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Developing Trust in Direct-to-Consumer Prescription Drug Advertising: The Effects of Benefit Type and Balance of Risk and Benefit Information

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Developing Trust in Direct-to-Consumer Prescription Drug Advertising: The Effects of Benefit Type and Balance of Risk and Benefit Information

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Trust in direct-to-consumer (DTC) pharmaceutical advertising is declining among consumers. Survey findings suggest providing more information about side effects and benefits to address this issue. Some scholars also criticize the ads for their emotional content despite the key role emotion can play in health-related decision making and trust. Therefore, an experimental study was conducted to assess the relative effectiveness of functional and emotional benefit communication as well the preferred balance of side effects and benefits information provided in DTC pharmaceutical ads in terms of perceived credibility/trust and persuasive outcomes. Results suggest a message including a combination of functional and emotional benefits is considered more credible and informative than an ad describing only emotional benefits. In addition, a high amount of side effect information produces lower brand attitudes and greater perceptions of manipulative intent compared to a low amount of side effect information. Implications for pharmaceutical advertising practitioners and researchers are discussed.

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Chapter 1: Introduction

Within the last decade, media have experienced an accelerated infiltration of direct-to-consumer advertisements for pharmaceuticals treating a growing catalog of ailments. Direct-to-consumer (DTC) pharmaceutical advertising has been defined as "any promotional effort by a pharmaceutical company to present prescription drug information to the general public through the lay media" (Bradley & Zito, 1997, p. 86). There have been three formats identified in which DTC pharmaceutical advertising appears: (1) product claim ads that name a specific pharmaceutical product and describe its benefits, (2) help-seeking ads that promote actions to be taken to treat certain symptoms or illnesses but do not name a specific pharmaceutical product, and (3) reminder ads that focus solely on the name of the drug without detailing the condition it is meant to treat (Matter, 2002). The type of DTC advertisements examined in this study fall under the "product claim" category.

While DTC pharmaceutical advertising first emerged in the 1980's, it was not until the Food and Drug Administration (FDA) changed its regulations in 1997 that the first DTC television commercials for prescription drugs appeared (Cline & Young, 2004; Kaphingst & DeJong, 2004; Sumpradit, Ascione, & Bagozzi, 2004; Matter, 2002; Bell, Kravitz, & Wilkes, 2000). The option of using broadcast advertisements had previously been prevented by rules dictating that all prescription drug ads targeted to consumers were required to give a brief summary of side-effects, contraindications, and effectiveness (Cline & Young, 2004; Main, Argo, & Huhmann, 2004; Sumpradit, Ascione, & Bagozzi, 2004; Woloshin et al., 2001; Bell, Kravitz, & Wilkes, 2000), a

requirement that the limited time of television and radio ads did not afford. The major change that paved the way for broadcast DTC ads to exist was the allowance of these ads to direct consumers to their physicians, a website, or a toll-free phone number for the detailed information normally contained in the brief summary (Kaphingst & DeJong, 2004; Sumpradit, Ascione, & Bagozzi, 2004; Macias & Lewis, 2003; Findlay, 2002; Fintor, 2002).

As a result, spending on DTC pharmaceutical advertising rose dramatically, peaking at $5.4 billion in 2006 and maintaining similar levels in subsequent years (eMarketer, 2009). Accordingly, 91% of American adults report having seen or heard advertisements for prescription medications (USA Today/Kaiser Family Foundation/ Harvard, 2008). However, this category of advertising is not without controversy. Proponents argue that DTC ads serve an educational role, giving consumers information about health issues and treatment options (Royne & Myers, 2008; Cline & Young, 2004; Kaphingst & DeJong, 2004; Main, Argo, & Huhmann, 2004; Fintor, 2002; Woloshin et al., 2001). This information purportedly allows illnesses that might have otherwise gone undetected to be identified. It is furthermore said to empower consumers to be more active in their health care solutions (Cline & Young, 2004; Matter, 2002) and make more informed choices (Kaphingst & DeJong, 2004; Main, Argo, & Huhmann, 2004).

Those opposed to DTC pharmaceutical advertisements are less convinced of these advantages and point out several concerns. They argue that the ads encourage consumers to pressure their doctors to prescribe medications that may not be appropriate or the best option (Cline & Young, 2004; Matter, 2002). Not only can this impact a patient's health,

but there are concerns that this interferes with the nature of the patient-physician relationship, leads to an over-reliance on drug therapies over other methods (Main, Argo, & Huhmann, 2004), and increases the costs of prescription drugs and healthcare (Royne & Myers, 2008; Cline & Young, 2004; Kaphingst & DeJong, 2004; Main, Argo, & Huhmann, 2004; Findlay, 2002; Fintor, 2002). It is also asserted that the information provided in DTC pharmaceutical ads is inadequate, inaccurate, and misleading (Royne & Myers, 2008; Frosch et al., 2007; Cline & Young, 2004; Kaphingst & DeJong, 2004; Main, Argo, & Huhmann, 2004; Sumpradit, Ascione, & Bagozzi, 2004; Bell, Wilkes, & Kravitz, 2000).

This debate over the pros and cons of advertising prescription medications directly to consumers has been exacerbated by a string of negative publicity in recent years. Controversial issues have included the high profile recall of Vioxx, various FTC rulings to pull well-known ads deemed deceptive, and the unveiling of suppressed study findings demonstrating minimal effectiveness of some popular drug brands. Most recently, the pharmaceutical manufacturer Pfizer was penalized $2.3 billion for engaging in illegal marketing techniques to promote several of its drug brands, though the allegations did not concern consumer advertising (Barrett, 2009).

As the ethicality of pharmaceutical company practices has come under fire, consumers appear to be growing more wary of the pharmaceutical industry and DTC prescription drug advertisements. Recent surveys show that a majority of consumers do not trust DTC pharmaceutical advertising (Kaiser Family Foundation, 2005; Singh & Smith, 2005) or at least take a skeptical stance when viewing these ads (Huh, DeLorme,

& Reid, 2004). The exact impact of this distrust on the effectiveness of DTC pharmaceutical advertising is not completely clear. However, studies suggest that a lack of trust in information presented online about prescription drugs as well as negative evaluations of the informativeness and utility of DTC advertisements negatively affect consumers' response to these ads in terms of talking to a physician or seeking further information (Lee, Salmon, & Paek, 2007; Huh, DeLorme, & Reid, 2005; Singh & Smith, 2005; Deshpande et al., 2004; Menon et al., 2002). Survey data has also provided consistent support for the relationship between attitudes toward DTC pharmaceutical advertising and behavioral responses to the ads (An, 2007; Choi & Lee, 2007; Lee, Salmon, & Paek, 2007; Wilson & Till, 2007; Herzenstein, Misra, & Posavac, 2004). Recently, there has been some evidence to suggest that DTC ads are not as effective as originally thought (Parnes et al., 2009; Law, Majumdar, & Soumerai, 2008). Therefore, in this context of declining consumer sentiment, growing scrutiny of the pharmaceutical industry, and calls for banning DTC prescription drug ads (Stange, 2007), building trust is a critical element to pharmaceutical advertisers facing the challenge of improving advertising effectiveness and ensuring the continued existence of DTC advertising.

There are several extraneous factors that potentially contribute to trust in DTC pharmaceutical advertising. Trust in pharmaceutical companies is one such factor, as has been supported in previous research (Ball, Stout, & Manika, 2009a; Atkin & Beltramini, 2007). Other studies have found that trust of traditional media (Huh, DeLorme, & Reid, 2005; Menon et al., 2002), health status (Menon et al., 2002), as well as attitudes toward and familiarity with DTC advertising (Huh, DeLorme, & Reid, 2004) were significant

predictors of trust and credibility of DTC advertising or online prescription medicine information. However, this dissertation research focuses on message factors that can potentially impact trust since the design of the ad execution is what advertisers have the most control over.

Currently there is little research to guide an understanding of the executional strategies that can be used to enhance the trust of advertising in general or DTC pharmaceutical advertising in particular. However, there is reason to believe that the information in a DTC ad about side effects and drug benefits can play a key role in message trustworthiness. Many of the criticisms of consumer-targeted pharmaceutical ads have focused on the imbalanced portrayal of these two message components. According to the "fair balance disclosure" regulation specified by the FDA, DTC prescription drug advertisements need to present information about side effects and contraindications in the same "scope, depth or detail" as information about drug effectiveness (Code of Federal Regulations, 2000, p. 76). If an ad violates this stipulation, particularly if it appears biased toward benefits information, the ad is considered misleading.

Indeed, several researchers have used this fair balance provision to judge the content of DTC pharmaceutical advertisements (Kaphingst et al., 2004; Main, Argo, & Huhmann, 2004; Sumpradit et al., 2004; Woloshin et al., 2001) and websites (Huh & Cude, 2004; Macias & Lewis, 2003). Generally, these studies have found that benefits and risks of the drug are presented differentially in a way that favors the prominence of benefits over side effects information. Furthermore, ads in this category are often criticized for the predominant use of emotional appeals (Frosch et al., 2007; Kaphingst et

al., 2004; Main, Argo, & Huhmann, 2004) which is thought to overshadow the informational content, especially about side effects (Main, Argo, & Huhmann, 2004). Such a skewed presentation can lead to perceptions of deception or manipulative intent which have a negative impact on trust and attitudes (Cotte, Coulter, & Moore, 2005; Grazioli & Jarvenpaa, 2000). Therefore, the conclusion of this research is a call for more and clearer information with greater emphasis on side effects and fact-based "rational" appeals.

Studies of consumer perceptions also indicate that consumers may require more information from the ads to restore their trust. Studies conducted by the FDA in 1999 and again in 2002 among consumers who had visited a healthcare provider in the past three months showed that evaluations of the informativeness of these ads dropped from 70% to 58% over that three year span (Aikin, Swasy, & Braman, 2004). Others have likewise found that consumers do not always believe the ads provide enough information (Friedman & Gould, 2007; Singh & Smith, 2005). More specifically, consumers express the desire for more complete information about potential side effects of the medication (Atkin & Beltramini, 2007; Davis, 2007).

Theoretically, highlighting the side effects of a drug to foster more trust in a DTC ad is akin to the concept of a two-sided message from the persuasive communication literature. Two-sided messages incorporate negative information that represents a counterargument against one's position as opposed to a one-sided message that only presents positive information favoring the advocated position. Research shows that two-sided messages are typically viewed as more credible than one-sided messages (Eisend,

2006; Lang, Lee, & Zwick, 1999). This supports the notion that communicating more drug risk information should increase trust in DTC pharmaceutical advertising.

However, there is evidence that too much risk information can have a deleterious effect on processing and attitudes, presumably because of the fear it induces (Kavadas, Katsanis, & LeBel, 2007). The implications of this go beyond ad response as studies have shown that accentuating the side effects in DTC ads can raise concerns to the point of hindering individuals from taking beneficial medications or causing them to stop taking their medications (Polen, Khanfar, & Clauson, 2009; Kees et al., 2008; Stange, 2007; Morris, Mazis, & Brinberg, 1989). In addition, surveys show that perceptions about both risk *and* benefit information contribute significantly to the perceived utility (Deshpande et al., 2004) and trust of DTC pharmaceutical advertising (Ball, Stout, Manika, 2009a). Therefore, a finer balance between the presentation of risks and benefits needs to be considered rather than simply devoting more of the ad message to side effects.

It is also noteworthy that while critics condemn the emotional content of DTC prescription drug advertising, emotional responses are an important part of consumer decision-making (Zambardino & Goodfellow, 2007; Shiv & Fedorikhin, 1999, 2002; Damasio, 1994). Emotion has also been shown to play a key role in health-related behaviors and decision-making (Menon, Raghubir, & Agrawal, 2008; Gutnnik et al., 2006; Hochhauser, 2004; Lockenhoff & Carstensen, 2004; Decruyenaere et al., 2000) as well as risk perception (Slovic et al., 2004; Loewenstein et al., 2001). Trust, too, is conceived of as possessing affective as well as cognitive elements (Johnson & Grayson, 2005; Morrow, Hansen, & Pearson, 2004; Young & Daniel, 2003; McAllister, 1995), and

Obermiller, Spangenberg, and MacLachlan (2005) found that emotional appeals were more effective among highly skeptical consumers because they circumvented the tendency to counterargue. Therefore, it can be argued that emotion is a valid component of DTC advertising appeals, but it is unclear what role emotion-laden content may play in developing trust in these ads.

The contribution of emotion to trust in prescription drug advertising may depend on how it is manifested. There are two primary ways in which emotion can be incorporated within the execution of an ad: as a property of the ad format (emotional appeal) or as a property of the message (emotional benefits). Emotional appeals are executions that rely primarily on affective cues such as "drama, mood, music, and other emotion-eliciting strategies" (Yoo & MacInnis, 2005, p.1397) in the overall design of the ad to communicate the message. Emotional benefits refer to communication points conveyed within the ad message entailing the emotional reward of buying and/or using the advertised brand. Emotional benefits may be communicated within an emotional appeal format (Lautman & Percy, 1984) or in a more straightforward manner as objective information contained within an informational appeal (Yoo & MacInnis, 2005).

While both aspects of emotion in advertising are important to investigate within the context of trust in DTC pharmaceutical advertising, this study will examine the effects of emotional benefits given that the focus is on aspects of the ad message. The results of previous research enumerating the benefits described in DTC pharmaceutical ads have varied but overall indicate that both emotion-related psychosocial benefits such as social acceptance and regaining control and functional benefits regarding drug

effectiveness and convenience are commonly used in DTC print and television advertisements for prescription drugs (Frosch et al., 2007; Woloshin et al., 2001; Bell, Kravitz, & Wilkes, 2000). While emotional benefits are believed to be an important consideration in consumer decisions about medication use, some scholars appear to view these more abstract benefits as unrealistic persuasion tactics (Frosch et al., 2007) and assert that ads should instead provide more detail about how the drug works (i.e., functional drug benefits) (Woloshin et al., 2001). This suggests the sense that functional benefits would comprise a more trustworthy message than emotional benefits, but this proposition remains untested.

Consequently, the primary questions at hand that this dissertation research will address are as follows:

> RQ1: Which type of benefits information (functional, emotional, or a combination of both) communicated within DTC pharmaceutical ads generates the greatest perceived ad credibility, brand trust, and advertiser trust?
>
> RQ2: Which type of benefits information (functional, emotional, or a combination of both) communicated within DTC pharmaceutical ads generates the highest attitudes toward the ad, attitudes toward the brand, and behavioral intentions?
>
> RQ3: What amount of side effects information relative to benefit information in DTC pharmaceutical ads generates the greatest perceived ad credibility, brand trust, and advertiser trust?
>
> RQ4: What amount of side effects information relative to benefit information in DTC pharmaceutical ads generates the highest attitudes toward the ad, attitudes toward the brand, and behavioral intentions?

To provide a theoretical and empirical background for the primary constructs addressed in these research questions, the subsequent chapters present a summary of the literature on trust (Chapter 2), product benefits (Chapter 3), and risk (Chapter 4). This

literature is used to support the development of hypotheses which are described and justified in Chapter 5. Chapter 6 then delineates the research methodology which is comprised of a main experiment preceded by three pretests. This is followed by a presentation of research results in Chapter 7 focused on hypothesis testing and analysis of relevant covariates. The dissertation concludes with a discussion of the study findings and suggestions for future research in Chapter 8.

Chapter 2: Trust

Trust is central to human interaction and is a crucial element in commercial activities (Gefen & Straub, 2004). Considered to be a key factor in consumer decision making and information processing, trust has been examined as relevant in source credibility (Priester & Petty, 2003; Whitehead, 1968; Hovland & Weiss, 1951), building service relationships (Johnson & Grayson, 2005), and most recently in online contexts (Rodgers & Harris, 2003; Wang & Emurian, 2005). Trust has also received growing attention in a wide variety of contexts outside the consumer and business fields including interpersonal communication and social psychology (e.g., Voci, 2006; Dunn & Schweitzer, 2005; Schul, Mayo, & Burnstein, 2004), risk communication (e.g., Frewer, Scholderer, & Bredahl, 2003; Siegrist & Cvetkovich, 2001; Earle & Cvetkovich, 1995; Slovic, 1993), and health behavior (e.g., Armstrong et al., 2006; Bleich, Blendon, & Adams, 2007; Roth, 1994). This wide variety of perspectives has produced a diverse collection of conceptualizations and applications of the trust concept. This chapter provides an overview of trust as it has been defined and studied within various business-related and social psychological fields.

DEFINING TRUST

While the idea of trust is prevalent in many domains with significant implications for actions and relationships, there is not a universally agreed upon definition of trust. As other researchers have acknowledged (Bhattacherjee, 2002; Gefen & Straub, 2004; Grabner-Krauter & Kaluscha, 2003; McKnight, Choudhury, & Kacmar, 2002), trust is a familiar and yet elusive construct to define. As mentioned, various conceptualizations

have been employed across different fields of study and even between different authors within the same domain. Part of the reason for this disparity is that trust is a complex, multifaceted concept. The nature of trust and its components can also differ from one situation to another. The primary point of divergence in how trust is characterized seems to lie in the presumed level of abstraction and nature of trust. In an extensive review, McKnight and Chervany (1996) summarized the plethora of trust definitions as ranging from dispositional, institutional, or attitudinal to comprising specific beliefs, intentions, or behaviors.

For researchers describing trust as a solely cognitive phenomenon, trust is discussed in terms of beliefs about (White, 2005) or perceptions of (Wang, 2006) the trustworthy qualities of a message or product/service provider. Others contend that trust is an emotion (Voci, 2006) or at least an "aspect of emotionality" (Rodgers & Harris, 2003, p. 324), though the proposed affective nature of trust in these cases was not elaborated. Chatterjee and Chaudhuri (2005) define trust as "the confidence the consumer develops" in the brand (p. 2), which, though they do not articulate it as such, could arguably be affective as in "I feel confident." However, these authors restrict the basis of trust to knowledge and reasoning so that this apparently affective orientation of trust stems from cognitive elements.

While this last example may seem paradoxical, Morrow, Hansen, and Pearson (2004) contend that trust involves both thinking and feeling processes while Johnson and Grayson (2005) and McAllister (1995) differentiate between cognitive trust and affective trust. Cognitive trust is a calculative prediction of reliability based on knowledge in

which judgments of competence and dependability are more relevant (Johnson & Grayson, 2005). Affective trust is defined as a secure feeling based on experienced care and concern, intuition, and emotional bonding of which perceived benevolence is the main component (Johnson & Grayson, 2005). While cognitive trust is more relevant early on in a relationship or encounter and for one-time interactions, affective trust plays a larger role in the later stages of a relationship and for ongoing interactions (Rousseau et al., 1998; McAllister, 1995). Given the difference in temporal relevance of these two types of trust, it is not surprising that cognitive trust has been found to be an antecedent of affective trust (Johnson & Grayson, 2005; McAllister, 1995). However, affective responses relating to trust can develop first in the absence of concrete information and thereby influence subsequent cognitive evaluations of trustworthiness (Morrow, Hansen, & Pearson, 2004). Similarly, Sillence et al. (2006) found that trustworthiness of a health information website was determined first based on affective heuristic cues (e.g., visual appeal, ease of use, and social identity cues) followed by a more analytic assessment of the content of a site (including language and tone, perceived expertise, and intentions of the site).

Given the importance of both thoughts and feelings in consumer evaluations and decision-making (Batra & Ray, 1986; Edell & Burke, 1987), it is not surprising that trust would have cognitive and affective components that together yield a more global assessment. Indeed, the majority of scholars do not discuss trust in specifically cognitive or affective terms but as a summative construct more closely related to the role and consequences of trust. In this way, trust is often conceptualized with terminology

indicating either a behavior or behavioral readiness (reliance, willingness, expectation, presumption) or evaluative judgment (attitude, subjective evaluation) that involves the trustee acting in a particular (positive) way to allow the trustor to achieve a desired outcome (Gefen & Straub, 2004; Delgado-Ballester, Munuera-Alemàn, & Yagüe-Guillén, 2003; Stewart, Pavlou, & Ward, 2002; Grazioli & Jarvenpaa, 2000; Christenson, 1985; Giffin, 1967).

Definitions that are most commonly applied in the consumer literature are a "willingness to be vulnerable" (Mayer, Davis, & Schoorman, 1995), "confident expectations" (Lewicki, McAllister, & Bies, 1998), and a "psychological state comprising intentions to accept vulnerability based on positive expectations of the intentions or behavior of another" (Rousseau et al., 1998). In essence, these conceptualizations pose trust not as a behavior but a psychological state that predisposes one to act in a trusting manner. The definition of trust adopted for this study is similar but focuses more on the evaluative component of trust and highlights the multidimensionality of trust. Specifically, trust is considered "an attitude of optimism that the goodwill and competence of another will extend to cover the domain of [an] interaction with [that party]" (Jones, 1996, p. 4). In advertising terms, this entails a sense that an advertisement has been created with benevolent intentions and a degree of proficiency to communicate a truthful and informative message that will result in a favorable outcome for the consumer. More specifically, trusting consumers would take the stance that the advertiser designed the ad to be truthful and informative with the intent to lead the individual to an informed and beneficial choice. Jones (1996) is clear in asserting that her portrayal of

trust positions it as an affective attitude, but certainly her depiction can encompass both cognitive beliefs about the qualities of the advertiser as well as feelings in response to the ad as contributing factors that determine the level of trust

COMPONENTS OF TRUST

Although some disparity exists in the definitions of trust offered, there appears to be more consensus regarding the qualities that constitute trustworthiness, meaning whether or not the potential trustee deserves to be trusted. Based on the typology proposed by Mayer, Davis, and Schoorman (1995), the dimensions of trustworthiness most frequently applied are benevolence, integrity, and ability (Dunn & Schweitzer, 2005; White, 2005; Gefen & Straub, 2004; Bhattacherjee, 2002; McKnight, Choudhury, & Kacmar, 2002; Grazioli & Jarvenpaa, 2000). Benevolence entails having good intentions to act in the trustor's best interests without ulterior motives. Integrity involves keeping promises and acting in accordance with acceptable rules of exchange. Ability requires the capability and knowledge to fulfill expectations. Other similar or synonymous terms have been used such as reliability or dependability (Wang, 2006; Johnson & Grayson, 2005; Delgado-Ballester, Munuera-Alemàn, & Yagüe-Guillén, 2003), intentions (Delgado-Ballester, Munuera-Alemàn, & Yagüe-Guillén, 2003), competence (Johnson & Grayson, 2005; White, 2005; Jones, 1996), expertise and performance (Johnson & Grayson, 2005), goodwill (Jones, 1996), honesty (Christensen, 1985), and care and concern (Johnson & Grayson, 2005). However, these can obviously be related back to the dimensions of benevolence, integrity, and ability.

It is supposed that these three dimensions lead to trust because they serve to assure that the outcome of relations with the trustee will be positive in an otherwise risky or uncertain situation (Wang & Emurian, 2005; Grabner-Krauter & Kaluscha, 2003; McKnight, Choudhury, & Kacmar, 2002; Giffin, 1967). However, these trusting beliefs are just one factor in trust. Based on their integrative review of the literature, Grabner-Krauter and Kaluscha (2003) affirm that trust also involves the consumer's trusting intentions (degree of willingness to "depend on" the trustee) and then the actualization of trust through trusting behaviors incorporating an assumption of risk. McKnight and Chervany (2001-2002) have arrived at a similar conclusion, proposing a model of trust that entails one's general disposition to trust which influences institutional trust of the context and trusting beliefs of the trustee which together impact trusting intentions that in turn shapes trusting behavior. Trusting emotions such as feelings of security, confidence, and relational bonding should be included as an additional component of the model based on the evidence that affective factors are a significant determinant of trust (Johnson & Grayson, 2005; Morrow, Hansen, & Pearson, 2004; McAllister, 1995).

DISTINCTION OF TRUST FROM CREDIBILITY

While trust is a key construct of interest in the current study, other similar constructs have been examined in the context of advertising and consumer behavior. Credibility in particular has been researched at length in persuasive communication studies, especially in relation to the message source. It is likely that credibility overlaps with trust to one degree or another, and therefore it is reasonable to draw parallels from research findings regarding credibility to gain insights on trust. Indeed, many researchers

treat trust as synonymous with credibility. However, in an effort to avoid conceptual confusion, this section describes how these two constructs may be distinguished from one another.

Trust and Credibility

Definitions of credibility have generally dealt with believability and reliability (Corritore, Kracher, & Wiedenbeck, 2003; Trettin & Musham, 2000; Keller & Aaker, 1998; MacKenzie & Lutz, 1989; Hovland, Weiss, & Kelley, 1953). For example, Hovland, Janis, and Kelley's (1953) depiction of source credibility concerns the perception that the source is providing valid arguments. Ad credibility has likewise been defined as the "extent to which the consumer perceives claims made about the brand in the ad to be truthful and believable" (MacKenzie & Lutz, 1989, p.51). As Soh, Reid, and King (2007, 2009) point out, the concept of credibility primarily centers around the integrity of the source or message and does not typically incorporate the ideas of perceived benevolent intent or a willingness to rely on the credible object as does trust. In relation to this argument, credibility is primarily a cognitive concept consisting of beliefs and perceptions while trust encompasses affective and behavioral components in addition to cognitions (Soh, Reid, & King, 2009; Johnson & Grayson, 2005; Morrow, Hansen, & Pearson, 2004; Grabner-Krauter & Kaluscha, 2003; McKnight & Chervany, 2001-2002; McAllister, 1995; Lewis & Weigert, 1985). As others have described (Corritore, Kracher, & Wiedenbeck, 2003; Trumbo & McComas, 2003; Trettin & Musham, 2000), credibility is a judged characteristic of a source stemming from perceptions of whether or not the source possesses certain traits. Trust, on the other hand, involves an act or feeling in

response to cues including perceived credibility as well as other features. Therefore, trust is an outcome of credibility, as in "That person is credible, so I will trust him."

Essentially, this suggests that trust is more holistic than credibility. Admittedly, this conclusion contradicts many scholars who view trust as a component of credibility. The reason trust is often viewed as subordinate to credibility is that trustworthiness is widely considered one of the main elements of credibility (along with expertise and sometimes attractiveness) (Fogg & Tseng, 1999; Ohanian, 1990; Hovland, Janis, & Kelley, 1953). However, it has been noted that trustworthiness is a characteristic that indicates a source is worthy of trust but is not the same as trust itself (Morrow, Hansen, & Pearson, 2004; Corritore, Kracher, & Wiedenbeck, 2003). While further research is needed to more clearly and definitively determine the relationship between trust and credibility, there has been some empirical evidence supporting the claim that credibility is a predictor of trust (Soh, Reid, & King, 2007; Sillence et al., 2006).

In summary, it can be concluded that credibility is a situation-specific evaluation of characteristics focused on determining believability. Trust is also typically thought of as situation-specific but has been depicted as a dispositional tendency as well. Moreover, trust extends beyond a determination of believability or truthfulness to encompass affective and behavioral aspects as well as considerations of intentions. Based on these conceptual distinctions, trust is a more holistic concept that can capture a broader portrait of consumer response to DTC advertising. However, trust is often considered a relational construct more relevant to a person or institution in which there is at least the potential for a two-way exchange. Credibility, on the other hand, is well-suited to address

perceptions of a message or information. Therefore, this dissertation research examines ad credibility as a dependent measure pertaining to perceptions of the ad itself while trust is measured in relation to the brand featured in the ad and the manufacturing pharmaceutical company sponsoring the ad.

TRUST AND CREDIBILITY IN ADVERTISING RESEARCH

The effects of varying levels of credibility and factors impacting credibility perceptions have been studied extensively in the advertising literature. On the other hand, scholars have generally neglected the topic of trust in the context of traditional advertising (Soh, Reid, & King, 2007; Stewart, Pavlou, & Ward, 2002). This is perhaps due to the belief that trust can not be cultivated through the one-way message communication of advertising (Mayer, Davis, & Schoorman, 1995), that it is not realistic to expect consumers to trust advertising because they are predisposed to doubt persuasive messages from commercial sources (Koslow, 2000; Trettin & Musham, 2000; Friestad & Wright, 1994), or that trust in the information of an ad message is better captured by perceived credibility (Calfee & Ringold, 1994). However, trust can have a significant impact on consumer behavior (Chatterjee & Chaudhuri, 2005; Gefen & Straub, 2004; Schurr & Ozanne, 1985) as well as message processing and response (Soh, Reid, & King, 2007; Schul, Mayo, & Burnstein, 2004; Priester & Petty, 2003) and therefore warrants more attention from advertising researchers. Research that has examined trust and credibility in relation to advertising has approached these concepts with regard to advertising in general, a particular advertisement, or the message source.

