

PERCEIVED EFFECTS, MEDIATING INFLUENCES, AND BEHAVIORAL
OUTCOMES OF DIRECT-TO-CONSUMER PRESCRIPTION DRUG
ADVERTISING: APPLYING THE THIRD-PERSON EFFECT FRAMEWORK

by

JISU HUH

(Under the Direction of Leonard N. Reid)

ABSTRACT

Direct-to-consumer prescription drug advertising (DTCAd) is a growing, yet unique form of product advertising about which research evidence is emerging. This dissertation was undertaken to explore questions about perceived DTCAd effects and the relationships of those perceptions and other perceptual, attitudinal, and demographic variables to two specific behavioral outcomes (support for regulation and patient behaviors), using the third-person effect framework.

A mail survey of 600 randomly selected adults was executed to address nine hypotheses and three research questions. 264 useable questionnaires were returned.

Among other things, the research found:

- The third-person DTCAd effect is a multidimensional construct. Four DTCAd-effect factors emerged from respondents' perceptions of DTCAd effects.
- Respondents believed that DTCAd had more influence on other people's behavior than on their own behavior.
- Respondents differentiated between the negative and positive DTCAd effects, and perceived negative DTCAd effects to be more pronounced in other people's behavior than in their own behavior.

- Perceived DTCAd importance, prescription drug use, perceived DTCAd credibility/informativeness, and global DTCAd attitude were negatively associated with third-person DTCAd effects.
- Perceived health and DTCAd recognition were positively associated with third-person DTCAd effects.
- Ability of the third-person DTCAd effect to predict support for DTCAd regulation did not vary by global DTCAd attitude. When global DTCAd attitude was controlled for, third-person DTCAd effects did not predict support for DTCAd regulation.
- Older, employed, less educated respondents, who disliked DTCAd, but who perceived themselves more familiar and knowledgeable of DTCAd were more likely to support DTCAd regulation. Those who perceived DTCAd as credible were less likely to support DTCAd regulation.
- The third-person effect associated with the DTCAd factor, “learning & involvement,” was a significant negative predictor of patient behavior.
- Perceived DTCAd importance and respondent race were significant positive predictors of patient behavior.
- Ability of third-person DTCAd effects to predict DTCAd-targeted patient behavior did not vary by respondents’ global DTCAd attitudes. No matter how much the respondents liked or disliked DTCAd, those who perceived greater third-person DTCAd effects were less likely to engage in ad-targeted patient behaviors.

The significance of the results is discussed relative to the research literature.

Methodological imitations are presented, followed by implications for advancing DTCAd research.

INDEX WORDS: DTC prescription drug advertising, third-person effect, advertising effects, pharmaceutical advertising.

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DEDICATION

This dissertation is dedicated to my dear husband, Taejong Yang, whose love is
the source of my strength and my life.

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When I first came to Athens, Georgia, in 1998, I never imagined I would have come this far. It has been a long and challenging five years. Completion of my graduate study and this dissertation would never have been possible without the assistance and support of many wonderful advisers, mentors, and friends.

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CHAPTER 1

INTRODUCTION TO THE RESEARCH

Direct-to-consumer (DTC) prescription drug advertising is a relatively new marketing phenomenon. Until the early 1980s, most marketing efforts by pharmaceutical manufacturers concentrated on creating and maintaining supply-chain demand for their prescription drugs (Holtz, 1998). If advertising was used at all in a manufacturer's marketing program, it took the form of trade advertising directed at physicians and pharmacists and was used to deliver information that would work with other promotional tools to educate, persuade, and help sell advertised drugs to physicians and pharmacists.

In less than twenty years, however, DTC drug advertising has dramatically changed the way prescription drugs are marketed. Today, DTC prescription drug advertising is a mainstay of pharmaceutical marketing and is considered "any promotional effort by a pharmaceutical company to present prescription drug information to the general public in the lay media" (Wilkes, Bell, and Kravitz 2000, p. 112).

In marketing terms, prescription drug manufacturers' growing reliance on DTC advertising dramatically altered the seller-buyer dynamic of healthcare marketing, transforming manufacturers' once predominant "push promotion" strategy to a combination of a "push/pull" strategic mix. Before DTC advertising, the pharmaceutical manufacturer relied on promotional tools, including direct-to-physician advertising, to stimulate demand for prescription drugs by selling almost exclusively to physicians. If

the promotion worked effectively, a particular chain of events would occur – if successfully persuaded, physicians would prescribe the promoted brand of drug to patients and thus cause sales and market share to grow.

The introduction of DTC advertising brought the physician's patient, the consumer, into the brand stimulation equation, eroding some of the physician's market control and giving prescription drug manufacturers more control of the marketplace. Where once the manufacturer was at the total mercy of the physician, DTC advertising put the prescription drug manufacturer in a position to exert some influence in the patient-doctor relationship. DTC advertising provided a means of direct contact with the end-user of prescriptions drugs, the doctor's patient. Even though the physician still retained the ultimate power "to-prescribe or not-to-prescribe," DTC drug advertising empowered the patient with information, once the exclusive province of the physician. If DTC advertising performed as designed, a different chain of events would occur: armed with ad-supplied information, the patient was now in a position to engage the doctor in a discussion about a prescription drug and even to ask that the drug be prescribed or an existing prescription be changed. As with all consumer advertising, DTC advertising gave the prescription drug manufacturer a new form of marketing power – the opportunity to stimulate demand at the patient level and thereby the potential to pull the promoted drug through the distribution channel.

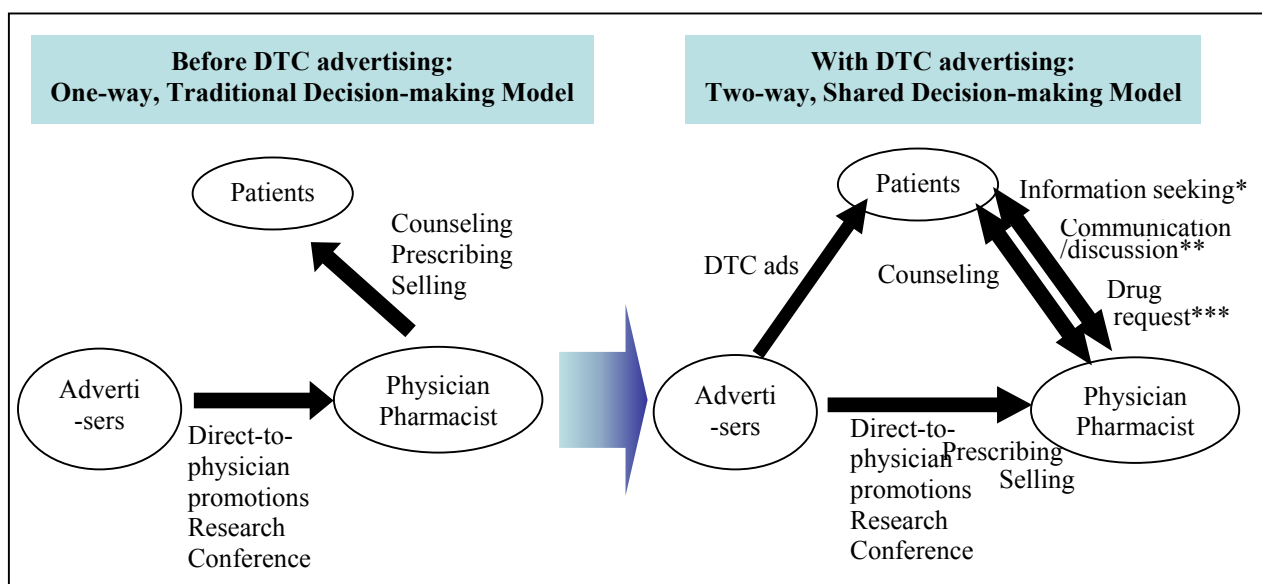
DTC prescription drug advertising is very different from other forms of consumer advertising. The product cannot be purchased without cooperation of healthcare professionals (e.g., doctor, pharmacist, and insurer, HMOs, etc.) and the final purchase decision, while made by the patient, is not possible without physician approval.

Consumers are expected to take one or more of the following actions after exposure to DTC prescription drug ads:

- Seek further information from media and interpersonal sources (e.g., friends and family) (Williams and Hensel, 1995; Bell, Kravitz, and Wilkes, 1999; FDA, 1999; Pfizer, 2000; Kaiser Family Foundation, 2001b; Balazs, Yermolovich, and Zinkhan, 2002; Huh and Becker, 2002).
- Talk with their doctors about the advertised drug (Perri and Dickson, 1988; Bell, Kravitz, and Wilkes, 1999; FDA, 1999; Kaiser Family Foundation, 2001b; Balazs, Yermolovich, and Zinkhan, 2000; Huh and Becker, 2002).
- Talk with their doctors about ad-conveyed health conditions and treatments (Kaiser Family Foundation, 2001b; Balazs, Yermolovich, and Zinkhan, 2002).
- Ask their doctors to prescribe the advertised drug or change an existing prescription (Perri and Dickson, 1988; Peyrot, Alperstein, Van Doren, and Poli, 1998; *Prevention* and APA, 1999; Pfizer, 2000; Kaiser Family Foundation, 2001b).
- Seek information from pharmacists about advertised drugs (Bell, Kravitz, and Wilkes, 1999; FDA, 1999; *Prevention* and APA, 1999; Pfizer, 2000).

According to Deshpande, Menon, Perri, and Zinkhan (2003), DTC drug advertising is likely associated with the shift from the traditional “paternalistic process” of healthcare decision-making to a more “share decision-making process.” In their view,

“The process of shared decision-making is characterized by the equal involvement of the patient in the decision-making process. The information transfer in this process is bi-directional, involving both the education of the patient about the disease and therapeutic outcomes by the physicians and the expression of therapeutic preferences by the patient to the physician. In the course of this process, both physician and patient weigh the risks and benefits of the therapeutic options under consideration, and they reach a collaborative decision. This process may lead to increased patient satisfaction (due to the interaction between patient and physician), increased knowledge of the disease and therapeutic options and better treatment outcomes such as compliance and adherence to drug dosage regimens.” (p. 5-6)



* Information seeking: seeking further information from media and interpersonal sources.

** Communication/discussion: talking with a doctor or a pharmacist about the advertised drug or ad-conveyed health conditions and treatments

*** Drug request: asking a doctor to prescribe the advertised drug or change an existing prescription

Figure 1. The Impact of DTC Advertising on a Shift in Decision-Making
(adapted from Deshpande, Menon, Perri, and Zinkhan, 2003)

Figure 1 presents the two decision-making models and the expected outcomes of DTC ads on consumers. Research has examined the influence of DTC drug advertising on behavioral outcomes; however, these studies have produced mixed findings and the influence of various moderating factors remains unclear.

Purpose of the Research

To date, the existing studies on DTC drug advertising have provided a valuable baseline for understanding the effects of DTC drug ads on consumers, as well as how consumers and other stakeholders in healthcare react to DTC advertising. However, many

questions remain unanswered, especially about the effects of DTC drug advertising on the perceptual, cognitive, affective, and behavioral reactions of consumers.

Research reported in this dissertation was undertaken to explore unanswered questions about consumer perceptions of DTC drug advertising and the relationship of consumer perceptions and other factors to ad-expected behavioral outcomes, using research on third-person effect as an empirical framework. The third-person effect framework guided the research design, focusing specifically on (1) perceived third-person effects of DTC drug advertising (i.e., how consumers perceive the effects of DTC drug advertising on themselves and on others), (2) the mediating and moderating influence of select demographic, perceptual, and attitudinal variables (i.e., perceived credibility and informativeness of DTC ads, knowledge of DTC ads, attitude toward DTC ads) on consumer perceptions and behavioral outcomes, and (3) relationships between perceived third-person effects and consumer reactions to DTC drug advertising (i.e., how those perceived effects are linked to support for the regulation of DTC prescription drug advertising and to DTC-ad-expected behavioral outcomes). Figure 2 graphically summarizes the conceptual framework of the examined variables and expected relationships, which are presented later in Chapter 3 as hypotheses and research questions.

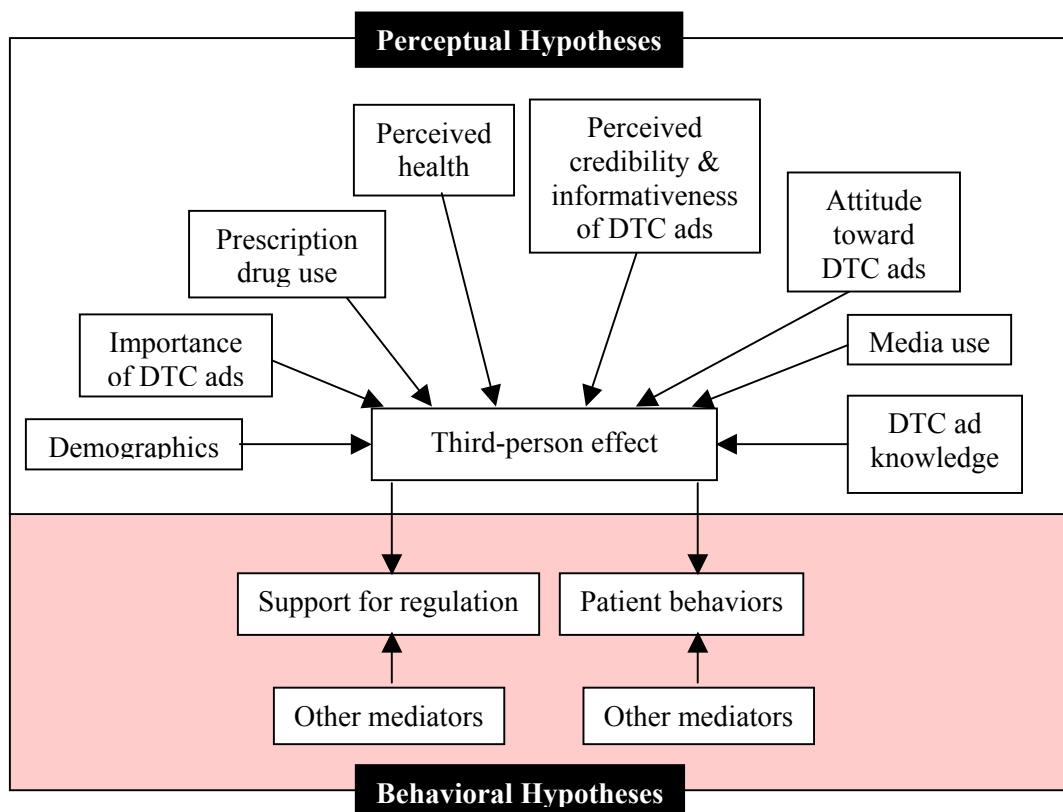


Figure 2. Overall Conceptual Framework of the Study

Even though studies on DTC prescription drug advertising have increased over the past ten years, no study have examined the perceived effect of DTC ads from the third-person effect framework and few third-person effect studies have examined advertising as a form of mass communication. The specific objectives of the study are:

Objective 1 – to determine if the third-person effect framework is a viable conceptual foundation for studying effects of DTC prescription drug advertising; that is, to examine if third-person effects operate in the DTC drug ad setting by determining whether consumers perceive differences in the effects of DTC drug ads on themselves and on others.

Objective 2 – to determine if consumers’ demographic characteristics, media use, health-related characteristics (i.e., perceived health condition, prescription drug use), perceptual variables (i.e., perceived credibility and informativeness of DTC ads, knowledge of DTC ads, and importance of DTC ads as an information source), and consumer attitude toward DTC drug advertising mediate consumer perceptions of DTC drug ad effects.

Objective 3 – to determine if and how perceived effects of DTC drug ads influence people’s support for regulation of DTC drug advertising and DTC-ad-targeted patient behaviors.

Objective 4 – to determine if consumers’ demographic characteristics, media use, health-related characteristics (i.e., perceived health condition, prescription drug use), perceptual variables (i.e., perceived credibility and informativeness of DTC ads, knowledge of DTC ads, and importance of DTC ads as an information source), and consumer attitude toward DTC drug advertising mediate consumer reactions to DTC drug ads (i.e., support for regulation of DTC drug advertising and DTC-ad-targeted patient behaviors).

The third-person effect framework guided the research design, focusing specifically on perceived third-person effects of DTC prescription drug advertising, the mediating influence of selected demographic, perceptual, and attitudinal variables (e.g., perceived credibility and informativeness of DTC drug ads, knowledge of DTC ads, importance of DTC ads as an information source, and attitude toward DTC ads), and

relationships between third-person effect and consumer behaviors (support for regulations of DTC ads and DTC-ad-targeted patient behaviors).

The third-person effect perspective suggests that people perceive a media message to have greater effects on others, or the third person, than on themselves, and the perceived media effect may influence people's behavior (Davison, 1983). The third-person effect has been demonstrated to operate in various media content, including news coverage of controversial events (Cohen, Mutz, Price, and Gunther, 1988; Perloff, 1989; Gunther, 1991), television violence (Hoffner and Buchanan, 1999; Hoffner, Plotkin, Buchanan, Anderson, Kamigaki, Hubbs, Kowalczyk, Silberg, and Pastorek, 2001), sexually explicit media content (Gunther, 1995; Rojas, Shah, and Faber, 1996), advertising and public service announcements (PSAs) (Gunther and Thorson, 1992; Youn, Faber, and Shah, 2000), and political campaigns (Cohen and Davis, 1991; Leshner, Holbert, and Yoon, 2002).

