of Negative Evaluation," *Journal of Advertising*, 44 (2), 126-39.

Young, Dannagal Goldthwaite (2008), "The Privileged Role of the Late-Night Joke: Exploring Humor's Role in Disrupting Argument Scrutiny," *Media Psychology*, 11 (1), 119-42.

Zhao, Xinshu, John G. J. R. Lynch, and Qimei Chen (2010), "Reconsidering Baron and Kenny: Myths and Truths About Mediation Analysis," *Journal of Consumer Research*, 37 (2), 197.

Zillmann, Dolf, Brien R. Williams, Jennings Bryant, Kathleen R. Boynton, and Michelle A. Wolf (1980), "Acquisition of Information from Educational Television Programs as a Function of Differently Paced Humorous Inserts," *Journal of Educational Psychology*, 72 (2), 170.

Ziv, Avner (2010), "The Social Function of Humor in Interpersonal Relationships," *Society*, 47 (1), 11-18.

APPENDIX A. CORRELATION TABLE STUDY 1

Study 1 Simple Correlations, N = 491								
	Intentions	Problem perception	Vulnerable	Liking	Humor	Response-Efficacy	Self-Efficacy	Social Norms
Appeal type[#]	0.03	-0.01	0.02	0.19***	0.7***	0.03	0.01	0.08^
Action		0.48***	0.44***	0.52***	0.16***	0.3***	0.35***	0.35***
Problem perception			0.4***	0.42***	0.05	0.5***	0.38***	0.34***
Vulnerable				0.31***	0.07	0.2***	0.48***	0.48***
Liking					0.48***	0.32***	0.31***	0.27***
Humor						0.04	0.03	0.11*
Response-Efficacy							0.52***	0.28***
Self-Efficacy								0.59***

[#] *Appeal type (0 = non-humorous, 1 = humor)*

^ *p < .10*

* *p<.05*

** *p<.01*

****p<.001*

APPENDIX B. CORRELATION TABLE STUDY 2

Study 2 Simple Correlations, N = 235								
	Action	Problem	Sad	Scared	Offended	Sympathetic	Liking	Humor
Appeal Type[#]	-.09	.00	-.27***	-.19***	.04	-.21***	-.02	.26***
Action		.48***	.36***	.54***	-.04	.35***	.57***	.03
Problem			.29***	.32***	-.17**	.32***	.53***	.04
Sad				.65***	.08	.53***	.29***	-.17**
Scared					.11^	.48***	.4***	-.14*
Offended						.07	-.18**	.17**
Sympathetic							.34***	.08
Liking								.28***

[#] *Appeal type (0 = positive, 1 = humor)*

^ *p < .10*

* *p<.05*

** *p<.01*

*** *p<.001*

APPENDIX C: CORRELATION TABLE STUDY 3

Study 3 Simple Correlations, N = 178													
	Liking Manip	Intention	Problem	Apps	Time on Apps	Clicks on Apps	Sign Pledge	Sad	Scared	Offended	Sympathetic	Liking	Humor
Humor Manip[#]	-.04	-.18**	-.16*	.18**	-.01	-.01	-.02	-.17*	-.21**	.20**	-.07	-.19**	.11
Liking Manip[$]		-.04	.04	-.03	.04	.07	.04	-.06	-.02	-.05	.14^	.24***	.27***
Intention			.26***	.33***	.05	.08	.35***	.4***	.42***	.04	.24***	.3***	-.02
Problem				.18*	.00	-.04	.21**	.18*	.17*	.05	.14^	.16*	-.07
Apps					NA	NA	.36***	-.01	.09	.08	.02	.14^	.02
Time on Apps						.78***	-.20	.00	-.16	.14	-.06	.13	.14
Clicks on Apps							.00	.00	-.01	.03	.12	.16	.11
Sign Pledge								.11	.12	.03	.00	.17*	-.07
Sad									.69***	.23***	.42***	.06	-.19**
Scared										.18*	.54***	.27***	-.18*
Offended											.04	-.16*	.04
Sympathetic												.4***	.08
Liking													.39***

[#] *Humor manip (0 = low, 1 = med/high)*

[$] *Liking manip (0 = dislike, 1 = like)*

^ *p < .10*

* *p<.05*

** *p<.01*

****p<.001*

APPENDIX D. CORRELATION TABLE STUDY 4

Study 4 Simple Correlations, N = 81									
	Intentions	Problem perception	Production	Sad	Scared	Empathic	Liking	Humor	Happy
Appeal type[#]	-.14	-.26*	-.23*	-.21^	-.19^	-.30***	-.10	.09	-.36***
Action		.35***	.20^	.19^	.12	.42***	.32***	.14	.08
Problem			.26*	.32***	.23*	.47***	.48***	.13	.34***
Production				.31	.25*	.54***	.58***	.26*	.37***
Sad					.60***	.60***	.30	-.08	.08
Scared						.47***	.25*	.02	.07
Empathic							.55***	.18^	.37***
Liking								.45***	.38***
Humor									.55***

Note: Response-efficacy, self-efficacy, social norms, and offended are absent due to space constraints. Appeal type did not affect these measures.

[#] *Appeal type (0 = positive, 1 = humor)*

^ *p < .10*

* *p<.05*

** *p<.01*

****p<.001*