Trust in advertising in general is akin to the concept of institutional trust (Soh, Reid, & King, 2009; McKnight & Chervany, 2001-2002) and is thought to act as an antecedent variable impacting how consumers generally respond to specific advertisements. Soh, Reid, and King (2009) found that general ad trust was positively related to ad involvement and inversely related to ad avoidance, suggesting that a trusting stance toward advertising increases attention and processing of ad messages. These findings mirror research on ad skepticism which demonstrated that consumers who have greater skepticism toward advertising in general tend to dislike it and are less likely to rely on or attend to advertising (Obermiller, Spangenberg, & MacLachlan, 2005). Soh, Reid, and King (2009) also found that generalized trust in advertising was associated with more positive attitudes toward specific advertisements and greater likelihood to apply ad information to purchase decisions. In a similar vein, general advertising credibility was found to indirectly affect the perceived credibility of a particular ad by directly influencing the credibility of the sponsoring advertiser (MacKenzie & Lutz, 1989). Interestingly, Calfee and Ringold (1994) revealed that the majority of consumers consider advertising in general to lack credibility, though perceptions of individual ads and advertisers varied.

Research on trust toward an individual ad is especially scant. Austin et al. (2002) found that perceived trustworthiness of alcohol ads had an effect on how appealing the ads were and how well consumers could identify with the ads. In a comparison of trust in an advertisement and trust in a promotional article, the advertisement generated lower trust than the article even when the message and message believability remained constant

(Wang, 2006). The more robust literature on ad credibility has shown this construct impacts the formation of ad and brand attitudes and is affected by perceptions of the advertiser and advertising in general, the degree and focus of information processing, and various message cues (Kavanoor, Grewal, & Blodgett, 1997; Ford, Smith, & Swasy, 1990; MacKenzie & Lutz, 1989). For example, ads judged to be more credible were associated with lower perceived manipulative intent, more positive attitudes toward the ad and the sponsor, and the elicitation of the intended emotional response (Cotte, Coulter, & Moore, 2005). Yoo and MacInnis (2005) also revealed differential pathways for the relation of ad credibility to ad effectiveness depending on ad format. Emotional appeal ads prompted feelings as the primary response from which perceptions of ad credibility arose that directly impacted attitudes toward the ad and brand. In contrast, perceived credibility of the ad was the initial response to an informational appeal, leading in turn to feelings which then affected ad and brand attitudes. Providing another perspective on the relation between ad processing and ad credibility, Mick (1992) postulated that deeper comprehension of an ad would enhance ad credibility along ad attitudes.

By far, the majority of advertising research in this area has focused on trustworthiness of the source under the rubric of source credibility. Hovland and Weiss (1951) demonstrated that individuals were more amenable to attitude change when a persuasive communication came from a more trustworthy source. In terms of the underlying information processes stemming from source trustworthiness, experimental studies applying the Elaboration Likelihood Model have established that presenting endorsers perceived as untrustworthy generally leads to increased elaboration of an ad

given adequate motivation and opportunity (Priester & Petty, 2003, 1995). While research has tended to focus on the influence of source credibility on information processing and message response, some research provides evidence for the ability of message content to influence perceived source credibility (Slater & Rouner, 1996; Rhine & Severance, 1970).

In addition to these three facets of advertising-related trust, marketers are also concerned with the role of brand trust. This concept is grounded in the perspective that consumers can have relationships with brands and ascribe person-like characteristics to brands. Similar to definitions of general trust, brand trust has been defined as "the confident expectations of the brand's reliability and intentions in situations entailing risk to the consumer" (Delgado-Ballester, Munuera-Alemàn, & Yagüe-Guillén, 2003). Brand trust has been linked to brand loyalty, commitment, and satisfaction (Delgado-Ballester, Munuera-Alemàn, & Yagüe-Guillén, 2003; Chaudhuri & Holbrook, 2002). Research in e-commerce has shown that familiarity with online brands plays a key role in developing brand trust given satisfying experiences (Ha & Perks, 2005; Bhattacherjee, 2002). In relation to advertising, Chatterjee and Chaudhuri (2005) found effects of brand trust on both market share and advertising efficiency. In particular, results showed trust increases share of voice and ad efficiency by increasing brand recall, brand and ad salience, and attention to advertisements for the brand. Additionally, brand differentiation impacted ad efficiency only when moderated by brand trust. Looking at the opposite relationship of how advertising can affect brand trust, Li and Miniard (2006) tested the effects of advertisements employing explicit trust appeals (e.g., "You can trust us to do the job for

you") on brand trust. They found that trust appeals did in fact increase perceived trustworthiness of the brand along with beliefs about brand competence and benevolence. Furthermore, brand trust and beliefs fully mediated the impact of appeals on brand attitudes and purchase intentions.

Chapter 3: Product Benefits

The construct of benefits has been examined within the branding and consumer behavior literature in relation to positioning and brand perceptions, decision-making, and customer satisfaction. Benefits may be communicated either explicitly or implicitly in an advertisement. In DTC pharmaceutical advertising research, communication about drug benefits is considered the promotional portion of the message since it represents the persuasive arguments for using the advertised medication. To contextualize the specific case of drug benefits, this chapter outlines relevant theory and research regarding product benefits and related concepts as they have been looked at more generally.

CONCEPTUALIZATION OF BENEFITS

Brand benefits are generally conceptualized as the relatively abstract characteristics of a product or service as opposed to attributes which are the more tangible aspects. Benefits have been defined in terms of the value a product or service delivers to consumers (Keller, 1993) or the solution offered by a product to address a consumer's need (Kotler & Armstrong, 1999). Similarly, Gutman (1982) poses benefits as the desirable consequences of brand use as part of his Means-End Chain Model. According to the model, consumers' personal values—which Gutman defines as preferred end-states and others describe as life goals (Olson & Reynolds, 2001)—guide which consequences (i.e., benefits) are deemed favorable and important. In turn, consumers seek products that possess the attributes associated with such benefits. In this way, benefits are the link between the means of product attributes and valued end-states.

Gutman (1982) asserts that benefit delivery can occur immediately or be delayed; derive directly from product consumption or indirectly from social response or the direct consequences of product use; and manifest as physiological, psychological (e.g., self-esteem), or sociological (e.g., status) consequences. Other scholars have offered alternative typologies in terms of the nature of product benefits. For example, Keller (1993) describes functional benefits as the inherent aspects of a brand related to the product attributes, experiential benefits as the experience of brand use also related to product attributes, and symbolic benefits as the "extrinsic advantages" of a product which relate to brand imagery, pricing, and packaging. Orth et al. (2004) suggest classifying benefits as functional, price, social, and emotional. Even more extensively, Orth (2005) examines a model employing six brand benefits (quality/performance [also labeled as functional], price/value, social, emotional, environmental, and health) while Lai (1995) proposes a model including eight types of benefits (functional, social, affective, epistemic, aestethic, hedonic, situational, and holistic).

While these benefit typologies do not explicitly posit one type of benefit as more or less superior than another, other classifications applying a means-end chain approach depict different benefit types hierarchically based on level of abstraction. For example, the Grey Benefit Chain consists of a product attribute that links to a functional benefit which can result in a practical benefit that in turn leads to an emotional pay-off (Young & Feigin, 1975). Lautman (1991) expands on this model to present an end-benefit hierarchy in which the end-benefits that may be communicated by advertisers and sought by consumers range from the most basic levels of inherent product attributes and functional

end-benefits up to physical and psychological end-benefits associated with consumer values and a "final payoff" described as the life experience facilitated by the product (see Figure 1). For example, the functional benefit of an allergy medication would be the elimination of symptoms (having a clear head, no longer sniffling and sneezing) while the psychological benefit could be feeling energized and carefree which leads to the final payoff of being able to engage in social situations (e.g., playing with one's children outdoors) or getting tasks accomplished (e.g., doing yard work).

Figure 1: End-Benefit Hierarchy (Lautman, 1991, p.11)

While Lautman's (1991) model offers a slightly more complex representation, Olson and Reynolds (2001) argue that simpler models are adequate for marketing research. They distinguish between functional consequences (tangible experiences occurring more directly and immediately from product use) and psychosocial consequences (emotional and personal experiences arising from one's self-perceptions or reactions from others). Functional consequences are asserted to derive directly from product attributes and lead to psychosocial consequences which directly fulfill the end values or goals. In line with their model, and given the tendency in advertising and consumer research to draw a distinction between affect and cognition, this dissertation study focuses on the comparison between emotional and functional benefits.

Emotional and Functional Benefits

Emotional benefits have also been referred to as hedonic (Burton & Easingwood, 2006; Chandon, Wansink, & Laurent, 2000), abstract (Homer 2006), or value-expressive (Cho & Stout, 1993) benefits, emotional brand values (Lynch & de Chernatony, 2004), or aesthetic attributes (Hirschman, 1980). Each of these terms carries a slightly different connotation, and therefore different definitions have been applied to what may be considered as variants of emotional benefits. In previous studies, these benefits have been posited as an intangible product attribute (Grimm, 2005; Hirschman, 1980) that serves the purpose of hedonic gratification (Homer, 2006) or satisfying experiential needs (Burton & Easingwood, 2006) regardless of practicality (Chandon, Wansink, & Laurent, 2000). The conception put forth by Ruth (2001), however, as "information considered to convey data about affect-laden experiences associated with a brand" (p.99) is most closely in line

with the definition of emotional benefits advocated for the present study. In short, emotional benefits refer to communication points entailing the emotional reward of buying and/or using the advertised brand.

Emotional benefits are similar to other aspects of affect in that they are characterized as being subjective (Homer, 2006), noninstrumental (Chandon, Wansink, & Laurent, 2000), and holistic in terms of relating more to the overall brand image rather than specific features of the brand (Burton & Easingwood, 2006). Functional benefits, on the other hand, are often described as relatively concrete attributes (Homer, 2006) that are feature-based (Lautman & Percy, 1984) and serve an instrumental or utilitarian purpose (Chandon, Wansink, & Laurent, 2000). In an application of product positioning concepts to a medical context, functional benefits have been referred to as "the essential clinical properties of a medication that intrinsically differentiate it from other medications" (e.g., providing symptom relief quicker, more completely, or for longer periods of time) and emotional benefits as the "emotions that customers may derive from using the brand" (Vanderveer & Pines, 2007, p.75).

In correspondence with the means-end theories previously described, it has been suggested that the significance of brand benefits is to add value or meaning to a brand (Chiu et al., 2005; Ballantyne, Warren, & Nobbs, 2006). Since, as in Lautman's (1991) end-benefit hierarchy and Olson and Reynold's (2001) model, the psychological or emotional benefits are most directly related to the final payoff level, some have argued that emotional benefits make the most significant contribution to brand value and meaning (Bennett & Rundle-Thiele, 2005) and act as the gateway to the development of

deeper consumer-brand relationships (Funk & James, 2001). However, benefits at any level of abstraction may be associated with a certain value or meaning of the brand (Hirschman, 1980). It is also the case that brand positioning and messages can, and often do, integrate multiple levels of the benefit hierarchy (Bhat & Reddy, 1998) though one level may be more prominent than others. Generally, an emphasis on functional benefits yields a more utilitarian brand value while emotional and psychological benefits lead to a more hedonic brand value (Chiu et al., 2005).

While means-end theories allude to but do not specifically discuss the different categories of values associated with different benefit types, consumption value theory put forth by Sheth, Newman, and Gross (1991) does offer a value typology. Consumption value theory states that consumer decisions are based on any combination of particular perceived values of a brand or product. Consumption values are generally described as the reasons consumers make particular product choices. The theory identifies five consumption values: functional values (related to functional, utilitarian, and physical performance), emotional values (related to the ability to produce particular feelings and moods), social values (related to affiliation with particular social groups), epistemic values (related to curiosity, novelty, or acquiring knowledge), and conditional values (related to fulfillment of a situational purpose or relevance in certain circumstances only). Each value dimension makes an independent contribution to product decisions with individual choices potentially influenced by all five values or rooted in just one value.

Further research reduced these five consumption values to three—functional (divided into performance and price), emotional, and social value (Sweeney & Soutar,

2001)—and several authors focus on only two broad dimensions that represent some form of functional and affective values (Roig et al., 2006). Comparing the effect of functional versus affective values, several studies have generally found that emotional values had the most significant impact on brand outcomes (Lim, Widdows, & Park, 2006; Yang & Jolly, 2006; Pura, 2005; Nelson & Byus, 2002; Sweeney & Soutar, 2001). However, there have been some cases in which functional values were demonstrated to play a larger role in consumer behavior (O'Loughlin & Szmigin, 2005; Sheth, Newman, & Gross, 1991).

Other research looking more at the benefit level has shown that a combination of emotional and functional aspects is best. For example, a study that experimentally compared the effectiveness of brand positioning based on functional attributes versus an emotional benefit positioning found that a combination of both elements yielded the most favorable results (although the purely emotional benefit positioning was superior to the purely functional positioning) (Hartmann, Ibáñez, & Sainz, 2005). Similarly, a study by Frisby (2006) showed that consumers had more positive responses toward ads that included a combination of emotional benefit and factual information compared to ads that included only heuristic information about emotional benefits.

In summary, values operate at a more abstract level than benefits, and functional benefits are typically considered more basic (as in, stemming more directly from product attributes) than emotional or psychological benefits. Means-end theories deal with personal values which guide the benefits that are sought in a brand choice situation. Consumption value theory differs in that it deals with the values consumers assign to

brands based on the perceived benefits offered by a brand. While this process of consumption value theory is not the focus of the current research, this theory is useful in suggesting a classification of values related to types of benefits sought (e.g., emotional and functional).

Chapter 4: Risk

While there is a degree of risk involved in most consumer purchase decisions, the risks associated with healthcare products, and particularly powerful pharmaceuticals, are generally greater due to the potentially major implications for one's physical and psychological well-being. Within DTC prescription drug advertising, consumer's risk perceptions may be in the form of concern about drug effectiveness or concern about experiencing harmful side effects. Risk communicated in the ads may be manifested as the risk of developing an illness or suffering negative consequences from a health condition if not prevented or treated (with medication of course) or as the possible risks of developing certain side effects from medicine use.

Interestingly, while consumer psychologists have focused more on different types of risk perceptions originating within the consumer and how to reduce these perceptions through communication efforts, risk communication researchers and practitioners are generally interested in cultivating a certain level of perceived risk through messages regarding a specific issue. Pharmaceutical advertisers confront both objectives. From the perspective of persuasion, it is in the best interest of drug manufacturers to promote the risks of having a health condition to motivate drug inquiries while downplaying the perceived risks associated with the drug. However, unlike with most consumer products, pharmaceutical advertisers are required to include this latter form of risk information in the ads with growing pressure to increase the salience of this information.

Much of the criticism from scholars and consumer advocates has in fact focused on advertisers' apparent attempts to obscure the risk information about side effects. For

this reason, the current study focuses on risk in the form of side effects information in the ads. However, to provide a broader background, this chapter first presents an overview of risk as it has been conceptualized within the fields of risk communication and consumer psychology. This summary is followed by discussions of the relationship between risk and trust, research on risk information in DTC pharmaceutical advertising, and theories dealing with evaluation of risks and benefits.

RISK COMMUNICATION PERSPECTIVE

Risk communication research originally evolved within the domains of health and environmental hazards (Holmes, 2008) and has expanded to include other natural and technological hazards with growing attention toward food risks (Loftstedt, 2006). Risk has been defined in terms of the objects, events, or forces that pose potential harm (Palenchar & Heath, 2007; Stern & Fineberg, 1996) or the probability that such objects, events, or forces will occur (Adil, 2008; Sokolowska & Pohorille, 2000). Initially, the philosophy of risk communication was based on the knowledge deficit model in which risk was approached objectively and technically by experts based on rationally calculated probabilities and scientific evidence (Kjærnes, 2006; Alaszewski, 2005; Lupton, 1999; Fischhoff, Bostrom, & Jacobs, 1997). Accordingly, risk communication aimed to match the public's judgment of risk to that of the experts by transmitting the information experts deemed important to correct the public's risk perception and hence produce the intended behavioral changes. This view obviously assumed a deliberative, information-driven form of decision-making. However, consumer and social psychological research has revealed that decisions are often guided by intuition and affect in ways not always

predicted by this "rational" model (Shiv & Fedorikhin, 2002, 1999; Herr & Fazio, 1993; Schwarz & Clore, 1988; Tversky & Kahneman, 1981), and this has emerged in risk research as well (Slovic et al., 2005; Loewenstein et al., 2001; Slovic, 1987).

Risk communication researchers now recognize the validity of a more subjective form of risk—that which is referred to by the term risk perception—that incorporates cultural and social influences among other factors (Beck, 1999). Adil (2008) defines risk perception simply as "people's beliefs and thoughts within their social and cultural context" concerning a risk. Others have offered more specific and inclusive descriptions that incorporate perception of the problem, assessment of options, and the actual decision (Pablo, Sitkin, & Jemison, 1996; Baird & Thomas, 1985). Research has shown that perceptions of risk are primarily impacted by dread (comprising the scale and degree of harm, controllability, voluntariness, equitability of impact, and likelihood of occurrence) and knowledge (involving comprehensibility and observability, novelty/ familiarity, and immediacy) (Trumbo & McComas, 2003; Breakwell, 2000) along with individual differences and framing (Edwards & Elwyn, 2001; Kühberger, 1998; Levin, Schneider, & Gaeth, 1998; Tversky & Kahneman, 1981).

To accommodate this subjectivity in risk assessments, risk communication is now more commonly approached as an interactive dialogue than a one-way transmission of information. This is evident in the various definitions of risk communication that have been put forth such as the "iterative exchange of information among individuals, groups, and institutions related to assessment, characterization, and management of risk" (McComas, 2006), the "sharing and discussing of information about harms and benefits

of different options" (Edwards et al., 2008), and the "flow of information and risk evaluations back and forth between academic experts, regulatory practitioners, interest groups, and the general public" (Leiss, 1996). It has also been noted that risk communication involves the content as well as the channel of message (Breakwell, 2000) and should convey the certainty, level, and impact of risk (Adil, 2008).

Ultimately, the objective of risk communication is to inform as well as persuade by impacting risk perceptions. In particular, messages about risk serve to alert or reassure the public, stimulate interest in and increase knowledge of the issue, and encourage participation in decision-making (Trettin & Musham, 2000). In addition, relevant to the topic of this dissertation research, some scholars have asserted that corporations and industries can utilize risk communication to instill trust as part of maintaining a favorable reputation and relationship with the public (Gouldson et al., 2007; Palenchar & Heath, 2007). However, this communication must be perceived as free of bias in order to be truly effective in improving or sustaining corporate credibility.

CONSUMER PSYCHOLOGY PERSPECTIVE

The stream of risk research within consumer psychology has followed an alternate approach compared to that of risk communication. The concept of risk was first brought to the attention of consumer researchers through Bauer's (1960) seminal piece discussing the essential connection between risk and consumer behavior. Since then it has been recognized as a major factor in consumer decision-making (Klerck & Sweeney, 2007; Mitchell, 1999). As with risk communication, the central focus within consumer psychology is on risk perception as a subjective, rather than objective, form of risk.

However, the evolution of conceptualizations of perceived risk within a consumer context has diverged from other fields.

One difference is that marketing scholars have generally come to treat risk and uncertainty as synonymous terms whereas these two concepts are often distinguished in other domains (Veloutsou & Bian, 2008; Mitchell, 1999). Risk also encompasses a solely negative connotation in consumer research even though other areas of psychology pose risk as pertaining to positive or negative outcomes (Dholakia, 2001). Altogether, there is a general consensus among consumer researchers that risk consists of perceptions of uncertainty dealing with negative consequences as originally defined by Bauer (1960) and further elucidated by Cunningham's (1967) proposition that uncertainty and the dangerousness of consequences were two components of perceived risk.

The marketing literature has also expanded on the commonly one-dimensional view of risk perception that dominates the risk communication and health behavior disciplines to examine risk as a multidimensional construct (Menon, Raghubir, & Agrawal, 2008). One of the earliest distinctions made between different aspects of risk in consumer behavior differentiated between inherent risk and handled risk (Bettman, 1973). Within this framework, inherent risk is the risk entailed by the product category, described as the "latent risk a product class holds for a consumer" (Bettman, 1973, p. 184). Handled risk, on the other hand, is associated with the brand level, defined as "the amount of conflict the product class is able to arouse when the buyer chooses a brand from a product class" (p. 184). In other words, inherent risk is the degree of risk involved in choosing the "wrong" brand or otherwise making a poor decision within a product

category while handled risk represents the perceived risk associated with the brand that has been chosen which is generally reduced through different coping mechanisms (e.g., by choosing a brand that is familiar or known to be of high quality). Ideally, handled risk should be low once a choice has been made despite the perception of high inherent risk.

Other multidimensional views of risk perception are based on the varying types of consequences. A widely adopted model is that of Jacoby and Kaplan (1972) whose typology included five categories of risk: performance, financial, physical, psychological, and social. Peter and Tarpey's (1975) model included these five dimensions but added the sixth dimension of time/convenience. To define each of these risk types, performance risk deals with concerns that the product will fail or not deliver satisfaction of functional needs as expected. Financial risk is not gaining the desired value for the cost. Physical risk is the possibility of bodily harm or incurring a health hazard. Psychological risk is the possible negative impact on one's self-image or anxiety from anticipated worry or regret. Social risk involves the experience of social embarrassment or unfavorable opinions of significant others due to product choice. Lastly, time or convenience risk entails the amount of time spent in product search or use that might be wasted if the product malfunctions or does not perform properly.

While many studies have included all five or six of these dimensions, Peter and Tarpey (1975) found that these six dimensions could be grouped under two umbrella categories—performance risk (performance, financial, physical, time/convenience) and psychosocial risk (psychological and social). Subsequently, several researchers have focused on the comparison between two overarching dimensions of perceived risk

labeled as performance/functional/ cognitive and psychological/affective (Klerck & Sweeney, 2007; Chen & Chang, 2005; Dholakia, 2001). Research has generally found that both risk categories are important, though the relative significance of each can differ by situation. For instance, consumer use of technology (using electronic payment systems and making online purchases) was more impacted by performance risk (Kim, Qu, & Kim, 2009; Ho & Ng, 1994) while psychological risk was the primary determinant for imposter fashion brands (Veloutsou & Bian, 2008). The relationship within risk types and with outcomes can differ as well. One study found that psychological risk (which was considered affective) preceded perceptions of social and functional risk (which were both considered cognitive) (Dholakia, 2001). Another study determined that performance risk increased information-seeking while psychological risk increased likelihood of information-seeking as well as purchase intentions (Klerck & Sweeney, 2007).

Recently, Menon, Raghubir, and Agrawal (2008) incorporated these dimensions of risk from consumer psychology in a model of health risk perception. In particular, they propose that financial risk, performance risk, psychosocial risk, and physiological risk moderate the relationship between overall perceptions of health risk and behavioral outcomes. Relevant to the current study, the authors specify side effects of medication use as a form of physiological risk and recommend highlighting the benefits of treatment as a way of addressing this type of risk perception. This use of benefits to offset risks is consistent with other research and theory examining the risk/benefit balance as will be discussed later in this chapter.

RISK AND TRUST

Regardless of the context in which risk has been studied, it has often been noted that a certain level of risk is inherent in trust (Corritore, Kracher, & Wiedenbeck, 2003; Delgado-Ballester, Munuera-Alemàn, & Yagüe-Guillén, 2003; Mayer, Davis, & Schoorman, 1995; Giffin, 1967). In fact, it is argued that some degree of uncertainty or risk must be present in a situation for trust to even be relevant (Wang & Emurian, 2005; Doney & Cannon, 1997; Moorman, Zaltman, & Deshpande, 1992). This uncertainty stems from having incomplete information or lack of control in a situation (Corritore, Kracher, & Wiedenbeck, 2003). Trust then acts as a coping mechanism to reduce the complexity of decision-making and replace this sense of uncertainty to allow one to proceed in taking action (Chen, 2008; Lobb, 2005; Chaudhuri & Holbrook, 2002; Earle & Cvetkovich, 1995; Lewis & Weigert, 1985). In this way, the act of trusting involves taking a risk that the trustee will not take advantage of the trustor, as evidenced by the many depictions of trust that include a component of vulnerability (Doney & Cannon, 1997; Wang & Emurian, 2005; Rouseau et al., 1998; Mayer, Davis, & Schoorman, 1995). If a situation is certain (i.e., some objective "truth" is known) and there is no perceived risk, then trust is not necessary.

This suggests that risk is an antecedent factor of trust. However, risk perception is also an outcome of trust since greater trust (in an individual, an institution or organization, or a message) reduces perceived risk (Twyman, Harvey, & Harries, 2008; Mitchell, 1999). In other words, placing trust in someone or something serves to reduce the expected likelihood of a negative outcome. Others have pointed out this lack of

clarity in the directional relationship between risk and trust (Poortinga & Pidgeon, 2005; Das & Teng, 2004; Mayer, Davis, & Schoorman, 1995), and both relationships have been studied and theorized. Clearly, the concepts of risk and trust are intricately interwoven in a complex relationship.

Because of this interplay, trust is considered a key component of successful risk communication and has become a focus of substantial research within that field (McComas, 2006; Lofstedt, 2006; Trumbo & McComas, 2003; White et al., 2003). Similar to the research on trust in the advertising literature discussed previously, trust has been shown to impact attention, understanding, and acceptance of risk messages (Eiser et al., 2009; Bleich, Blendon, & Adams, 2007; Langford, 2002; Slovic, 1993; Renn & Levine, 1991). Trust is also linked to information seeking given that lower trust increases concern about risks, prompting a stronger desire for more information and consequently heightened information seeking behavior (Kuttschreuter, 2006).

While the trust characteristics applied in risk communication overlap with those already described in the first chapter (integrity, ability, and benevolence), there are some variations. For example, perceived similarity, especially in terms of shared values and goals, is identified as an important factor in trust (Meijnders et al., 2009; Twyman, Harvey, & Harries, 2008; Johnson, 2005; White et al., 2003; Siegrist, Cvetkovich, & Roth, 2000; Earle & Cvetkovich, 1995) as well as perceived vested interest (which decreases trust) (Frewer, Scholderer, & Bredahl, 2003; White et al., 2003). As opposed to three dimensions of trust, many risk researchers focus on two dimensions that generally align with ability and benevolence. For instance, Twyman, Harvey, and Harries (2008)

describe two dimensions of trustworthiness as competence (based on past performance and manifested as confidence) and motives (based on perceived shared values and manifested as social trust). Lobb (2005) refers to these dimensions alternatively as knowledge bias and reporting bias, respectively. Eiser et al. (2009) make a similar distinction in trust components within the context of an environmental hazard and find the motivational aspects of trust (considered more affective and social) are more influential on overall trust of sources than expertise factors (considered more cognitive). This may be moderated by involvement or experience as some research suggests that shared values are used as a heuristic cue by those unfamiliar with the risk issue while competence is applied under systematic processing by those having greater familiarity (Johnson, 2005).

As with other persuasive communication studies, the majority of research within the risk field has looked at trust as an antecedent factor associated with the source (including individuals, groups of people such as scientists, and institutions) which influences risk perceptions and message response (Eiser et al., 2009; Meijnders et al., 2009; Bleich, Blendon, & Adams, 2007; Lofstedt, 2006; Frewer & Miles, 2003; Trumbo & McComas, 2003; Breakwell, 2000). However, risk researchers have also looked at trust as the outcome either in terms of trust in the information presented (White et al., 2003; Frewer et al., 1999) or how message factors influence perceptions of source trustworthiness (Meijnders et al., 2009; Conchie & Burns, 2008; Twyman, Harvey, & Harries, 2008; Wiedemann et al., 2006; Frewer, Scholderer, & Bredahl, 2003). The provision of information in general is typically seen as a way of establishing trust in order

to reduce information asymmetry between the public and risk managers (Chen, 2008). This is in accord with the view of distrust as a perception that a source is intentionally presenting distorted or biased information (Frewer et al., 1996). Research supporting this view has found that withholding or limiting information raises suspicions leading to the notion of openness and transparency as the logical strategy for building trust (Conchie & Burns, 2008; Palenchar & Heath, 2007; Shapiro, 1987) Furthermore, the negative impact of failing to disclose information outweighs the positive impact of open communication (Conchie & Burns, 2008), consistent with the observation that trust is easier to lose than it is to regain (Slovic, 1993).