Although the third-person effect has generated a considerable body of research and contributed to the way researchers think about media effects, most of third-person effect studies have dealt with negative or socially undesirable media content (e.g., media violence and pornography). Relatively few studies have focused on advertising and no study has examined the third-person effect in relation to DTC prescription drug advertising. By demonstrating evidence of the third-person effect in DTC prescription drug advertising, the research will contribute to the empirical body of mass communication research, adding another very different message type to the third-person effect research stream.

This study also will expand the knowledge boundary of the behavioral component of the third-person effect framework. Most existing studies have examined the relation between perceived media effect and people's support for media censorship (Gunther, 1995; McLeod, Eveland, and Nathanson, 1997; Hoffner and Buchanan, 1999; Youn, Faber, and Shah, 2000). While some scholars have explored perceived advertising effects regarding public service announcements (PSAs), and political campaigns and voting intention, research on the association between the third-person effect and real effects of general product advertising is extremely rare. This study will provide valuable insight as to how third-person effects influence consumers' perceptual, cognitive, and behavioral reactions to advertising.

Umphrey (2002) suggests that the third-person effect can significantly contribute to our understanding of what occurs in consumers' minds when they are exposed to ads. In some cases, consumers may believe that other people are more affected by an ad and in other cases they may believe that they themselves are more influenced. These are all perceptions that take place in the consumer's mind and may or may not be an accurate reflection of the reality. Conventional wisdom suggests that consumers act in the real world on perceptions, whether accurate or not.

The origin, assumptions, and research findings of the third-person effect framework are reviewed more fully in Chapter 2. However, the research design, research questions and hypotheses were guided by three specific considerations.

Perceptual Differences

The third-person effect framework involves two general hypotheses: the perceptual component hypothesis and the behavioral component hypothesis. The

perceptual hypothesis predicts that people perceive greater media effects on other people than on themselves. Therefore, the research explores whether consumers perceive differences between the effects of DTC prescription drug advertising on themselves and on others. Based on third-person effect study findings, it is hypothesized that consumers will attribute more effects of DTC drug ads on others than on themselves.

Mediators of Perceived Effects

A number of third-person effect studies have shown that the magnitude of the third-person effect is mediated by a host of factors including demographic factors (Rucinski and Salmon, 1990; Tiedge, Silverblatt, Havice, and Rosenfeld, 1991; Salwen, 1998); media use (Rucinski and Salmon, 1990; Salwen, 1998); level of knowledge about an issue (Driscoll and Salwen, 1997; Price, Huang, and Tewksbury, 1997; Glynn and Ostman 1998); media content characteristics (Gunther and Mundy, 1993; Duck, Terry, and Hogg, 1995); and attitudes toward the specific media content or issues (Gunther and Mundy, 1993; Brosius and Engel, 1996; Hoffner, Plotkin, Buchanan, Anderson, Kamigaki, Hubbs, Kowalczyk, Silberg, and Pastorek, 2001).

Therefore, the research examines whether perceived third-person effects of DTC prescription drug advertising are influenced by individual-specific demographic, perceptual, and attitudinal factors. It tests a set of hypotheses on relations between third-person effect and consumer's level of DTC-drug-ad knowledge, importance of DTC ads as an information source, perceived health, prescription drug use, media use, and attitudes toward DTC drug advertising.

Behavioral Outcomes

The behavioral aspect of the third-person effect framework examines how people's perceived media effects relate to their behaviors. Behavioral outcomes of communications have not drawn much attention in third-person effect research except for research on support for media censorship. Researchers have demonstrated that the magnitude of third-person effect predicts support for restrictions of various types of media content such as sexually-explicit content (Gunther, 1995; Wu and Koo, 2001), anti-social rap lyrics (McLeod, Eveland, and Nathanson, 1997), and gambling ads (Youn, Faber, and Shah, 2000). However, as Umphrey (2002) suggests, the third-person effect perspective holds a great promise in the area of advertising effect research, particularly if perceived third-person effects can be linked to advertising-prompted behavioral outcomes. Therefore, this study examines whether behavioral outcomes associated with DTC prescription drug ads are influenced by perceived third-person effects of DTC drug ads. In addition, the study tests the relationship between third-person effect and support for regulations of DTC drug advertising practice.

A survey was conducted among a randomly drawn sample of consumers to explore these questions, formally stated as a series of research questions and hypotheses. The full details of the survey design are described in Chapter 4; the hypotheses and research questions are presented in Chapter 3.

The remainder of this chapter provides detailed background information on how DTC prescription drug advertising started and grew. Various arguments – both pro and con – surrounding the DTC-drug-advertising phenomenon are also presented.

Background

The Rise and Growth of DTC Prescription Drug Advertising

The Food and Drug Administration (FDA) has had jurisdiction over DTC prescription drug advertising since 1962 when the Kefauver-Harris amendments to the Federal Food, Drug, and Cosmetics Act of 1938 transferred regulatory control from the Federal Trade Commission (FTC) to the FDA (Montagne, 1992). The FDA, however, did not establish any rules specifically designed to regulate DTC prescription drug advertising because product-specific DTC advertising was simply nonexistent until the 1980s.

The first product-specific DTC prescription drug advertising campaign was launched in 1981 by Boots for its ibuprofen product, Rufen (Levitt, 2001). Other pharmaceutical manufacturers including Eli Lilly & Company, and Merck, Sharp & Dohme quickly followed suit with DTC campaigns for their prescription drug brands (Sheffet and Kopp, 1990; Parker and Delene, 1998; Pines, 1999).

In 1983, the FDA requested a voluntary moratorium from the pharmaceutical industry on DTC prescription drug advertising to examine whether another set of guidelines was needed in addition to regulations on direct-to-physician advertising. The moratorium was lifted two years later without substantive changes in the existing FDA policy on advertising directed to healthcare professionals (Sheffet and Kopp, 1990). The FDA required all DTC prescription drug ads to meet the same legal criteria as those directed at healthcare professionals (56 Fed. Reg. 36,677, 1985).

In 1985, the FDA lifted the ban on DTC prescription drug advertising. Although the ban was lifted, pharmaceutical manufacturers did not rush to embrace the advertising

practice (Rogers, 1986) due to the strict FDA regulations. According to FDA rules, all DTC ads mentioning both the advertised brand name and the treated disease had to present a fair balance of the benefits and risks involved with the drug, as well as convey a “brief summary” of risk information including major and minor side effects, contraindications, and benefits (Holtz, 1998).

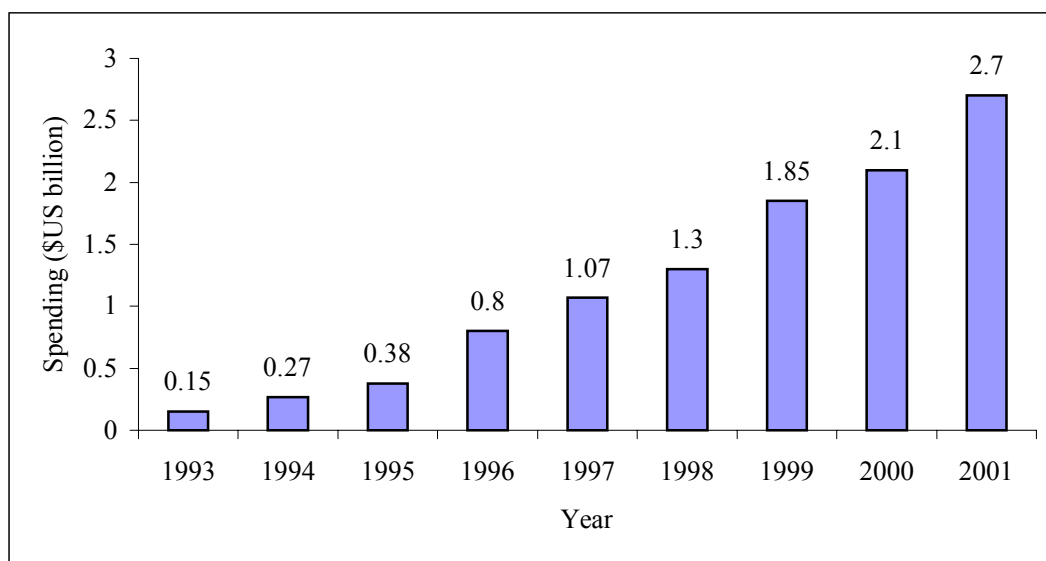
Meeting FDA requirements for advertising in lay media, especially in broadcasting, was difficult. Consequently, pharmaceutical manufacturers took two different approaches: (1) told consumers about certain medical conditions recommending that they consult a doctor without mentioning a specific drug name or; (2) reminded consumers of the brand of the advertised drug without information on treated diseases. For example, when one of the early DTC advertised brands, “Rogaine,” aired a television commercial aimed at people with hair loss, it did not mention the brand name but only urged consumers to see a doctor (Alperstein and Peyrot, 1993).

Until the late 1990s, the pharmaceutical industry communicated to consumers mainly through these non-brand/non-disease ads; the ads were designed to increase public awareness of certain medical conditions and to encourage or remind consumers to seek medical treatments. From the pharmaceutical industry perspective, this type of advertising helped expand total market size; from the public health perspective, it drove consumers to seek proper medical care when needed (Shaw, 2001). Pharmaceutical manufacturers continued to rely primarily on communicating brand-specific information about their brands directly to healthcare professionals who subsequently disseminated that information to patients or end-users.

DTC advertising took an important turn in 1997 when the FDA reviewed its policy and issued new guidelines for broadcast DTC advertising: “major statement provision” and “adequate provision.” The “major statement provision” distinguished between print and broadcast advertising, recognizing that broadcast advertising couldn’t convey all of a drug’s side effects and contraindications in a limited timeframe. Under this provision, broadcast advertisements were required to include only major side effects and contraindications instead of an entire list of all potential adverse reactions. The “adequate provision” allowed broadcast advertisers to avoid the “major statement provision” if they could provide adequate alternative sources for dissemination of the approved or permitted package labeling in connection with the broadcast presentation. The most commonly used alternative information sources were toll-free telephone numbers and manufacturer-sponsored drug websites (Holtz, 1998; Wilkes, Bell, and Kravitz, 2000). In 1999, the FDA finalized these guidelines for DTC advertising transmitted via broadcast media.

Since 1999, DTC prescription drug advertising has continued to grow at a rapid pace. Today, a viewer cannot watch television, read a magazine or the morning newspaper without encountering an ad promoting a prescription drug.

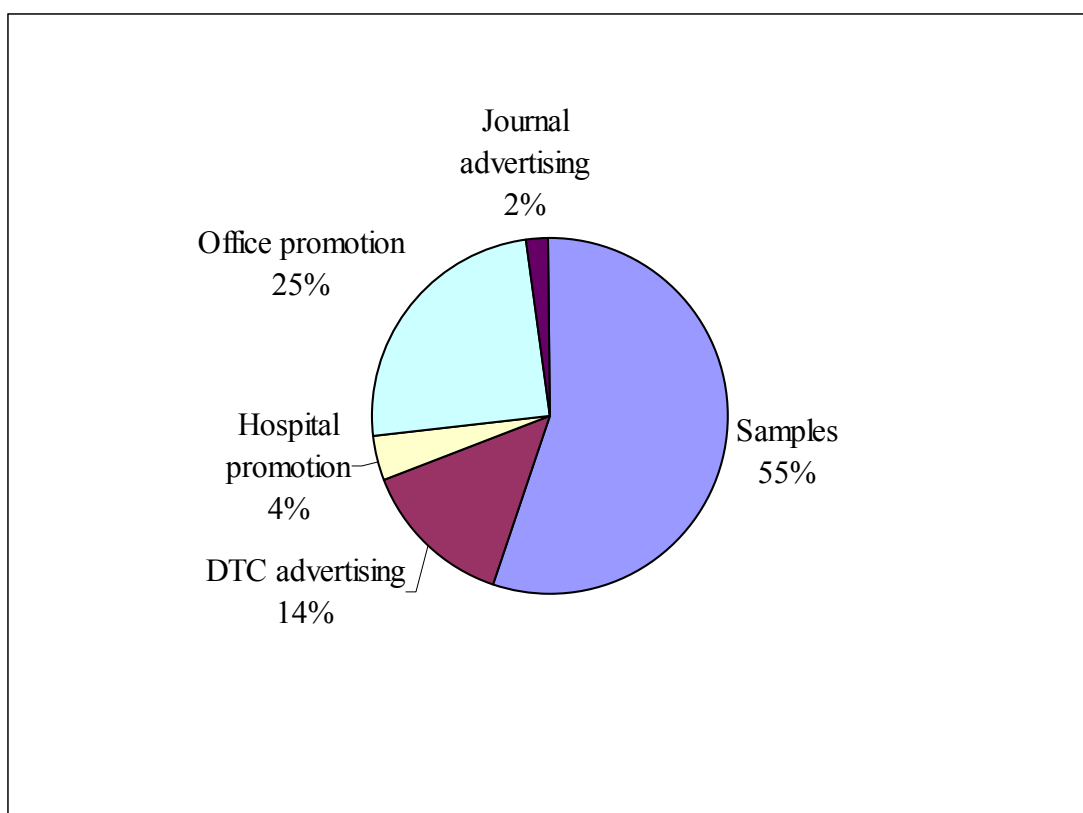
In the late 1990s, broadcast advertising expenditures soared and DTC prescription drug advertising became one of the fastest growing advertising categories (Davis, 2000) (See Figure 3).



Source: IMS Health Analysis data from Competitive Media Reporting (quoted from Findlay, 2001, p. 111), IMS Health (quoted from Blankenhorn and Lipson, 2002, p. 58)

Figure 3. DTC Advertising Spending, 1993-2001

DTC prescription drug advertising spending reached more than \$2.1 billion in 2000, increasing about 17 percent from 1999 (Appleby, 2001). In 2001, the total expenditures on DTC drug advertising tripled from 1996 spending, reaching \$2.7 billion or fourteen percent of total pharmaceutical promotional spending (Blankenhorn and Lipson, 2002; Cohen, 2002) (See Figure 4). Most experts expect ad spending to continue and some predict that total DTC advertising expenditures by prescription drug manufacturers may reach \$7.5 billion by 2005 (Wilkes, Bell, and Kravitz, 2000).



Source: IMS Health, Integrated Promotional Services, and CMR 2002 (quoted from Blankenhorn and Lipson, 2002, p. 58)

Figure 4. Total Promotional Spending in the Pharmaceutical Industry by Type

In addition to the phenomenal growth in advertising spending, DTC prescription drug advertising has also shown remarkable diversification in the range of media used to communicate to consumers. Until the FDA's 1997 new guidance allowed broadcast advertising without summary information on the drug's benefits and risks, most DTC advertising efforts were concentrated in the print media (Findlay, 2001). Recently, however, spending for television advertising has surpassed print advertising expenditures (Findlay, 2001). In 1999, television advertising spending reached 61 percent of the pharmaceutical industry's total expenditures on DTC drug advertising (IMS Health Press Release, 2000); the expenditures reached 64 percent in 2000, making television

advertising the most rapidly growing form of DTC drug advertising (Kaiser Family Foundation, 2001a). Pharmaceutical manufacturers also increased their use of the Internet and the Web as an advertising channel in the 1990s (Tripp and Straub, 2001). Some experts estimate that pharmaceuticals are the fourth largest product category advertised on the Internet (Wilke, 1998).

The growth in DTC drug advertising has been driven by relaxed FDA regulations and structural changes in the healthcare market, especially the adoption of managed care systems. In the managed care environment, pharmaceutical companies increasingly face Health Maintenance Organizations (HMOs) and Pharmacy Benefits Managers (PBMs), organizations that typically use formularies to restrict doctors' ability to freely prescribe drugs. Managed care organizations usually prefer cheaper generic drugs to more expensive brand name drugs and as a result, limit the ability of pharmaceutical companies to influence physicians through traditional marketing tools. As a result, pharmaceutical companies have shifted marketing focus from direct-to-physician marketing to direct-to-consumer marketing in an attempt to regain control of the retail prescription drug market (Hunt, 1998; Holtz, 1998).

The exponential growth in DTC advertising spending is also linked to consumers, who have shown increasing interests in prescription drug advertising. A survey by *Prevention Magazine* and the American Pharmaceutical Association (APA) (1999) reported that 31 percent of respondents had talked with their doctors about a prescription drug they had seen advertised. Research by the FDA (1999) showed that about three-quarters of the respondents had been exposed to an ad for a prescription drug and about 25 percent of them asked their doctors about the medical conditions they had seen in the

ad: 13 percent of those who were exposed to DTC drug ads asked their doctors for a specific drug brand. A recent survey by Sengupta (2002) also demonstrated consumers have grown more positive about DTC drug advertising over time.

Argument Against and For DTC Prescription Drug Advertising

Increased commitment of pharmaceutical manufacturers to DTC prescription drug advertising has generated a great deal of controversy among legislators, physicians, other healthcare professionals, drug manufacturers, regulatory organizations, advertising experts, and consumer advocates. Critics claim that DTC prescription drug advertising results in a number of negative consequences, including:

- Confusing or misleading consumers due to inadequate information (Morris, Brinberg, Klimberg, Rivera, and Millstein, 1986a; IMS Health, 1998; Kopp and Bang, 2000; Wilkes, Bell, and Kravitz, 2000; Coney, 2002).
- Undermining physician authority and weakening the doctor-patient relationship (Alperstein and Peyrot, 1993; Hollon, 1999).
- Inducing unnecessary consumer demand for prescription drugs (Hollon, 1999; Siegel, 2000).
- Causing pharmacy costs to rise (Siegel, 2000; Findlay, 2001; National Institute for Health Care Management, 2001).
- Causing people to misuse and abuse unneeded medicine (Findlay, 2001).
- Influencing patients to pressure doctors into prescribing advertised drugs (Hollon, 1999; Wilkes, Bell, Kravitz, 2000; Lexchin and Mintzes, 2002).