However, although transparency is important, simply providing information is not enough. Moreover, communicating more information is not necessarily better (Lofstedt, 2006) due to issues of cognitive load (Peters, 2008) and possibilities of counterarguing or disregard if the information is not trusted (Bleich, Blendon, & Adams, 2007; Kjærnes, 2006; White et al., 2003;). Given the many sociocultural influences on risk perception, appropriateness of the information communicated in a risk message is key to building and retaining trust (Williams & Noyes, 2007; Kjærnes, 2006; Frewer, Scholderer, & Bredahl, 2003).

One suggested communication strategy to increase trust that is more targeted is presenting information and message arguments that contradict one's self-interests (Peters, Covello, & McCallum, 1997). This serves to not only reduce apprehensions due to perceived vested interest, but may demonstrate shared goals as well. Related research in persuasive communication has likewise associated messages against one's self-interests

with trustworthiness (Priester & Petty, 1995). Although the literature on message sidedness presents somewhat conflicting findings, presenting a two-sided message which includes arguments against the communicator's position (such as including negative information about a product) most often leads to enhanced credibility of the ad and the advertiser (Eisend, 2006; Lang, Lee, & Zwick, 1999; Kamins & Marks, 1987).

In a similar vein, research in risk communication has paid special attention to the roles of negative and positive information. For instance, the trust asymmetry principle indicates that negative information about a risk decreases trust in affiliated organizations moreso than positive information increases trust (Slovic, 1993). From another perspective, the theory of negativity bias states that messages presenting negative information about a risk (i.e., the presence of risk) are trusted more than positive messages (i.e., the absence of risk) (Siegrist & Cvetkovich, 2001; Slovic, 1993). In a business context, acknowledging the presence of a risk regarding a company's activities or products would be against that company's vested interest.

However, subsequent research suggests a more complex relationship in support of a confirmatory bias (White et al., 2003). This theory based on research by White et al. (2003) asserts that messages presenting information congruent with pre-existing attitudes are trusted more than messages contradicting pre-existing attitudes. Therefore, negative information is only evaluated as more trustworthy among those with prior negative attitude while individuals possessing more favorable attitudes prior to exposure are more likely to trust positive messages about the issue. Other research has provided additional supporting evidence that pre-existing trust in the information and attitudes toward the

category often override the information strategy used in affecting source trustworthiness (Frewer et al., 2003, 1999) and evaluations of risk (Johnson, 2003). Meijnders et al. (2009) further revealed that in addition to people's general tendency to want to confirm their beliefs and reduce cognitive load (Wickens & Holland, 2000), perceived similarity plays an important role in explaining and potentially modifying confirmatory bias responses.

RISK AND BENEFITS

Just as risk and trust are inherently linked, the relationship between risks and benefits is also closely intertwined. This interconnection is most clearly elucidated within decision theory. The weighing of risks and benefits is a prominent facet of decision-making theories such as Expected Utility Theory and Expectancy Value Theory. In these theories, individuals consider the utility or value of possible outcomes weighted by the estimated likelihood that the outcome will be realized. A benefit would presumably hold a positive value while a risk represents a negatively valued consequence. It is assumed that an individual will choose the option that has the greatest likelihood of delivering the highest expected utility which depends on maximizing benefits while minimizing risks.

Based on this model of decision-making, several theories commonly applied to the examination of individual health behaviors include some component in which the individual assesses the positive and negative reasons for engaging or not engaging in behavior change. In the Health Belief Model, perceived benefits (efficacy and favorable results of the behavior) and perceived barriers (perceived costs of a behavior) are among the beliefs (along with perceived susceptibility to and severity of the health issue and

perceived self-efficacy to perform the behavior) that drive individuals to take action. Similarly, the behavioral and evaluative beliefs contributing to attitude formation within the Theory of Planned Behavior deal with the perceived advantages and disadvantages of a behavior in terms of its expected outcomes. The Transtheoretical Model, which describes behavior change as a process by which individuals progress through a series of stages, also incorporates a component depicted as the decisional balance comprised of evaluating the pros (benefits) and cons (costs) of changing. Progressing from one stage to the next is partly dependent on perceiving the benefits of change to increase while the cons decrease.

This relationship between benefits and risks is also apparent in conceptualizations of brand value. In particularly, the overall perceived value of a brand is portrayed as the net result of weighing the benefits against the costs (also termed "sacrifices" which includes risk) (Grewal et al., 1998; Dodds et al., 1991). Brand value is hence increased by either raising benefits or reducing the costs (Dodds et al., 1991). Likewise, risk communication scholars have suggested that the general public calculates overall risk by comparing perceived risk and perceived benefits (Wiedemann et al., 2003; Beck, 1999). Research results typically exhibit an inverse relationship between benefits and risk so that study participants who perceive benefits to be higher have lower perceptions of risk while risk is judged higher among those perceiving little benefit to be gained (Trettin & Musham, 2000; Gregory & Mendelsohn, 1993). Alhakami and Slovic (1994) propose this consistent negative correlation pattern indicates that risks and benefits are considered together rather than separately so that an option can not be high on both perceived risk

and benefits. In other words, risk and benefit perceptions represent opposite ends of a value dimension where more of one necessitates less of the other. While there are cases in which a behavior may entail both a high risk and a high reward in an objective sense (e.g., skydiving or high stakes gambling), according to the one-dimensional view, those who decide to do such an activity are focused more on the benefits and minimize the perceived risk involved while those who abstain likely perceive the risk as an overwhelming barrier that overshadows the benefits.

As illustrated by this example, the question then becomes, what leads one individual to weigh the benefits and risks differently than another individual? One factor is the framing of decision options. Research has shown that framing alternatives in terms of gains inspires risk-averse behavior while losses lead to more risk-taking, even when the choices are equivalent (Williams & Noyes, 2007; Ghosh & Ghosh, 2005; Tversky & Kahneman, 1981). Some have suggested that emotions are another factor influencing perceptions of risks and benefits (Chaudhuri, 1998). Within risk communication, the Affect Heuristic, also described as "risk-as-feelings" hypothesis, stipulates that affect precedes risk perception so that feelings often override reasoning (Slovic et al., 2004; Loewenstein et al., 2001). In particular, positive feelings enhance perceived benefits and lower perceived risk while negative feelings lead to an elevated perception of risk and reduced perceived benefits. This corresponds to Schwarz & Clore's (1988) Affect-as-Information approach in social psychology which states that people rely on affect as a cue for evaluating an object rather than carefully considering attributes. This judgment strategy is most likely to be used when no other heuristics are available, information is

limited, the individual perceives little personal relevance or has limited cognitive resources, or the problem is too complex for systematic analysis (i.e., when motivation or opportunity is low).

Echoing means-end theory (Gutman, 1982), personal values and goals have been shown to impact evaluation of risk as well as benefits (Chaudhuri & Holbrook, 2002; Siegrist, 1999; Dowling & Staelin, 1994). For instance, Dowling and Staelin (1994) presented a model in which an individual's purchase goals were an antecedent of the amount of acceptable overall product risk. Mitchell (2001) conducted a meta-analysis illustrating a similar notion that consumers' choice of stores to shop at was driven by shopping motivations connected to certain desired store attributes and four types of perceived risk (time, financial, psychosocial, and physical). This demonstrates that motives and goals not only guide which benefits are sought as discussed in the previous chapter, but also align with a certain tolerance for or avoidance of particular risks.

In addition, some researchers have expanded on this relationship to show that trust also has significant links to the relative perceptions of risks and benefits (Chaudhury & Holbrook, 2002; Siegrist, 2000, 1999). Siegrist (1999) compared two types of world views which they affiliated with personal values and found that valuing economic growth, technological advancements, and materialism was associated with greater benefits of gene technology while valuing the minimization of social and environmental ramifications of growth was associated with lower benefits and higher risk. Trust in scientists, authorities, and/or corporations also had a positive relationship with benefits and a negative relationship with risks (Siegrist, 2000, 1999; Siegrist, Cvetkovich, & Roth,

2000). In fact, the typical inverse relationship observed between perceived risks and benefits diminished when trust was accounted for (Siegrist 2000, 1999).

Chaudhuri & Holbrook (2002) alternatively looked at trust as a dependent variable affected by perceived risks as moderated by hedonic and utilitarian value orientations toward a product. Results showed that product categories valued for utilitarian reasons were perceived as possessing greater functional risk (but not emotional risk) which was then associated with increased trust for the brand participants used in that category. Brands in categories with hedonic value were seen as entailing greater emotional risk (but not functional risk) if perceived differences between brands were high. In other words, those motivated by the utilitarian performance of a product were primarily concerned with the risks of the product not functioning properly while those hedonically involved were primarily concerned about the risks of the product not delivering the desired emotional experience. Interestingly, emotional risk was not associated with brand trust (operationalized as reliance on the brand and perceived safety) but was significantly related to brand affect (operationalized in terms of positive feelings toward the brand). This may be due to brand trust being measured solely in cognitive terms. An alternative interpretation could be that functional risk led to a cognitive form of trust whereas emotional risk led to what could be considered an affective form of trust. However, further testing is necessary to confirm this possibility.

Altogether, it can be concluded that values influence which benefits and risks are important as well as the rating of those risks and benefits. Perceived risk at a more abstract level (such as a product category, product usage occasion, or hazard potential)

precedes the need for trust in a specific solution (such as a specific brand or action) including the source and information about that solution in order to reduce one's sense of risk. Deciding to trust is then associated with lowered perceived risks and increased perceived benefits of that solution. It is unclear, though, what the causal relationship is between trust and perceptions of risks and benefits. The research by Siegrist and colleagues (2000, 1999) suggests that trust develops first and subsequently alters perceptions of risks and benefits. However, their research is correlational. Wang and Emurian (2005) theorize the relationship operates in the opposite direction, suggesting that in order to trust and hence make oneself vulnerable, the trustor must perceive more to gain than to lose (i.e., that benefits are greater than risks). This implies that the benefit-to-risk balance can impact trust so that higher benefits and lower risk lead to greater trust. However, these authors do not provide any empirical data to support this claim. Therefore, further research is needed to test these alternatives, though making this distinction is beyond the scope of this dissertation.

When applying the research and theory regarding trust as it relates to risk/benefit assessments, it is important to keep in mind that these concepts deal with perceived risks and benefits while the current study will alter an objective amount of risk and benefit information. Also, the benefit and risk variables in this dissertation research pertain to the drug (i.e., at the brand level), but the main measure of trust is associated with the ad. What might impact brand trust is not necessarily the same as what leads to ad trust, so there may not be a direct correspondence between the anticipated results of the current study and the preceding findings described here in which trust was at the same level as

the benefits and risks. Finally, the role of trust in the situation of prescription medications may be different given that consumers can not make a product choice without approval from their doctor. However, this literature suggests that it will be important to evaluate risk and benefit perceptions along with brand trust as potential mediating variables for this study as well as examining various forms of behavioral responses relevant to pharmaceutical products.

RISK RESEARCH IN DTC PHARMACEUTICAL ADVERTISING

The relation of risks and benefits has been a subject of great importance in DTC pharmaceutical advertising research with a particular focus on risk due to the concern that pharmaceutical companies do not wish to fully disclose complete information about drug side effects. Several content analyses of ads in this category have reported an imbalance of risk and benefit information with a greater focus on benefits (Huh & Cude, 2004; Kaphingst et al., 2004; Main, Argo, and Huhmann, 2004; Sumpradit, Ascione, & Bagozzi, 2004). Although FDA regulations stipulate a fair balance in the amount of information provided about side effects and effectiveness, researchers have pointed out execution strategies used in the ads that can make the messages about side effects less noticeable or more difficult to understand. For instance, television commercials have been found to de-emphasize side effects information by presenting this portion in one quick, continuous verbal segment while simultaneously displaying unrelated positive or neutral visual images (Kaphingst et al., 2004; Sumpradit, Ascione, and Bagozzi, 2004). Main, Argo, and Huhmann (2004) argued that this risk information is often written in smaller font near the bottom of print ads, getting overshadowed by the promotional

portion of the ads. Findings suggest the risk information on prescription drug websites targeted to consumers is also often presented in smaller font, is less detailed, and is more difficult to access compared to information about benefits (Huh & Cude, 2004).

Studies of consumers generally concur with the conclusions that have been drawn based on ad content. Surveys show that consumers think the ads do not provide enough information about the risks of the drug (Friedman & Gould, 2007; Aikin, Swasy, & Braman, 2004) and that this information is of poorer quality than information about benefits (Deshpande et al., 2004). Consequently, it is not surprising that consumers exhibit an inferior understanding of a drug's risks compared to its benefits (Kaphingst et al., 2005) and have stated a preference for more detailed side effect information in terms of numerical statements, information about discontinuation of the drug, and test comparisons to placebo-groups (Davis, 2007a).

This dissatisfaction with the way the side effects are portrayed coupled with the lack of clear guidelines from the FDA as to how this risk information should be communicated has spurred numerous experimental studies on the subject. During the 1980's, Morris and colleagues conducted a series of studies examining the effects of the amount, specificity, prominence, and delivery mode of risk disclosures in DTC ads, consumer leaflets, and drug descriptions (Morris, Brinberg, & Plimpton, 1984; Morris, Ruffner, & Klimberg, 1985; Morris, Mazis, & Brinberg, 1989). Findings generally revealed that a greater number of risk statements and/or more specificity led to more irritation with the ad and decreased brand evaluations in some cases (Morris, Ruffner, & Klimberg, 1985) while increasing awareness and knowledge of side effects (Morris,

Mazis, & Brinberg, 1989). Subsequent research has similarly found that disclosing complete risk information which includes more side effects decreases the overall appeal, perceived safety, and likelihood of recommending or purchasing the advertised medication (Davis & Meader, 2009; Davis, 2007b; Davis, 2000). However, the use of qualifying language techniques commonly used in DTC pharmaceutical ads when providing information about side effects significantly improves brand evaluations by reducing consumers' perceived likelihood of experiencing the side effects (Davis, 2007b).

While the research attention allocated to information about side effects in the ads is well-founded, consumers need to be able to fully understand and evaluate the negative *and* positive consequences of taking a drug (Singh & Smith, 2005; Woloshin, Schwartz, & Welch, 2004). Accordingly, both benefits and risk information have been shown to have a significant impact on the perceived utility of DTC pharmaceutical ads (Deshpande et al., 2004), and consumers have expressed a desire for more information about benefits as well as risks of drug use in the ads (Polen, Khanfar, & Clauson, 2009; Friedman & Gould 2007; Aikin, Swasy, & Braman, 2004; Woloshin, Schwartz, & Welch, 2004). Therefore, as others have pointed out (Atkin & Beltramini, 2007; Beltramini, 2006), improving response to pharmaceutical advertising rests not only on increasing the amount and understandability of risk information but achieving the right balance of risk and benefit information.

It is unclear what exactly the "right" balance is between risk and benefit content. Consumer advocates have generally focused on the concern that too little risk information

does not adequately equip consumers to make well-informed choices. However, too much risk information may actually hinder decision-making by overloading cognitive resources (Malhotra, 1982; Jacoby, Speller, & Kohn, 1974) and causing confusion (Morris, Mazis, & Brinberg, 1989). Placing too much emphasis on the possible side effects of the drug can also create undue anxiety and fear that deters consumers from taking beneficial medications (Polen, Khanfar, & Clauson, 2009; Kees et al., 2008; Morris, Mazis, & Brinberg, 1989).

Of course, determining the ideal balance of risk and benefit information in the ads requires either adjusting both types of content or purposefully manipulating the amount of one in relation to the other. The aforementioned studies focused on the risk message either omitted the benefits information completely or held it constant without any effort to match the differing levels of side effect information relative to the benefits. To date, only two studies have explicitly examined this issue by manipulating the amount of information provided about side effects and benefits (Kavadas, Katsanis, & LeBel, 2007; Morris, Brinberg, & Plimpton, 1984).

Kavadas, Katsanis, and LeBel (2007) applied the protection motivation theory (Rogers, 1975) in their study, likening the side effects information to the threats used in fear appeals. Protection motivation theory is part of a body of fear appeal theories which posit that individuals may respond to a threatening message with danger control (taking actions such as seeking information or changing behavior to control the danger) or fear control (engaging in denial, avoidance, or reactance to cope with one's fear) (Witte & Allen, 2000; Witte, 1994; Folkman & Lazarus, 1988). To elicit a danger control

response, which signifies a successful threat message, recipients need to perceive an adequate level of severity and susceptibility to the risk, judge the recommended action as effective in resolving the risk, and possess self-efficacy for executing the recommended action. Generally, persuasive messages most effective at low to moderate fear levels. Weak fear appeals do not adequately convey the seriousness or likelihood of the threat to motivate sufficient processing of the message while overly strong fear appeals reduces persuasion by producing counterarguing or limiting message processing as a defensive mechanism.

Within this framework, Kavadas, Katsanis, & LeBel (2007) manipulated the balance of risk and benefit information by including six side effect statements to two benefit statements (high risk), two side effect statements to six benefit statements (low risk), or six side effect and six benefits statements (moderate risk). Involvement with the health condition was also manipulated. Consistent with hypothesized outcomes, results showed that ad and brand attitudes were highest at both high and low levels of involvement when the amount of benefit and side effect information was equally balanced. Ad involvement and recall were also highest when participants were highly involved with the topic and exposed to the low risk or balanced ads.

Morris, Brinberg, and Plimpton (1984) compared different combinations of low and high risk and benefit information across two different drug categories (back pain and acne). Low risk or benefit information consisted of three statements while high risk or benefit conditions contained six statements. In this design, a "balanced" portrayal was provided when benefits and side effects were both high or both low. However, results for

either of these balanced conditions were not reported, presumably because they did not yield significant effects. Instead, relevant to this dissertation study, findings revealed that including fewer benefits and more risk information led to an increase in perceived believability and lack of bias. In addition, the number of benefits impacted beliefs about the ethical standards (including benevolence) of the manufacturing corporation, though the pattern was not consistent. While the manufacturer was viewed more positively for the acne medication ad containing more versus less benefit information, the opposite was true of the back pain medication.

While these two studies lend insight on the effects of different balance schemes between risk and benefit information in DTC pharmaceutical advertising, there are limitations on their applicability to the research questions of this dissertation study. In the Kavadas, Katsanis, and LeBel (2007) study, the balanced condition only accounted for the case when benefits and risk information were both high without a comparison to when both types of information were low. This confounds the effect of presenting balanced information with presenting more information overall. The study also looked only at overall involvement with the category as opposed to distinguishing between different types of involvement, and ad trust was not included as an outcome measure. Morris, Brinberg, and Plimpton (1984) did not assess any measure of involvement, and while they examined a full factorial design in which risk and benefit information was balanced at high and low levels, they did not report the results for these balanced conditions. Their measure of believability and perceived bias, both related to trust, consisted of only two semantic differential word pairs each factored out from an overall

measure of attitude, meaning a validated scale intended for these constructs was not used. In addition, study participants did not view an actual prescription drug ad but were instead shown a bulleted list of drug information said to have come from either a magazine ad or educational leaflet. Information processing and response to this form of test stimulus could differ from viewing the information within a more realistic format. Lastly, this study was conducted before DTC pharmaceutical ads became as ubiquitous as the present day. Studies have shown that familiarity with this category of advertising has an impact on ad response (Huh & Langteau, 2007; Huh, DeLorme, & Reid, 2004), warranting the need for updated research. Thus, this dissertation study seeks to improve upon previous research to derive a clearer understanding of how message content in DTC pharmaceutical advertisements affects attitudes, trust, and behavioral intentions.

Chapter 5: Hypotheses

This research seeks to address two issues regarding the information communicated about drug benefits and side effects within DTC pharmaceutical advertising messages. One issue focuses solely on the benefits information, comparing the efficacy of functional and emotional benefits. The other issue examines the relative effects of differing amounts of information regarding drug risks (in the form of side effects) relative to the overall drug benefits. This chapter applies the previously discussed literature to delineate hypotheses regarding both of these topics.

FUNCTIONAL VERSUS EMOTIONAL BENEFITS

Focusing on the first issue, expectations for the impact of communicating functional and emotional benefits in DTC advertisements can be drawn from research comparing emotional and functional brand values. These studies show that brands imbued with primarily emotional values are often superior to those representing more functional values in producing favorable brand outcomes (Lim, Widdows, & Park, 2006; Yang & Jolly, 2006; Pura, 2005; Nelson & Byus, 2002; Sweeney & Soutar, 2001). Means-end theories also predict that promoting emotional benefits will be more effective due to their being closer to the "final pay-off" that is desired by consumers (Olson & Reynolds, 2001; Lautman, 1991). However, others have talked about the necessary role functional benefits serve in advertising messages and branding strategies to provide a rational justification for consumers' brand choices (Ziems, 2004). Research that has investigated ad messages or brand positioning incorporating a combination of emotional and functional aspects shows that including both elements produces better results than

focusing on an exclusively emotional or functional strategy (Frisby, 2006; Hartmann, Ibáñez, & Sainz, 2005). Therefore, it is expected that DTC pharmaceutical ads that feature an even mix of both functional and emotional benefits will result in the most positive ad responses while messages containing emotional benefits only will perform better than messages focused solely on functional benefits. (See Figure 2 for an illustration of the hypotheses.)

> H1a: Communicating a combination of functional and emotional benefits will yield more positive ad attitudes, brand attitudes, and behavioral intentions than communicating only emotional benefits or only functional benefits.
>
> H1b: Communicating only emotional benefits will yield more positive ad attitudes, brand attitudes, and behavioral intentions than communicating only functional benefits.

There is less of a theoretical or empirical basis for hypothesizing the relationship between benefit type and credibility or trust in the advertisement. On one hand, the argument that trust is similar to attitudes and comprised of cognitive and affective dimensions could be used to propose that, as with ad attitudes, an ad message combining emotional and functional benefits would be best to appeal to both sides of trust. However, DTC advertising scholars assert, either explicitly or implicitly, that emotional benefits and similar ad content interfere with the credibility and utility of DTC advertisements and call for a greater focus on information regarding drug effectiveness (i.e., the functional benefits) (Frosch et al., 2007; Kaphingst et al., 2004; Main, Argo, & Huhmann, 2004;

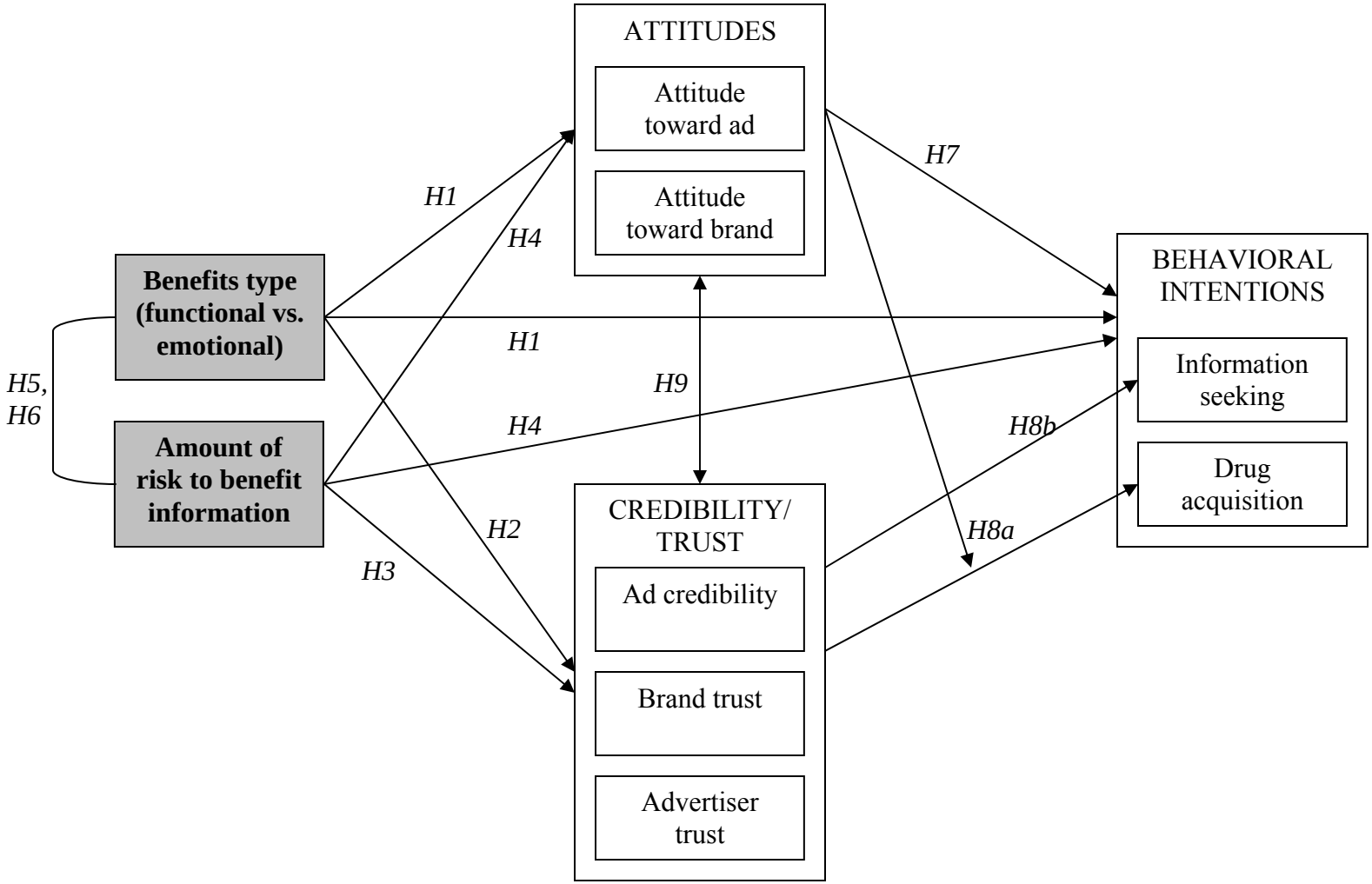


Figure 2: Hypotheses Model

Woloshin et al., 2001). Indeed, consumers may equate emotional benefits in these ads to a form of "puffery"—that is, ad claims using unverified and often exaggerated subjective statements—used by advertisers to increase persuasiveness. While one study found that increased levels of puffery had no effect on perceived ad truthfulness (Kamins & Marks, 1987), other research has found that ads making "search claims" which can be verified before product use are more trusted than ads utilizing "experience claims" (verified only after product use) or "credence claims" (which can never be verified) (Ford, Smith, & Swasy, 1990; Darby & Karni, 1973; Nelson, 1970). Arguably, the greater concreteness of functional benefits allows for more verifiability than abstract emotional benefits, suggesting that a message about functional benefits would be deemed more trustworthy than one describing emotional benefits. This is further supported by research showing that products touting utilitarian benefits led to greater feelings of security and confidence than products promoting hedonic benefits (Chitturi, Raghunathan, & Mahajan, 2008). Security and confidence are considered key emotions related to trust (McKnight & Chervany, 2001-2002, 1996). Hence, it is hypothesized that DTC pharmaceutical advertisements containing a functional benefits message will garner the most credibility and trust.

> H2: Communicating only functional benefits will yield more positive ad credibility, brand trust, and advertiser trust than communicating only emotional benefits or a combination of functional and emotional benefits.

RISK VERSUS BENEFITS INFORMATION

Regarding the second issue to be examined in this research concerning the relative balance of risk and benefit information, insights can be drawn from research on two-sided persuasive messages, risk communication, and related work within the DTC pharmaceutical advertising literature. Research on message sidedness generally compares the effects of presenting a one-sided message in which only positive information about the merits of the product or advocated position is communicated with a two-sided message in which shortcomings or opposing arguments are acknowledged. Results typically show that two-sided ad messages generate greater credibility than one-sided ad messages (Eisend, 2006; Lang, Lee, & Zwick, 1999; Kamins & Marks, 1987). This makes sense given that admitting limitations in such an upfront way presents a more balanced view that fosters an image of openness, reduces perceived bias, and seemingly contradicts the expected vested interest of advertisers.