Supporters of the advertising practice counter that DTC drug advertising produces a number of positive benefits. They argue, for example, that DTC prescription drug advertising:

- Educates consumers about medical conditions and drugs (Morris, Brinberg, Klimberg, Rivera, and Millstein, 1986b; Perri and Nelson, 1987; Sheffet and

Kopp, 1990; Alperstein and Peyrot, 1993; McInturff, 2001; Pfizer, 2001; Calfee, 2002).

- Leads to higher competition and lower prices of prescription drugs (Masson and Rubin, 1986; Calfee, 2002).
- Increases awareness of diseases and treatments (Masson and Rubin, 1986; Siegel, 2000; McInturff, 2001; Pfizer, 2001).
- Leads to better patient compliance and a decrease in adverse medical events (Pfizer, 2000; Siegel, 2000; Calfee, 2002).
- Makes consumers aware of available and more advanced new drugs and treatment options (Parker and Delene, 1998; FDA, 1999; Pfizer, 2000; Pfizer, 2001; McInturff, 2001).
- Prompts consumers to see their doctors and to ask about medical conditions and illnesses (Pfizer, 2000; Findlay, 2001; McInturff, 2001; Kaiser Family Foundation, 2001b; Calfee, 2002).
- Enhances doctor-patient communication by fostering dialogue between patients and doctors (Masson and Rubin, 1986; Morris, Brinberg, Klimberg, Rivera, and Millstein, 1986b; Pfizer, 2000; Pfizer, 2001).
- Leads to better informed and more involved patients (Pfizer, 2000; McInturff, 2001).
- Primes consumers to seek more information on diseases and drugs (Williams and Hensel, 1995; Wilkes, Bell, and Kravitz, 2000; Kaiser Family Foundation, 2001b; Calfee, 2002).

One point that both critics and supporters apparently agree upon is that more empirical research is needed to answer important questions on the practice and effects of DTC prescription drug advertising. As will be chronicled in Chapter 2, past studies have examined a number of issues regarding DTC prescription drug advertising, including:

- Consumer recognition and awareness of DTC drug advertising (Alperstein and Peyrot, 1993; *Prevention Magazine*, 1997; *Prevention Magazine*, 1998; *Prevention Magazine*, 1999; FDA, 1999)

- Consumer attitudes toward DTC drug advertising (Morris, Brinberg, Klimberg, Rivera, and Millstein, 1986b; Perri and Dickson, 1987; Everett, 1991; Deshpande, Menon, Perri, and Zinkhan, 2003; Sengupta, 2002)
- Effects of DTC drug advertising on consumers (Perri and Dickson, 1988; Williams and Hensel, 1995; Peyrot, Alperstein, Doren, and Poli, 1998; FDA, 1999; *Prevention Magazine*, 1999; Balazs, Yermolovich, and Zinkhan, 2000; Kaiser Family Foundation, 2001b; Huh and Becker, 2002)
- Effects of DTC drug advertising on non-consumer stakeholders and the healthcare system (Masson and Rubin, 1986; Blue Cross Blue Shield Association, 1999; Tanouye and Connors, 1999; Siegel, 2000; Wilkes, Bell, Kravitz, 2000; Findlay, 2001; National Institute for Health Care Management, 2001; Zachary, Shepherd, Hinich, Wilson, Brown, and Lawson, 2002)
- Attitudes and behaviors of healthcare professionals toward DTC drug advertising (Avorn, Chen, and Hartley, 1982; Krieger, 1983; Cohen, 1988; Cutrer and Pleil, 1991; Liebman, 1993; Petroshius, Titus, and Hatch, 1995; Lipsky and Taylor, 1997; IMS Health, 1997; IMC Health, 1998; Reardon, 1999; Gonul, Carter, and Wind, 2000; Stavchansky, 2000; Allison-Ottey, Ruffin, and Allison, 2002)
- DTC drug advertising public policy and regulatory issues (Kessler and Pines, 1990; Holtz, 1998; Bell, Kravitz, and Wilkes, 1999; Calfee, 2002; Coney, 2002; Hoek and Gendall, 2002; Lexchin and Mintzes, 2002; Wogalter, Smith-Jackson, Mills, and Paine, 2002)
- Message content of DTC drug advertising (Morris, Brinberg, and Plimpton, 1984; Morris and Millstein, 1984; Morris, Ruffner, and Klimberg, 1985; Morris, Brinberg, Klimberg, Rivera, and Millstein, 1986a; Tucker and Smith, 1987; Morris, Mazis, and Brinberg, 1989; Roth, 1996; Parker and Delene, 1998; Bell, Wilkes, and Kravitz, 2000; Davis, 2000; Kopp and Bang, 2000; Woloshin, Schwartz, Tremmel, and Welch, 2001; Menon, Deshpande, Perri, and Zinkhan, 2003)
- Content and format of DTC websites (Frangos, 2001; Graber and Weckmann, 2002; Huh and Cude, 2002; Macias and Lewis, 2002)

In Chapter 2, these studies are organized and reviewed relative to the various healthcare industry stakeholders: pharmaceutical and advertising industries, physicians and other healthcare professionals, insurance providers, government regulatory agencies,

and end-users, the patients. The arguments and issues listed here were used to create specific items to measure perceived potential effects of DTC drug ads.

Dissertation Chapters and Organization

This chapter has overviewed the nature and scope of DTC prescription drug advertising and introduced the third-person effect framework. Subsequent chapters build upon the overview. Chapter 2 describes the theoretical framework of the third-person effect and reviews the relevant research literature of the third-person effect and on DTC prescription drug advertising. Chapter 3 presents hypotheses and research questions drawn from the research literature. Chapter 4 describes the details of the survey research methodology and Chapter 5 reports the results of the analysis of the collected data relative to the posed hypotheses and research questions. Chapter 6 summarizes and discusses the key research findings, offers empirical and practical implications from the research, and makes recommendations for future research efforts.

CHAPTER 2

REVIEW OF RELEVANT RESEARCH

This chapter reviews the research literature on DTC prescription drug advertising and the third-person effect. As was noted in Chapter 1, DTC prescription drug advertising research is ordered and reviewed in relation to stakeholders: pharmaceutical and advertising industries, healthcare professionals, the health insurance industry, government and regulatory agencies, and consumers. The third-person effect studies are ordered and reviewed based on focus of the research: perceptual and behavioral hypotheses, theoretical explanation of the third-person effect, and contingent conditions and mediating factors. Following the review of two streams of research, the major conclusions suggested by each are summarized and presented.

DTC Prescription Drug Advertising Stakeholders: Positions and Research

The issues surrounding DTC prescription drug advertising involve questions of public health, healthcare costs, corporate responsibility, advertising ethics, physician/patient dynamics, and the consumers' ability to understand and use complicated medical information. Different stakeholders take different positions on these issues, ranging from solid support for the advertising practice from the pharmaceutical and advertising industries to outright opposition to the practice from physicians and the health insurance industry. The following sections describe the positions that stakeholders take on issues and the research used to support their respective positions.

Pharmaceutical and Advertising Industries

Pharmaceutical companies – including those who do not practice DTC advertising extensively – enthusiastically welcomed the FDA’s regulation change in 1997 and have continued their efforts for more relaxed regulations on DTC prescription drug advertising. From the industry point of view, this form of advertising provides an important alternative marketing tool that offsets increasing competition, and declining access and impact of traditional direct-to-physician marketing efforts (Wilkes, Bell, and Kravitz, 2000; Shaw, 2001).

Pharmaceutical companies argue that they have not only a right to free speech, but also the responsibility to educate individuals about drug treatments and to inform people about new products (Holmer, 1999). According to pharmaceutical industry logic, DTC prescription drug advertising is a win-win game for themselves as well as the public. Companies believe DTC drug ads can enhance brand recall, brand loyalty, and sales volume of their drugs. At the same time, they see DTC prescription drug advertising as an opportunity to provide consumers with important information about diseases and treatment options and to encourage them to speak with physicians and to seek necessary care (Anonymous, 2001; Calfee, 2002).

Pharmaceutical manufacturers and their industry partners have conducted a number of consumer studies to support their arguments. For example, Pfizer conducted surveys in 1997 and 2000 to examine consumer attitudes toward DTC drug advertising and behaviors related to information seeking. The 2000 study reported that compared to the 1997 survey results, consumers have increasingly become involved in their healthcare, with 82 percent feeling the need to be more actively involved in the

management of their health and 69 percent actively asking their doctors specific questions about their health. The study also found an increase in the number of consumers with positive views of DTC drug advertising: 62 percent believed that DTC ads made them aware of new treatment options; and 44 percent reported that DTC ads provided them with medical information about which they were unaware. Half of the respondents reported intentions to request from their physicians a specific medication that they had seen advertised (Pfizer, 2000).

Another study sponsored by the Coalition for Healthcare Communication (CHC), a group of advertising agencies and medical publications, analyzed a number of published consumer surveys. The study reported that overall attitudes of consumers toward DTC drug ads were very positive and that DTC prescription drug advertising educated consumers and led them to seek additional information (Calfee, 2002).

The advertising industry has consistently called for reform of the FDA regulations on DTC prescription drug advertising claiming that DTC ads benefit consumers. The industry has made the claims with good reason. A time series analysis of new prescription drug data between 1993 and 1994 demonstrated that a DTC drug advertising campaign was significantly and positively related with the number of prescriptions for the specific drug (Basara, 1996). It is also reported that between 1999 and 2000, U.S. sales of the 50 most heavily advertised pharmaceuticals increased at 2.3 times the rate of all other drugs, and the number of prescriptions for the 50 most heavily advertised DTC pharmaceuticals grew at a rate six times that of other drugs in the same time period (Coney, 2002). These findings strongly suggest that pharmaceutical manufacturers' DTC ad spending pays off.

Healthcare Professionals – Physicians and Pharmacists

Historically, healthcare professionals have exhibited negative attitudes toward DTC prescription drug advertising (Pines, 1999; Stavchansky, 2000). Even though the American Medical Association (AMA) amended its explicit opposition to DTC ads in 1992, the medical community still does not apparently trust DTC prescription drug advertising; many studies have reported mixed views and behaviors of physicians toward DTC prescription drug advertising (Siegel, 2000; Calfee, 2002).

In the early stage of DTC drug advertising, Cutrer and Pleil (1991) surveyed 343 random-selected physicians and found that the majority of physicians perceived that DTC drug advertising would produce negative outcomes for both themselves and their patients, especially confusing consumers and increasing demand for the advertised drugs.

Petroshius, Titus, and Hatch (1995) surveyed 148 physicians about their attitudes toward direct-to-physician and direct-to-consumer advertising for prescription drugs. The study found that although overall physicians' attitudes toward advertising were favorable, their attitudes toward DTC advertising were neutral. Lipsky and Taylor (1997) surveyed 454 family physicians and found that about four-fifths of respondents believed that DTC advertising was not a good idea.

Gonul, Carter, and Wind (2000) compared the perceived value of DTC drug ads among consumers and physicians and found that physicians did not perceive the value of DTC drug ads as favorably as consumers did. More experienced physicians, those who see more patients, or those who have more exposure to DTC drug ads, held more favorable attitudes toward DTC drug advertising.

While accepting the existence of DTC ads, the AMA advocates more studies on the impact of DTC prescription drug advertising. The current AMA policy statement recommends that physicians work with the FDA to ensure a commitment to high advertising standards. The policy also urges physicians to resist patient pressures to prescribe advertised drugs and to engage patients in discussions when requests are made (AMA Policy statement on “Direct-to-Consumer Advertising (DTCA) of Prescription Drugs” from AMA website, <http://www.ama-assn.org/>; Siegel, 2000).

The potential for misinformation and consumer misunderstanding is one of the major concerns in the medical community (Krieger, 1983). Physicians argue that, although patients may get information that was unavailable before DTC ads appeared in lay media, the quality of advertising-conveyed information is questionable and that DTC ads are potentially confusing and misleading to patients (Reardon, 1999; Stavchansky, 2000). A survey conducted by IMS Health (1998) reports that about forty percent of physicians believe that DTC prescription drug ads mostly confuse patients rather than inform them; 64 percent of survey respondents wanted to see DTC advertising decrease or banned.

Physicians also view DTC prescription drug advertising as a challenge to their medical authority and are concerned that DTC advertising may undermine the doctor-patient relationship by causing demand for prescription drugs that may not be necessary or appropriate (Vecchio, 1997; Hunt, 1998; Hollon, 1999; Wilkes, Bell, and Kravitz, 2000). Studies show that DTC prescription drug advertising has potential to alter the roles of patients and doctors by accelerating the trend toward patient involvement. A study of physicians conducted in 1992 found that 88 percent of patients asked for a drug by brand

name, up from 45 percent in 1989 (Liebman, 1993). Other studies also provide evidence that patient pressures and drug promotion possibly have more influence on physicians' prescribing patterns than scientific sources (Avorn, Chen, and Hartley, 1982; Cohen, 1988).

In sum, physicians' attitudes about DTC prescription drug advertising are at best neutral and mostly negative. Interestingly, however, a recent survey conducted by the NMA (National Medical Association), an association of physicians of color, reports that African-American physicians generally favor DTC prescription drug advertising and believe that DTC ads might play a positive role in patient education and communication between doctors and patients (Allison-Otley, Ruffin, and Allison, 2002).

As a professional group, pharmacists' perceptions of DTC prescription drug advertising have been overlooked in research (Stavchansky, 2000). However, a few studies suggest that pharmacists do not view DTC advertising as negatively as physicians. In 1999, a survey of pharmacists conducted by Readex Research for the American Pharmaceutical Association (AphA) found that almost 70 percent of the surveyed respondents felt that DTC ads could supply valuable information to consumers (Siegel, 2000).

Health Insurance Industry - MCOs and PBMs

The health insurance industry is an interest group that has avidly opposed DTC prescription drug advertising. Rising drug spending is the primary reason why the insurance industry is unhappy with the increasing use of DTC drug advertising (Stavchansky, 2000).

The insurance industry is concerned because healthcare spending is rising at a faster rate than ever before; the group blames increased spending on advertised prescription drugs for the growth of healthcare costs (AARP, 2001). For example, one source reports that health insurance plans spend eleven to fourteen percent of their premiums on prescription drugs, up from seven percent just a few years ago (Blue Cross Blue Shield Association, 1999).

Such rapid growth in prescription drug spending is assumed associated with three factors: (1) growth in the volume of prescriptions used; (2) changes in the intensity of prescription drug use; (3) increasing use of newer and more expensive drugs (Tanouye and Connors, 1999; Siegel, 2000; Wilkes, Bell, and Kravitz, 2000; AARP, 2001). The health insurance industry blames DTC prescription drug advertising for driving these trends. Managed care organizations (MCOs) have complained that DTC ads cause excessive prescribing by physicians or lead consumers to prefer more expensive branded drugs over generics, based on surveys of healthcare professionals (Blue Cross Blue Shield Association, 2002), real-world cases of increasing use of highly-advertised, pricey drugs over cheaper generics (Burton, 2002), and healthcare market statistics showing growth in prescription drug use and sales of top selling DTC promoted drugs (National Institute for Health Care Management (NIHCM), 2001).

However, although pharmaceutical costs are indeed rising, the causal relationship between DTC prescription drug advertising and prescription drug spending is unclear and studies have found mixed results (Siegel, 2000; Findlay, 2001). The NIHCM Foundation (2001) analyzed data on DTC advertising spending and on the nationwide retail sales of selected prescription drugs that were most heavily advertised to consumers. The study

concluded that sales of highly advertised drugs contributed significantly to the steep increase in total prescription spending in 1999. Zachary, Shepherd, Wilson, Brown, and Lawson (2002) examined the relationship between the level of DTC advertising spending and the diagnoses and prescriptions written by physicians using data from the National Ambulatory Medical Care Survey and Competitive Media Reporting. The study found a relationship existed between DTC advertising expenditures, and physician diagnoses or prescriptions for some product groups such as allergy medicines and hypercholesterol medicines; no relationship was found in other medicine groups. Rizzo (1999) conducted a study of the relationship between direct-to-healthcare-provider promotion and drug price elasticity. The study found that product promotion inhibits price competition and lowers price elasticity, which in turn makes it likely for consumers to pay higher prices for drugs.

Other research suggests that DTC drug ads will decrease overall healthcare expenditures in the long run. For example, Pfizer study (2001) reports that DTC drug advertising is essential in raising consumer awareness of diseases and treatments and as consumers become more knowledgeable, their illnesses will be treated earlier and in turn they will be able to manage long-term healthcare costs. To support its point, the Pfizer study quoted a study by the Tufts University Center for the Study of Drug Development, which reported that doctors have increasingly used prescription drugs to treat chronic diseases rather than more costly hospital care (“Inside the Industry,” 2001).

In an article published in 1986, Masson and Rubin argued that DTC advertising will lead to higher competition and lower drug prices, pointing to a study by Lee Benham (1972). The Benham study provided empirical evidence that the introduction of retail

advertising in the eyeglasses market leads to lower prices. However, applying the retail-price advertising research to DTC drug advertising may be misleading and no clear evidence has been produced to show DTC drug advertising leads to reduced prescription drug prices. For example, Schere (1980) concluded that, although retail-price advertising might lead to higher competition and price reduction, product differential advertising actually could cause price increase. Mentioning the “Aspirin” case, he argued that in the drug market in which consumers usually lack knowledge to make real distinction between brands, highly advertised brands tend to have high prices. He also presented several studies showing that the prices for advertised drug brands were higher than the prices of generic names.