The concept of a negativity bias studied within the risk communication field offers a similar perspective. This theory suggests that messages containing negative information about a potential risk (i.e., that the possibility of negative outcomes does exist) are trusted more than messages with positive information about a risk (i.e., disputing or ignoring the presence of a risk by instead discussing the positive outcomes of what may otherwise be considered a risky issue) (Siegrist & Cvetkovich, 2001; Slovic, 1993). This proposition and the research supporting it has been questioned by further investigation showing that this effect may be relevant only among those who have a pre-existing notion that the issue or object is risky (White et al., 2003). However, in the case

of prescription medication, people are generally aware that most medicines are accompanied by side effects. Hence, it is expected that most consumers would hold the belief that taking prescription drugs entails a certain level of risk of encountering side effects, even if it is minimal, and therefore they should have more trust toward a message that acknowledges this risk.

Indeed, a study by Tucker and Smith (1987) demonstrated that DTC prescription drug ads with no warning information about side effects were less appealing than messages containing this information. This indicates that consumers expect and therefore prefer ads to convey some degree of risk information. Of course, DTC prescription drug ads are required to include a statement about side effects, so the question is not whether to include this information but how much to include. It should be noted that the FDA regulations for DTC pharmaceutical ads provide little guidance as to this matter of the "amount" of information about side effects. The fair balance requirement simply states that disclosure of side effects must receive a reasonably equal level of attention within the ad as communication of drug benefits. This vague guideline leaves it to the advertiser's discretion as to how many and which side effects to disclose. It has been suggested that DTC ads should include all side effects above a certain incidence level (Davis, 2000), but ads currently fall short of providing such complete risk information. (Further discussion of how "amount of information" is operationalized in this context is provided in the next chapter.)

Presumably, being more comprehensive in disclosing side effects (which act as negative information against the drug as with a two-sided message) should instill greater

trust because it goes against the vested interest of pharmaceutical advertisers and exceeds the minimal FDA requirement. To support this assumption, Morris, Brinberg, and Plimpton (1984) showed that DTC pharmaceutical ads were rated as more believable when the ads provided more (in terms of number of side effects) rather than less risk information. In particular, this result was reported for the condition in which the number of side effects statements was greater than the number of benefits statements. It is reasonable to assume that while an absolute increase in side effects information would consequently increase trust, this effect would be even more pronounced if there are more side effects than benefits in a message since this ratio appears to favor the provision of complete information over promotional motives. Corroborating this proposition, research on two-sided messages shows that the increase in credibility rendered by the inclusion of negative information is tempered if these negative message points are subsequently strongly refuted or downplayed within the message (Eisend, 2006). In summary, it would be expected that trust and credibility increases with more information about side effects and that this effect is greatest when the message presents more information about side effects than benefits.

> H3: Ad credibility, brand trust, and advertiser trust will increase as a function of the amount of side effects information. In other words, a medium amount of side effects information will be significantly greater than a low amount of side effects information, and a high amount will be significantly greater than both medium and low amounts of side effects information.

Generally, messages that are more trusted are also more persuasive. For example, messages from credible sources typically produce more positive attitudes than less

credible sources (e.g., Goldberg & Hartwick, 1990; Ohanian, 1990; Hovland & Weiss, 1951). However, there are cases in which an increase in trust does not coincide with an increase in other ad perceptions and responses. Particularly, within the two-sided advertising message literature, it has commonly been shown that although the inclusion of negative information enhances credibility perceptions, it also leads to decreased attitudes toward the ad and brand along with lowered purchase intentions compared to one-sided messages (Eisend, 2006). This trade-off effect has been borne out in DTC advertising research as well. Several studies have shown that ad and brand attitudes as well as behavioral responses are lower when these ads incorporate more statements about side effects (Davis & Meader, 2009; Davis, 2007b; Davis, 2000; Morris, Ruffner, & Klimberg, 1985). The likely explanation for this seemingly contradictory pattern is that although consumers are more assured in being able to believe the message with negative information, it nonetheless provides them with counterarguments against the brand and may interfere with enjoyment of the ad.

However, this inverse relationship between negative information and persuasion outcomes is not necessarily linear. A meta-analysis of the literature on message-sidedness revealed a curvilinear relationship so that brand attitudes and purchase intentions were highest with moderate amounts of negative information (Eisend, 2006). The findings of Kavadas, Katsanis, & LeBel (2007) also demonstrated this inverted-U shape pattern within the context of DTC advertising. Their study showed that ad and brand attitudes were highest when the risk and benefit information was equally balanced (operationalized as an equal number of statements about side effects and drug benefits) which they

considered representative of a moderate level of risk. These researchers invoked protection motivation theory to explain their results, stating that too little risk information is not motivating or engaging enough, but risk information above a certain threshold reduces processing of the message and stimulates counterarguing to cope with the fear.

Overall, it is possible that increased message trustworthiness improves attitudes up to a certain level of negative information beyond which the negative information overwhelms the positive aspects of the brand and thereby inhibits persuasion. Eisend's (2006) meta-analysis mentioned above did in fact find that source credibility mediated the curvilinear relationship between the amount of negative information and brand attitudes. This idea that negative communication points reach maximum effectiveness at a moderate or balanced level is also consistent with decision theory which suggests that the risks must be offset by the benefits in order to produce action. Otherwise the potential gain is outweighed by the potential loss. Hence, the following hypotheses can be proposed:

> H4a: Ad attitudes, brand attitudes, and behavioral intentions will be highest when the amount of side effects is equal to the amount of benefits information.
>
> H4b: Ad attitudes, brand attitudes, and behavioral intentions will be significantly greater when the amount of side effects information is low compared to when the amount of side effects information is high.

While benefit type and the amount of side effects information in the ad are each anticipated to produce the hypothesized pattern of effects, it is also assumed these components will interact with one another to modify the degree to which the relative effects differ between conditions. In particular, it is reasonable to expect that the reduced

credibility of the emotional benefit message (compared to a functional benefits message) would be offset by the inclusion of higher amounts of side effect information. Support of this proposition can be derived from Jain and Posavac (2001) who found that experience claims in an ad (akin to emotional benefits) were rated lower than search claims (akin to functional benefits) on believability when delivered by a low credibility source but not when the source had high credibility. In other words, the high credibility of the source successfully bolstered the credibility of the experience claim message to the same high level of the search claim message. Kamins and Marks (1987) likewise asserted that the decline in credibility with increased levels of puffery could be moderated by employing a two-sided instead of a one-sided message. Applied to the current study, the effect of the amount of side effect information on credibility and trust would be greatest when the message focuses only on emotional benefits. Conversely, the higher credibility and trust of the functional benefits message would act as a buffer to minimize the negative effect of communicating a low amount of side effect information, but this message would also not be significantly enhanced by communicating more side effect information. The effects of the combination benefits message and a medium amount of side effects information on trust and credibility outcomes would fall in between these extremes. Consequently, the hypothesized interaction effect on the credibility and trust variables is as follows:

> H5: The difference in ad credibility, brand trust, and advertiser trust between functional benefits, emotional benefits, and a combination of functional and emotional benefits will be significantly less at higher amounts of side effects information compared to a low amount of side effects information.

The proposed interaction of benefit type and side effects information for attitudinal and behavioral outcomes is based on theory and research already discussed showing maximum results when benefits and risks are balanced (especially when the existence of risks is known). It can be argued that this balance may vary by the type of benefits associated with a brand since the different benefit types would be weighted differently. Specifically, the combination of emotional and functional benefits is expected to be viewed the most favorably in terms of persuasive outcomes, and would therefore hold the greatest value. Following this logic, emotional benefits would be valued somewhat less and functional benefits the least according to the hypotheses based on means-end theory. In this sense, the greater weight of the combination benefits would help dampen the negative impact of a high amount of side effects information moreso than the emotional benefits would, and those viewing the functional benefits message would display the most negative reaction to a high amount of side effects information in terms of attitudes and behavioral intentions. In addition, a medium amount of side effects would balance well, and therefore produce higher persuasive outcomes, than the low amount of side effects information ad when a combination or emotional benefits message is used. However, the lower weight of the functional benefits on these variables would match better with a low amount of side effects information, thereby yielding more positive attitudes and behavioral conditions for a low versus a medium amount of side effects information. In sum, this set of hypothesized interaction effects are stated as follows:

H6a: When the ad contains only functional benefits, ad attitudes, brand attitudes, and behavioral intentions will be significantly greater for a low amount of side effects information compared to a moderate or high amount of side effects of information. These dependent variables will be significantly greatest for a moderate amount of side effects information when the ad communicates only emotional benefits or a combination of functional and emotional benefits.

H6b: When a combination of functional and emotional benefits is communicated, the difference in ad attitudes, brand attitudes, and behavioral intentions by the amount of side effects information will be significantly less compared to an ad communicating only emotional or functional benefits.

SECONDARY RELATIONSHIPS

Beyond the hypothesized direct effects of the treatment variables on ad responses, attitudes and trust and credibility perceptions are expected to exert effects on intended behavioral outcomes as well. Looking at attitudes first, there is substantial support from the general advertising literature (e.g., Homer & Yoon, 1992; Batra & Ray, 1986; MacKenzie, Lutz, & Belch, 1986) as well as research on DTC pharmaceutical advertising specifically (e.g., An, 2007; Choi & Lee, 2007; Lee, Salmon, & Paek, 2007; Wilson & Till, 2007; Herzenstein, Misra, & Posavac, 2005) to indicate that attitudes toward the ad and attitudes toward the brand have a positive relationship with behavioral intentions. It should be noted that, because consumers can not purchase a prescription medication directly without first obtaining a prescription from their physician, the primary behavioral objectives of DTC pharmaceutical advertising often include seeking more information about the drug or health condition, making an appointment with a healthcare provider regarding the drug or health condition, and requesting a prescription for the medication. Reminding individuals to refill their prescriptions, encouraging compliance with prescriptions, and recommending the advertised medication to friends and family are also

considered favorable behavioral outcomes of the ads. Therefore, the intended behaviors examined in the current study as a result of ad exposure are classified into two main categories: 1.) information-seeking from various sources and 2.) drug acquisition which indicates more decisive actions regarding the medication including drug requests, consumption, and recommendation to others. (Note: the preceding hypotheses incorporating behavioral intentions include both of these categories.) In line with previous research, it is expected that more positive ad and brand attitudes will result in higher intentions to seek information about the brand and health condition as well as engage in drug acquisition-related actions.

> H7a: Attitude toward the ad will have a positive predictive relationship with information-seeking and drug acquisition intentions.
>
> H7b: Attitude toward the brand will have a positive predictive relationship with information-seeking and drug acquisition intentions.

Having trust toward the ad is likewise expected to increase intended drug acquisition behaviors to the extent that attitudes are positive. Typically, trust is depicted as leading to increased behavioral intentions and actual behaviors (McKnight & Chervany, 2001-2002). Without this relationship, trust would not be considered such a key factor in areas like risk communication and service relationships. However, as the research previously reviewed in this report on message-sidedness has evidenced, messages can be viewed as credible without stimulating a corresponding interest in purchasing the product. When ad credibility or message trust has been linked to greater behavioral intentions, attitudes have been positive as well (Lang, Lee, & Zwick, 1999;

Kavanoor, Grewal, & Blodgett, 1997). This seems to indicate that trust and attitudes must be congruent to produce the desired behavioral response. In other words, trusting an ad is important, but an individual is still not going to purchase the advertised brand or engage in a behavior which he or she does not judge favorably. Therefore, it is believed that in the current study, ad and brand attitudes will moderate the relationship between trust and drug acquisition intentions so that trust will increase intended drug acquisition behaviors when attitudes are positive but not when they are negative.

Conversely, ad trust is expected to have an inverse relationship with intended information-seeking responses. The support for this proposition is based on the idea that a lack of trust is accompanied by uncertainty and an increased sense of risk (Chen, 2008; Lobb, 2005; Earle & Cvetkovich, 1995; Morgan & Hunt, 1994; Lewis & Weigert, 1985), and hence distrustful individuals are motivated to seek more information to reduce that uncertainty. This relationship is captured in the Risk Information Seeking and Processing model which postulates that when risk information elevates perceived risk and uncertainty, individuals cope by engaging in information-seeking (Griffin, Dunwoody, & Neuwirth, 1999). Other research on risk communication and consumer risk confirms the tendency to seek more information as a result of lower trust and increased risk perceptions (Klerck & Sweeney, 2007; Kuttschreuter, 2006; Johnson, 2005; Neuwirth, Dunwoody, & Griffin, 2000; Murray, 1991). Those who do trust the information in the ad will not be as compelled to seek additional information from secondary sources to facilitate decision-making because their sense of risk and uncertainty is low enough to act

on the information they already have. Therefore, trusting individuals will show lower intentions to seek information compared to those with a lower level of trust.

Based on this, the following hypotheses are proposed:

H8a: Ad credibility, brand trust, and advertiser trust will have a positive predictive relationship with drug acquisition intentions moderated by ad and brand attitudes so that higher credibility and trust will lead to greater drug acquisition intentions if ad and brand attitudes are high rather than low.

H8b: Ad credibility, brand trust, and advertiser trust will have a negative predictive relationship with information-seeking intentions.

Lastly, the preceding hypotheses generally depict a modified trade-off effect of the independent variables on the dependent variables. Specifically, credibility/trust, attitudes, and behavior intentions are predicted to increase between low and medium amounts of side effects information and between the emotional benefits and combination benefits messages. However, when the amount of side effects information further increases to a high level or a functional benefits message is presented, credibility and trust is expected to continue to increase while attitudes and behavior intentions are expected to decline. This anticipated pattern of results suggests that attitudes and trust will have a positive relationship to a certain point followed by a negative relationship, forming an overall inverted U-shape. Therefore, the final hypothesis is:

H9: Ad credibility, brand trust, and advertiser trust will have curvilinear relationships with ad and brand attitudes.

Chapter 6: Methodology

DESIGN

The hypotheses were tested in a 3 (benefit type: functional, emotional, combination) X 3 (amount of side effects information: high, medium, or low) between-subjects factorial experiment. A diagram illustrating the design of the study is shown below in Figure 3. More specifically, participants were randomly assigned to view an ad that included functional benefits only, emotional benefits only, or a combination of functional and emotional benefits. The test ad also varied in the number of side effects provided to comprise a high, medium, and low amount of side effects information condition. The number of benefits was held constant.

		Type of Benefits Information		
		Functional	Emotional	Combination
Amount of Side Effects Information	Low			
	Medium			
	High			

Figure 3: Experimental Design

PARTICIPANTS

Participants were recruited from the Ad Participant Pool of the Department of Advertising at the University of Texas at Austin. This subject pool consists of students enrolled in undergraduate-level Advertising classes who receive extra credit for

participation. Participants included those with and without allergies. A total of 238 participants completed the study (N=25-28 per cell). Seventy percent of participants were female with a median age of 20 (ranging from 18-44 years old). The majority (61%) of participants were Caucasian with 14% identifying as Asian American and 15% Hispanic American. Thirty-eight percent had been diagnosed with allergies while 77% knew of a friend or relative who had allergies. Of those who had allergies themselves, 65% had ever taken prescription allergy medication, 31% were currently on a prescription to treat allergies, and rated the severity of their allergies on average at 3.85 (SD = 1.69) on a 7 point scale. Both allergies involvement and general perceived allergies severity were slightly above the mid-point (M = 4.51, SD = 1.62 and M = 4.76, SD = 1.48, respectively, on 1-7 scale).

STIMULI DEVELOPMENT AND DESCRIPTION

The test stimulus consisted of a DTC pharmaceutical print style advertisement for a hypothetical prescription drug. The ad used a fictitious drug brand and manufacturing pharmaceutical company to ensure the participants were not biased with pre-existing attitudes and beliefs toward the drug brand. The health condition the drug was advertised to treat was determined in an initial pretest conducted among those from the main study population. The criteria for selected health condition were having a relatively high prevalence of diagnosis and level of involvement along with adequate usage of prescription medication. In addition, the potential conditions included in the pretest were non-gendered, symptom-based to increase the salience of the benefits information, and non-life threatening so that taking the medication would be voluntary. This last element

was considered important to theoretically allow for a larger impact of the advertising since consumers play a bigger role in making drug requests in this case. Previous experimental DTC studies employing a student sample and similar criteria for selecting the health condition had used allergies, acne, and adult ADHD. These three conditions were included in the pretest as well as depression, migraines, insomnia, and acid reflux. In the pretest, participants were asked if they had been diagnosed with the condition, if they currently use or have used in the past prescription medication to treat the condition, and their involvement with the condition using a 5 item semantic differential scale adapted from Mittal (1995). Results of the pretest showed allergies to be highest in rate of diagnosis (56%), prescription medication usage (14% currently, 38% in the past), and involvement ($M = 5.04$, $SD = 1.53$) (see Table 1 for full results). Therefore, allergies was selected as the health condition for the test ads.

The format of the ad was modeled after existing DTC prescription drug print ads and used a straightforward informational presentation to focus on the effects of the information contained in the message. To reduce the impact of ad characters, which can affect identification or perceived congruency with the ad (Chang, 2002; Hong & Zinkhan, 1995; Kelman, 1961), the ad did not include any pictures or drawings of people or animated characters. Instead, the visual image was neutral showing the product package. Adhering to the standard elements of DTC prescription drug ads, the stimulus ad provided basic information including the product name and the health condition treated as well as the provision of sources of additional information (i.e., a website, a toll-free phone number, and the directive to talk to one's doctor). The ad also contained

	Involvement		Diagnosed	Medication Usage	
				Ever	Currently
	M	*SD*	%	%	%
Allergies	5.04	1.53	56	38	14
Acid Reflux	4.40	1.87	16	14	10
Depression	3.91	1.78	12	10	0
Acne	3.72	1.98	40	33	5
Insomnia	3.58	1.95	4	5	0
ADHD	3.58	1.92	4	5	0
Migraines	3.40	1.93	16	19	10

Table 1: Health Condition Pretest Frequency Ratings

information about benefits and side effects of the drug in a consistent manner with the manipulations described below.

It should be noted that the brief summary included with print ads—the detailed fine print description of drug information that usually appears on the opposite side of the page from the promotional message—was not included as part of the test stimulus. The reasons for this exclusion are that the summary contains detailed information above and beyond that which is contained in the main promotional portion of the ad which is the focus of this research. This information may therefore detract from or interfere with the manipulations. Research has also shown that consumers rarely read the brief summary (Aikin, Swasy, & Braman, 2004), and therefore this information is unlikely to impact most consumers' evaluations and behavioral responses to a DTC pharmaceutical advertisement. Hence, it was not deemed necessary to include the brief summary as part of the test stimulus in order to determine ad effects.

Manipulation Variables

A series of pretests were conducted to determine the execution of the experimental manipulations aligned with the independent variables (see Appendix A for pretest instruments). The benefit type message manipulation pertained to the promoted benefits of the prescription drug. The product benefits described in the ad entailed a description of either four functional benefits, four emotional benefits, or a mix of two functional and two emotional benefits to maintain a consistent length of the benefits statement. The ad message was also manipulated to vary in terms of the amount of side effect information provided. This study followed the examples of other studies within DTC pharmaceutical advertising which have operationalized "amount" in terms of the number of statements about specific side effects and benefits (Davis & Meader, 2009; Davis, 2007b; Kavadas, Katsanis, & LeBel, 2007; Huh & Cude, 2004; Morris, Mazis, & Brinberg, 1989; Morris, Ruffner, & Klimberg, 1985; Morris, Brinberg, & Plimpton, 1984). While this is admittedly a simplified scheme, it is commonly used in this category thereby allowing for greater comparison to past research. The amount of benefits mentioned was held constant at four items while the number of side effects mentioned were designed to be low, moderate, and high relative to the number of benefits. The exact content of benefits statements and content and number of side effects were determined in pretests conducted among undergraduate students in the University of Texas Department of Advertising as described below.

Pretest 1

The first pretest was conducted as an online survey asking respondents to evaluate a list of potential side effects and drug benefits. It was determined that the side effects chosen for the main study should be of moderate perceived severity and likelihood. Therefore, following the procedure used by Davis (2007b), the perceived severity of 23 side effects typically mentioned in DTC advertisements were measured by asking respondents how willing they were to experience each side effect (1=not at all willing, 7=very willing). Perceived likelihood of each side effect was also assessed by asking for an estimate of the percentage of people who experience each side effect when taking a prescription medication ranging from 0-100%. To assist in developing the benefit type manipulation, pretest participants were provided definitions of a functional benefit and an emotional benefit and then asked to evaluate a selection of benefits statements on a scale ranging from "mostly functional" to "mostly emotional" with the objective of choosing benefits that rated at one extreme or the other. The questionnaire included twenty-four benefits statements derived from existing DTC pharmaceutical ads and written generally to apply to any health condition. The benefits statements were also judged for appeal (1=not at all appealing, 7=very appealing) to ensure the functional and emotional benefits were equally appealing. In addition, the side effects and benefits were evaluated for perceived importance (1=not at all important, 7=very important) (Morris, Brinberg, & Plimpton, 1984). Ideally, it was desired that all side effects and benefits chosen would be similar (not significantly different) on these last two measures.

Twenty-five participants completed the first pretest. The descriptive statistics for each of the side effects and benefits statements are shown in Tables 2 and 3. For the side effects items, a one sample T-test was conducted to compare the mean ratings of each item on perceived severity and likelihood with the overall mean for the combined items. Results revealed eight side effects that were not significantly different from the overall means for perceived severity and likelihood indicating moderate levels of these measures. Specifically, these side effects were nausea, abdominal pain, anxiety, back pain, insomnia, nervousness, cold and flu symptoms, and dizziness. Similarly, a one-sample T-test was conducted with the benefits statements, comparing the mean of each statement against the overall question mean. Benefits statements significantly lower than the mean were judged to be sufficiently functional while those significantly above the mean were considered emotional. Eleven benefits statements were identified in this way as being perceived functional and ten as emotional, though one of the functional benefits statements ("Slows the progression of the health condition") was dropped due to inapplicability to allergies. To narrow this remaining set of twenty statements, ratings of appeal and importance were evaluated to determine which functional and emotional benefits were equivalent on these measures. However, while several of the functional benefits had similar appeal to the emotional benefits, the functional benefits were generally rated higher on importance ($M = 5.88$) compared to the emotional benefits ($M = 4.54$). The emotional benefits were also generally rated lower than the side effects on perceived importance ($M = 5.34$), making it difficult to choose a set of benefits statements differentiated as functional or emotional but similar on appeal and importance.

	Willingness		Likelihood		Importance	
	M	*SD*	*M*	*SD*	*M*	*SD*
Dry mouth	3.72*	1.93	43.29*	29.83	4.32	1.75
Prickling or tingling	3.68*	1.63	30.58	23.97	4.72	1.70
Muscle ache	3.64*	1.73	32.38	24.24	4.88	1.54
Next day drowsiness	3.64*	1.71	40.24*	24.73	4.76	1.59
Throat irritation/sore throat	3.28*	1.51	28.58	17.39	4.80	1.38
Headache	3.12	1.67	39.84*	23.25	4.80	1.61
Back pain	**3.08**	**1.98**	**27.46**	**20.93**	**5.16**	**1.43**
Lack of energy	3.08	1.66	38.67*	23.50	4.52	1.71
Insomnia	**2.84**	**1.91**	**27.88**	**22.19**	**5.80**	**1.00**
Dizziness	**2.84**	**1.49**	**32.16**	**21.49**	**5.20**	**1.53**
Nervousness	**2.76**	**1.48**	**26.38**	**19.55**	**5.12**	**1.48**
Cold and flu symptoms	**2.76**	**1.59**	**25.00**	**21.79**	**5.52**	**1.30**
Skin rash	2.68	1.57	20.08*	15.05	5.68	1.11
Nausea	**2.60**	**1.41**	**33.04**	**19.22**	**5.16**	**1.28**
Abdominal pain	**2.60**	**1.53**	**27.58**	**19.74**	**5.32**	**1.41**
Anxiety	**2.60**	**1.44**	**26.43**	**20.62**	**5.44**	**1.29**
Upset stomach	2.36	1.29	36.21*	20.80	5.20	1.35
Upper respiratory infection	2.24*	1.01	15.75*	16.16	6.08	1.22
Diarrhea	2.08*	1.26	26.08	19.96	5.72	1.17
Kidney disease	1.60*	1.04	11.87*	18.24	6.72	.74
Liver disease	1.56*	1.04	8.71*	10.12	6.71	.75
Cardiovascular problems	1.48*	1.01	10.81*	16.13	6.71	.75
Suicidal thoughts	1.44*	.768	11.82*	19.03	6.68	.75
	Cumulative *M* = 2.68		Cumulative *M* = 26.59			

* Significantly different from cumulative mean at $p < .05$

Note: Items in bold were selected for test stimuli

Table 2: Side Effects Ratings from Pretest 1

	Func. vs. Emot.		Appeal		Importance	
	M	*SD*	*M*	*SD*	*M*	*SD*
Controls symptoms	1.80*	.957	6.08	1.29	5.80	1.41
Slows progression of health condition	2.20*	1.19	5.60	1.35	5.88*	1.13
Prevent symptoms before start	2.28*	1.40	5.88	1.27	5.84*	1.18
Helps manage symptoms	2.32*	1.11	5.60	1.41	5.68	1.52
Works at the source of the problem	2.36*	1.44	5.80	1.53	5.80*	1.08
Provides complete symptom relief	2.36*	1.41	6.40*	.87	6.24*	.97
Treats all causes of the condition	2.40*	1.44	6.42*	.93	6.36*	.91
Works quickly	2.40*	1.41	6.16	1.07	5.80	1.32
Can be taken infrequently	2.56*	1.66	4.92*	1.63	5.20	1.58
Has long-lasting effects	2.96*	1.59	5.64	1.87	6.00*	1.41
Provides continuous relief	3.32*	1.38	6.16*	.94	6.04*	1.31
Gives powerful relief	3.76	1.90	6.12	1.08	6.08*	1.19
Offers new hope for treating the condition	3.84	1.99	5.58	1.59	5.08	1.66
Feel refreshed and energized	4.68	1.87	5.52	1.64	4.84	1.63
Stop worrying about the condition	5.32*	1.68	5.68	1.41	4.80	1.80
Feel in control of life once more	5.40*	1.78	5.68	1.38	4.52	1.94
Feel free to do things you want to	5.56*	1.26	5.68	1.28	4.67	2.04
Feel ready for what comes your way	5.56*	1.45	5.00*	1.50	4.60	1.73
Relax knowing condition won't get in way of life	5.60*	1.58	5.80	1.19	5.00	1.71
Allows to be more confident	5.84*	2.12	5.32	1.70	4.32*	1.99
Lets you be happy	5.88*	1.88	5.60	1.58	4.48	1.96
Lets you enjoy life again	5.96*	1.12	5.80	1.38	4.36	2.12
Lets you feel like yourself again	6.08*	1.15	5.36	1.66	4.56	1.87
Provides sense of accomplishment	6.40*	1.00	4.68*	1.80	4.12*	2.07
	Cumulative *M* = 4.03		Cumulative *M* = 5.69		Cumulative *M* = 5.25	

* Significantly different from cumulative mean at $p < .05$

Table 3: Benefits Statements Ratings from Pretest 1

Pretest 2

A second pretest was performed to meet three objectives: 1) better understand the validity of these differences in appeal and importance between the functional and emotional benefits, 2) test a revised list of benefits statements modeled after the original set but redesigned specifically for allergies, and 3) assess if relevant benefits statements had been left out of the initial list. The second pretest was a mixed methods study involving a focus group format with an additional survey component. In particular, four focus groups were conducted using participants drawn from the Advertising Participant Pool. Two focus groups included those with seasonal or environmental allergies, one focus group was designated for those without allergies, and the last focus group had a mix of those with and without allergies for a total of thirty-one participants. A total of thirty-one students participated in the pretest. For the focus group portion, participants were first asked questions about the experience of allergies and motivations for drug usage to treat allergies for oneself or others. Subsequently, a set of recent print DTC ads for allergy medications were shown and participants were asked about their perceived message communication focused particularly on the benefits described and interpreted in the ads. Following this, participants were given a questionnaire to complete in which a predetermined list of benefits along with benefits highlighted during the focus group discussion were rated on functionality versus emotionality, perceived importance, appeal, and perceived relevance (1=not at all relevant, 7=very relevant). The focus group concluded with a brief discussion of how participants responded to the questionnaire ratings.

	Func. vs. Emot.		Appeal		Importance	
	M	*SD*	*M*	*SD*	*M*	*SD*
Works by blocking histamines and leukotrienes	1.42*	.76	4.58*	1.78	4.32*	2.09
Treats multiple sources of allergies including dust, pollen, mold, and pet dander	**1.87***	**1.26**	**5.90**	**1.49**	**6.32***	**1.22**
Use regularly to prevent allergy symptoms before they start	1.90*	.83	3.65*	1.56	4.52*	1.65
Controls all allergy symptoms including sneezing, runny nose, and itchy, watery eyes	2.19*	1.17	6.68*	.60	6.61*	.99
Acts fast for instant relief	**2.19***	**1.17**	**6.32***	**.83**	**6.61***	**.76**
Relieves nasal congestion to help you breathe easier	**2.50***	**1.38**	**6.23***	**.84**	**6.42***	**.85**
Effective with just one pill	**2.54***	**1.25**	**6.23***	**1.15**	**6.42***	**.85**
Provides complete relief	2.55*	1.41	6.52*	.81	6.77*	.50
Relieves allergy symptoms for a full 24 hours	2.97*	1.25	6.71*	.59	6.74*	.63
Helps you stay alert and focused	3.52*	1.23	6.16*	.86	5.74*	.89
Lets you think more clearly	4.42	1.59	6.32*	.87	5.26	1.15
Feel refreshed and energized	4.71	1.77	5.90	1.04	5.58	1.03
Feel ready for whatever comes your way	5.35*	1.54	5.16*	1.27	4.03*	1.49
Stop worrying about allergies	5.42*	1.48	4.97*	1.40	4.77	1.65
Provides relief from the misery of allergy symptoms	**5.45***	**1.59**	**5.87**	**1.36**	**5.74**	**1.34**
Feel free to do things you want to	5.55*	.93	5.35	1.14	4.84	1.42
Relax knowing allergies won't get in the way of your life	**5.77***	**1.20**	**5.26**	**1.50**	**4.74**	**1.71**
Lets you enjoy life again	**5.97***	**1.52**	**5.52**	**1.36**	**4.90**	**1.33**
Lets you feel in control again	5.97*	1.20	5.48	1.41	4.61*	1.38
Eliminates the frustration allergies can bring	**6.00***	**1.41**	**4.80**	**1.93**	**4.44**	**2.07**
Lets you be happy and carefree	6.27*	1.08	5.16	1.34	4.42*	1.48
Lets you feel like yourself again	6.35*	.98	5.52	1.39	4.65*	1.33
Allows you to be more confident	6.39*	1.17	5.58	1.48	4.23*	1.59
	Cumulative *M* = 4.26		Cumulative *M* = 5.64		Cumulative *M* = 5.33	

* Significantly different from cumulative mean at $p < .05$

Note: Items in bold were selected for test stimuli

Table 4: Benefits Statements Ratings from Pretest 2

Qualitatively, those who had allergies primarily stated symptom relief and other functional benefits (e.g., thinking clearly, ability to complete tasks, going out to different places) as main motivations for taking allergy medication. Interestingly, those who did not have allergies cited a wider variety of functional and emotional benefits as reasons their friends or family members treated allergies. Based on the discussions, a few benefits items were added ad hoc to the questionnaire participants completed during the session. For the quantitative analysis of questionnaire responses, a one sample T-test was run as before to identify statements that were significantly above or below the overall mean (see Table 4). The remaining items were then compared on appeal, importance, and relevance. Results confirmed the first pretest results showing functional benefits to be considered more important and relevant and therefore more appealing than emotional benefits. With this difference in mind, four benefits rated as highly emotional and at least equivalent (i.e., not significantly below) to the overall means for importance, relevance, and appeal were selected. Similarly, four benefits rated as highly functional; not significantly below the overall means for importance, relevance, and appeal; and whose scores otherwise ranked in the low to middle range of ratings on these scales among the functional benefits were selected.

Pretest 3

In regards to the manipulation of the amount of side effect information, a third pretest was performed to confirm the number of statements that should comprise the high, moderate, and low conditions. The pretest was conducted as an online questionnaire and received 114 completed responses. Participants were provided with descriptions of a

prescription drug treating environmental allergies. The descriptions included two, four, six, or eight side effects selected from the set of moderate side effects identified in the first pretest. The messages also varied to include only functional benefits, only emotional benefits, or a combination of functional and emotional benefits as identified in the second pretest. The range of different benefits messages were tested to confirm the perceived functionality/emotionality of the benefits statements held when conveyed in a drug message (rather than listed individually as in the previous pretests). Each participant viewed and rated three different descriptions randomly selected from the set of twelve descriptions. For each description, participants provided separate ratings of the perceived amount of side effects information and benefits information provided in the description (ranging from 1=a little to 7=a lot), the perceived balance between side effects and benefits information in the description (1 = more risk than benefits, 7 = more benefits than risk) (Kavadas, Katsanis, & LeBel, 2007), and two questions addressing the overall subjective risk and benefits associated with taking the drug. Participants also rated the degree to which the benefits in the description were primarily functional or primarily emotional.

Results showed a significant effect of benefit type on the functional versus emotional scale ratings (F [2, 259] = 35.48, $p < .001$). A Tukey post hoc test revealed the functional (M = 2.85, SD = 1.18), combination (M = 3.89, SD = 1.45), and emotional (M = 4.72, SD = 1.69) benefits messages separated into three significantly different groups in the appropriate fashion. A one-way ANOVA showed a significant effect of the number of side effects on all relevant dependent measures (as shown in Table 5). Tukey post hoc

tests confirmed the message with two side effects was perceived as imparting the least amount of side effects information, having more benefits than side effects information, and entailing more drug benefits than risks overall. The four side effects message was also rated at relatively moderate levels, confirming this as a medium level of side effects information. In determining the number comprising a high amount of side effects information, the eight side effects message was fairly consistently rated as significantly different from the two and four side effects messages while the message with six side effects was not significantly distinguished from the messages with fewer side effects in terms of overall perceived risk/benefit balance. Therefore, the eight side effects message was chosen to represent the high amount of side effect information condition for the main experiment. Examples of the test ad stimuli are shown in Appendix C.

	Number of Side Effects				
	2	4	6	8	*F* (d.f.)
Amount of side effect info	2.75_a	4.01_b	4.92_c	5.29_c	44.41* (3, 281)
Amount of benefit info	4.81_a	4.48_{ab}	4.72_a	4.01_b	4.12* (3, 281)
Amount of side effect vs.benefit info	5.23_a	4.38_b	3.70_c	3.02_d	28.28* (3, 282)
Perceived risks and benefits					10.50* (3, 282)
Measure 1	4.90_a	4.37_b	4.31_{bc}	3.88_c	
Measure 2	4.82_a	4.11_b	4.17_b	3.54_c	13.90* (3, 282)

* $p < .05$.
Means sharing the same subscript are not statistically different from each other.

Table 5: Pretest 3 MANOVA Results by Number of Side Effects

PROCEDURE

For the main experiment, students interested in participating in the study were asked to first complete an online pre-questionnaire (see Appendix B). The pre-questionnaire asked questions regarding their trust of the pharmaceutical industry, general attitudes toward DTC pharmaceutical advertising, involvement with allergies, and perceived seriousness of allergies. Data on these potential covariates were collected in advance of study participation to minimize the possibility of biasing response to the stimuli ad. Following completion of the pre-questionnaire, participants were directed to sign up for a session to complete the main portion of the study in a computer lab. Participants were also automatically provided a five digit code at this point which could be used to connect their responses to the pre-questionnaire and the main questionnaire.

The lab portion of the main experiment was administered using an online questionnaire (see Appendix B), but participants completed it in a computer lab on campus to provide a controlled environment. Upon arrival at designated scheduled times, participants were provided an informed consent form to read and sign and then were randomly assigned to one of the experimental conditions by the computer program once the questionnaire was initiated. The questionnaire started with a prompt to enter the five digit code received at the end of the pre-questionnaire and then presented a brief introduction to the study with general instructions. On the following screen, participants were asked to review at their own pace an advertisement for a new brand of prescription medication treating allergies. The dependent measures and manipulation checks were administered following exposure to the ad. The questionnaire finished with

demographics, after which participants were thanked and debriefed about the purpose of the study.

KEY MEASURES

The main dependent measures consisted of levels of ad credibility, brand and advertiser trust, attitudes toward the ad and brand, and behavioral intentions related to information seeking and more proximate measures of drug consumption which are grouped together as "drug acquisition" behaviors (including drug requests, prescription compliance, and recommending the brand to others). Other measures that were anticipated as possible moderators or mediators of the ad effects based on previous theory and research were included as well. In particular, these supplementary measures were antecedent trust of the pharmaceutical industry, general attitudes toward DTC pharmaceutical advertising, general involvement with allergies, and perceived seriousness of allergies as well as outcome measures including level of ad processing, perceived informativeness of the ad, perceived manipulative intent of the advertiser, and attribution for disclosure of side effects in the ad. The exact measures of these variables are described below.

Ad Credibility

Ad credibility was measured with a three-item 7-point semantic differential scale used by MacKenzie and Lutz (1989). The items were convincing/unconvincing, unbiased/biased, and believable/unbelievable. The Cronbach's alpha was below an acceptable level ($\alpha = .67$), and the correlation matrix showed low inter-item correlations

for the biased/unbiased item. This item was dropped from the scale, producing a two-item cumulative measure for ad credibility (α = .81).

Brand Trust

While Delgado-Ballester, Munuera-Alemàn, and Yagüe-Guillén (2003) have developed a validated scale of brand trust, the statements of their scale imply actual experience with the brand which participants did not have with the fictitious drug brand in these experiments. Therefore, only one applicable item adapted from this scale was used (I feel confidence in this brand) in an effort to include a more affective-oriented measure of brand trust. The other four items used to measure brand trust in this study (I would rely on this brand, This brand is safe, I trust this brand, This is an honest brand) came from the measure of brand trust employed by Chatterjee and Chaudhuri (2005) (α = .93).

Advertiser Trust

Trust was measured by combining two scales (Gefen and Straub 2004; Grazioli and Jarvenpaa 2000) that were chosen because of their correspondence to our conceptual definition of trust and their adaptability to the context of DTC pharmaceutical advertising. (These scales were originally created within the context of e-commerce.) In particular, the trust statements adapted from the four-item revised scale by Grazioli and Jarvenpaa (2000) asked participants whether prescription medicine advertising "is trustworthy," "keeps its promises and commitments," "keeps customers' best interests in mind," and "can be relied upon." The other trust scale consisted of eleven items adapted from Gefen and Straub's (2004) trust scale encompassing the dimensions of integrity, benevolence, and competence.

The specific items covered the themes of reliability, honesty, consideration of customer interests, good intentions, expertise and ability, and expectations. The two trust scales together had a Cronbach's alpha of .94.

Attitudes

General attitudes toward DTC pharmaceutical advertising were assessed on a seven-point Likert-type scale (1 = strongly disagree, 7 = strongly agree) via five statements regarding judgments of prescription medicine advertising (e.g., benefits consumers, are a bad idea, should not be advertised directly to consumers, provide useful information, like to see ads) based on Morris et al. (1986) (α = .80). Attitudes toward the test ad (α = .94) and toward the advertised drug brand (α = .93) were each be measured with a three-item semantic differential scale (negative/positive; unfavorable/favorable; dislike/like) similar to other advertising studies (Homer, 2006; Yoo & MacInnis, 2005; Ruth, 2001).

Behavioral Intentions

Intended behavioral responses to the ad were assessed by eight statements about the likelihood of doing certain behaviors regarding the advertised health condition and/or medication brand in response to seeing the stimulus ad. Using a seven-point scale (1=extremely unlikely, 7=extremely likely), four statements dealt with seeking information about the brand or health condition from different sources (doctor, health care provider other than doctor, media, and friends or family). The other four statements involved requesting the drug brand, insisting on a prescription for the drug brand, filling and taking a prescription for the brand, and recommending the drug brand to others. All

of the behavioral items were adopted from previous research on DTC advertising (Hausman, 2008; An, 2007; Spake & Joseph, 2007; Beltramini, 2006; Huh & Becker, 2005; Huh, DeLorme, & Reid 2005; Singh & Smith, 2005; Deshpande et al., 2004; Davis, 2000). A principle component factor analysis with a varimax rotation on the 8 items yielded a two factor solution with the information seeking items loading together on one factor (α = .85) and the drug acquisition behaviors loading together on the second factor (α = .81).

Trust of the Pharmaceutical Industry

Given that there is not an established measure of industry-level trust, the validated scale developed by McKnight, Choudhury, and Kacmar (2002) to measure institution-based trust was adapted to the context of the pharmaceutical industry. The measure consisted of eleven items measured on a seven-point Likert-type scale covering multiple dimensions of trust (competence, integrity, benevolence beliefs) as well as structural cues (regulations, safeguards) impacting institutional or industry level trust (α = .91).

Health Condition Involvement and Severity

Involvement with allergies was measured on a seven-point scale using five semantic differential items (unimportant/important; of no concern to me/of concern to me; means nothing to me/means a lot to me; doesn't matter to me/matters to me; insignificant/significant) (Mittal, 1995) (α = .93). Participants also rated a one-item measure of how seriousness they considered allergies to be (1=not at all serious, 7=very serious). In addition, participants who self-identified as having allergies in the

demographics portion of the main questionnaire were also asked to rate how severe their allergies were on a 7-point scale ranging from very mild to very severe.

Level of Ad Processing

Although message involvement was not manipulated, it is of value to assess the level of participants' processing of the ad since this variable is known to impact the nature and basis of response to persuasive communications. Following the procedure used in studies of ELM to gauge message elaboration, ad involvement was measured with an open-ended question asking participants to list the thoughts and feelings that went through their minds when they saw the ad. In addition, a closed-ended question was asked with three items assessing how much they paid attention to the ad, thought about the ad, and tried to figure out what the ad was about, all rated on a 7-point Likert scale (1=strongly disagree, 7=strongly agree) (α = .74).

Emotional Responses

A set of emotional responses to the ad were presented and rated by participants to provide additional insight into their responses to key dependent and covariate measures. Particularly, this question asked participants to rate on a seven-point scale (1=Not at all, 7=Extremely) the degree to which they experienced each of 14 feelings that have been described or demonstrated as related to trust (Dunn & Schweitzer, 2005; McKnight & Chervany, 2001-2002, 1996) or perceived manipulative intent (Cotte, Coulter, & Moore, 2005).

Perceived Manipulative Intent

Perceived manipulative intent was assessed with a measure developed by Campbell (1995) and used by Cotte, Coulter, and Moore (2005). This measure was comprised of a five item 7-point (1=strongly disagree, 7=strongly agree) Likert type scale capturing whether the persuasive strategies of the ad were viewed as acceptable, appropriate, fair, or excessively manipulative. A single item measure was also included, asking participants to rate on a 7-point scale the degree to which the ad was fair versus unfair. The combined items had a Cronbach's alpha of .92.

Perceived Ad Informativeness

To measure the perceived information value of the ad, participants were asked their agreement with two statements adapted from Deshpande et al. (2004) and Friedman and Gould (2007). The statements dealt with whether the ad provided enough information to decide whether or not to see a doctor about the advertised drug brand and if the information in the ad would help participants make their own decision about the drug brand (R = .53).

Attribution of Side Effects Disclosure

To evaluate the various attributions participants might make for the disclosure of side effects in the ad, four statements were rated on a 7-point Likert scale (1=strongly disagree, 7=strongly agree). These statements included attributing the disclosure to the company caring about its consumers, regulations forcing the provision of the information, it was the morally "right" thing to do, and creating a positive corporate image.

Chapter 7: Results

This chapter reviews the results for each of the experimental hypotheses detailed earlier. An evaluation of the experimental manipulations is followed by a description of the findings for each of the hypotheses. Since some of the covariate measures were found to have large impact on the dependent measures, the results of several post hoc analyses examining the relationships between these factors and other independent and dependent variables are also discussed.

MANIPULATION CHECKS

To evaluate the success of the benefit type manipulation, participants were asked to rate the extent to which the benefits communicated in the ad were "primarily functional" or "primarily emotional" as opposite end points on a seven-point scale (Kempf, 1999). As in the pretests, definitions of functional and emotional benefits were provided. A one-way ANOVA was performed and showed a significant effect of benefit type condition on the perceived type of benefits communicated in the ad (F [2, 235] = 27.60, $p \leq .00$). With higher ratings representing a greater perception that the message was "primarily emotional" and lower ratings representing a greater perception that the message was "primarily functional," a Tukey post-hoc test revealed the emotional benefits message ($M = 4.65$) was rated significantly higher than both the combination ($M = 3.35$, $p \leq .00$) and functional benefits message ($M = 2.73$, $p \leq .00$) while the combination message was also significantly higher than the functional benefits message ($p \leq .05$). Thus, the nature of the benefits participants perceived to be communicated in

the ad corresponded appropriately with the intended message, so the benefit type manipulation was successful.

Perceptions of the risk-to-benefit ratio were assessed through a series of questions to triangulate various components involved in this manipulation. Namely, these questions addressed relative as well as actual differences in the amount of side effects and benefits participants thought was communicated in the ad and associated with the advertised brand. For a general, relative measure of perceived information communicated in the ad, participants were asked to rate on seven-point scales the amount of information about side effects in the ad ranging from "very little" to "a lot," the amount of information about drug benefits in the ad also ranging from "very little" to "a lot," and the degree to which the ad communicated "more side effects than benefits" versus "more benefits than side effects" as opposite ends of the scale (Kavadas, Katsanis, & LeBel, 2007). To augment these abstract measures, participants were also asked to estimate the number of side effects and number of benefits conveyed in the ad. In addition, participants were asked two questions based partially on Kees et al. (2008) to capture the degree to which perceptions of side effects and benefits information in the ad translated to perceptions of the risks and benefits expected from using the advertised brand. The first of these questions asked participants to rate six statements on a seven-point Likert-type scale ranging from "strongly disagree" to "strongly agree": very risky/not at all risky, unsafe/safe, not at all beneficial/very beneficial, not effective/very effective. The second question included two statements, also rated on the same seven-point Likert-type scale: "The risks and negative effects seem reasonable compared to the benefits and positive

effects of Respirex" and "The benefits and positive effects of Respirex outweigh the risk and negative effects." Items on each of these scales were averaged together for two composite measures of perceived drug risks versus benefits.

A MANOVA test revealed significant effects of the number of side effects reported on the perceived amount of side effects information in the ad, the perceived relative amount of side effects and benefits information in the ad, the estimated number of side effects, and both measures of the perceived risks and benefits associated with the brand, Wilks' $\lambda = .411$, F (16, 436) = 15.23, $p \leq .001$. The lack of significant differences in the general amount of perceived benefits information and the estimated number of benefits communicated in the ad is to be expected given the number of benefits included in the test ads was held constant across conditions. Post hoc testing likewise showed that responses to the specific questions varied appropriately by condition. The perceived amount of side effects information in the ad was significantly lower for the two side effects condition ($M = 2.74$) than the four ($M = 3.64$, $p \leq .01$) or eight side effects conditions ($M = 5.14$, $p \leq .001$), and the four side effects condition was rated significantly lower than the message with eight side effects ($p \leq .001$). For the semantic differential scale in which lower ratings represented more side effects than benefits and higher ratings represented more benefits than side effects, the two side effects condition ($M = 5.72$) was rated significantly higher than the four ($M = 4.57$, $p \leq .001$) or eight side effects conditions ($M = 3.44$, $p \leq .001$), and the four side effects condition was rated significantly higher than the message with eight side effects ($p \leq .001$). The estimated number of side effects also varied according to condition with those exposed to the two

side effects message estimating an average of 2.08 side effects (SD = .615) compared to the four side effects message (M = 4.01, SD = 1.63) and eight side effects message (M = 5.81, SD = 1.95). All of the mean differences on this measure were significant at $p \leq .001$.

On the four-item scale measuring overall perceptions of the risks and benefits associated with the brand, participants viewing the two side effects message expected the brand to have significantly greater benefits and fewer risks (M = 4.50) than those viewing the eight side effects message (M = 4.11, $p \leq .05$). Perceptions on this measure for the four side effects condition (M = 4.24) did not differ significantly from the other two conditions. Similarly, the two-item measure assessing whether the risks of the brand outweighed or were offset by the benefits showed this perceived balance to be more in favor of the benefits for the two (M = 4.24) and four side effects (M = 4.16) message than for the eight side effects message (M = 3.64, $p \leq .05$), though the two and four side effects conditions did not differ significantly from each other. Thus, overall perceptions of the level of risk and benefits involved in the advertised drug brand generally adhered to the differing levels of risk information provided in the ad.

In addition, a measure of perceived ad realism was asked as a check of how well the test stimuli conformed to participants' expectations of a DTC pharmaceutical ad and to assess if any of the experimental manipulation conditions were viewed as more or less realistic than others. This question consisted of three items asked on a 7-point semantic differential scale (was an ad/was not an ad, looked like an ad/didn't look like an ad, read like an ad/didn't read like an ad). Overall, the ad was viewed as realistic (M = 5.26, SD =

1.53), but a two-way ANOVA revealed this varied significantly by the amount of side effect information ($F(2, 229) = 3.67$, $p < .05$). A Tukey post hoc test showed the high amount of side effect information ($M = 4.90$) was significantly lower on ad realism than the ad with a low amount of side effect information ($M = 5.48$, $p < .05$). A medium amount of side effect information was also viewed as more realistic ($M = 5.42$) than a high amount of side effect information, but this difference was only marginally significant ($p < .10$). Due to this difference, ad realism was included as a covariate in the analyses described in the next section.

HYPOTHESIS TESTING

Hypotheses 1 through 6 described the effects of the experimental manipulations on the dependent variables. See Table 6 for descriptive statistics of the dependent measures by each level of the independent variables. A 3 (Amount of side effects information) X 3 (Benefit type) MANOVA with Tukey post hoc tests was initially run for this set of hypotheses. This showed an overall significant effect of benefit type on the dependent variables (Wilks' $\lambda = .900$, F (14, 444) = 1.72, $p \leq .05$), but the amount of side effects information did not have a significant effect overall (Wilks' $\lambda = .946$, F (14, 444) = .90, $p > .05$). A subsequent series of MANOVAs was conducted to identify significant covariates. Based on the covariate analysis, the hypotheses were re-tested through analysis of covariance (ANCOVA) tests incorporating the primary independent variables and the covariates showing a significant effect on each dependent variable. Post hoc pairwise comparisons were used to interpret significant main or interaction effects found in the ANCOVA tests.

	Amount of Side Effect Information			Benefit Type			Total
	High	Moderate	Low	Functional	Emotional	Combination	
	M (SD)	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*
Ad credibility	4.04 (1.35)	4.18 (1.39)	4.35 (1.36)	4.32 (1.29)	3.74 (1.46)	4.54 (1.21)	4.19 (1.37)
Ad attitude	3.69 (1.43)	3.65 (1.31)	4.02 (1.41)	3.72 (1.45)	3.49 (1.37)	4.16 (1.27)	3.79 (1.39)
Brand attitude	3.93 (1.33)	4.05 (1.21)	4.45 (1.27)	4.06 (1.36)	3.98 (1.32)	4.41 (1.15)	4.15 (1.29)
Brand trust	4.04 (1.19)	4.03 (1.15)	4.38 (1.18)	4.16 (1.19)	3.90 (1.19)	4.39 (1.12)	4.15 (1.18)
Advertising trust	4.29 (.98)	4.33 (.81)	4.52 (.89)	4.39 (.92)	4.22 (.87)	4.53 (.88)	4.38 (.90)
Information-seeking intentions	4.45 (1.54)	4.29 (1.53)	4.48 (1.44)	4.24 (1.57)	4.36 (1.48)	4.62 (1.44)	4.41 (1.50)
Drug acquisition intentions	3.28 (1.27)	3.30 (1.25)	3.40 (1.28)	3.31 (1.32)	3.10 (1.23)	3.58 (1.19)	3.32 (1.26)
	(n = 78)	(n = 80)	(n = 80)	(n = 77)	(n = 82)	(n = 79)	(n = 238)

Table 6: Dependent Variable Descriptive Statistics by Experimental Manipulations

Effects of Benefit Type

Hypotheses 1a and 1b stated the message including a combination of emotional and functional benefits would result in significantly more positive ad attitudes, brand attitudes, and behavioral intentions than the emotional or functional benefits messages, and the functional benefits message would be significantly superior to the emotional benefits message on these outcome variables. Hypothesis 2 indicated that ad credibility, brand trust, and advertiser trust would be significantly higher for the functional benefits message compared to both the emotional benefits and combination benefits messages. According to the initial MANOVA test, benefit type had a significant effect on attitudes toward the ad (F [2, 228] = 5.13, p <.01), ad credibility (F [2, 228] = 7.77, p <.01), brand trust (F [2, 228] = 3.94, p <.05), and drug acquisition behavioral intentions (F [2, 228] = 3.21, p <.05). In particular, a combination of emotional and functional benefits produced more positive ad attitudes (M = 4.16), brand trust (M = 4.39), and greater intentions to engage in the drug acquisition behaviors (M = 3.58) than the emotional benefits message (M = 3.49, p < .01, M = 3.89, p < .05, and M = 3.08, p < .05, respectively). Ad attitudes (M = 3.72), brand trust (M = 4.16), and drug acquisition intentions (M = 3.31) among those seeing the functional benefits message did not vary significantly from the other two benefit type conditions. Ad credibility was significantly equivalent between the functional benefits message (M = 4.32) and combination benefits message (M = 4.54), but both these conditions were significantly higher on ad credibility compared to the emotional benefits message (M =3.74). Thus, these results would provide partial support for H1a and H2 but fail to support H1b.

However, the ANCOVA tests revealed some of the significant effects of benefit type were no longer significant when the covariates were included (see Table 7). Benefit type maintained a significant impact on ad credibility with significant covariation by perceived informativeness, perceived manipulative intent, and industry trust. Other dependent variables did not differ significantly by benefit type when covariates were taken into account. Therefore, the final conclusion based on the ANCOVA results is that H2 is partially supported, but H1a and H1b are not supported.

Effects of Amount of Side Effect Information

Hypothesis 3 proposed a significant increase in ad credibility, brand trust, and advertiser trust with increasing numbers of side effects reported in the ad. Ad attitudes, brand attitudes, and behavioral intentions were expected to have a somewhat inverted U-shape, showing significantly better results for the balanced message with four side effects than the two or eight side effects messages (H4a) and the two side effects message in turn yielding significantly higher results than the ad with eight side effects (H4b). The MANOVA results showed no significant effect of the amount of side effect information on ad credibility, brand trust, or advertiser trust, thus failing to support H3. Ad attitudes and behavioral intentions also failed to show significant differences by side effect condition. Brand attitudes varied significantly by the number of side effects provided, though (F [2, 228] = 3.72, $p < .05$). Specifically, exposure to the ad with two side effects led to significantly more positive brand attitudes (M = 4.45) than the ad with eight side effects (M = 3.93). The ad with four side effects did not differ significantly on this variable (M = 4.05) nor any others from the two or eight side effects messages. The

	Amount of Side Effect Information (A)				Benefit Type (B)				A X B
	High (8)	Moderate (4)	Low (2)	*F* (d.f.)	Functional	Emotional	Combination	*F* (d.f.)	*F* (d.f.)
Ad credibility[a]	4.08	4.28	4.24	.41 (2, 214)	4.34_a	3.83_b	4.18_a	4.43^{**} (2, 214)	1.24 (4, 214)
Ad attitude[b]	3.66	3.70	4.01	1.30 (2, 210)	3.73	3.64	3.99	1.28 (2, 210)	.68 (4, 210)
Brand attitude[c]	3.92_a	4.12_{ab}	4.40_b	2.68^{*} (2, 213)	4.06	4.10	4.28	.77 (2, 213)	.42 (4, 213)
Brand trust[d]	4.07	4.07	4.23	.48 (2, 212)	4.15	4.00	4.22	.69 (2, 212)	.46 (4, 212)
Advertising trust[e]	4.30	4.33	4.42	.55 (2, 212)	4.36	4.29	4.39	.41 (2, 212)	.21 (4, 212)
Information-seeking intentions[f]	4.45	4.26	4.51	.40 (2, 212)	4.29	4.38	4.55	.86 (2, 212)	.50 (4, 212)
Drug acquisition intentions[g]	3.26	3.30	3.36	.03 (2, 213)	3.33	3.15	3.43	.81 (2, 213)	.79 (4, 213)

$^{*} < .05$. $^{**} < .01$. Where there is a significant F value, means sharing the same subscript are not statistically different from each other.