Government Regulatory Agencies

To make sure DTC drug advertising provides consumers with appropriate and accurate information, the FDA regulations require all prescription drug ads to present a “fair balance” between benefits and risks, with no false or misleading representations (Holtz, 1999). Any ad may be considered misleading if it does not present the risk information in at least the same “scope, depth, or detail” as that of the benefit information (Kopp and Bang, 2000). Numerous studies on DTC drug advertising have dealt with the issues of information quality and presentation in DTC ads to examine if the ad content complies with the FDA regulations and if the current regulations are sufficient to ensure information quality. In this section, studies are reviewed in three subcategories: DTC drug advertising message content, content and format of DTC websites, and public policy and regulatory issues.

DTC Advertising Message Content

Several studies examined informational content provided in DTC ads and raised concerns about the quality of the information communicated to consumers. Parker and Delene (1998) conducted a content analysis of DTC advertising in popular magazines published between 1992 and 1995 and found that the use of FDA-mandated product safety disclosures in DTC ads had increased. However, Roth (1996) reported that many DTC ads omitted or presented incomplete information on risk-related factors.

Bell, Wilkes, and Kravitz (2000) identified six key types of information about a drug treatment and five key types of information about the health condition needed by patients. The study examined the existence of the 11 forms of key information in DTC drug ads in consumer magazines and found that most of the ads did not contain the basic elements of patient-required information. Woloshin, Schwartz, Tremmel, and Welch (2001) conducted a content analysis of DTC drug ads in men's, women's and general interest magazines. The study found that 87 percent of ads described the benefits of drugs in vague and qualitative terms without support of any data; even when the benefit information was explicit, only thirteen percent of ads provided any evidence to support their claims.

Kopp and Bang (2000) conducted a systematic review of empirical studies on warning information in DTC drug advertising. The study found that promotional and benefit information outweighed risk information and DTC advertising often did not comply with FDA rules.

Other researchers focused on the presentation format of information in DTC drug ads and its impact on consumer comprehension of and reactions to the advertising

message. Most of this research used experimental procedures to measure consumer memory, knowledge, and attitude regarding DTC drug ads and advertised products after viewing mock television ads for prescription drugs (Morris, Ruffner, and Klimberg, 1985; Morris, Mazis, and Brinberg, 1989), or magazine ads (Tucker and Smith, 1987), or magazine and television ads (Morris and Millstein, 1984), or magazine ads and leaflets (Morris, Brinberg, and Plimpton, 1984). These studies found that consumer perceptions of and reactions to DTC drug ads varied significantly by the inclusion of risk information and various presentation formats of risk and benefit information. Study results varied by the context in which a DTC ad was presented as well (e.g., media in which DTC ads were delivered, types of advertised drugs).

Morris, Brinberg, Klimberg, Rivera, and Millstein (1986a) examined the degree to which DTC drug advertising correctly communicated messages and how DTC ads may intentionally or unintentionally mislead consumers. The study found that DTC ad miscomprehension rates were not much different from findings from studies of other product ads. However, the experimental results suggested that there are inherent dangers associated with DTC drug advertising when it comes to misleading consumers: even advertising messages which were intended to convey accurate information generated miscomprehension. For example, although the investigators did not intend to communicate that an advertised drug brand was superior to aspirin, most respondents logically assumed that the advertised drug was more effective than aspirin.

Davis (2000) conducted research on the relationship between risk statement completeness and consumer perceptions of advertised prescription drugs. He found that consumer attitudes toward drug safety, benefits, and appeal were affected by the

completeness of the risk statement. When given incomplete risk information, consumers were more likely to recommend or purchase an advertised drug brand and also to perceive the drug as safer.

Wogalter, Smith-Jackson, Mills, and Paine (2002) explored the effects of presentation format of risk and benefits information in DTC drug ads on consumer comprehension of information. The study found that separated benefit and risk information in more enhanced presentation condition (e.g., large, bold print, in color) generated the highest knowledge levels. Based on the findings, the researchers suggested that regulators pay more attention to how critical information is presented in DTC drug ads to ensure consumer-accessible designs.

Menon, Deshpande, Perri, and Zinkhan (2002) examined how much attention consumers pay to the brief summary of risk information in print DTC drug ads and how consumers evaluate the usefulness of the risk information. They found that a significant proportion of consumers who were exposed to DTC drug ads in the print media did not attend to the brief summary information. The number of prescription drugs taken, level of exposure to DTC drug ads, and attitudes toward DTC ads were found to influence consumers' attention to the brief summary. Also, clarity of brief summary information and educational value of DTC advertising were found to significantly influence consumers' perceptions of the usefulness of brief summary information in discussing medical issues with their doctors.

Content and Format of DTC Websites

Regulatory issues involving DTC drug advertising on the Web has drawn researcher attention only recently. The FDA sets forth no special regulations on Web-

based DTC drug advertising if the website does not mention a drug by name. When a drug name is mentioned, the website must meet the standards that are applied to print advertising (Frangos, 2001). However, several studies have suggested that the peculiar nature of the Internet or the Web necessitates specific regulations concerning Web-based DTC prescription ads.

Graber and Weckmann (2002) conducted a content analysis of websites for antidepressants. The websites were searched through popular search engines. The study found that most websites were easily accessible through search engines and contained information useful to educating consumers about medical symptoms. However, they also report a lack of comparisons between drug efficacy and adverse effects, which may make it difficult for consumers to make rational choices about drug selection.

Macias and Lewis (2002) analyzed content of DTC prescription drug websites and found that most prescription drug websites provided consumers with rich information and great educational value. From the results, the authors inferred that, in general, pharmaceutical companies were conforming to FDA requirements.

Huh and Cude (2002) evaluated the quality of prescription drug website content, specifically focusing on risk information applying the FDA's "fair-balance disclosure" provision. The study found that even though most prescription drug websites provide both risk and benefit information, the two types of information differed in presentation and accessibility. They suggested that regulators write more specific rules to ensure that a drug website's homepage is substantially balanced.

Public Policy and Regulatory Issues

The role of the FDA and the FTC in DTC advertising regulations and review of regulation effectiveness have also been important research topics. During the early days of DTC drug advertising, the main issue was if the FDA's regulatory framework, which was established to regulate direct-to-physician promotions, could effectively deal with the challenge of increasing DTC advertising expenditures (e.g., Kessler and Pines, 1990). After the revision of the FDA regulations for DTC advertising, Holtz (1998) evaluated the effectiveness of the current FDA regulations regarding DTC drug advertising and provided recommendations for strengthening the regulations in response to the changing nature of DTC drug advertising. Holtz reported that FDA regulations fail to take into account the presentation format or scope of risk information in DTC drug ads and suggested that the fair balance criteria should consider the scope or the completeness of risk information.

From his review of numerous existing DTC advertising studies, Calfee (2002) reported that there is no clear evidence of any harmful impact of DTC drug ads on consumers and the public healthcare system. Based on the review, he concluded that DTC drug advertising provides valuable information to consumers and thus regulations should be loosened, not tightened. However, Lexchin and Mintzes (2002) point out that Calfee's 2002 study lacks objectivity due to its dependency on consumer survey data. They reviewed market data such as advertising expenditures, individual drug sales, DTC drug advertising violations of FDA rules, DTC drug ad content analysis studies, and physicians' prescription practices. Lexchin and Mintzes concluded that there is no clear evidence that DTC drug advertising provides consumers with accurate and valuable

information or that it benefits the healthcare system. They recommended that, until clear evidence of benefits mitigates any possibility of harm, FDA regulations should not be loosened.

The same type of public policy debates are also found in New Zealand, which is the only other country that allows DTC ads for prescription drugs. Hoek and Gendall (2002) argued that there is no empirical evidence showing DTC drug ads adversely affects consumers and other healthcare stakeholders in New Zealand. Coney (2002) counterargues that while New Zealand's self-regulation-based policy depends on a flow of consumer complaints, the poor quality of DTC-ad information, lack of public voice, and the inefficient process of taking complaints make it difficult to ensure that fair and accurate information is conveyed to consumers.

Research on public perceptions of DTC drug advertising regulations presents an alarming finding that few consumers correctly understand the regulations of DTC advertising. A survey conducted by Bell, Kravitz, and Wilkes (1999) found that a large number of people believed that DTC drug advertising regulations were stricter than they actually are. Half of the respondents believed that DTC ads had to be submitted to the government for prior approval and 43 percent believed that only completely safe drugs could be advertised to consumers. About a quarter of the people also believed that drugs with serious side effects could not be advertised directly to consumers.

Contrary to these consumer beliefs, DTC drug ads are not subject to mandatory approval of the FDA prior to publication or broadcast. The FDA reviews and comments on proposed advertisements before they are distributed only if an advertiser requests such

a review, and the FDA does not have any authority to impose penalties or sanctions against advertisers who convey false or misleading information in their ads (Foley, 2000).

Consumers of Prescription Drugs, the Patients

Research suggests that consumers want to play a more active role in their health care and actively seek out information on medical treatments (Kasteler, Kane, Olsen, and Thetford, 1976; Perri and Nelson, 1987; Holmer, 1999; Perri, Shinde, and Banavali, 1999). Evidence indicates that today's consumers are becoming increasingly knowledgeable of medical conditions and treatments through information seeking, and even "shopping" for physicians who will accommodate their wishes (Perri, Shinde, and Banavali, 1999). To be more actively involved in their health care, consumers need information about diseases and treatment options presented in a manner they can understand. They often find DTC ads useful. As a result, consumers tend to hold relatively positive views of DTC advertising (McInturff, 2001).

In the following section, studies of consumer awareness, attitude formation, and reactions to DTC drug advertising are reviewed by topic areas of research.

Consumer Recognition and Awareness of DTC Advertising

Since the rise of DTC prescription drug advertising, a number of studies have measured consumer awareness of DTC drug ads and ad exposure. The studies have found increasingly high levels of awareness of DTC drug advertising. In the early 1990s, Alperstein and Peyrot (1993) reported 35 percent of respondents were aware of DTC drug advertising. Four years later in 1997, a *Prevention* survey reported that 63 percent of respondents had seen or heard DTC ads for prescription drugs. The next year, another *Prevention* survey found the awareness rose to 70 percent and in 1999, awareness was up

to 81 percent (*Prevention* survey 1997, 1998, and 1999, quoted from Calfee, 2002, p. 181). Also in 1999, a survey by the FDA reported that almost three-quarters of the study's respondents had viewed or heard DTC ads. Three years later, a 2002 FDA survey reported that 81 percent of the respondents recalled seeing a prescription drug ad in the past three months.

Alperstein and Peyrot (1993) attempted to determine predictors of DTC drug ad exposure. The study found that younger and more educated people were most aware of DTC ads and that regular prescription drug users were more likely to be aware of DTC ads than non-drug-users. The study also found that higher levels of ad awareness were associated with more positive attitudes toward DTC drug advertising. More recently, Sengupta (2002) examined the relationship of demographic variables to DTC drug ad exposure and recall rates. Female consumers were found to report higher ad exposure and were more likely to recall advertised prescription drugs. Household income was also a significant factor, with higher income related to higher ad exposure and to higher brand recall.

Consumer Attitudes toward DTC Advertising

As mentioned earlier, consumers have been found to hold relatively positive attitudes toward DTC drug advertising. Even in the very early period of the advertising practice, consumers' attitudes toward DTC drug advertising were found to be favorable. For example, Morris, Brinberg, Klimberg, Rivera, and Millstein (1986b) reported that consumers exhibited generally favorable attitudes toward DTC advertising after seeing prototype magazine and television DTC drug ads. About two-thirds believed that prescription drug ads would provide useful information, and half of the respondents

agreed that DTC drug ads would benefit them. However, the attitudes were less positive about television ads than magazine ads, suggesting that consumer attitudes are not universal nor firmly held and could be influenced by ad types.

Perri and Dickson (1987) examined patient attitudes toward DTC drug advertising presented in the form of direct mail. The study found that 67 percent of the respondents agreed that DTC drug advertising provides them with information they have a right to know and 70 percent believed that DTC advertising benefits them in some way. Of particular importance, patients with some chronic medical condition were found more likely to hold positive attitudes.

In 1991, Everett examined consumer responses to hypothetical DTC drug ad exposure. The study found that about 66 percent of the respondents were willing to attend to DTC drug advertising and about 70 percent would discuss advertised drugs with their doctors. In 1993, Alperstein and Peyrot reported that consumers hold generally positive attitudes toward DTC drug advertising with almost 70 percent believing that DTC drug advertising helps educate them about medical conditions and treatments.

More recent studies report consistent results. From a secondary analysis of data collected by *Prevention Magazine's* 1999 survey, Deshpande, Menon, Perri, and Zinkhan (2003) found that consumers are generally positive about the utility of DTC drug ads. The study found that perceptions of DTC drug advertising were a important predictor of consumers' use of ad-conveyed information in their healthcare decision-making process, with more positive opinions associated with greater use of ad-conveyed information. In 2002, Sengupta found evidence of increasingly more positive consumer attitudes. His

study reported that more consumers believed that DTC ads provided useful information about prescription drugs than earlier studies indicated.

Effects of DTC Advertising on Consumers

Evidence reported in several studies indicates that consumers are influenced to act through exposure to DTC drug advertising. The most common reported behavioral responses to DTC drug ads are:

- Seek further information from media and interpersonal sources (e.g., friends and family) (Williams and Hensel, 1995; Bell, Kravitz, and Wilkes, 1999; FDA, 1999; Pfizer, 2000; Kaiser Family Foundation, 2001b; Balazs, Yermolovich, and Zinkhan, 2002; Huh and Becker, 2002).
- Talk with their doctors about the advertised drug (Perri and Dickson, 1988; Bell, Kravitz, and Wilkes, 1999; FDA, 1999; Kaiser Family Foundation, 2001b; Balazs, Yermolovich, and Zinkhan, 2002; Huh and Becker, 2002).
- Talk with their doctors about ad-conveyed health conditions and treatments (Kaiser Family Foundation, 2001b; Balazs, Yermolovich, and Zinkhan, 2002).
- Ask their doctors to prescribe the advertised drug or change an existing prescription (Perri and Dickson, 1988; Peyrot, Alperstein, Doren, and Poli, 1998; *Prevention* and APA, 1999; Pfizer, 2000; Kaiser Family Foundation, 2001b).
- Seek information from pharmacists about advertised drugs (Bell, Kravitz, and Wilkes, 1999; FDA, 1999; *Prevention* and APA, 1999; Pfizer, 2000).

A survey by *Prevention Magazine* and the American Pharmaceutical Association (APA) (1999) reported that 31 percent of the respondents had talked with their doctors about a prescription drug they had seen advertised. Research by the FDA reported that about 25 percent of those who were exposed to DTC drug ads asked their doctors about the medical conditions they had seen in the ad and thirteen percent asked for a specific drug brand (FDA, 1999).

In an effort to understand the effects of DTC advertising on consumers and moderating factors in the relation between exposure to DTC drug ads and consumer behaviors, a number of studies have been conducted. Perri and Dickson (1988) examined how DTC ads affect consumer behavior by structuring the cognitive processes following exposure to prescription drug ads. They demonstrated a significant relationship between DTC ad exposure and drug inquiry and suggested that consumers' medical condition might moderate the relationship. Seven years later, Williams and Hensel (1995) found that educational level and health status were negatively related to attitudes toward DTC drug advertising and, in turn, attitudes toward DTC drug advertising were significantly related to the intention to seek more information from a friend and a pharmacist. In 1998, Peyrot, Alperstein, Doren, and Poli found that DTC advertising influenced consumer knowledge and induced drug brand requesting behavior. The study found that consumer demographic factors and attitudes toward DTC drug advertising moderated the ad-induced effects.

Balazs, Yermolovich, and Zinkhan (2002) explored attitudes and information-seeking behavior related to DTC advertising among the elderly. The study found that DTC drug advertising stimulated older consumers to seek more prescription drug information from friends and healthcare professionals. More than half of the respondents were found to ask doctors or pharmacists about a drug seen in DTC ads; about 30 percent requested a specific medication; and one-fifth inquired about the medical condition they had seen in DTC ads.

The Kaiser Family Foundation (2001b) conducted a national survey and found that DTC drug advertising prompted about one-third of the respondents who viewed DTC

ads to talk to their doctors about advertised medicines. Those with greater health needs, and the elderly in particular, were more likely to have conversations with their doctors. Forty percent said that they were likely to talk to their doctors about health conditions they had seen in DTC ads, and about one-third indicated that they were likely to look for more information about advertised medicines and health conditions.

Huh and Becker (2002) examined three types of consumer behaviors induced by DTC drug ad exposure, using the FDA's 1999 national survey data. The study found that exposure to DTC drug advertising was strongly related to "drug information seeking," "thinking about communication with doctors," and "actual communication with doctors." Other factors, including prescription drug use, health conditions, control over healthcare, and various demographic variables were also found to influence the behavioral outcomes; however, the small amount of increase in explanatory power suggested that most of these variables were found more likely to indirectly affect key behavioral variables through DTC drug ad exposure.

Taken together, the studies on DTC drug ad effects suggest that the effects of DTC drug ads on information seeking, communication with a healthcare professionals (doctors and pharmacists), and specific drug brand requests are mediated by a host of consumer-specific factors including attitudes toward DTC drug advertising, demographic characteristics, health conditions, issue involvement, media use, and prescription drug use.

Lessons Learned From DTC Prescription Drug Advertising Research

From the reviewed research, several conclusions can be drawn about stakeholders and the effects of DTC prescription drug advertising.