[a] Significant covariates were perceived informativeness, trust of the pharmaceutical industry, ad realism, and perceived manipulative intent.

[b] Significant covariates were perceived informativeness, trust of the pharmaceutical industry, perceived manipulative intent, level of ad processing, ad realism, and attributions of side effects disclosure to caring for customers.

[c] Significant covariates were perceived informativeness, trust of the pharmaceutical industry, perceived manipulative intent, ad realism, and attributions of side effects disclosure to caring for customers.

[d] Significant covariates were perceived informativeness, trust of the pharmaceutical industry, ad realism, and perceived manipulative intent.

[e] Significant covariates were perceived informativeness, trust of the pharmaceutical industry, perceived manipulative intent, and attributions of side effects disclosure to caring for customers and doing what is morally right.

[f] Significant covariates were perceived informativeness and attitude toward DTC pharmaceutical advertising.

[g] Significant covariates were perceived informativeness, ad realism, and trust of the pharmaceutical industry.

Table 7: ANCOVA Results for Experimental Manipulations

ANCOVA results confirmed these findings (see Table 7). While covariates exhibited a significant effect on brand attitudes as well, they did not reduce the significant effect of the amount of side effect information. Therefore, it can be concluded that H4a was not supported but H4b was partially supported.

Interaction effects

Hypotheses 5 and 6a-b stipulated the pattern of main effects of benefit type would vary significantly depending on the amount of side effects information provided. However, the MANOVA and ANCOVA results showed no significant interactions between the treatment variables. Therefore, H5, H6a, and H6b were not supported.

Relationships between Dependent Variables

Hypotheses 7a-b, 8a-b, and 9 depicted the expected nature of the relationships between the dependent variables. H7a and 7b proposed positive relationships between ad and brand attitudes and the two behavioral intention variables while H8b suggested there would be a negative relationship between ad credibility, brand trust, advertiser trust and intentions to seek more information about the advertised drug. To test these hypotheses, two multiple regressions were performed—one for information-seeking intentions and one for drug acquisition intentions—including the attitude and credibility/trust measures as independent variables. As shown in Table 8, advertiser trust was the only significant predictor of intentions to seek more information about the drug while both advertiser trust and ad attitude were significant predictors of drug acquisition intentions. All significant relationships were positive. Therefore, H7a is not supported since attitudes did not affect information-seeking intentions; H7b is partially supported since ad but not brand attitudes

Predictors	Information-seeking		Drug Acquisition	
	Beta		*Beta*	
Ad attitude	.148	R^2_{adj} = .138	.226*	R^2_{adj} = .358
Brand attitude	.197	F (5, 231) = 8.57	.028	F (5, 231) = 27.38
Ad credibility	-.004	p < .001	.116	p < .001
Brand trust	-.116		.160	
Advertiser trust	.208*		.167*	
*p<.05				

Table 8: Regressions of Behavioral Intentions

	Predictors	*Beta*		
Model 1	Ad attitude	.357**	R^2_{adj} = .323, F (2, 234) = 57.33 p < .001	
	Ad credibility	.267**		
Model 2	Ad attitude	.340**	R^2_{adj} = . 332, F (3, 233) = 40.06 p < .001	F change
	Ad credibility	.306**		4.04*
	Ad attitude X Ad credibility	.111*		
*p<.05, **p<.01				

Table 9: Regressions of Drug Acquisition Intentions on Ad Attitudes and Ad Credibility with Interaction Term

were significantly predictive of intended drug acquisition intentions; and H8b is not supported since ad credibility and brand trust were not significantly predictive of information-seeking intentions and the relationship between advertiser trust and information-seeking was in the opposite direction than expected.

Hypothesis 8a predicted an interaction effect of ad and brand attitudes with the credibility/trust variables on drug acquisition intentions. To test this hypothesis, a series of multiple regressions were run for each combination of attitude and credibility/trust variables. Each regression included one attitudinal and one credibility/trust variable

entered as independent variables in the first model and an additional interaction term entered into a second model to determine if the interaction explained a significant amount of additional variance in drug acquisition intentions. In most cases, the interaction term did not produce a significant change in the F value. However, there was a significant improvement in variance explained for the interaction of ad attitude and ad credibility as shown in Table 9. When the values for this interaction are plotted (see Figure 4), they reveal the slope for drug acquisition intentions from low to high credibility is steeper when ad attitudes are high than when ad attitudes are low. This indicates that ad credibility has a greater effect on these behavioral intentions when attitudes toward the ad are more positive. Therefore, H8a is partially supported.

In addition, H9 dealt with the shape of the relationship between attitudes and trust, predicting a curvilinear relationship. Since this hypothesis did not to imply causation, a Pearson correlation test was first run including ad attitude, brand attitude, ad credibility, brand trust, and advertiser trust. As shown in Table 10, the correlation coefficients between all variables were significantly positive and fairly strong. The strength of the correlations suggested the relationships were likely to be linear in a positive direction rather than curvilinear. To further check for the curvilinearity of the relationship, a curve estimation with scatterplots was executed (Figure 5). The linear model appears to fit the data best, confirming the relationship was positive and linear. This result means that increased ad and brand attitudes were associated with an increase in ad credibility, brand attitudes, and advertiser trust. Therefore, H9 was disconfirmed.

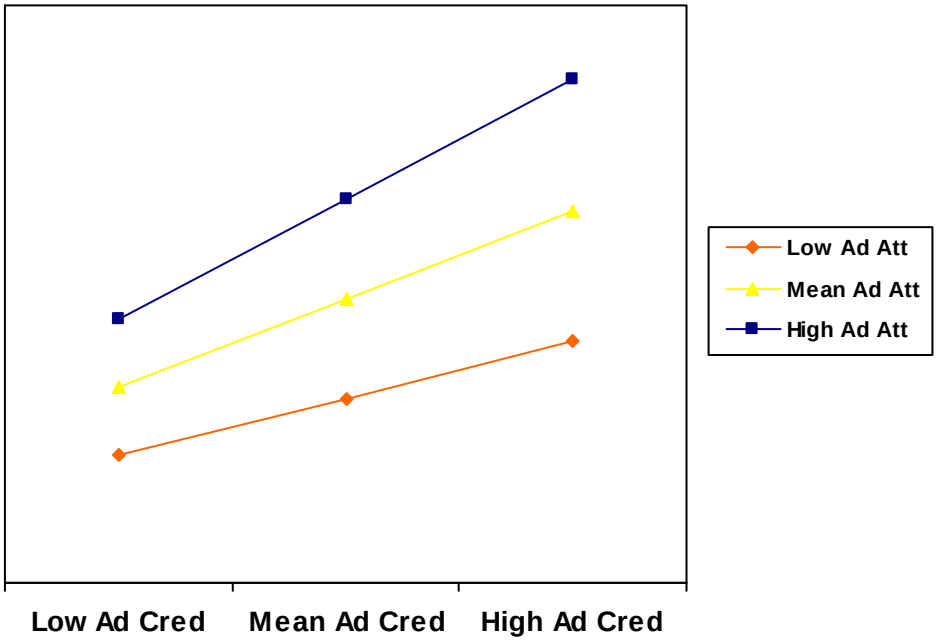


Figure 4: Regression Plot of Drug Acquisition on Ad Credibility X Ad Attitude

	Ad Credibility	Ad Attitude	Brand Trust	Brand Attitude	Advertiser Trust
Ad Attitude	.681**	--			
Brand Trust	.718**	.685**	--		
Brand Attitude	.719**	.811**	.776**	--	
Advertiser Trust	.625**	.606**	.792**	.660**	--

**p<.001

Table 10: Correlations of Attitudes and Credibility/Trust

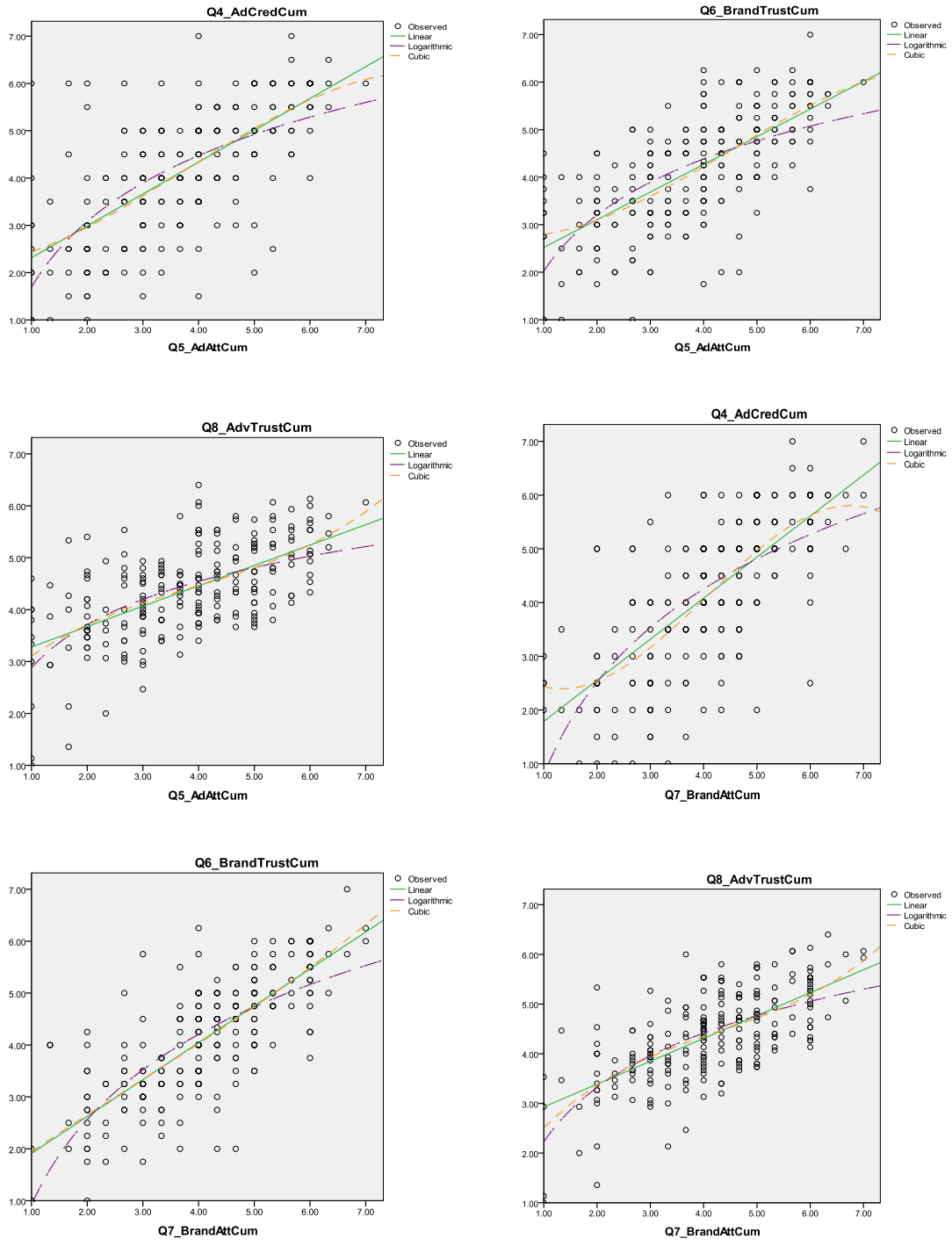


Figure 5: Attitudes and Credibility/Trust Scatterplots

Table 11 provides a summary of the results of the hypothesis tests. Three hypotheses received full or partial support while the other hypotheses were not supported. To better understand the limited support for the hypotheses related to the experimental manipulations, exploratory post hoc analyses were conducted. These analyses are described in the next section with the intention of providing insight for subsequent research on this topic.

ADDITIONAL POST HOC ANALYSES

Several of the covariates showed a consistent significant effect across all or most of the dependent variables. Table 12 provides the frequencies and descriptive statistics for the covariates included in the ANCOVA hypothesis tests. Two such covariates dealt with perceptions of the test ad, namely perceived informativeness and perceived manipulative intent. Additional exploratory analyses were performed to identify the factors contributing to these perceptions in an effort to better understand why these perceptions had such a strong impact on responses to the ad. First, a Pearson correlation analysis was conducted to determine which possible antecedent factors exhibited a significant relationship with perceived informativeness and perceived manipulative intent. As shown in Table 13, the results showed a significant negative relationship between perceived informativeness and perceived manipulative intent. In addition, trust toward the pharmaceutical industry, attitude toward DTC advertising, and attributions of side effects disclosure to the company caring about its consumers or doing what is morally right were significantly related to perceived informativeness in a positive direction. These same factors along with attribution of side effects disclosure to the

IVs		DVs	Expected Pattern	Method	Result
Benefits type	H1a	Ad attitudes, brand attitudes, behavioral intentions	C > E and F	ANCOVA	Not supported
	H1b		E > F	ANCOVA	Not supported
	H2	Ad credibility, brand trust, advertiser trust	F > E and C	ANCOVA	Partial support (F and C > E; $p < .01$)
Amount of side effects information	H3	Ad credibility, brand trust, advertiser trust	H > M > L	ANCOVA	Not supported
	H4a	Ad attitudes, brand attitudes, behavioral intentions	M > L and H	ANCOVA	Not supported
	H4b		L > H	ANCOVA	Supported, $p < .05$
Interaction	H5	Ad credibility, brand trust, advertiser trust	Effect proposed in H2 will be stronger when side effects are low compared to high	ANCOVA	Not supported
	H6a	Ad attitudes, brand attitudes, behavioral intentions	If F, L > M and H; If E or C, M > L and H	ANCOVA	Not supported
	H6b		Effects proposed in H4a and H4b will be weaker for C compared to E and F	ANCOVA	Not supported
Relation of DVs	H7a	Behavioral intentions	Increase with increasing ad attitude	Multiple Regression	Partial support (drug acquisition; $p < .05$)
	H7b		Increase with increasing brand attitude	Multiple Regression	Not supported
	H8a	Drug acquisition intentions	Increase with increasing credibility/trust if attitudes high	Hierarchical Regression	Partial support (ad attitude X ad credibility; $p < .05$)
	H8b	Information-seeking intentions	Decrease with increasing credibility/trust	Multiple Regression	Not supported
	H9	N. A.	Curvilinear between attitudes and credibility/trust	Correlation and Scatterplot	Not supported

C = Combination benefits, E = Emotional benefits, F = Functional benefits, H = High side effect information, M = Medium side effect information, L = Low side effect information

Table 11: Summary of Hypothesis Testing

	Total		
	M	*SD*	
Industry trust	4.97	.90	
Attitudes toward DTC advertising	4.22	1.03	
Allergies involvement	4.51	1.62	
Perceived allergy severity	4.51	2.31	
Level of ad processing	4.69	1.28	
Perceived manipulative intent	2.98	1.16	
Perceived informativeness	3.91	1.33	
Attributions for side effects disclosure	*M*	*SD*	% Agree
Caring for consumers	3.49	1.30	24.3%
Regulations	5.71	1.11	89.1%
Morally right	4.08	1.53	46.2%
Want positive image	4.06	1.54	48.0%

Table 12: Frequency and Descriptive Statistical Data for Covariates

	Perceived Informativeness	Perceived Manipulative Intent
Perceived manipulative intent	-.353**	--
Industry trust	.178**	-.305**
Attitude toward DTC advertising	.186**	-.273**
Allergies involvement	-.032	.052
Perceived allergies severity	-.033	.018
Attribution for side effects disclosure: caring for consumers	.181**	-.257**
Attribution for side effects disclosure: regulations	-.126	.063
Attribution for side effects disclosure: morally right	.141*	-.143*
Attribution for side effects disclosure: positive image	.125	-.222**
*p<.05, **p<.01		

Table 13: Correlations of Ad Perceptions with Antecedent Variables

corporation desiring a positive image were inversely related to perceived manipulative intent.

A multiple regression analysis was used to further assess which of the significantly correlated factors were the best predictors of perceived informativeness and perceived manipulative intent. The regression model for perceived informativeness accounted for 13% of the variance (R^2_{adj} = .133, F[5, 223] = 7.99, p < .01) but indicated perceived manipulative intent as the only significant predictor (ß = -.310, p < .01). The regression model for perceived manipulative intent accounted for 22% of the variance (R^2_{adj} = .219, F[6, 222] = 11.66, p < .01) and revealed three significant predictors: perceived informativeness (ß = -.275, p < .01), pharmaceutical industry trust (ß = -.187, p < .01), and attitude toward DTC advertising (ß = -.145, p < .01).

To further examine how the ad perceptions of interest may have differed by experimental condition, ANCOVA tests were run on perceived informativeness and perceived manipulative intent with the respective significant predictors identified in the regression analyses as covariates and benefit type, number of side effects, and an interaction term entered as the independent variables. There was not a significant difference in perceived informativeness by the number of side effects communicated in the ad (F[2, 217] = .70, p > .05), but this perception varied significantly by benefit type condition (F[2, 217] = 5.01, p < .01). In particular, the combination message was rated as significantly more informative (M = 4.20) than the emotional benefits message (M = 3.54, p < .01). The functional benefits message fell in the middle on perceived informativeness (M = 4.01) with no statistical difference from the other two benefits type

conditions. Perceived manipulative intent did not differ by benefit type (F[2, 217] = 1.49, $p > .05$) but was significantly affected by the number of side effects in the ad (F[2, 217] = 4.86, $p < .01$). Interestingly, the message providing only two side effects was seen as less manipulative ($M = 2.70$) than both the messages with four ($M = 3.21$, $p < .01$) and eight side effects ($M = 3.07$, $p < .05$). This suggests that mentioning more rather than fewer side effects in an ad is not viewed as being open and honest but instead perceived as a sign of intent to manipulate the consumer.

An analysis of emotional responses to the ads sheds some light on the pattern of ad perceptions. Table 14 shows the total means for each of the emotional responses queried. To determine which emotional responses were most predictive of perceived manipulative intent and perceived informativeness, separate multiple regressions were conducted for each of these perceptions with the list of emotional responses as the independent variables. As shown in Table 15, increased irritation and anger were significantly predictive of perceived manipulative intent while feeling cautious and irritated were significantly predictive of perceived informativeness in a negative direction (i.e., perceived informativeness decreases as cautiousness and irritation increase).

A MANOVA was run to further understand the link between the experimental manipulations and emotional responses to the ad. There was not an overall effect of the number of side effects (Wilks' $\lambda = .871$, F [28, 416] = 1.06, $p > .05$) or type of benefits (Wilks' $\lambda = .887$, F [28, 416] = .914, $p > .05$) on emotional responses on total. However, the number of side effects had a significant impact on feeling secure (F[2, 221] = 3.53, $p < .05$), uneasy (F[2, 221] = 3.53, $p < .05$), and frightened (F[2, 221] = 4.94, $p < .01$). In

	Total	
	M	*SD*
Secure	2.77	1.61
Confident	2.63	1.65
Hopeful	2.69	1.61
Cautious	3.39	1.91
Uneasy	2.29	1.57
Anxious	1.99	1.35
Frightened	1.65	1.13
Irritated	2.22	1.55
Angry	1.52	1.07
Sad	1.49	1.00
Contemptuous	2.08	1.41
Cheerful	2.09	1.38
Glad	2.39	1.52
Comforted	2.74	1.63

Table 14: Emotional Response Descriptive Statistics

Predictors	Perceived Informativeness		Perceived Manipulative Intent	
	Beta		*Beta*	
Secure	.091		-.056	
Confident	.112		-.177	
Hopeful	.119		-.040	
Cautious	-.168*		.014	
Uneasy	.016		.068	
Anxious	.000	$R^2_{adj} = .128$	.035	$R^2_{adj} = .272$
Frightened	.121	F (14, 215) =	-.068	F (14, 215) =
Irritated	-.242**	3.41	.297**	7.12
Angry	-.040	$p < .001$	.234*	$p < .001$
Sad	.012		-.124	
Contemptuous	.010		.099	
Cheerful	-.060		-.030	
Glad	.027		-.066	
Comforted	.090		-.007	
*p<.05, **p<.01				

Table 15: Regressions of Ad Perceptions on Emotional Responses

particular, the message with two side effects led to significantly greater security (M = 3.14) than the message with four side effects (M = 2.47, $p < .05$) while producing significantly less uneasiness (M = 1.97) and fright (M = 1.46) than the ad containing eight side effects (M = 2.64, $p < .01$ and M = 1.95, $p < .01$, respectively). The eight side effects message was also produced a significantly more frightened response compared to the four side effects message (M = 1.50, $p < .05$). In addition, the interaction of benefit type and number of side effects significantly influenced feelings of irritation (F[4, 221] = 2.76, $p < .05$) and comfort (F[4, 221] = 2.50, $p < .05$). The ad disclosing eight side effects was significantly more irritating (M = 3.16) than four (M = 1.92, $p < .01$) and two side effects (M = 2.27, $p < .05$) only when the message conveyed just functional benefits. When the ad communicated only emotional benefits, the four side effects message (M = 2.85) was significantly higher on irritation than two side effects (M = 2.00, $p < .05$) with no significant differences for eight side effects (M = 2.23, $p > .05$). Irritation did not differ significantly by number of side effects when the ad described a combination of functional and emotional benefits. Conversely, participants' comfort significantly decreased with the four side effects message (M = 2.08) compared to the two (M = 3.27, $p < .01$) and eight side effects ad (M = 3.12, $p < .05$) when a functional benefits message was used. When the message was based on emotional benefits, participants were less comfortable with eight side effects (M = 2.26) compared to two side effects (M = 3.21, $p < .05$) with no significant differences at four side effects (M = 2.37, $p > .05$). Comfort did not differ significantly by number of side effects when a combination benefits message was used. Figures 6 and 7 provide an illustration of these interactions.

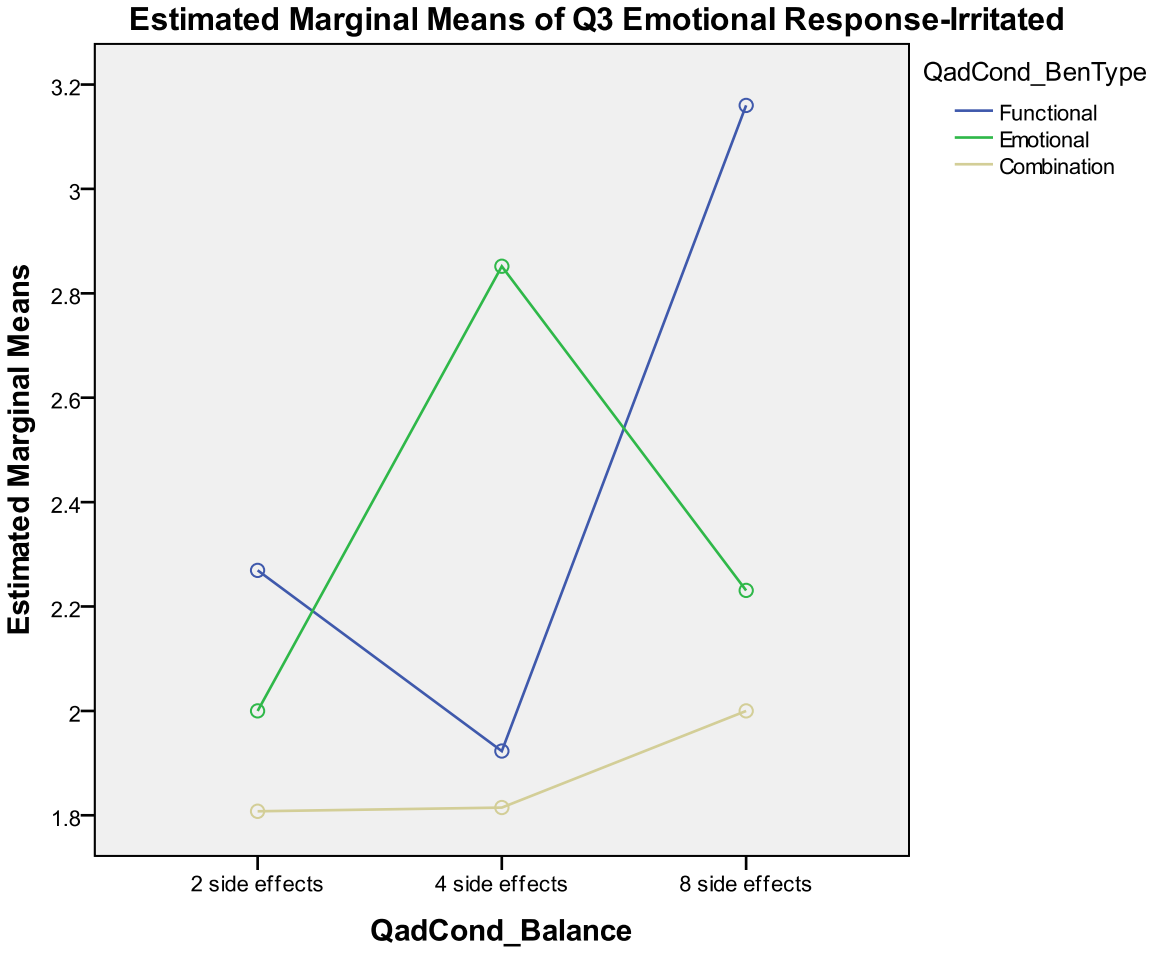


Figure 6: Interactions of Manipulation Variables on Irritation

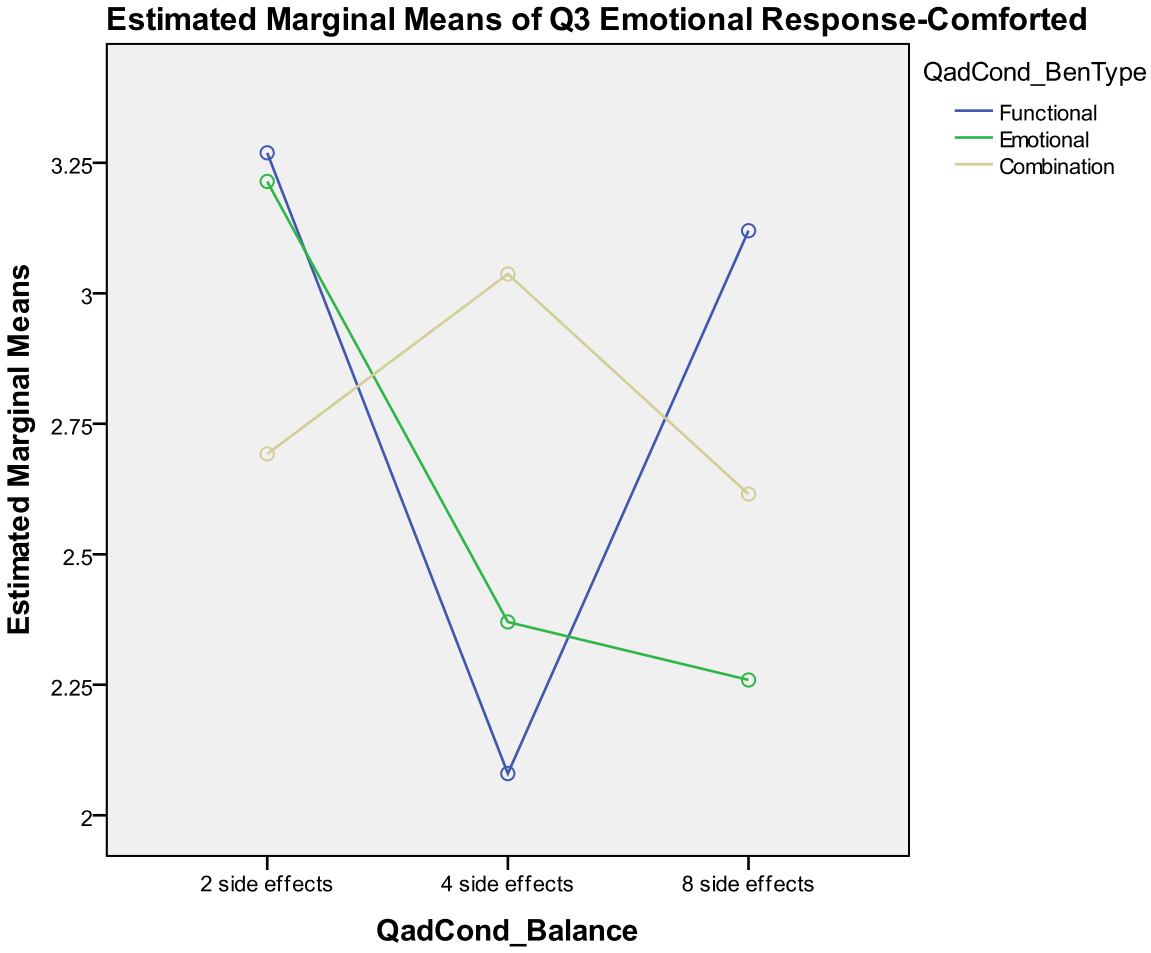


Figure 7: Interactions of Manipulation Variables on Comfort

Chapter 8: Discussion and Conclusions

The motives for this research stemmed from practical questions regarding the controversial nature of the information conveyed in DTC pharmaceutical advertising. Ensuing debate continues to focus on the accuracy and comprehensiveness of the information provided in the ads regarding the benefits and side effects of the promoted drug. While regulations require the ratio of benefits to side effects be a "fair balance," this doctrine is vague about what constitutes a balanced presentation. Research on this topic offers some insight but has been too limited in scope thus far to provide conclusive guidance. In addition, the view that DTC pharmaceutical ads should serve as a health education tool has led to disapproval of the use of persuasive techniques including the employment of emotional content in the ads. Many have criticized ads in this category as being too emotionally-driven. However, emotion can play a valuable role in message communication and health decision-making, and there has been a dearth of research to determine how consumers respond to different types of appeals within DTC pharmaceutical advertising. This study aimed to address both of these issues by testing the assumptions and arguments in support of more side effects information and less emotion in the ads with hypotheses grounded in theory and previous empirical findings. The ad outcomes investigated in this research included measures of trustworthiness as well as persuasion to examine whether pharmaceutical advertisers faced a trade-off decision in which improving the credibility of ads meant sacrificing more typical selling

objectives or if, alternatively, increasing consumer trust would translate into enhanced attitudes and behavioral intentions.