- Pharmaceutical and advertising industries are the most enthusiastic supporters of DTC prescription drug advertising. They argue for softened regulations, citing studies of consumers' growing need for more information on medical conditions and treatment options, and consumers' high level of acceptance of DTC advertising as a valuable information source.
- Healthcare professionals and the health insurance industry tend to hold negative opinions of DTC prescription drug advertising. Surveys of physicians suggest that doctors are concerned about potential harmful effects of DTC drug ads because they convey misinformation, weaken the doctor-patient relationship, and cause patients to demand advertised brands of drugs. However, physician attitudes toward DTC drug advertising have recently become more positive than before.
- The insurance industry's main concern is rising healthcare costs. However, studies of the possible relationship between prescription drug expenditures and DTC advertising have found no clear evidence of positive or negative impact of DTC drug advertising on healthcare costs.
- Findings involving public policy and regulatory issues surrounding the DTC drug advertising phenomenon suggest that DTC drug advertising content and presentation format can potentially misinform and mislead consumers, and that FDA regulations should be more specific about the quality of information that consumers get from DTC drug ads.
- Consumer awareness of and positive attitudes toward DTC drug advertising have increased over time. Studies have found that consumers believe DTC drug ads provide useful information and benefits consumers.
- Many studies have found that DTC drug ads influence consumers to seek out information, to talk to friends and family, to ask their doctors and pharmacists about advertised drugs, and to request a specific medication from their doctors.
- However, the relation between DTC drug ads and consumers' behavioral outcomes varies by a host of individual factors: demographic factors, attitudes toward advertising, health condition, prescription drug use, and issue involvement are found to mediate the effects of DTC advertising, although study findings have been somewhat mixed.

To move consumer research forward, this research raises a question about another possible mediating factor of DTC-drug-ad effects in addition to those that have been examined: how consumers perceive the effects of DTC drug ads on themselves and on

others; and whether those perceived effects influence actual behaviors related to advertising of prescription drugs. These types of questions have been asked and examined in the third-person effect research for two decades. The next part of this chapter reviews literature on the third-person effect.

The Third-Person Effect

The concept of the third-person effect originated from an incident during World War II. In the Pacific, there was a service unit consisting of black soldiers with white officers. Knowing this, the Japanese scattered propaganda leaflets conveying the message: “This is a white man’s war. Don’t risk your life for the white man.” The day following the leaflet drop, the white officers decided to withdraw the unit, possibly out of fear of the effects of the leaflets on black troops (Davison, 1983).

Inspired by this episode, sociologist W. Philips Davison proposed a simple hypothesis called the third-person effect hypothesis. He proposed:

“People will tend to overestimate the influence that mass communications have on the attitudes and behavior of others. More specifically, individuals who are members of an audience that is exposed to a persuasive communication (whether or not this communication is intended to be persuasive) will expect the communication to have a greater effect on others than on themselves. And whether or not these individuals are among the ostensible audience for the message, the impact that they expect this communication to have on others may lead them to take some action” (Davison, 1983, p. 3).

In the 1983 article, Davison reviewed a number of existing studies, providing evidence of the third-person effect in various media contexts. Among the evidence were three studies of the “Roots” television series, two studies of American attitudes toward Jews during the period following World War II, and one study on voting behavior.

Since Davison's 1983 article, many researchers have tested the third-person effect hypothesis in different forms of mass-mediated communication and on different subjects. So far, over fifty journal articles and dozens of conference papers have investigated the third-person effect phenomenon. The range of media content tested for the third-person effect includes defamatory news stories (Cohen, Mutz, Price, and Gunther, 1988; Gunther, 1991), news coverage of political issues (Mutz, 1989; Perloff, 1989), political advertisements (Rucinski and Salmon, 1990; Cohen and Davis, 1991), news stories predicting an earthquake (Atwood, 1994), advertising messages and public service announcements (Gunther and Thorson, 1992; Henriksen and Flora, 1999), pornography (Gunther, 1995; Rojas, Shah, and Faber, 1996; Lo and Paddon, 2000), and violent television content (Hoffner and Buchanan, 1999; Hoffner, Plotkin, Buchanan, Anderson, Kamigaki, Hubbs, Kowalczyk, Silberg, and Pastorek, 2001).

In addition to media content, some researchers have tested for the third-person effect in cross-cultural communication contexts. For example, studies have examined sex and violence on television in Singapore (Gunther and Hwa, 1996), Internet pornography in Taiwan (Lo and Wei, 2002), sexual media content in Korea (Lee and Yang, 1996), and television viewing behavior in Germany (Peiser and Peter, 2000). Others have tested the mechanism of the third-person effect by exploring whether the third-person effect is induced by overestimation of communication effect on others or by underestimation of effect on self (Cohen, Mutz, Price, and Gunther, 1988; Gunther, 1991; Gunther and Thorson, 1992; Perloff, Neuendorf, Giles, Chang, and Jeffres, 1992).

Of particular importance in the early work were those studies noted above that sought to determine the mechanism of third-person effect through measurement of the

difference between the size of perceived effects (e.g., expected change of attitudes) and real effects (e.g., actual change of attitudes). Davison (1983) initially conceived that the third-person effect might be caused by overestimation of effects on others but relatively accurate estimates of effects on self. However, studies have indicated that the third-person effect appears to have its roots in combination of both overestimation of effect on others and underestimation of effect on self. While some studies report that people overestimate the effects of media content on others but provide relatively accurate estimates on self (Gunther, 1991; Perloff, Neuendorf, Giles, Chang, and Jeffres, 1992), others report occurrence of both underestimates of effects on self and overestimation of effects on others (Cohen, Mutz, Price, and Gunther, 1988; Gunther and Thorson, 1992). After systematically reviewing the third-person effect literature, Perloff (1993) concluded that it was difficult to say whether the third-person effect was rooted in overestimating effects on others or underestimating effects on themselves, and that it is not likely this kind of inquiry would bear fruit since overestimation of effects on others and underestimation of effects on self are conceptually and methodologically intertwined.

Even if it remains unclear whether third-person effect is induced by overestimation of effects on others or underestimation of effects on self, a great amount of research has tested and demonstrated that people perceived different effect magnitudes on self and on others across different media, different media content, and different cultures. Third-person effect inquiry has generally focused on two major components: perceptual and behavioral aspects of the phenomenon.

Perceptual and Behavioral Hypotheses of the Third-Person Effect

The third-person effect involves two general hypotheses: (1) the perceptual component hypothesis that predicts people perceive greater media influence on other people than on themselves; (2) and the behavioral component hypothesis that predicts people will act on perceived third-person effect (e.g., people will support restrictions of certain messages). In the early stage, third-person effect research focused mainly on the perceptual hypothesis, but recently more and more researchers have paid attention to the behavioral hypothesis.

Research Findings on the Perceptual Hypothesis

As described earlier, the third-person effect suggests that people tend to estimate effects of communication on others and on themselves differently and are likely to attribute greater effects on others. Numerous studies tested this hypothesis in various communication contexts but mainly using socially undesirable media content: violent media content (Hoffner and Buchanan, 1999; Hoffner, Plotkin, Buchanan, Anderson, Kamigaki, Hubbs, Kowalczyk, Silberg, and Pastorek, 2001), sexually explicit content (Gunther, 1995; Lo and Paddon, 2000), negative political campaigns (Rucinski and Salmon, 1990; Cohen and Davis, 1991), and advertising messages (Gunther and Thorson, 1992; Borzekowski, Flora, Feighery, and Schooler, 1999; Youn, Faber, and Shah, 2000). These studies provide abundant evidence of third-person effect. A systematic review of published journal articles concludes: “most papers that have directly tested the third-person effect has found some support for the third-person effect” (Perloff, 1993).

Third-person studies’ over-reliance on negative media contexts raises a question about confidence in universal support for the third-person effect. Studies testing more

positive media content have failed to find the third-person effect, indicating the third-person effect phenomenon might be contingent on certain message context conditions.

Duck and Mullin (1995) examined the effects of the type of media content on the third-person effect using two different messages: drunk-driving messages, that were perceived by respondents as desirable, and media violence messages, that were perceived as socially undesirable. No significant difference was found between perceived impact on self and others in the context of the drunk-driving messages, while violent content respondents reported more media influence on others than themselves. Brosius and Engel (1996) also found that, with a socially desirable message, the size of the third-person effect became smaller and, even in some cases, people attributed stronger media influence on themselves than others. This was later called the first-person effect or reverse third-person effect. The first-person effect is likely to occur when people believe that a message is socially desirable and feel that it is good to be influenced by such a message (Chapin, 1999). Duck, Terry, and Hogg (1995) found that respondents who strongly believed that it was good to be influenced by AIDS PSAs perceived that they were more influenced than people in general.

In 1999, the concept of second-person effect appeared in the research literature. Neuwirth and Frederick (1999) used the term to describe joint media effects on self and others. Three years later, they argued that the second-person effect is likely to occur when there is no difference between perceived effects on self and on others, producing the potential for social consensus and thus forming the basis of social reality (Neuwirth and Frederick, 2002). They also suggested that since the second-person effect was grounded in judgments of mutually shared influence, it could increase the possibility of common

social interests and subsequent social action. To support their explanations, Neuwirth and Frederick (2002) provided empirical support for the second-person effect, finding that the second-person effect emerged as the most consistent predictor of multiple measures of behavioral intentions.

Research Findings on the Behavioral Hypothesis

When he first hypothesized the third-person effect, Davison suggested the “action-inducing potential” of the third-person effect (Davison, 1983). He stated:

“The impact that they expect the communication to have on others may lead them to take some actions. Any effect that the communication achieves may thus be due not to the reaction of the ostensible audience but rather to the behavior of those who anticipate, or think they perceive, some reaction on the part of others” (1983, p. 3).

Although the behavioral component of the third-person effect has not been studied much in the early part of the research stream, it has stimulated considerable research in recent years, most of it probing the possibility that the third-person effect may lead people to censor socially undesirable media content. Unfortunately, studies have found less support for the universality of the behavioral component hypothesis than for the perceptual component hypothesis.

Studies of entertainment content and advertising have almost unanimously found that the third-person effect predicted people’s willingness to censor media content. McLeod, Eveland, and Nathanson (1997) examined the perceived impact of violent and misogynistic rap lyrics and found that a larger third-person effect was positively associated with support for censorship of rap music. Gunther (1995) reported that the magnitude of the third-person effect was significantly related to opinions favoring pornography restrictions. Youn, Faber, and Shah (2000) found that the third-person effect

was positively related to censorship attitudes toward gambling advertising. Hoffner and Buchanan (1999) reported support for a connection between the third-person effect of violent television content and support for censorship. They also found that support for censorship was mediated: greater exposure to television violence was associated with less willingness to censor violent content; support for censorship of violent television content was higher for women and for individuals who were older and more religious.

In the case of news coverage and political communications, however, studies have found only weak support for the link between the third-person effect and support for media censorship. Salwen (1998) found that perceived effects on others were significantly, but weakly, associated with support for restricting unfair news coverage and electoral campaign messages during the 1996 presidential campaign. Driscoll and Salwen (1997) failed to predict willingness to restrict news coverage of the O.J. Simpson trial by third-person effect. Price, Tewksbury, and Huang (1996) found no evidence of a connection between third-person effect and behavioral intention to ban a Holocaust-denial ad. These findings indicate that the third-person effect might not be a central predictor of behavior when legitimate media content is used as test stimuli (Salwen, 1998).

Some studies have suggested that attitudes toward censorship might be better predicted by individual characteristics such as demographic factors, religiosity, authoritarianism, conservatism, and traditional family ideology rather than by the third-person effect (McClosky and Brill, 1983; Hense and Wright, 1992; Tewksbury, Huang, and Price, 1996; Salwen, 1998). However, not all studies have found support for these relationships and some studies have reported mixed or inconsistent results. One

consistent finding across the studies is that censorship of communications was associated with the belief that the outcome of communications would be negative (Sullivan, Piereson, and Marcus, 1982; Marcus, Sullivan, Theiss-Morse, and Wood, 1995).

A few studies provide evidence that even after controlling other factors, the third-person effect is still a significant predictor of support for media censorship. Youn, Faber, and Shah (2000) found in their study of third-person effect and censorship attitudes toward gambling ads that even after controlling for possible confounding variables, the relationship between the third-person effect and support for censorship still remained significant. Rojas, Shah, and Faber (1996) also found that the third-person effect is significantly related to intention to support censorship, even when controlling for a variety of personality, media use, and demographic variables.

The research on third-person effect and support for censorship has extended the third-person effect framework beyond the perceptual level and contributed to a deeper understanding of the motivation behind media censorship. However, research focusing exclusively on media censorship has potentially obscured the fact that a much broader range of behavioral effects can be examined in connection with the third-person effect framework (Umphrey, 2002).

A few studies have demonstrated the potential of extending the behavioral hypothesis to other types of behavioral outcomes. For example, studies have examined voting behavior (Griswold, 1994; Leshner, Holbert, and Yoon, 2002), assessment of a penalty against a newspaper disseminating a defamatory story (Gunther, 1991), and adoption of new media (White and Scheb, 2000).

Griswold (1994) examined the relationship between third-person effect and voting intention in the 1992 Georgia presidential primary. The study found that those who perceived greater an effect of the parties' economic messages on other people were less likely to vote. Leshner, Holbert, and Yoon (2002) focused on the influence of the third-person effect on actual voter turnout and found that when people perceived greater effects of counter-endorsements on other people they were more likely to vote, which led to greater overall turnout. The study conducted by Gunther (1991) hypothesized that people who perceived a greater self-other discrepancy would perceive more harm to have occurred to the subject of a negative news story and therefore would award more money in damages to the subject. However, the data did not support the hypothesis.

White and Scheb (2000) examined the third-person effect in the case of media coverage of Internet influence and its consequence on people's adoption of the Internet. The study found that people tended to perceive that other people were more affected by media coverage of the Internet, which led them to conclude that most other people were adopting the Internet. This, in turn, led to a perception of a bandwagon effect regarding adoption of the Internet. Findings of these four studies provide evidence of the promise of the behavioral hypothesis of the third-person effect framework for research on other issues involving the mass media.

Theoretical Underpinnings

Attempts have been made to theoretically explain the third-person effect phenomenon and a variety of psychological theories have been examined: ego involvement (Perloff, 1989), biased optimism (Gunther and Mundy, 1993; Brosius and Engel, 1996; Chapin, 2000), social comparison theory (Atwood, 1994), and attribution

theory (Rucinski and Salmon, 1990; Gunther, 1991; Hoffner, Plotkin, Buchanan, Anderson, Kamigaki, Hubbs, Kowalczyk, Silberg, and Pastorek, 2001). Among the theories, biased optimism and attribution theory have been most frequently used by third-person effect researchers (Paul, Salwen, and Dupagne, 2000), and attribution theory has been most often offered as the best theoretical link between the third-person effect framework and the theoretical explanation of the phenomenon and the reported research (Umphrey, 2002).

Attribution theory suggests that people seek reasons for things happening around them and try to understand them in terms of their perceived causes. The origins of attribution theory are credited to Fritz Heider, the recognized father of balance theory. In his book, *The Psychology of Interpersonal* (1958), Heider describes how people make attributions about the world: in everyday life, people form ideas about other people and about social situations, and in doing so, they act like “naïve psychologists” who seek commonsense answers to understand the world around them (Weiner, 1990). Heider’s initial conceptualization of attribution theory states that “a person tends to attribute his own reactions to the object world, and those of another, when they differ from his own, to personal characteristics” (1958, p. 157). The conceptualization led to the line of studies on “fundamental attribution error.”

Early on, Jones and Davis (1965) and Kelley (1967) provided empirical evidence to support Heider’s initial conceptualization and contributed significantly to the foundation of attribution theory. Their work added a core assumption of attribution theory that individuals interpret people’s behavior in terms of its causes and that these interpretations play an important role in determining their reactions to behavior (Jones

and Davis, 1965; Kelley, 1972). Jones and Nisbett (1972) generalized the fundamental attribution error phenomenon, which states that causal attribution of behaviors of the self are attributed to external, or situational factors, while the behaviors of others are attributed to personality traits. Later Miller and Norman (1975), however, found that people do not always make self-attributions to situational factors and there are occasional reversals of the fundamental attribution error. Jones (1979) explained this differing causal attributions by “effectance motivation,” which is that observers attribute their behaviors to situational factors to feel that they are in control of outcomes and thus, they do so only when their sense of personal control is not threatened. Considering the self-serving bias explanation, Ross and Fletcher (1985) concluded that “assuming it is reasonable to do so, we explain our own and others’ behaviors in terms that “flatter us” and “put us in good light”” (p. 103).

Attribution theory has been applied to studies in education, communication, marketing, and consumer behavior. The central theme of attribution theory is that people tend to generate different causal attributions about stimuli, persons involved, and circumstances in response to social events and communication. In the area of marketing and consumer behavior, the attribution theory perspective has been applied to examine people’s causal attributes of marketing communication (e.g., advertising messages, word-of-mouth) and its effects on consumer behavior and attitude formation for products and brands (Settle and Golden, 1974; Smith and Hunt, 1978; Mizerski, Golden, and Kernan, 1979; Swinyard, 1981; Mullen, 1984; Chakraborty and Cole, 1991; D’Astous and Touil, 1999; Lacznia, DeCarlo, and Ramaswami, 2001). The following section describes how attribution theory has contributed to explanations of the third-person effect research.