BALANCE OF SIDE EFFECTS AND BENEFITS

Focusing first on the question of balance between side effect and benefit information, the results of this study indicated a significant decline in brand attitude when a high level of side effects information was disclosed compared to a low level. This is consistent with previous DTC research showing a more negative evaluation of a brand that involves more rather than fewer side effects (Davis & Meader, 2009; Davis, 2007b; Davis, 2000; Morris, Ruffner, & Klimberg, 1985). It is also reasonable to expect consumers to prefer a brand with more minimal side effects, especially if they assume the medication does not entail more side effects than those mentioned in the ad. Therefore, this result was hypothesized and supported.

However, it was also postulated that the message containing four side effects (equal to the number of benefits) would have the highest brand attitude. This was based largely on evidence from research on message-sidedness showing that a moderate amount of negative information was viewed favorably as long as it was balanced with positive attributes. In this study, the effect of the amount of side effect information was linear rather than having an inverted U-shape, meaning the four side effects ad produced a brand attitude rating that fell in between the two and eight side effects messages without being significantly different from either one. There are several possible reasons for this result. One potential explanation is that four side effects was not viewed as truly moderate in the context of the test ad. Although the four side effects condition

represented an objectively balanced message since this number was equivalent to the four benefits discussed in the ad, and was therefore considered moderate in line with DTC research by Kavadas, LeBel, and Katsanis (2007), it is possible that even four side effects was perceived as too many. Following this logic, the condition with two side effects would have been subjectively viewed as more moderate or balanced with the benefits by the participants. This would explain the linear pattern as one might imagine the line from two to eight side effects as one side of the inverted U-shape that might have resulted had there been a condition with no side effects. Support for this explanation is not exactly apparent in the two measures of perceived drug risk and benefits. The ratios of benefits to risk for both the four and two side effect messages were slightly to significantly above the scale mid-point of four on these measures in the direction of greater perceived benefits rather than greater perceived risk. Nonetheless, it is plausible that the expected benefit/risk ratio depends on the seriousness of the health condition and the importance of the benefit. In this way, consumers' definition of "moderate" may vary and not always line up with the absolute mid-point of the scales used in this study. In other words, if a health condition is minor, perhaps consumers expect the benefits of a medication to greatly outweigh the risks. A review of open ended responses revealed many participants across the conditions thought the benefit of eliminating allergy symptoms was overshadowed by the side effects associated with the brand. It was clear in these comments that the severity of the side effects was perceived as too substantial compared to the benefit of relieving allergy symptoms. The side effects used in this study were designed to have moderate severity, but perhaps, given the relatively minor severity of

allergies, choosing side effects with low severity would have rendered the expected pattern of results.

Another explanation for the failure to produce an increased response for the balanced four side effects condition on brand attitude is the lack of an effect of side effect information on the credibility and trust measures. As observed by Eisend (2006), favorable brand attitudes resulting from a two-sided message with a moderate level of negative information were driven by a corresponding increase in source credibility. In this study, the inclusion of four rather than two side effects in the message did not make the ad seem more credible nor the brand or advertiser appear more trustworthy. This may be the case because the participants were most likely to attribute the disclosure of the side effects to regulations rather than the goodwill or integrity of the advertiser. Being more likely to attribute the side effects disclosure to laudable characteristics and motives of the advertiser (i.e., caring about its customers, doing what is morally right, wanting to promote a positive image) was a significant contributing factor to increasing ad attitudes, brand attitudes, and advertiser trust. These alternative attributions were based on higher trust in the pharmaceutical industry or a positive attitude toward DTC advertising and were endorsed by a quarter to nearly half of participants. As attribution theory suggests, internal attributions such as these would be expected to generate more positive ad responses since the advertiser is assigned the responsibility for openly admitting the drug's side effects in the ad. The external attribution of regulations does not give advertisers credit for its actions (other than abiding by the rules), so the side effects disclosure in this case would not be considered reflective of the trustworthiness of the

advertiser. Given that regulations was by far the most common attribution for side effects disclosure, it is therefore not surprising that participants did not show increased credibility and trust perceptions with an increasing number of side effects in the ad.

What is surprising is that increasing the number of side effects reported in the ad led to greater perceived manipulative intent. In turn, perceived manipulative intent contributed negatively to all dependent measures with an especially strong influence on brand attitude (as evidenced by its substantially large F value compared to other covariates on this variable). Assessing the advertiser's intent as more manipulative when more side effects were disclosed is counterintuitive since one would typically expect a manipulative message to be biased in the advertiser's favor. This would entail acknowledging fewer rather than more side effects since the side effects represent negative information about the brand. It is possible that this result stems from the way participants interpreted the measure used to capture perceived manipulative intent. The statements generally dealt with perceived fairness and acceptability of the ad but also incorporated affective components such as liking and annoyance. Participants may have considered the ad with eight side effects to be unfair because the message was biased so much in the direction of negative information, and this onslaught of negative attributes of the drug may have generated a generally negative affective stance toward the ad.

Indeed, certain negative emotional responses were related to perceived manipulative intent and impacted by the number of side effects reported in the ad. In particular, participants reported feeling more uneasy, frightened, and insecure when a higher number of side effects were mentioned in the ad. These anxiety-related feelings

may have led to the irritation and anger associated with the perception that the ad was manipulative, perhaps sensing the advertiser was trying to use fear as a persuasive tactic (though fear stemming from side effects is an argument against using the drug as opposed to using fear of the health condition to motivate drug use). This finding is consistent with Cotte, Coulter, and Moore (2005) who found that anger was higher when an ad was perceived as more manipulative.

It is important to note that perceptions of manipulative intent were not affected only by the number of side effects disclosed in the ad. As with attributions of side effects disclosure, trust toward the pharmaceutical industry and attitude toward DTC pharmaceutical advertising had a significant influence on the degree of perceived manipulative intent. This suggests that pre-existing industry distrust and negative attitudes toward this category of advertising predisposed some participants to view the test ad as manipulative regardless of the message components. This may have inhibited the expected effect of the manipulated message elements on the outcome measures to a degree.

TYPE OF BENEFITS

The focus of this study on the benefits portion of the ad message concerned not how much information about the benefits was communicated but which type of benefits were described in the ad. The main finding of this portion of the study was that the message conveying only emotional benefits was seen as less credible than messages comprised of only functional benefits or a mix of functional and emotional benefits. The emotional benefit message was expected to yield lower credibility than a message with

functional benefits since emotional benefits are more abstract, less verifiable, and may be likened to "puffery" when used in an extreme form. This reasoning for the poorer performance of the emotional benefits ad is supported by participants' lower ratings of this message on perceived informativeness. It is likely that participants viewed the emotional benefits alone as too generic, at least for this category, which would reasonably reduce the informational value of the ad.

However, that is not to say that emotional benefits do not provide valuable information within DTC pharmaceutical advertising. While the functional benefits message was deemed more credible than the message with only emotional benefits, the message discussing a combination of emotional and functional benefits was overall significantly or directionally the most effective on attitudinal outcomes as well as credibility and trust measures. This is consistent with previous research showing the superiority of a mixed benefits message over ads containing just emotional or functional benefits (Frisby, 2006; Hartmann, Ibáñez, & Sainz, 2005). The combination message also appeals to both hedonic and utilitarian motives for drug usage (Hirschman & Holbrook, 1982; Park & Young, 1986, 1983), hence broadening the consumer segment with which the message would resonate. Furthermore, this finding aligns with means-end theory in terms of the proposition that functional benefits alone are generally not enough to persuade consumers—consumers want to know about the psychological or emotional benefits they can expect from a brand as well.

The positive impact of the combination benefits message (on the outcomes for which there was a significant effect) was largely driven by perceived informativeness.

The ad communicating both functional and emotional benefits was viewed as more informative than the ad with only emotional benefits, and in turn perceived informativeness had a significant effect across all the dependent measures. This suggests that, as theorists have pointed out before, emotional components provide information just as more cognitive-oriented elements do (Schwarz & Clore, 1988), but furthermore the informational sum of emotional and functional benefits together is greater than an exclusive focus on just emotional or functional benefits. This also shows eliminating emotional content and focusing only on basic drug effectiveness in an ad message, as some DTC advertising critics might suggest, does not provide consumers with the increased level of information as they desire.

While the results support the argument that emotion plays a valid role in DTC pharmaceutical advertising, the substantial influence of perceived informativeness on ad responses indicates that consumers value ads that will help them be more informed about a drug. Similarly, other research in this area has shown relevance or utility of information in a drug ad significantly impacts brand attitudes (Hausman, 2008) and behavioral responses to DTC pharmaceutical advertising (Huh, DeLorme, & Reid, 2004; Singh & Smith, 2005). Of course, a central issue regarding the advertisement of prescription drugs to consumers is whether these ads are providing enough information. A meta-analysis concluded DTC pharmaceutical advertising helped consumers be more informed (Taylor, Capella, & Kozup, 2007). However, surveys have portrayed consumers as less certain they are getting enough information from these ads (Aikin, Swasy, & Braman, 2004; Friedman & Gould, 2007; Singh & Smith, 2005) and revealed a desire for more

information to enhance perceptions of DTC pharmaceutical advertising (Atkin & Beltramini, 2007; Davis, 2007). This study corroborates the importance of informativeness in producing positive ad outcomes for drug advertising.

Of course, the format of the ad may have biased participants to focus on the informational content in their ad evaluations. In this study, the ads were designed to be informational appeals with no emotional cues outside of the emotional benefits mentioned in the some of the messages. Studies show consumers responses to an ad differ in accordance with appeal format so that emotional appeals generate feelings as a primary response while informational appeals primarily generate cognitive responses initially (Batra & Ray, 1986; Burke & Edell, 1989; Edell & Burke, 1987; Homer, 2006; Yoo & MacInnis, 2005). Therefore, it is reasonable to expect the quality of information provided to be a major factor determining judgments about the ad's credibility and favorability. Presenting the same message manipulations within an emotional appeal would change the way these messages are processed with perceived informativeness perhaps having a weaker influence on responses to the ad.

IMPLICATIONS, LIMITATIONS, AND FUTURE RESEARCH

Overall, the research findings of this study are modest. However, the results illuminate aspects of DTC pharmaceutical advertising needing further research examination and contain some cues to the factors pharmaceutical advertisers should consider in gaining trust and persuasiveness through DTC advertisements. Given the reduction in brand attitude when a high level of side effect information was communicated without compensation of increased trust, advertisers appear to have no

incentive to disclose more rather than fewer side effects in the ads. In fact, this study's findings would imply that consumers do not want a full disclosure of side effects within the context of an advertisement given the negative affect and perceptions of manipulative intent associated with a higher number of side effects. However, ethics dictates that important information regarding drug safety should not be purposely withheld from consumers in order to boost sales. In addition, concealing serious side effects can eventually cause more damage to the brand's and corporation's image as recent scandals have illustrated. It should also be noted that communicating more side effects did not have a negative impact on attitudes toward the ad or behavioral intentions, so consumers may still be willing to check into the drug and discuss it with their doctor despite a decline in attitude toward the brand from awareness of extensive side effects.

There are also some additional considerations which may qualify the conclusion that a greater amount of side effect information is not beneficial to advertisers or viewed favorably by consumers. For one, there are different ways in which "amount" of information may be operationalized. The relevance, complexity, importance, and specificity of communication points in a message could all be expected to impact a person's subjective evaluation of how much information is conveyed. For example, the lack of probability statistics accompanying each side effect may have lead to questions, confusion, and over- or under-estimation of the likelihood of the side effects mentioned. Other DTC advertising researchers have considered alternative definitions of the amount of side effect information such as the specificity of the side effects information (naming particular side effects versus making general references to there being side effects)

(Morris, Mazis, & Brinberg, 1989; Morris, Ruffner, & Klimber, 1985), the inclusion of numeric incidence data (Davis, 2007a; Huh & Cude, 2004; Davis, 2000), presenting a comparison to a placebo and rates of drug discontinuation due to side effects (Davis, 2007a), as well as the types of side effects mentioned in terms of severity (Davis & Meader, 2009; Davis, 2007b; Kees et al., 2008) or incidence (Davis, 2000). However, these studies have not looked extensively at the actual persuasive effect of communicating more side effect information in these forms. Therefore, further research is needed to determine if the hypotheses posed in this study regarding the amount of information about side effects provided would receive more or less support when these alternative operationalizations are applied.

Of course, it is important to consider not just what information is provided but also how it is communicated. Researchers have pointed out a variety of factors likely to impact the perceived balance of side effects and benefits information such as differing rates and visual/verbal modes with which this these two message components are delivered within television commercials (Kaphingst & DeJong, 2004; Sumpradit, Ascione, & Bagozzi, 2004) and the varying font size and placement of each information type within print ads or websites (Huh & Cude, 2004; Main, Argo, & Huhmann, 2004). Yet again, research is lacking to determine how consumers actually respond to these differences within the context of a DTC pharmaceutical advertisement. However, open-ended responses revealed many respondents mentioning the equality in font between the benefits and side effects portions of the test ads used in this study (they noted the side effects are often in a smaller font) as well as the overall prominence of the side effects list

given it was not surrounded by other text. While these comments often included appreciation that the advertiser was willing to be so upfront in disclosing the side effects, many also remarked feeling greater uneasiness at seeing the side effects displayed so glaringly. Such negative affect was reflected in the emotional response data. It is not clear how much of this reaction was affected by an apparent deviation from the expected schema participants had for pharmaceutical advertising. The implication for advertisers may be the need to provide additional contextual information or cues accompanying mentions of side effects to limit the fear and anxiety without detracting from comprehension of this part of the ad content.

In regards to the nature of the benefits information, the results indicate there is a role for emotion in DTC pharmaceutical advertising. However, the emotional content needs to be balanced with information about basic drug effectiveness. In this study, this balance was executed by discussing both emotional and functional benefits within the text of the ad. There are other ways to achieve this balance, though, in a more vivid manner that would perhaps further strengthen or alter the impact of benefit type on consumer responses to the ad. For instance, functional benefits could be communicated with a graph, diagram, or picture while emotional benefits could be depicted pictorially as well. The use of a straightforward informational appeal with a neutral picture exhibiting only the product package was purposefully chosen to focus attention on the message manipulations. However, this design may have inhibited the persuasiveness of the emotional benefits message by limiting the potential for emotional responses (as evidenced by the fairly low average ratings across all the emotional responses measured).

Appeal format can be particularly important when trust is an issue. Research has shown skeptical consumers exhibit more positive responses to emotional than informational appeals (Obermiller, Spangenberg, & MacLachlan, 2005) due to less opportunity to counterargue with an emotional appeal. Therefore, a follow-up study is needed to compare the effect of benefit type when conveyed within an informational appeal versus an emotional appeal.

While these message factors may play a role in persuasion and trust, this study provides evidence for broader factors external to the ads themselves which exert a major impact on consumer response to DTC pharmaceutical ads. Trust toward the pharmaceutical industry was particularly influential, showing significant covariation for every dependent variable except intentions to seek more information about the advertised drug. Industry trust along with general attitudes toward DTC pharmaceutical advertising also affected the degree to which respondents viewed the ads as manipulative and informative. This link between general categorical judgments and evaluations of specific messages or objects is consistent with theories regarding the investigated variables of trust (McKnight & Chervany, 2001-2002), ad credibility, and attitudes (MacKenzie & Lutz, 1989). Trust of pharmaceuticals is likely to be particularly salient given the increasingly negative reputation of the industry in light of numerous controversies. To address this issue, advertisers can take a micro-level approach by creating more credible ads, thus changing overall perceptions one ad at a time. However, this would take a concerted effort across multiple advertisers to have an effect at the industry level, and DTC pharmaceutical ads are likely to be just one of many factors shaping consumers'

opinions of the pharmaceutical industry. Therefore, actions at a more macro-level need to be taken such as public relations campaigns promoting the value of pharmaceuticals to society, the programs sponsored by pharmaceutical companies to assist individuals and communities, and the extensive research entailed in developing prescription drugs to evaluate effectiveness and safety. Of course, the manufacturers need to abide by ethical standards in their actions as well to avoid the harmful scandals that have tarnished the industry's image.

In the interim, it is still valuable to examine the effects of ad characteristics since the information and communication strategies of DTC pharmaceutical advertising are the focus of regulators, critics, and ad practitioners. This study is a first step in expanding the literature on consumer effects of DTC pharmaceutical ad factors. Several ideas for future research on the communication of side effects and benefits in these ads have already been mentioned. In addition, there are some limitations of this study which warrant the need for further investigation. The sample population was comprised of college students taking advertising courses. Research has shown that college-age adults tend to be more trusting of pharmaceutical companies and prescription drug ads (Ball, Manika, & Stout, 2009b; Mintel, 2008), so the potential impact of the ads on trust measures may have been somewhat limited. In addition, the participants may have been more familiar with the typical format of DTC pharmaceutical ads or more likely to view the ads from a creative standpoint, so additional research utilizing a more general population sample is needed. Future research should also examine the effects of this study using different types of health conditions. Research has shown consumers perceptions of and responses to DTC

pharmaceutical ads vary by health condition (Hausman, 2008). Evaluations of the types of benefits and their perceived balance with the side effects as analyzed in this study may differ for life-threatening or lifestyle oriented health conditions. In addition, the stimuli for this study employed an unknown brand by a fictional manufacturing corporation presented in a single forced exposure. While this conforms to standard practice in advertising research, the results may not reflect the typical variance that would occur between those who do and do not have the health condition and stem from natural differences in levels of processing. Research has also shown that sources with no reputation do not perform as well on credibility and persuasion outcomes compared to a known brand with favorable perceptions (a comparison to familiar brands with negative perceptions was not made) (LaBarbera, 1982). Therefore, it would be of interest to test the effects of the benefits and side effects communicated in a prescription drug ad for a familiar drug brand and known pharmaceutical manufacturer.

Overall, this study adds to the burgeoning literatures on ad credibility and trust as well as product benefits. Research on these constructs in an advertising context has been surprisingly limited, but they are increasingly important as marketing shifts more toward a brand relationship focus. In addition, despite calls to look at the balance of drug risk and benefit information in consumer studies of DTC pharmaceutical advertising, research in this area has thus far excluded consumer response or primarily concentrated on only the presentation of side effects. The very few studies that have experimentally investigated both types of information have had critical methodological flaws and not considered the types of benefits comprising the message. This investigation improves and

expands on previous studies, and provides guidance on additional lines of inquiry on this topic.

Appendix A: Pretest Instruments

PRETEST 1 QUESTIONNAIRE

1a. We are interested in finding out which health conditions are relevant to college students. For each of the health conditions listed below, indicate

(1) if **you** have ever been diagnosed by a health professional with the condition

(2) if **you** have taken prescription medication to treat the condition.

(Randomize)	Ever Diagnosed	Currently taking prescription medication	Taken prescription medication in the past
Seasonal allergies	❑	❑	❑
Depression	❑	❑	❑
Acne	❑	❑	❑
Adult Attention Deficit Hyperactive Disorder (ADHD)	❑	❑	❑
Migraines	❑	❑	❑
Insomnia	❑	❑	❑
Acid Reflux	❑	❑	❑

(Ask Q.1b for three conditions per respondent randomly selected from the list above)

1b. Please rate how interested you are in the subject of [*condition*]. Would you say information on [*condition*] is…

Unimportant	____:____:____:____:____:____:____	Important
Of no concern	____:____:____:____:____:____:____	Of concern to me
Means nothing to me	____:____:____:____:____:____:____	Means a lot to me
Doesn't Matter	____:____:____:____:____:____:____	Matters to me
Insignificant	____:____:____:____:____:____:____	Significant

2. Assume that you have an illness and are considering a prescription medication. Below are the side effects associated with the use of a new medication designed to treat the illness. Assuming that the medication works as promised, please indicate **how willing you would be to experience** each particular side effect in order to obtain the medication's benefits. You can select any number between 1 and 7 to indicate your opinion.

(Randomize)	Not at all willing to experience 1	2	3	4	5	6	Very willing to experience 7
Upper respiratory infection							
Nausea							
Abdominal pain							
Anxiety							
Back pain							
Insomnia							
Upset stomach							
Agitation							
Nervousness							
Headache							
Throat irritation/ sore throat							
Dry mouth							
Cold and flu symptoms							
Diarrhea							
Infection							
Muscle ache							
Skin Rash							
Dizziness							
Next day drowsiness							
Eye pain							
Lack of energy							
Prickling or tingling							
Suicidal							

thoughts							
Liver disease							
Kidney disease							
Cardiovascular problems such as heart attack or stroke							

3. Please tell us your guess of the percent of people taking the particular prescription medication who will have each of these side effects after taking the medication. You can type any number between 1 (meaning 1 person in 100 will have the side effect) and 100 (meaning 100 people out of 100 will have the side effect).

Upper respiratory infection	_____ %	Dry mouth	_____ %
Nausea	_____ %	Cold and flu symptoms	_____ %
Abdominal pain	_____ %	Diarrhea	_____ %
Anxiety	_____ %	Infection	_____ %
Back pain	_____ %	Muscle ache	_____ %
Insomnia	_____ %	Skin Rash	_____ %
Upset stomach	_____ %	Dizziness	_____ %
Agitation	_____ %	Next day drowsiness	_____ %
Nervousness	_____ %	Eye pain	_____ %
Headache	_____ %	Lack of energy	_____ %
Throat irritation/ sore throat	_____ %	Prickling or tingling	_____ %
Suicidal thoughts	_____ %	Kidney disease	_____ %
Liver disease	_____ %	Cardiovascular problems such as heart attack or stroke	_____ %

4. Imagine that you were to read a description of a prescription medication you were considering. How important would it be for the description to mention each of the side effects listed below if they were associated with the medication?

(Randomize)	Not at all important 1	2	3	4	5	6	Very important 7
Upper respiratory infection							
Nausea							
Abdominal pain							
Anxiety							
Back pain							
Insomnia							
Upset stomach							
Agitation							
Nervousness							
Headache							
Throat irritation/ sore throat							
Dry mouth							
Cold and flu symptoms							
Diarrhea							
Infection							
Muscle ache							
Skin Rash							
Dizziness							
Next day drowsiness							
Eye pain							
Lack of energy							
Prickling or tingling							
Suicidal thoughts							
Liver disease							
Kidney disease							
Cardiovascular							

problems such as heart attack or stroke							

5. As with many products, prescription medications can offer many possible benefits. The benefits of using a medication may be functional or emotional.

- A **functional benefit** is the degree or manner in which the medication works to treat the condition and/or its symptoms.

- An **emotional benefit** is the feeling or emotion people experience as a direct or indirect result of using the medication.

For each of the prescription medication benefits listed below, please rate whether you think it is more of a functional benefit or an emotional benefit according to these definitions.

(Randomize)	Mostly functional 1	2	3	4	5	6	Mostly emotional 7
Prevent symptoms before they start							
Controls symptoms							
Slows the progression of the health condition							
Has long-lasting effects							
Can be taken infrequently (e.g., once a month or once a year)							
Treats all causes of the condition							
Works quickly							

Gives powerful relief							
Provides continuous relief							
Works at the source of the problem							
Lets you rest easy knowing the condition won't get in the way of your life							
You don't have to worry anymore about the condition							
Offers new hope for treating the condition							
Lets you feel like yourself again							
Helps manage symptoms							
Lets you enjoy life again							
Helps you feel refreshed							
Lets you feel a sense of accomplishment							
Helps you feel free to do the things you want to do							
Feel ready for what comes your way							
Provides complete symptom relief							

6. Assume you are considering a prescription medication to treat a health condition. Assuming that the medication has some side effects, please indicate **how appealing** each particular benefit despite the possibility of side effects. You can select any number between 1 and 7 to indicate your opinion.,

(Randomize)	Not at all appealing 1	2	3	4	5	6	Very appealing 7
Prevent symptoms before they start							
Controls symptoms							
Slows the progression of the health condition							
Has long-lasting effects							
Can be taken infrequently (e.g., once a month or once a year)							
Treats all causes of the condition							
Works quickly							
Gives powerful relief							
Provides continuous relief							
Works at the source of the problem							
Lets you rest easy knowing the condition won't get in the way of your life							
You don't have to worry							

anymore about the condition							
Offers new hope for treating the condition							
Lets you feel like yourself again							
Helps manage symptoms							
Lets you enjoy life again							
Helps you feel refreshed							
Lets you feel a sense of accomplishment							
Helps you feel free to do the things you want to do							
Feel ready for what comes your way							
Provides complete symptom relief							

7. Imagine again that you were to read a description of a prescription medication you were considering. How important would it be for the description to mention each of the benefits listed below if they were associated with the medication?

(Randomize)	Not at all important 1	2	3	4	5	6	Very important 7
Prevent symptoms before they start							
Controls symptoms							

Slows the progression of the health condition							
Has long-lasting effects							
Can be taken infrequently (e.g., once a month or once a year)							
Treats all causes of the condition							
Works quickly							
Gives powerful relief							
Provides continuous relief							
Works at the source of the problem							
Lets you rest easy knowing the condition won't get in the way of your life							
You don't have to worry anymore about the condition							
Offers new hope for treating the condition							
Lets you feel like yourself again							
Helps manage symptoms							
Lets you enjoy life again							

Helps you feel refreshed							
Lets you feel a sense of accomplishment							
Helps you feel free to do the things you want to do							
Feel ready for what comes your way							
Provides complete symptom relief							

Demographics

You're almost done! These last questions focus on basic demographics such as age, gender, and ethnicity to help us group your responses with other participants.