Attribution Theory and Third-Person Effect

Third-person research has been related to two concepts within attribution theory, the fundamental attribution error and egotistical differential attributions (Rucinski and Salmon, 1990; Gunther, 1991; Paul, Salwen, and Dupagne, 2000). The basic idea of the fundamental attribution error is that when individuals interpret the behavior of others, they tend to attribute acts to personal factors; whereas when they interpret their own behavior, they tend to attribute acts to external factors. This causes a gap between the perceived reality and actual reality, which constitutes the fundamental attribution error (Umphrey, 2002).

Connecting attribution error to the third-person effect phenomenon, Gunther (1991) conducted an experimental study. From the results, he concluded that third-person effect tends to occur because people think that others are less responsive to the situational character of a message than themselves (fundamental attribution error). Gunther describes this process as “when judging the impact of the message on others, observers will underestimate the effect of situational (external) factors and attribute relatively more opinion change to others; but in judging themselves, observers will observe modest, if any, opinion change, attributing it to their greater awareness of, and discounting of, situational factors like persuasive intent” (Gunther, 1991, p. 357).

The principle of egotistical differential attributions, or self-serving biases, also helps to explain third-person effect research findings. Jones (1979) wrote that individuals tend to make self-attributions to situational factors only when they feel no threat to their self-esteem. According to his explanation, when a message is perceived as negative or when it is considered undesirable to be influenced by a message, people generally

attribute the message to have more influence on others. On the other hand, when a message is considered positive, people attribute more effects to the self since “I am smart enough to recognize the value of the message.” This type of self-serving bias has been found in third-person effect research, especially in the context of socially undesirable messages (Rucinski and Salmon, 1990; Gunther and Thorson 1992; Gunther and Mundy 1993; Brosius and Engel 1996; Rojas, Shah, and Faber, 1996).

These studies help explain why the third-person effect is found in some contexts but not in others. The following section describes details of what researchers have found about contingent conditions and mediating factors of the third-person effect.

Contingent Conditions and Mediating Factors

Abundant research on the third-person effect has not only provided strong support for it, but also revealed that the third-person effect was more complex than Davison (1983) initially speculated. The third-person effect is not a universal phenomenon, but varies by type of media content, the characteristics of individuals who perceive media effects, and the context of message exposure and processing.

The mediating influence of variables such as media use, education, age, knowledge, issue importance, ego-involvement, and content types has been the focus of a number of studies. These studies can be grouped into three categories: (1) characteristics of “self” or a perceiver; (2) characteristics of media content; and (3) characteristics of “others.”

Characteristics of “Self”

Among many different factors of “self,” knowledge (actual or perceived) and issue involvement have been systematically tested in a number of studies (Perloff, 1999).

Perceived Knowledge and Real Knowledge

The idea that more knowledgeable people show a stronger third-person effect goes back to Davison (1983)'s initial statement that

“In a sense, we are all experts on those subjects that matter to us, in that we have information not available to other people.... Other people, we reason, do not know what we know. Therefore, they are more likely to be influenced by the media” (p. 9).

Most studies examining the knowledge factor used perceived knowledge of message topic rather than actual level of knowledge. Self-perceived knowledge is assumed to lead individuals to believe that they are immune to message effects, whereas others are vulnerable (Perloff, 1999).

Evidence to support the mediating influence of knowledge on third-person effects is found in studies by Lasorsa (1989), Atwood (1994), and Driscoll and Salwen (1997). Lasorsa (1989) tested the mediating effects of perceived knowledge and real knowledge and found that while perceived knowledge generated a third-person effect, real knowledge did not make any significant difference between perceived effects on self and on others. In an attempt to explain this finding, he raised a question about the possible intervening effects of education and topic because people might perceive themselves as experts when more highly educated and when the topic mattered to them.

A study by Driscoll and Salwen (1997) also found support for the proposition that self-perceived knowledge mediates the third-person effect. The study reports that self-perceived knowledge provides confidence of superior knowledge over others, which produces a stronger third-person effect.

Price, Huang, and Tewksbury (1997) examined how people's political knowledge affected the third-person effect using a real knowledge measure. The study found mixed

evidence of the mediating role of political knowledge, though the general pattern appeared that more knowledgeable people tended to perceive slightly weaker effects of news stories on themselves than on others.

Issue Involvement/Issue Importance

Several studies suggest that the third-person effect was more likely to occur among those who view a media-conveyed issue as important and who are more involved in the message topic. Mutz (1989) tested the effect of issue importance on the magnitude of the third-person effect. She found that the tendency to perceive others as more influenced by mass media than oneself was stronger among those with greater issue importance. Perloff (1989), in his research with news coverage of the Middle East conflict, found that ego-involvement affected the size of the third-person effect. When highly involved, individuals were more likely to attribute stronger media effects on others.

On the other hand, Price and Tewksbury (1996) failed to find any increase in the size of the third-person effect resulting from perceived issue importance. They suggested that the reason why the relationship was not detected was because greater personal importance increased not only perceived effects on others, but also perceived effects on oneself.

Demographic Factors

Among various demographic variables, education (Salwen, 1998), age (Tiedge, Silverblatt, Havice, and Rosenfeld, 1991), race/ethnicity (Matera and Salwen, 1997), and gender (Howitt, Driscoll, and Salwen, 1998) have emerged as relevant factors in third-person effect research. When it comes to the age factor, the elderly are assumed to be

more susceptible to the third-person effect; that is, it is thought that they will perceive smaller effects on self and greater effects on others (Tiedge, Silverblatt, Havice, and Rosenfeld, 1991). However, the studies have produced mixed results about this assumption.

The Tiedge, Silverblatt, Havice, and Rosenfeld (1991) study found that there is a significant relationship between age and perceived effect discrepancies, with older people exhibiting greater third-person effect. Rucinski and Salmon (1990), however, found no evidence of a relationship between age and third-person effect. Salwen (1998) found that age is a negative predictor of both effects on oneself and on others, subsequently producing no significant relationship with magnitude of the third-person effect.

For education, a positive association between education and the third-person effect is generally hypothesized because more highly educated people are assumed to be more aware of media content and more resistant to media effects, thus making them less vulnerable (Tiedge, Silverblatt, Havice, and Rosenfeld, 1991; Perloff, 1999). Studies, however, have found mixed results, with some but not all studies finding relationships between education and the magnitude of the third-person effect. Lasorsa (1989) reported that even though the test results did not meet statistical significance, the direction suggested that higher education led to stronger perceived third-person effect.

Tiedge, Silverblatt, Havice, and Rosenfeld (1991) found there was a significant relationship between education and the third-person effect, with higher education related to greater perceived media effects on others. Gunther (1995) also found that more highly educated people were more apt to exhibit third-person effect. However, Kim, Ahn, and

Song (1991) and Salwen (1998) found no evidence that education was associated with greater third-person effect perception.

Media Habits and Use

Like education, media use is thought to provide people with confidence in their knowledge and thus to increase the likelihood and magnitude of perceived the third-person effect (Driscoll and Salwen, 1997; Salwen 1998). Studies, however, have found no or mixed evidence of relationships between media use and third-person effect.

Rucinski and Salmon (1990) found some media use patterns to be significant predictors of perceived media influence of five types of political campaign media content (news coverage, debates, polls, political advertising, and negative political advertising). They found that exposure to newspapers was positively related to the third-person effect, though television use was not a significant predictor of the third-person effect.

Salwen (1998) hypothesized that news media use would be positively related with the third-person effect and negatively related to support for message restrictions. However, the data showed that among various media use variables, only newspaper reading was a significant positive predictor of the third-person effect. Innes and Zeitz (1988) found that heavy television viewership was associated with a greater third-person effect and light viewership with a smaller third-person effect. However, other media use patterns were not found to mediate the third-person effect. Paxton (1997) and Brosius and Engel (1996) also failed to find a relationship between media use and the third-person effect.

Characteristics of Media Content

The initial notion that the third-person effect is a universal response to the influence of any type of media content has been challenged by numerous studies reporting different results for different types of media content. The overwhelming majority of third-person effect studies have tested media content that can be associated with negative outcomes. Overall, these studies have found a greater third-person effect when the issue or message is perceived as negative and socially undesirable. Perloff and Fetzer (1986) suggest that a greater third-person effect associated with negative content may be explained as an ego-defensive or self-enhancing function. When a message or an issue is perceived as beneficial or socially desirable, the magnitude of the third-person effect has been found to be smaller or even the direction reversed, which is referred to as first-person effect.

Duck and Mullin (1995) conducted a series of experiments involving PSAs to clarify conditions under which the third-person effect was likely to occur. The study found that individuals perceived more influence on themselves than on others for PSAs considered socially desirable. Similarly, Duck, Terry, and Hogg (1995) found that respondents who strongly believed that it was good to be influenced by socially-positive AIDS PSAs perceived that they were more influenced than people in general.

Several studies suggest that media content viewed as “not smart to be influenced by” (i.e., product advertising) should lead to a greater perceived third-person effect as well, although the type of content might not necessarily connote socially undesirable outcomes (Perloff, 1999). Gunther and Thorson (1992) found a third-person effect for general product ads, but not for PSAs. Among various product ads, those inducing more

positive emotions generated weaker third-person effects, suggesting that the third-person effect is contingent on not only a type of media content but also viewers' attitudes toward a particular message.

Gunther and Mundy (1993) conducted an experiment using a 2 (benefit likelihood of message topic) X 2 (informative vs. persuasive format) design. The results found that topics with possible harmful consequences produced third-person effects while potentially beneficial messages did not. Also, messages with explicit persuasive intention generated greater third-person effects than informative messages without persuasive intention.

Brosius and Engel (1996) found that credibility of media genre led to a significant difference in the magnitude of the third-person effect. In the case of television news, a smaller third-person effect was found for those perceived to have high credibility and low persuasive intent than for genres perceived to have low credibility. Lasorsa (1992) also found that the third-person effect was more likely to occur under low-credibility conditions.

Other researchers have found that people's beliefs about source credibility of a message are related to third-person effects. Three studies found greater discrepancy between perceived influence of the message on self and on others when the source of a message was believed to be untrustworthy and biased or when the audience attributed persuasive intent to the communication source (Cohen, Mutz, Price, and Gunther, 1988; Gunther, 1991; Gunther and Mundy, 1993).

Characteristics of “Others”

While a substantial amount of research has explored the mediating effects of self-characteristics on third-person effect, few studies have examined variables associated with “others.” Of the studies conducted on “others” characteristics, most have focused on the social distance corollary. The social distance corollary assumes that the discrepancy between perceived media effects on others and on self increases as “others” are defined in broader and more global terms; that is, when there is a more social distance between “self” and “others” (Cohen, Mutz, Price, and Gunther, 1988; Cohen and Davis 1991; Gunther 1991; Perloff 1993).

Evidence of relationships between social distance factors and the third-person effect is particularly abundant in studies involving student samples. Early research of the social distance corollary by Mutz (1989) found that the third-person effect was greater among Stanford students when they compared themselves with people outside of campus relative to other Stanford students. Cohen, Mutz, Price, and Gunther (1988) found linear increases in the third-person effect as social distance increased from other students to other people residing in the town to the general public. Gunther (1995) and Wu and Koo (2001) found a greater third-person effect between student respondents and general public than between students and other students. Duck and Mullin (1995) found that the third-person effect was more pronounced when people compared their own vulnerability with that of vague and distant others. Henriksen and Flora (1999) found that children attributed greater influence from exposure to anti-smoking messages on other peers than best friends.

Lessons Learned From Third-Person Effect Research

From third-person effect research, a number of conclusions can be drawn about the applicability of the third-person effect perspective to research on DTC prescription drug advertising. The third-person effect framework involves two general hypotheses: (a) the perceptual component hypothesis that predicts people perceive greater media influence on other people than on themselves; and (b) the behavioral component hypothesis that predicts people tend to act on perceived third-person effect.

- Studies on the perceptual hypothesis provide abundant evidence that people tend to perceive greater effects of communication on others than on themselves. However, the likelihood of occurrence and magnitude of third-person effect seems to vary across different types of media content.
- The third-person effect is more likely to occur or to have greater magnitude when a media content is negative or socially undesirable or something with explicit persuasive intention such as product advertising. When a media content is perceived as positive or at least not negative, study findings have been mixed.
- DTC advertising is a form of advertising and can be perceived as something “undesirable to be influenced by” because of its persuasive intent. However, to some people it can be a valuable information source, which will be perceived as a positive media content. This suggests that while DTC advertising is likely to induce the third-person effect, the magnitude of DTC drug ad effects attributed to others and to themselves is likely to vary depending on individual perceptions of DTC drug advertising.
- Studies also reveal that third-person effect perceptions vary by the characteristics of an observer, media content, and other people. Among many possible mediating factors, issue involvement, level of knowledge, and media use are found to be associated with a greater third-person effect, although findings have been mixed.
- As a behavioral component, the relationship between the third-person effect and support for regulations of communication has been extensively tested. The third-person effect has been found to be a significant predictor of support for media censorship; however, in the context of socially desirable message content, the relationship is not universally supported.

- Although not many studies have explored the relationship between the third-person effect and behavioral outcomes of a communication other than support for censorship, a few studies suggest possible impact of the third-person effect on various types of behavioral outcomes such as election voting behavior and behavioral reactions to advertising messages.
- Key behavioral outcomes of DTC advertising are seeking more information and talking to other people - friends and family, doctors, and pharmacists. When people view DTC ads and think about talking to others, their perceptions of influences of the advertising message on others can alter their behaviors. The behavioral component of the third-person effect can provide valuable insight.

Summary

DTC prescription drug advertising is considered a unique kind of product advertising. Unlike most products, purchases cannot be made without the cooperation of others. The consumer, the one who pays money and consumes the product, is not free to legally purchase the product without permission of a gatekeeper, the physician. Even then, the purchase decision is influenced by others, most notably pharmacists and healthcare insurers. Therefore, the main goal or expected effect of DTC drug advertising is inducing consumers to search for more information about the advertised drug or the medical condition and to communicate with others including healthcare professionals. How people perceive others to be influenced by DTC ads and to react to the ads is likely to intervene between exposure to DTC drug ads and talking to other people about the ads. The third-person effect framework provides valuable insight into examining perceived effects of media messages and the relationship between the perceived effects and behaviors.

In this chapter, the research related to DTC prescription drug advertising stakeholders and the third-person effect was reviewed. The third-person effect research reveals that people attribute different effects of media on themselves and on others and

that they will perceive a persuasive media message to have greater effects on others than on themselves. However, it is uncertain whether and to what degree a third-person effect will be produced in the case of DTC drug ads, which is a form of persuasive commercial message but favored by majority of consumers.

In the behavioral aspect, third-person effect studies have demonstrated that the perceived third-person effect can induce people to support regulation of certain types of media content. However, few studies have examined the relation between the third-person effect and other types of behaviors. More studies are needed to examine whether and to what extent perceived media effects can influence actual behavioral outcomes of communication in the real world (e.g., patient behaviors after exposure to DTC drug ads).

In the following chapter, a series of hypotheses and research questions drawn from the third-person effect perspective and literature review will be presented to explore the perceived effects of DTC drug advertising, the mediating factors of the perceived effects, and how perceived effects might influence consumers' reactions to DTC drug ads.

CHAPTER 3

HYPOTHESES AND RESEARCH QUESTIONS

The hypotheses and research questions are presented in this chapter. The hypotheses and questions are drawn from the literature reviewed in Chapter 2 and are presented and justified relative to theoretical framework of the third-person effect and empirical grounding from specific research findings. As described in Chapter 2, the third-person effect framework involves two hypotheses: the perceptual hypothesis and the behavioral hypothesis. Consistent with this conceptualization, the first seven hypotheses, H1 through H7, focus on perceptual expectations involving the respondent's judgments of the perceived effects of DTC prescription drug advertising (hereafter referred to as DTCAd) and mediating factors. Hypotheses 8 and 9 focus on behavioral expectations and the correspondence between perceptions of DTCAd effects and particular forms of behaviors associated with prescription drugs. Three research questions are posed as a subset of the behavioral hypotheses to examine the mediating influence of other demographic, perceptual, and attitudinal variables. Figure 5 summarizes the hypotheses and research questions presented in this chapter.

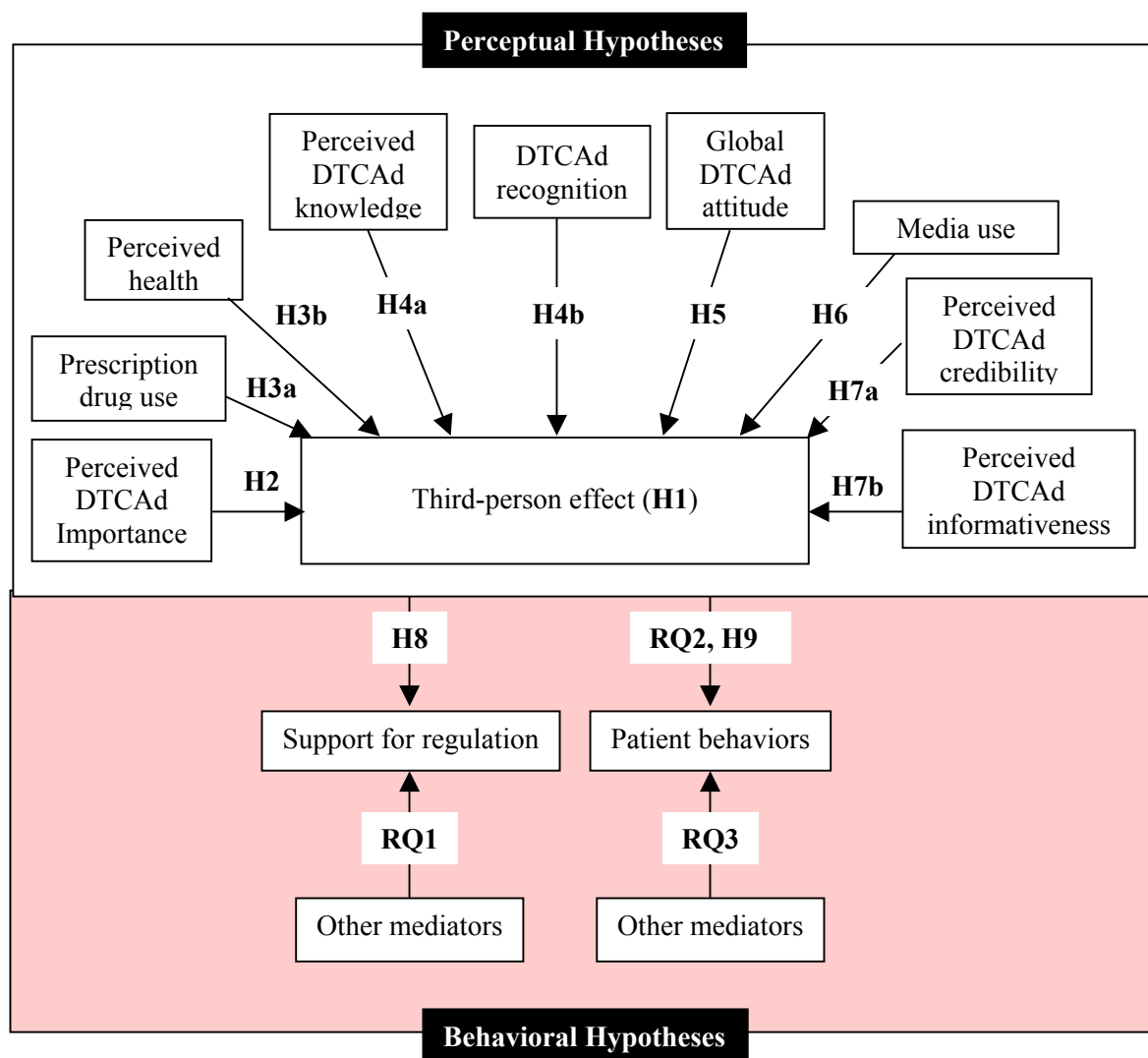


Figure 5. Hypotheses and Research Questions in the Overall Research Framework

Perceptual Hypotheses

The first hypothesis predicts that:

H1a: Respondents will perceive DTCAd to exert greater influence on other people (third person) than on themselves (first person).

H1a is predicated on the finding in the research that people believe mass media messages have less influence on themselves than on others. As noted in Chapter 2, the

third-person effect has been demonstrated in news coverage (Mutz, 1989; Perloff, 1989; Gunther, 1991; Atwood, 1994), violent media content (Innes and Zeitz, 1988; Hoffner and Buchanan, 1999), sexually explicit content (Gunther, 1995; Rojas, Shah, and Faber, 1996; Lo and Paddon, 2000), political campaigns (Rucinski and Salmon, 1990; Cohen and Davis, 1991), and advertising and PSAs (Henriksen and Flora, 1999; Youn, Faber, and Shah, 2000). Advertising, in particular, has been found to produce strong third-person effects (Gunther and Thorson, 1992; Henriksen and Flora, 1999), and DTCAd is a form of product advertising, albeit a special form.

The third-person effect phenomenon is expected because, as explained by fundamental attribution error in attribution theory: when attributing effects of media messages, people tend to underestimate others' responsiveness to external factors such as the persuasive intention of an advertising message whereas they themselves are aware of, and discount such external, situational factors.

Also, as a sub-hypothesis of **H1**, it is hypothesized that

H1b: The magnitude of the third-person DTCAd effect will be greater for negative effects of DTCAd than for positive effects of DTCAd.

Another contribution from attribution theory, egotistical differential attributions or self-serving biases, provides an explanation for stronger third-person effects in the context of negative messages. According to the principle of egotistical differential attributions, individuals tend to make self-attributions to situational factors only when they feel no threat to their self-esteem. When a message is perceived as negative, people are more likely to attribute the message to have more influence on others than when a

message is considered positive (Jones, 1979; Gunther and Thorson 1992; Brosius and Engel 1996).

Support for this notion has been also offered by studies outside the third-person effect research. For example, Reid and Soley (1982), based on Fishbein's notion of the difference between generalized and personalized beliefs, examined how people's attitudes toward advertising differ in the generalized and personalized levels. They found that there is a significant difference between people's generalized and personalized attitudes toward advertising, and therefore, people are likely to perceive others as more susceptible to the persuasive effects of advertising than themselves.

Past research demonstrates that third-person effects are mediated by a host of contextual and individual-specific factors. Therefore, Hypothesis 2 through 7 predict that respondents' perceived effects of DTC prescription drug advertising on first person and on third person will be mediated by the following factors: perceived importance of DTCAd, prescription drug use, perceived health, perceived knowledge of DTCAd, DTCAd recognition, global DTCAd attitude, media use, and perceived message characteristics.

Perceived DTCAd Importance

A number of studies demonstrate that the third-person effect is more likely to be present among those who view an issue or the topic of a media message as important (Mutz, 1989; Perloff, 1989). For example, Mutz (1989) found a linear relationship between the size of the third-person effect and perceived importance of the given issue, indicating that the size of the third-person effect of news coverage was greatest among those who viewed the riots in South Africa as "very important." Perloff (1989),

examining an ego-involvement factor, reported that those who were highly involved in the issue of Middle East conflict were more likely to generate stronger third-person effect.

Therefore, it is predicted that:

H2: The magnitude of the third-person DTCAd effect¹ will be positively related with the level of perceived importance of DTCAd as an information source.

Prescription Drug Use and Perceived Health

In the case of DTCAd, there is a reason to suspect that a person's prescription drug use and perceived health is directly associated with level of involvement into DTCAd. Though there is no direct evidence that prescription drug use or health condition is related to involvement level, DTCAd researchers have often inferred a level of involvement from respondents' health status or presence or absence of medical conditions (Perri and Dickson, 1988). Petty and Cacioppo (1981) also argued that individuals could become involved in communication messages when the messages were personally relevant. Several studies on third-person effect have demonstrated that a higher level of involvement is related with a greater third-person effect (Perloff, 1989).

Therefore, it is predicted that:

H3a: The magnitude of the third-person DTCAd effect will be greater among users than non-users of prescription drugs.

¹ By "magnitude of third-person effect," it is meant the size of difference between perceived effects of DTC advertising on other people (third person) and on themselves (first person). The effect magnitude is calculated by subtracting the size of effect on self from the size of effect on others.

H3b: The magnitude of the third-person DTCAd effect will be negatively related with the level of perceived health.

Perceived DTCAd Knowledge and Ad Recognition

Studies provide evidence that more knowledgeable people tend to estimate slightly weaker effects of media content on themselves and stronger effects on other people. Price and Tewksbury (1996) found that under some conditions, more knowledgeable individuals estimate less impact of news stories on themselves than on others. Lasorsa (1989) demonstrated that the third-person effect was greater among those with greater perceived knowledge of the given issue, and Driscoll and Salwen (1997) also reported that the third-person effect was greater among those with higher levels of self-perceived knowledge of the media content.

These findings suggest that perceived effects of DTCAd on self and on others may be influenced by perceived DTCAd knowledge and recognition of dominant copy points in DTCAd. Therefore, it is predicted that:

H4a: The magnitude of the third-person DTCAd effect will be positively related with the level of perceived DTCAd knowledge.

H4b: The magnitude of the third-person DTCAd effect will be positively related with the degree of recognition of dominant copy points in DTCAd.

Global DTCAd Attitude

Self-serving bias of attribution theory suggests that individuals tend to make self-attributions to situational factors only when they feel no threat to their self-esteem. Therefore, when a message is perceived as negative or socially undesirable, people generally attribute more influence of the message on others than on themselves. Gunther

and Thorson (1992) and Henriksen and Flora (1999) report that whether a message is positive or negative depends on how the individual perceives it and that the differing perception of media content affects the third-person effect. As a general tendency, product advertising has been associated with a strong third-person effect because of its explicit persuasive intention (Gunther and Mundy, 1993; Brosius and Engel, 1996). The implication is that DTCAd is likely to generate a strong third-person effect.

However, based on the research finding that people believe DTCAd has both positive benefits and negative consequences, it is likely that attitudes of respondents toward DTCAd will mediate the magnitude of the third-person effect. For example, Perri and Dickson (1987) reported that the majority of consumers believe that DTCAd provides useful information and benefits them in some way. Deshpande, Menon, Perri, and Zinkhan (2003) also showed that consumers generally hold positive opinions on the utility of DTCAd. However, a study by Sengupta (2002) found that consumers who held overall positive views believed that there could be some negative consequences of DTCAd: “confusing consumers,” “leading to doctor-patient conflict,” and “making money for pharmaceutical companies.” Therefore, it is predicted that:

H5: The magnitude of the third-person DTCAd effect will be negatively related with global DTCAd attitude.

Media Use

Although the research results are mixed, researchers have found that people’s media use is associated with confidence in knowledge of social objects and events and that confidence in knowledge is associated with an increased third-person effect.

Rucinski and Salmon (1990) reported that exposure to newspapers was positively related

to third-person effect in the context of political communication, although television exposure was not a significant predictor of third-person effect. Innes and Zeitz (1988) demonstrated that heavy television viewing was associated with a greater third-person effect. Therefore, because media use might make a difference in people's perception of effects of DTCAAd, it is predicted that:

H6: The magnitude of the third-person DTCAAd effect will be positively related with time spent using mass media.

Perceived Message Characteristics

This hypothesis is also in the same line with the global DTCAAd attitude hypothesis explained by self-serving bias of attribution theory. When people encounter a media message that they perceive of low credibility and information quality, they consider themselves "too smart to be influenced," but others "not smart enough to avoid being influenced." They will consider the message as something undesirable to be influenced by and thus attribute more effects on others.

A number of studies suggest that the third-person effect is mediated by people's perceptions of message characteristics (Gunther and Mundy, 1993; Duck and Mullin, 1995; Brosius and Engel, 1996). For example, studies report that the third-person effect is more likely to occur under low-credibility than under high-credibility conditions (Lasorsa, 1992; Gunther and Mundy, 1993; Duck and Mullin, 1995; Brosius and Engel, 1996).

Therefore, because perceived DTCAAd credibility might also mediate third-person DTCAAd effects, it is hypothesized that:

H7a: The magnitude of the third-person DTCAd effect will be negatively related with perceived DTCAd credibility.

It is also predicted that third-person DTCAd effects are mediated by people's perceptions of the informativeness of DTCAd. Though no research on DTCAd reports results on the mediating effect of message informativeness, perceived informativeness is established and well-accepted message characteristics (Earl and Pride, 1980; Kirmani, 1990; Pasadeos, 1990). Therefore, it is hypothesized that:

H7b: The magnitude of the third-person DTCAd effect will be negatively related with perceived DTCAd informativeness.

Behavioral Hypotheses and Research Questions

Two types of behavioral outcomes are examined in relation to perceived third-person DTCAd effect and potential mediating effects of other demographic, perceptual, and attitudinal factors: (1) support for DTCAd regulation and (2) DTCAd-targeted patient behaviors.

Support for DTCAd Regulation

The behavioral hypothesis predicts that, because some people believe other people need protection from media influences, the third-person effect is positively related to support for restrictions on media messages (Salwen, 1998). For example, a number of researchers report evidence of a positive relationship between perceived third-person effect and support for regulations on socially undesirable types of media content such as pornography, misogynistic rap lyrics, and gambling ads (Gunther, 1995; McLeod, Eveland, and Nathanson, 1997; Youn, Faber, and Shah, 2000). However, when media

content is perceived as legitimate and socially desirable, evidence suggests that the third-person effect is less predictive of censorship (Salwen, 1998).

To test whether the same relationship is exhibited for DTCAd, it is predicted that:

H8a: Among those who hold relatively negative DTCAd attitudes, the magnitude of the third-person DTCAd effect will be a significant positive predictor of support for DTCAd regulation.

H8b: Among those who hold relatively positive DTCAd attitudes, the magnitude of the third-person DTCAd effect will not predict support for DTCAd regulation.

Three research questions are posed about the relationships between perceived third-person DTCAd effects and behavioral outcomes, and various mediating factors of the behavioral outcomes. Other than the studies about censorship issues (Gunther, 1995; Rojas, Shah, and Faber, 1996; Salwen, 1998; Hoffner and Buchanan, 1999), few studies have considered other types of behavioral outcomes and their association with perceived media effects. In particular, there is no evidence about the association between perceived third-person effect and behavioral outcomes that can be induced by persuasive messages, including DTC prescription drug ads.

Mediating Factors of Support for DTCAd Regulation

The first question is posed to explore how factors other than third-person DTCAd effects might be related to support for DTCAd regulation.

The question asks:

RQ1: How are perceived DTCAd importance, global DTCAd attitude, perceived DTCAd credibility and informativeness, perceived DTCAd

knowledge, DTCAd recognition, prescription drug use, perceived health, media use, and individual demographic factors associated with support for DTCAd regulation?

DTCAd-Targeted Patient Behaviors

The second question is posed to explore how third-person DTCAd effects are associated with the possible behavioral outcomes of this unique form of advertising. As pointed out in Chapter 1, DTC prescription drug advertising is created and placed to bring about specific patient behaviors – to move patients to seek further information, to talk with a doctor about the advertised drug, to talk with a doctor about the health conditions mentioned in the ads, to ask a doctor to prescribe a specific medication, and to talk with pharmacists and friends.

The studies that have examined the effects of DTCAd (Williams and Hensel, 1995; Peyrot, Alperstein, Doren, and Poli, 1998; Balazs, Yermolovich, and Zinkhan, 2000; Huh and Becker, 2002) are suggestive, but not conclusive about mediators of DTCAd-targeted behavioral outcomes.

The second question asks:

RQ2: How are third-person DTCAd effects specifically associated with DTCAd-targeted patient behaviors (e.g., talking to doctors or requesting for an advertised drug)?

Other Mediating Factors of DTCAd-Targeted Patient Behaviors

The third question, like the first question, focuses on the possible association between other individual demographic, perceptual, and attitudinal factors and DTCAd-targeted patient behaviors. Williams and Hensel (1995) found that educational level and

health status were indirectly related to the intention to seek more information by affecting DTCAd attitudes. Peyrot, Alperstein, Doren, and Poli (1998) also identified four factors that influenced drug-requesting behavior: demographic variables, media exposure, DTCAd attitudes, and awareness of DTCAd. Huh and Becker (2002) found that exposure to DTCAd was a strong predictor of behavioral outcomes and that other factors such as prescription drug use, health conditions, control over healthcare, and various demographic variables also influenced the advertising outcomes directly and indirectly through DTCAd exposure.

The question asks:

RQ3: How are perceived DTCAd importance, global DTCAd attitude, perceived DTCAd credibility and informativeness, perceived DTCAd knowledge, DTCAd recognition, prescription drug use, perceived health, media use, and individual demographic factors associated with DTCAd-targeted patient behaviors?

Bandwagon Effect

A study by White and Scheb (2000) suggests a bandwagon effect as one possible consequence of the third-person effect. In their study, it was found that when people perceived others to be more influenced by media coverage of the Internet, they themselves were more likely to adopt the Internet. According to White and Scheb (2000), the behavior is a bandwagon effect – the respondents wanted to be like those who had started using the Internet.

To see whether a bandwagon effect can be replicated in the case of DTCAd, two hypotheses are tested:

H9a: Among those who hold relatively positive global DTCAd attitudes, the magnitude of the third-person DTCAd effect will be a significant positive predictor of DTCAd-targeted patient behaviors.

H9b: Among those who hold relatively negative global DTCAd attitudes, the magnitude of the third-person DTCAd effect will not predict DTCAd-targeted patient behaviors.

H9a and **H9b** are predicated on the assumption that the predictive ability of the third-person effect will depend on how people perceive the given media content, as third-person effect researchers have found in studies on support for media censorship. As noted in Hypothesis 8, when media content is perceived as negative, the third-person effect is a significant predictor of support for censorship, but when content is perceived as positive the predictive ability is weak. Thus, **H9a** and **H9b** are hypothesized in the same way in which **H8a** and **H8b** were predicted by testing the relationship between the third-person effect and behavior separately for those who perceive DTCAd positively and for those who perceive it negatively.

Hypotheses and Questions Revisited

The hypotheses and research questions will be revisited in Chapters 5 and 6. In Chapter 5, the results will be organized and presented in relation to each hypothesis and research question. In Chapter 6, the results will be summarized and discussed as they pertain to the hypotheses, research findings, and the third-person effect perspective and DTC prescription drug advertising research.

CHAPTER 4

METHODOLOGY OF THE RESEARCH

A mail survey of 600 randomly selected adults was conducted to address the hypotheses and research questions. In this chapter, the exact details of the survey methodology are presented, including descriptions of the sample and sampling method, questionnaire construction and measures, questionnaire pretest, data collection procedure, and questionnaire return rates.

Sample and Sampling Method

A systematic random sample of 600 adults residing in Athens-Clarke County, Georgia were targeted to receive questionnaires.² The list containing the 600 adults was purchased from the Survey Research Center (SRC) at the University of Georgia.