C-1 What is your age?

_____ years

C-2 What is your gender?

☐ Male ☐ Female

C-3 What year are you in school?

- Freshman
- Sophomore
- Junior
- Senior
- Graduate student
- Other (*specify*)

C-4 How would you classify yourself? (Select the one that fits best)

- African American
- American Indian
- Anglo American (Caucasian/White)
- Asian American
- Hispanic American
- Multiracial
- International
- Other

Thank you very much for participating in this research project. The purpose of this project is to help develop advertisements to be used in an experiment to be conducted in the future. We are trying to evaluate how information about prescription medications is perceived to determine which side effects and benefits to include in the test ad messages. For more information about this project, please contact Jennifer Ball at jgerardball@yahoo.com.

PRETEST 2: FOCUS GROUP DISCUSSION GUIDE

Introductions

Welcome and thank you for coming today. As was stated in the consent form, the purpose of this study is to gauge your views of information in prescription medication advertisements and gain a better understanding of why prescription medication is used. In particular, we will be talking about allergy medications today. Before we start the discussion, I want you to be aware of a few rules:

- Please speak one at a time so that I can hear you all clearly
- You may hold different opinions but please show respect for one another
- There are no right or wrong answers
- You will not be forced to comment on anything you are not comfortable with, but your opinions are valuable so we hope you will participate
- You will not be asked to share any personal health information you do not wish to share

As a reminder, to help us capture everything you have to say to and facilitate reviewing your responses, the discussion is being audiotaped.

Please introduce yourselves and describe an advertisement you have seen recently that you really liked or consider memorable.

Step 1: Generation of Benefits Statements

[Allergies Sufferers Group]

Does everyone here have some form of seasonal allergies? How do you treat your allergies symptoms/what types of medications do you take (prescription, over-the-counter, etc.)?

Why do you use the allergy medications you use? What benefits are most important to you when taking an allergy medication? If you take a prescription medication for your allergies, what motivated you to seek a prescription?

(Probe for impact on physical, emotional, and functional outcomes)

[Non-allergies Sufferers Group]

Does anybody here have seasonal allergies? Do you have friends or family that have some form of seasonal allergies? How do they treat their allergies symptoms/what types of medications do they take (prescription, over-the-counter, etc.)?

Based on those you know with allergies or just your general impressions, what benefits do you think are most important when taking an allergy medication? What would motivate someone to seek a prescription to treat their seasonal allergy symptoms?

(Probe for impact on physical, emotional, and functional outcomes)

Now we're going to look at some ads for different brands of prescription allergy medications that you might find in a magazine or newspaper. As you look at each ad, I'd

like you to think about the types of benefits you'd expect from the medication based on the ad.

(Ask the following questions as show each ad)

What are the main messages you get from this ad? What are the specific benefits of the medication the ad talks about or shows.

(Probe for impact on physical, emotional, and functional outcomes and for explicit/tangible benefits points as well as implicit/intangible benefits points)

Step 2: Scale Ratings of Benefits Statements

Next, I'd like you to fill out this questionnaire that shows a list of benefits an allergy medication might offer and asks you to rate each benefits statement on a few different scales. There are some blank lines at the end of the list on each page, and I'd like you to add in these statements that you mentioned (*identify pertinent statements written on the board or flip chart that arose from the discussion and do not overlap with statements already in pre-existing list)* and rate them as well.

Step 3: Discussion of Scale Ratings

Which benefits did you rate as most appealing? Why?

Are those the same or different from the benefits you considered most important or relevant? Why?

Which benefits did you tend to rate lowest? Why?

Is there anything else anyone would like to add?

That concludes our discussion. Thank you for participating.

PRETEST 2: QUESTIONNAIRE

1. As with many products, prescription medications can offer many possible benefits. The benefits of using a medication to treat seasonal allergies may be functional or emotional.

- A **functional benefit** is the degree or manner in which the medication works to treat the condition and/or its symptoms.

- An **emotional benefit** is the feeling or emotion people experience as a direct or indirect result of using the medication.

For each of the prescription allergy medication benefits listed below, please rate whether you think it is more of a functional benefit or an emotional benefit according to these definitions.

	Mostly functional 1	2	3	4	5	6	Mostly emotional 7
Works by blocking histamines and leukotrienes, an underlying cause of allergy symptoms							
Relieves allergy symptoms for a full 24 hours							
Is effective with just one prescription pill							
Controls all your allergy symptoms including sneezing, runny nose, and itchy, watery eyes							
Relieves nasal congestion to help you breathe easier							
Use regularly to prevent allergy symptoms before they start							

Acts fast to provide instant relief of allergy symptoms							
Helps you stay alert and focused							
Provides complete relief of your allergy symptoms							
Lets you think more clearly							
Treats multiple sources of allergies including dust, pollen, mold, and pet dander							
Lets you relax knowing allergies won't get in the way of your life							
Allows you to stop worrying about getting stopped by allergies							
Lets you feel like yourself again							
Lets you enjoy life again							
Leaves you feeling refreshed and energized							
Helps you feel free to do the things you want to do							
You can feel ready for whatever comes your way							
Lets you be happy and carefree Lets you feel in control of your life again							
Allows you to be							

more confident							
Provides relief from the misery of dealing with allergy symptoms							

2. Assume you are considering a prescription medication to treat seasonal allergies. Assuming the medication has some side effects, please indicate **how appealing** each particular benefit is despite the possibility of side effects. You can select any number between 1 and 7 to indicate your opinion.

	Not at all appealing 1	2	3	4	5	6	Very appealing 7
Works by blocking histamines and leukotrienes, an underlying cause of allergy symptoms							
Relieves allergy symptoms for a full 24 hours							
Is effective with just one prescription pill							
Controls all your allergy symptoms including sneezing, runny nose, and itchy,							

watery eyes							
Relieves nasal congestion to help you breathe easier							
Use regularly to prevent allergy symptoms before they start							
Acts fast to provide instant relief of allergy symptoms							
Helps you stay alert and focused							
Provides complete relief of your allergy symptoms							
Lets you think more clearly							
Treats multiple sources of allergies including dust, pollen, mold, and pet dander							
Lets you relax knowing allergies won't get in the way of your life							
Allows you to stop worrying about getting							

stopped by allergies							
Lets you feel like yourself again							
Lets you enjoy life again							
Leaves you feeling refreshed and energized							
Helps you feel free to do the things you want to do							
You can feel ready for whatever comes your way							
Lets you be happy and carefree Lets you feel in control of your life again							
Allows you to be more confident							
Provides relief from the misery of dealing with allergy symptoms							

3. Imagine that you were to see an ad for a prescription medication you were considering to treat seasonal allergies. How **important** would it be for the ad to mention each of the benefits listed below if they were associated with the medication?

	Not at all important 1	2	3	4	5	6	Very important 7
Works by blocking histamines and leukotrienes, an underlying cause of allergy symptoms							
Relieves allergy symptoms for a full 24 hours							
Is effective with just one prescription pill							
Controls all your allergy symptoms including sneezing, runny nose, and itchy, watery eyes							
Relieves nasal congestion to help you breathe easier							
Use regularly to prevent allergy symptoms before they start							
Acts fast to provide							

instant relief of allergy symptoms							
Helps you stay alert and focused							
Provides complete relief of your allergy symptoms							
Lets you think more clearly							
Treats multiple sources of allergies including dust, pollen, mold, and pet dander							
Lets you relax knowing allergies won't get in the way of your life							
Allows you to stop worrying about getting stopped by allergies							
Lets you feel like yourself again							
Lets you enjoy life again							
Leaves you feeling refreshed and energized							
Helps you feel							

free to do the things you want to do							
You can feel ready for whatever comes your way							
Lets you be happy and carefree Lets you feel in control of your life again							
Allows you to be more confident							
Provides relief from the misery of dealing with allergy symptoms							

4. How **relevant** would each of the benefits listed below be to your decision to ask a doctor for a prescription for a particular seasonal allergy medication?

	Not at all relevant 1	2	3	4	5	6	Very relevant 7
Works by blocking histamines and leukotrienes, an underlying cause of							

allergy symptoms							
Relieves allergy symptoms for a full 24 hours							
Is effective with just one prescription pill							
Controls all your allergy symptoms including sneezing, runny nose, and itchy, watery eyes							
Relieves nasal congestion to help you breathe easier							
Use regularly to prevent allergy symptoms before they start							
Acts fast to provide instant relief of allergy symptoms							
Helps you stay alert and focused							
Provides complete relief of your allergy symptoms							
Lets you think more clearly							

Treats multiple sources of allergies including dust, pollen, mold, and pet dander							
Lets you relax knowing allergies won't get in the way of your life							
Allows you to stop worrying about getting stopped by allergies							
Lets you feel like yourself again							
Lets you enjoy life again							
Leaves you feeling refreshed and energized							
Helps you feel free to do the things you want to do							
You can feel ready for whatever comes your way							
Lets you be happy and carefree Lets you feel in control of							

your life again							
Allows you to be more confident							
Provides relief from the misery of dealing with allergy symptoms							

5. Lastly, imagine again that you were to see an ad for a prescription medication you were considering. How important would it be for the description to mention each of the side effects listed below if they were associated with the medication?

(Randomize)	Not at all important 1	2	3	4	5	6	Very important 7
Nausea							
Abdominal pain							
Anxiety							
Back pain							
Insomnia							
Nervousness							
Cold and flu symptoms							
Dizziness							

PRETEST 3 QUESTIONNAIRE

We are interested in your opinion of messages about prescription medications. You will be shown several versions of a description of the prescription medication, Respirex, which treats [*condition*]. Please read through each description and then continue on to the next screen to answer the questions following each description.

[Repeat the following questionnaire three times for each respondent]

[Show medication description]

(Randomize order of Q.1a and Q.1b)
1a. In the description you just read, how much information about the **side effects** of the medication do you think was provided?

Very little	____:____:____:____:____:____:____	A lot

1b. In the description you just read, how much information about the **benefits** of the medication do you think was provided?

Very little	____:____:____:____:____:____:____	A lot

2. How would you rate the relative amount of information about side effects risk and benefits of the medication in the description you just read?

More side effects than benefits	____:____:____:____:____:____:____	More benefits than side effects

3. Thinking about your overall perceptions of Respirex based on the description you just read, do you consider Respirex to be…

Very risky	____:____:____:____:____:____:____	Not at all risky
Unsafe	____:____:____:____:____:____:____	Safe
Not at all beneficial	____:____:____:____:____:____:____	Very beneficial
Not effective	____:____:____:____:____:____:____	Very effective

4. How strongly do you agree or disagree with each of the statements below about Respirex.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Agree	Strongly Agree
The risks and negative effects seem reasonable compared to the benefits and positive effects of Respirex							
The benefits and positive effects of Respirex outweigh the risk and negative effects							

5. How would you characterize the type of benefits communicated about Respirex in the description you read? In answering this question, please use the following definitions:

- A **functional benefit** is the degree or manner in which the medication works to treat the condition and/or its symptoms.
- An **emotional benefit** is the feeling or emotion people experience as a direct or indirect result of using the medication.

Primarily functional	____:____:____:____:____:____:____	Primarily emotional

Demographics

You're almost done! These last questions focus on basic demographics such as age, gender, and ethnicity to help us group your responses with other participants.

C-1 What is your age?

_____ years

C-2 What is your gender?

☐ Male ☐ Female

C-3 What year are you in school?

- Freshman
- Sophomore
- Junior
- Senior
- Graduate student
- Other (*specify*)

C-4 How would you classify yourself? (Select the one that fits best)

- African American
- American Indian
- Anglo American (Caucasian/White)
- Asian American
- Hispanic American
- Multiracial
- International

Other

C-5. Have you ever been diagnosed with allergies?

Yes No Not sure

Thank you very much for participating in this research project. The purpose of this project is to help develop advertisements to be used in an experiment to be conducted in the future. We are trying to determine how different combinations of information about side effects and benefits of prescription medications are perceived. For more information about this project, please contact Jennifer Ball at jgerardball@yahoo.com.

Appendix B: Main Study Instruments

MAIN EXPERIMENT PRE-EXPOSURE QUESTIONNAIRE

Industry Trust/credibility

1. Please indicate the extent to which you agree or disagree with each of the following statements regarding your perceptions of the pharmaceutical industry as a whole.

[Randomize statements]	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Agree	Strongly Agree
I feel that the pharmaceutical industry would act in a customers' best interest.							
If a customer required help, the pharmaceutical industry would do its best to help.							
The pharmaceutical industry is interested in customer well-being, not just its own wellbeing.							
I am comfortable relying on the pharmaceutical industry to meet its obligations.							
I feel fine taking prescription medicines since the							

pharmaceutical industry generally fulfills its agreements.							
In general, the pharmaceutical industry is competent at serving its customers.							
The pharmaceutical industry does a capable job at meeting customer needs.							
I feel that the pharmaceutical industry is good at what it does.							
The pharmaceutical industry has enough safeguards to make me feel comfortable taking prescription medicines.							
I feel assured that policies and regulations adequately protect me from problems with taking prescription medicines.							
In general, it is							

safe to take prescription medicines.							

General Attitude toward DTC Advertising

2. Listed below are statements that people make about prescription medicine advertising. Please indicate your level of agreement or disagreement with each statement.

[Randomize statements]	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Agree	Strongly Agree
Advertising prescription medicines directly to consumers benefits consumers.							
Advertisements for prescription medicines are a bad idea.							
Prescription medicines should not be advertised directly to consumers.							
I like to see advertisements about prescription medicines.							
Prescription medicine ads provide useful information to consumers.							

Health Condition Involvement

3. Please rate how interested you are in the subject of allergies. Would you say information on allergies is…

Unimportant	____:____:____:____:____:____:____	Important
Of no concern to me	____:____:____:____:____:____:____	Of concern to me
Means nothing to me	____:____:____:____:____:____:____	Means a lot to me
Doesn't matter to me	____:____:____:____:____:____:____	Matters to me
Insignificant	____:____:____:____:____:____:____	Significant

4. Based on what you know about allergies, how serious do you consider allergies to be?

1	2	3	4	5	6	7
Not at all serious						Very serious

You have completed the first portion of the study. Your code is XXXX. Please be sure to bring this code with you for your appointment to complete the second portion of the study at the computer lab. If you have any questions about the study, please contact the Principal Investigator of the study via email, jgerardball@yahoo.com.

MAIN EXPERIMENT QUESTIONNAIRE

Welcome and thank you for participating in the study. Before you start, we want you to read the following instructions carefully.

In this study, we are interested in finding out how consumers respond to advertisements for prescription medication advertising. We'll first ask you to view a print advertisement on the computer screen and then you will be asked a series of questions about your response to the ad. Please read each question carefully. All of the information you provide will be kept confidential and will not be used to identify you individually.

As indicated in the Informed Consent Form, your participation is voluntary and you are free to withdraw from the study at any time without penalty.

Once you complete the study, you will be asked to provide information necessary to give you proper extra course credit. Please click on CONTINUE below to start the study.

Ad Exposure

The following screen will show an advertisement from the pharmaceutical company Dantrix for its prescription allergy medication, Respirex. Please review this ad and then continue on to the next screen to answer questions about the ad.

[Show test ad]

Thought Listing

1. What thoughts or feelings went through your mind when you saw the ad? Anything else?

Level of processing

2. Thinking about when you viewed the ad, please indicate below your level of agreement or disagreement with the following statements.

	Disagree Strongly	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Agree	Agree Strongly
I paid attention to the advertisement for Respirex that I saw.							
I thought a lot about the advertisement for Respirex that I saw.							
When I saw the advertisement for Respirex, I tried to figure out what the ad was about.							

Emotional Response Questionnaire

3. To what extent did the ad lead you to experience the following emotions?

Randomize list	Not at all						Extremely
Secure							
Confident							
Hopeful							
Cautious							
Uneasy							
Anxious							
Frightened							
Irritated							
Angry							
Sad							
Contemptuous							
Cheerful							
Glad							
Comforted							

Ad Credibility

4. To what extent would you say the ad you just saw is…

-3	-2	-1	0	1	2	3
Unbelievable						Believable

-3	-2	-1	0	1	2	3
Biased						Unbiased

-3	-2	-1	0	1	2	3

Unconvincing						Convincing

Trust in Advertiser

5a. Based on the ad you just saw, please indicate the extent to which you agree or disagree with each of the following statements about Dantrix, the corporation that manufactures Respirex.

Randomize statements	Disagree Strongly	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Agree	Agree Strongly
Dantrix is trustworthy.							
Dantrix will keep its promises and commitments.							
I do not doubt the honesty of Dantrix							
Dantrix can be relied upon.							
Dantrix keeps its customers' best interests in mind.							
Promises made by Dantrix are likely to be reliable.							
I expect that Dantrix puts customers' interests							

before their own.
I expect that Dantrix will keep promises they make.
I expect that Dantrix is well-meaning.
I expect I can count on Dantrix to consider how their actions affect me.
I expect that the advice given by Dantrix is their best judgment.
I expect the intentions of Dantrix to be benevolent.
Dantrix is competent
Dantrix knows about prescription medicine
Dantrix knows how to provide the information that is needed

5b. How much do you trust Dantrix based on the ad you just saw?

-3	-2	-1	0	1	2	3
Do not trust at all						Absolutely trust

Attitude toward ad

6. Based on the ad you just saw, for each pair of words below, please select the corresponding number that adequately describes your overall evaluation of the **ad**.

-3	-2	-1	0	1	2	3
Negative						Positive

-3	-2	-1	0	1	2	3
Unfavorable						Favorable

-3	-2	-1	0	1	2	3
Dislike						Like

Brand Trust

7. Based on the ad you saw, to what extent to you agree or disagree with each of the statements below regarding your perceptions of Respirex?

[Randomize statements]	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Agree	Strongly Agree
I would rely on this brand							
I trust this brand							
This is an honest brand							
I feel confidence in this brand*							

Ad-Related Brand Attitude

8. Based on the ad you just saw, for each pair of words below, please select the corresponding number that adequately describes your overall evaluation of **Respirex,** the medication being advertised.

-3	-2	-1	0	1	2	3
Negative						Positive

-3	-2	-1	0	1	2	3
Unfavorable						Favorable

-3	-2	-1	0	1	2	3
Dislike						Like

Intended Behavioral Responses

9. Based on the ad you just saw, how likely would you be to do the following activities if you were interested in a new medication to treat allergies?

	Extremely unlikely	Very unlikely	Somewhat unlikely	May or may not	Somewhat likely	Very likely	Extremely likely
Information-seeking behaviors							
Ask my doctor for more information about **allergies** or **Respirex**							
Ask health care providers other than my doctor (e.g., pharmacists, nurses, etc.) for more information about							

allergies or **Respirex**							
Consult media sources (e.g, the Internet, books, magazines) for more information about **allergies** or **Respirex**							
Talk to my friends or family for more information about **allergies** or **Respirex**							
Drug acquisition behaviors							
Request a prescription for **Respirex** from my doctor							
Insist that my doctor give me a prescription for **Respirex**							
Fill a prescription for **Respirex** right away if my doctor gave me one and begin taking it as							

directed							
Recommend **Respirex** to a friend or family member who has allergies							

Perceived Manipulative Intent

10a. Please rate your perceptions of the ad you just saw using the following statements.

	Disagree Strongly	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Agree	Agree Strongly
The way this ad tried to persuade people seems acceptable to me.							
The advertiser tried to manipulate the audience in ways I do not like.							
I was annoyed by this ad because the advertiser seemed to be trying to inappropriately manage or control the consumer audience.							
I didn't mind this ad; the advertiser tried to be persuasive without being							

excessively manipulative.
The ad was fair in what was said and shown.

10b. I think that this advertisement was…

-3	-2	-1	0	1	2	3
Unfair						Fair

Perceived Informativeness

11. How much do you agree or disagree with the following statements?

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Agree	Strongly Agree
The ad provided enough information to decide whether I should discuss Respirex with a doctor							
The information in the ad would help me make my own decision about Respirex							

Risk/benefit Balance of ad

(Randomize order of 12a and 12b)
12a. In the description you just read, how much information about the **side effects** of the medication do you think was provided?

Very little	____:____:____:____:____:____:____	A lot

12b. In the description you just read, how much information about the **benefits** of the medication do you think was provided?

Very little	____:____:____:____:____:____:____	A lot

12c. How would you rate the communication of side effects risk and benefits of the medication in the ad?

More side effects than benefits	____:____:____:____:____:____:____	More benefits than side effects

Perceived Risks and Benefits

13a. Thinking about your overall perceptions of Respirex based on the description you just read, do you consider Respirex to be…

Very risky	____:____:____:____:____:____:____	Not at all risky
Unsafe	____:____:____:____:____:____:____	Safe
Not at all beneficial	____:____:____:____:____:____:____	Very beneficial
Not effective	____:____:____:____:____:____:____	Very effective

13b. Still thinking about Respirex, how much do you agree or disagree with the following statements?

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Agree	Strongly Agree
The risks and negative effects seem reasonable compared to the benefits and positive effects of Respirex							
The benefits and positive effects of Respirex outweigh the risk and negative effects							

Functional and Emotional Benefits in ad

14. How would you characterize the benefits of the medication communicated in the ad?

Primarily functional	_____:_____:_____:_____:_____:_____:_____	Primarily emotional

15a. Please estimate how many side effects of Respirex were mentioned in the ad.

15b. Please estimate how many benefits of Respirex were mentioned in the ad.

Perceived Attribution of side effects disclosure

16. Thinking specifically about the side effects information provided in the ad, please rate your level of agreement or disagreement with the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Agree	Strongly Agree
Dantrix describes the side effects of Respirex in the ad because ultimately the company cares about consumers.							
Dantrix only describes the side effects of Respirex in the ad because regulations force them to provide this information.							
Dantrix provides information about side effects in the ad because it is morally the "right" thing to do.							
Dantrix provides information about side effects in the ad because it creates a positive corporate image.							

17. For each pair of words below, please select the corresponding number that indicates your overall **perceptions** of the ad.

Didn't look like an ad	1 : 2 : 3 : 4 : 5 : 6 : 7	Looked like an ad
Didn't read like an ad	1 : 2 : 3 : 4 : 5 : 6 : 7	Read like an ad
Wasn't an ad	1 : 2 : 3 : 4 : 5 : 6 : 7	Was an ad

18. Before today, had you ever seen the ad we showed you?

☐ Yes ☐ No ☐ Not sure

Demographics

You're almost done! These last questions focus on basic demographics such as age, gender, and ethnicity to help us group your responses with other participants.

C-1 What is your age?

_____ years

C-2 What is your gender?

☐ Male ☐ Female

C-3 What year are you in school?

- Freshman
- Sophomore
- Junior
- Senior
- Graduate student
- Other (*specify*)

C-4 How would you classify yourself? (Select the one that fits best)

African American
American Indian
Anglo American (Caucasian/White)
Asian American
Hispanic American
Multiracial
International
Other

C-5a. Have you ever been diagnosed with allergies?

☐ Yes ☐ No ☐ Not sure

[If 'No' or 'Not sure' at Q.C-5a, skip to Q.C-6a]
C-5b. Have you ever taken any prescription medication for allergies?

☐ Yes ☐ No ☐ Not sure

[If 'No' or 'Not sure' at Q.C-5b, skip to Q.C-5d]
C-5c. Do you currently take prescription medication for allergies?

☐ Yes ☐ No ☐ Not sure

C-5d. Overall, how severe do you consider your allergies to be?

1	2	3	4	5	6	7
Very mild			Moderate			Very severe

C-6a. Has a friend or family member ever been diagnosed with allergies?

☐ Yes ☐ No ☐ Not sure

[If 'No' or 'Not sure' at Q.C-6a, skip to closing]
C-6b. Has a friend or family member ever taken a prescription medication for allergies?

☐ Yes ☐ No ☐ Not sure

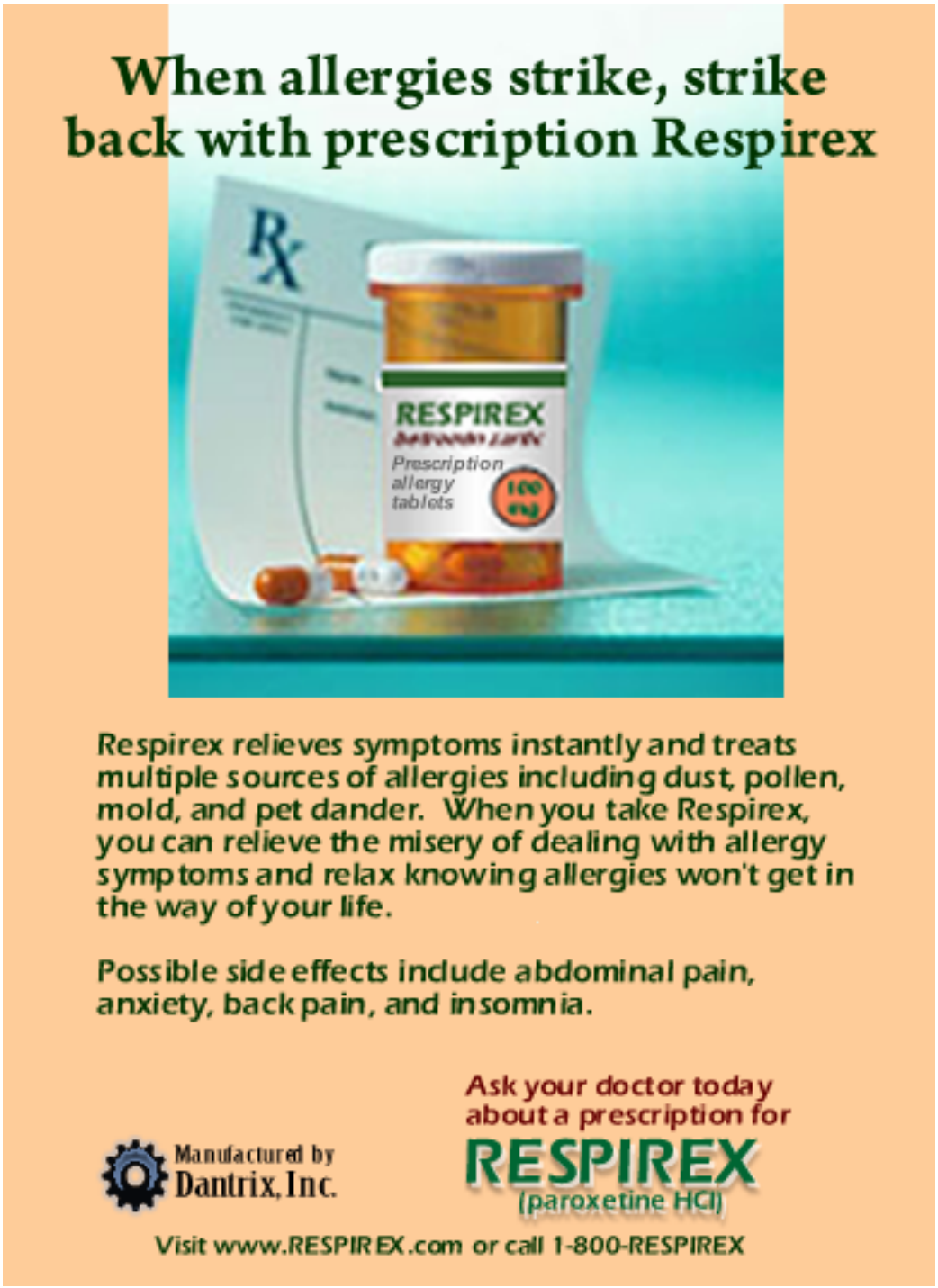
[If 'No' or 'Not sure' at Q.C-6b, skip to closing]
C-6c. Does a friend or family member currently take a prescription medication for allergies?

☐ Yes ☐ No ☐ Not sure

C-7. Please state what you believe to be the purpose of this study.

Appendix C: Sample Test Ad Stimuli

COMBINATION BENEFITS WITH FOUR SIDE EFFECTS:



FUNCTIONAL BENEFITS WITH TWO SIDE EFFECTS:

EMOTIONAL BENEFITS WITH EIGHT SIDE EFFECTS:

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