The list was generated by the SRC using a list-assisted systematic random sampling technique. First, using a national database of U.S. households derived primarily from white pages telephone directories and supplemented with additional proprietary information sources, a list of all possible households in Athens-Clarke County was created. Through this procedure, a sampling frame of 24,093 households was produced. Every n-th record was systematically selected from the list of 24,093 to generate the

² Usually, a sample of 50, 75, or 100 subjects per subgroup (or cell) is recommended for researchers, and multivariate studies require larger samples than univariate studies. One guideline recommended for multivariate studies indicates that a sample size larger than 200 is acceptable (Wimmer and Dominick, 1997: p.72-73).

sample of 600. To ensure randomness of the process, both the starting point and the interval (n) were randomly selected (Wimmer and Dominick, 1997).

Unlisted numbers in the telephone directories were not included in the sampling frame, unless a household with an unlisted number was derived from a secondary source. The database, which was created based on the telephone directories and secondary sources, contained approximately 78 percent of all households in Athens-Clarke County.

Questionnaire Construction and Measures

A questionnaire was constructed based on constructs derived from the research on DTC prescription drug advertising and the third-person effect framework. The questionnaire consisted of 27 questions, some of which had multiple sub-questions. The 27 questions formed 10 questionnaire sections: exposure to DTCAd; perceived DTCAd credibility and informativeness; third-person DTCAd effects; support for DTCAd regulation; perceived DTCAd importance; perceived DTCAd knowledge and DTCAd recognition; global DTCAd attitude; prescription drug use/exposure to relevant DTCAd/DTCAd-targeted patient behaviors and doctor response; perceived health; and respondent demographic/background characteristics.

The questionnaire began with an explanation of the purpose of the research and a set of general instructions about questionnaire completion. To frame the questionnaire for the respondents, an operational definition of a “prescription drug” was provided. A prescription drug was defined as “a drug that you can only get with a doctor’s prescription from a pharmacist; it can’t be purchased over the counter.”

Exposure to DTCAd

The first section of the questionnaire asked a question about “exposure to DTC prescription drug advertising by media type.” The question asked: “In the past six months, have you seen, read, or heard advertisements for prescription drugs in any of the following ways?” Respondents were required to mark either “yes,” “no” or “not sure” for six forms of media: television, radio, newspapers, magazines, the Internet, and flyers/brochures.

The question was also used for the purpose of screening. Those who answered that “they had never seen any DTC prescription drug ad in any medium in the past 6 months” were not required to complete the questionnaire. They were instructed to return the questionnaire in a provided self-addressed, pre-stamped return envelope. The number of returned, incomplete questionnaires due to non-exposure to DTCAd is reported later in this chapter.

Perceived DTCAd Credibility and Informativeness

The second part of the questionnaire included scales to measure respondents’ perceptions of two characteristics of DTCAd: credibility and informativeness. Respondents were required to rate seven forms of DTCAd on three seven-point semantic differential scales (believable – not believable, trustworthy – not trustworthy, credible – not credible) for “credibility” and one seven-point semantic differential scale (informative – not informative) for “informativeness.” The forms of DTCAd rated were: newspaper ads, television commercials, magazine ads, radio commercials, Internet ads, place-based leaflets/brochures, and direct mail pieces. A “don’t know/unsure” option was included with each scale for every advertising form.

Measures and formats of “credibility” were taken from Beltramini (1988), Kamins, Brand, Hoeke, and Moe (1989), and MacKenzie and Lutz (1989). The measure and format of perceived informativeness was taken from Earl and Pride (1980), Kirmani, (1990), and Pasadeos (1990).

Third-Person DTCAd Effects

The third-person effect is typically operationalized as the difference between perceptions of the influence of mass-mediated messages on self and others. Typically, a positive value is interpreted as indicating a third-person effect and a negative value as indicating a reverse third-person effect or first-person effect. In some cases, separate assessments of third-person perceptions and first-person perceptions are also interpreted (Perloff, 1999). The third section of the questionnaire included scales designed to measure respondents’ perceptions of DTCAd effects on self and others.

The question asked:

Now, I would like to ask you about the effects of prescription drug advertising on your behavior and on the behavior of other people. By effect, I mean the power of prescription drug advertising to cause you or others to act toward a brand of drugs, an information source, a medical care provider, or a relative or friend in a specific way.

Perceived DTCAd effects on self and others were measured by two sets of 22 seven-point scales, anchored on “strongly agree” and “strongly disagree” values. Respondents were instructed to rate each of the statements by placing a check mark in one of seven spaces, where 1 meant “strongly disagree” and 7 meant “strongly agree.” A “don’t know/unsure” option was provided for each statement.

Some researchers have questioned whether the observed third-person effect may be attributed to the order of questions or contrast between self-related and other-related questions. Tiedge, Silverblatt, Havice, and Rosenfeld (1991) and Gunther (1995) examined question-order effects and found that order did not make any difference on perceived effects on self and others. Price and Tewksbury (1996) also provided a significant measure of validity of third-person effect measurements. They tested both question-order and question-contrast effects and found that neither order of self and other questions nor question contrast mattered. In this research, self-effects and other-effects questions were asked separately in two independent sets of questions using the same statements.

First, respondents were required to rate perceived effects on self, and then, to rate perceived effects on others. The two sets of effect statements were identical, except for the declarative statement provided with each “effect” set. For the self-set, the heading stated: “Prescription drug advertising has caused ME to ...” For the others-set, the heading stated: “Prescription drug advertising has caused OTHERS to ...” “Others” was defined as “consumers who are members of the general public.”

The format of the “effects” measure has been applied in a number of third-person effect studies (e.g., Hoffner and Buchanan, 1999; Salwen and Dupagne, 1999; Youn, Faber, and Shah, 2000). The 22 DTCA effects were identified by a thorough review of previous studies (e.g., Masson and Rubin, 1986; Morris, Brinberg, Klimberg, Rivera, and Millstein, 1986a; Morris, Brinberg, Klimberg, Rivera, and Millstein, 1986b; Perri and Nelson, 1987; Sheffet and Kopp, 1990; Alperstein and Peyrot, 1993; Williams and Hensel, 1995; IMS Health, 1998; Parker and Delene, 1998; FDA, 1999; Hollon, 1999;

Kopp and Bang, 2000; Pfizer, 2000; Siegel, 2000; Wilkes, Bell, and Kravitz, 2000; Findlay, 2001; Kaiser Family Foundation, 2001b; McInturff, 2001; National Institute for Health Care Management, 2001; Pfizer, 2001; Calfee, 2002; Coney, 2002; Lexchin and Mintzes, 2002). Exhibit 1 presents the statements used to measure perceived DTCA effects, categorized by positive/negative behavioral effects and positive/negative cognitive effects³.

Exhibit 1. Statements for Perceived DTCA Effects

	Positive effects	Negative effects
Behavioral Effects	<ul style="list-style-type: none"> ▪ Make an appointment to see my doctor. ▪ Go to other media sources to get information about medical conditions and treatment options. ▪ Talk with my pharmacist about a prescription drug, treatment or medical condition. ▪ Talk with my doctor about a prescription drug, treatment or medical condition. ▪ Talk with friends and relatives about healthcare. ▪ Ask my doctor intelligent questions about treatments and medical conditions. 	<ul style="list-style-type: none"> ▪ Question the advice of my doctor. ▪ Ask my doctor to change a prescription drug I'm already taking. ▪ Ask my doctor to prescribe a specific drug brand. ▪ Misuse a prescription drug. ▪ Abuse a prescription drug. ▪ Increase my medical costs.
Cognitive Effects	<ul style="list-style-type: none"> ▪ Self-diagnose a medical condition. ▪ Learn about the risks and benefits of an advertised drug. ▪ Learn more about treatment options and medical conditions. ▪ Be more involved in my own healthcare. ▪ Retain useful information about new drugs. 	<ul style="list-style-type: none"> ▪ Become confused about treatment options and medical conditions. ▪ Feel that something is wrong with my health. ▪ Be deceived about the benefits of a prescription drug. ▪ Experience conflict with my doctor. ▪ Become distrustful of drug company-sponsored information.

³ This categorization is hypothetically suggested by this researcher and a factor analysis will determine the appropriateness of this categorization.

Support for DTCAd Regulation

Support for DTCAd regulation was measured in the fourth section of the questionnaire. Respondents were asked to rate nine statements about the regulation of DTCAd on seven-point scales, where 1 meant “strongly disagree” and 7 meant “strongly agree.” A “don’t know” option was provided for each statement.

The nine statements were identified from regulatory remedies suggested by the FDA guidelines for DTCAd and previous studies on consumers’ beliefs about DTCAd-related regulations (e.g., Foley, 2000; Wilkes, Bell, and Kravitz, 2000; Findlay, 2001), and the measurement format has been used by many studies on the behavioral aspects of the third-person effect (e.g., Gunther, 1995; Salwen and Dupagne, 1999; Youn, Faber, and Shah, 2000). The nine statements were:

1. Advertisements for prescription drugs should be submitted to the government for prior approval before they are aired or published.
2. Advertisements for prescription drugs should be totally banned.
3. Any company that wants to advertise its prescription drugs should be allowed to without any regulation.
4. Advertisements for prescription drugs should include all of a drug’s potential risks (side effects and contraindications).
5. The government should leave the regulation of prescription drug ads to the pharmaceutical industry.
6. Advertisements for prescription drugs should provide alternative information sources (toll-free numbers, websites).
7. Advertisements for prescription drugs should include a statement that a consumer must talk to doctors and/or pharmacists.
8. Advertisements for prescription drugs should present both benefits and risks of the advertised drug.

9. Only drugs that are completely safe should be advertised directly to consumers.

Perceived DTCAd Importance

The fifth section of the questionnaire included a single question designed to measure perceived DTCAd importance as a source of health-related information. The question asked: “On a scale where 1 means “not important “ and 7 means “extremely important,” how would you rate the importance of prescription drug advertising as a source of health information to you.” Importance was defined as “how essential DTC drug advertising is to the person’s mental and physical well-being.” A “don’t know” option was included with the statement.

Perceived DTCAd Knowledge and DTCAd Recognition

Self-perceived knowledge was measured by asking respondents how familiar they were with DTCAd and how much they could remember about ads for specific prescription drug brands on 2 seven-point scales. The familiarity scale was anchored by “not familiar” and “very familiar;” the memory-for-ads scale was anchored by “can’t remember at all” and “can remember a lot.” A “don’t know” option was provided for each statement.

In addition to perceived DTCAd knowledge, how much respondents actually know and remember of DTCAd was measured by an ad-content recognition task. Respondents were required to match a specific brand of prescription drug with its ad content⁴ by writing the number of the brand in a space beside a description of content from the brand’s ad. Seven brands were listed with five descriptions of ad content. The

⁴ Each ad content was described by the most dominant cues of the ad (e.g., celebrity spokesperson, repeated slogan).

two extra brands were included to control for guessing, and a “don’t know” option was provided for each description of ad content.

The advertised brands presented in the DTCAd recognition task were selected from the top ten most advertised prescription drugs in 2001 (source: IMS Health, Integrated Promotional Service and CMR, 2002, quoted from Blankenhorn and Lipson, 2002, p. 62). The seven brands and the corresponding ad content descriptions listed were:

Vioxx	Former ice skater Dorothy Hamill testimonial
Nexium	“Today’s purple pill”
Zocor	Atlanta Falcons’ coach Dan Reeves testimonial
Viagra	Major leaguer Rafael Palmerio testimonial
Celebrex	“Celebrate, celebrate”
Imitrex	
Claritin ⁵	

Global DTCAd Attitude

In the seventh section of the questionnaire, global DTCAd attitude was measured by three semantic differential scales, anchored by bad – good, pleasant – unpleasant, and favorable – unfavorable. The three scales were adopted from measurements of “attitude toward advertising-in-general” used by Muehling (1987), MacKenzie and Lutz (1989), Pollay and Mittal (1993), and Ramaprasad (2001). Attitude toward advertising-in-general is defined as “a learned predisposition to respond in a consistently favorable or unfavorable manner toward advertising in general” (MacKenzie and Lutz, 1989, p. 53). Many researchers who studied attitude toward advertising-in-general have used different measures such as a set of Likert scales of belief statements regarding concerns about advertising. Muehling (1987) criticized these studies for measuring beliefs about

advertising when the focus was on attitude toward advertising. Because the current research intends to measure consumers' attitude toward DTC drug advertising in general – “the degree to which a person likes or dislikes” (Ajzen and Fishbein, 1980, p. 64) DTC drug advertising – global attitude measures are more appropriate than belief measures.

Prescription Drug Use, Exposure to Relevant DTCAd, DTCAd-Targeted Patient Behaviors, and Doctor Response

A series of questions was asked to measure respondents' prescription drug use, exposure to self-defined relevant DTCAd, DTCAd-targeted patient behaviors resulting from ad exposure, and physician response to DTCAd-induced prescription requests. Prescription drug use was measured by two questions. The first question asked: “In the last 6 months, have you taken a prescription drug, that is, a drug that you can only get with a doctor's prescription?” Respondents could answer in three ways: “yes,” “no,” or “don't know.” The second question asked: “How many prescription drugs are you now taking?”

Exposure of relevant DTCAd was measured by asking: “In the last 6 months, have you seen or heard any prescription drug ads that seemed relevant to your health?” The question had three response options: “yes,” “no,” and “don't know.”

DTCAd-targeted patient behaviors were measured by asking respondents to check any of six outcomes that resulted from seeing or hearing relevant DTCAd. The six outcomes were:

1. I have talked with my doctor about an advertised drug.
2. I have talked with my friends or relatives about an advertised drug.

⁵ Claritin went OTC (Over-the-Counter) in November 2002, but when this survey was conducted, Claritin was sold only with a doctor's prescription.

3. I have talked with my pharmacist about a drug.
4. I have searched for more information about a drug.
5. I have asked my doctor to prescribe an advertised drug.
6. Something else

Those who asked their doctors to prescribe an advertised drug were asked to report their doctor's reaction to the request. Eight doctor responses were provided and respondents were instructed to check all that occurred:

1. Doctor prescribed the drug you asked about.
2. Doctor refused to prescribe the drug with explanation.
3. Doctor refused to prescribe the drug without explanation.
4. Doctor recommended a different prescription drug.
5. Doctor recommended an over-the-counter drug.
6. Doctor recommended no drug.
7. Doctor recommended that you make changes in your behavior or lifestyle.
8. Something else

Perceived Health

A single statement was used to measure perceived health. Respondents were asked to rate their overall health on a seven-point scale, where 1 meant "unhealthy" and 7 meant "extremely healthy." A "don't know" response option was provided with the statement.

Demographic/Background Characteristics

In the final section of the questionnaire, demographic and background information was collected. Age and media use were collected through open-ended questions; respondents were asked to write in their age and hours per week spent reading newspapers and magazines, watching TV, listening to the radio, and using the Internet. Information about gender, education, race, marital status, employment status, and income were collected through closed-in questions; respondents were asked to mark particular attributes for each of the six characteristics.

Questionnaire Pretest

An initial version of the questionnaire was pretested with a convenience sample of 30 adults from the Athens-Clarke County area. The sample consisted of 12 undergraduate students in a graphic communication class and 18 office workers at the University of Georgia. Self-administered survey questionnaires were distributed and collected in person by the researcher of this study.

The pretest was designed to detect any possible format, wording and measurement problems and to make sure that respondents understood the instructions, questions, and scales. Additionally, respondents were asked to provide feedback about how long it took to complete the questionnaire and completion difficulty by writing comments at the bottom of the questionnaire (Alreck and Settle, 1995; Wimmer and Dominick, 1997).

No major problems emerged from the pretest. However, based on suggestions from the pretest respondents, minor wording and editing changes were made in the questionnaire. On average, it took about fifteen minutes for respondents to complete the questionnaire. The final version of the questionnaire is provided in the Appendix.

Data Collection Procedure

The final questionnaire was administered in three waves of mailings. In the first wave, questionnaires were mailed to the 600 adults. Included with each questionnaire were three items: a letter of introduction with instructions, a monetary incentive, and a postage-paid return envelope.

A \$1 bill was affixed to the letter as a response incentive to draw attention and to increase questionnaire completion and return. The letter informed the respondents that they would be mailed a \$2 bill when they mailed back a completed/usable questionnaire in the provided return envelope.

Approximately one month after the first mailing, a second wave of questionnaires was mailed to non-respondents. About a month later, the third and final mailing wave was executed. Postage-paid return envelopes were included in both second and third mailing waves; however, no further incentives were enclosed.

Acceptance of returns was closed one month following the third mailing wave. One week later, “thank you” letters and the promised \$2 bills were mailed to the 264 respondents who returned completed/usable questionnaires.

Questionnaire Return Rates

The three mailing waves yielded 264 useable questionnaires. One hundred and sixty-five completed questionnaires were returned from the first mailing. The second mailing produced 74 completed questionnaires and the third mailing generated 25.

Of the 600 mailings, 74 were returned because of undeliverable addresses; 25 people returned unusable questionnaires; 10 were returned from respondents who declined to participate; and 10 were returned with a note saying the targeted individual

was deceased. Fifteen questionnaires were returned but were not completed because of no DTC drug ad exposure. These questionnaires were included as returns when computing return rates, but not included in data analyses.

The three mailings yielded a gross survey return rate of 46.5 percent and an adjusted return rate of 53 percent. The adjusted rate was computed by excluding the 74 undeliverable returns from the 600 mailings.

Compared to return rates reported in most social science studies, this study's return rate is relatively high: for example, Alreck and Settle (1995) state that mail surveys with return rates over 30 percent are rare nowadays; Yu and Cooper (1983) reported that an average return rate of mail surveys in the social science fields between 1965 and 1981 was 47 percent.

Regardless of how high the response rate is, research methodology textbooks recommend that a researcher needs to examine any possible biases in response patterns in comparison to the population under study (Alreck and Settle, 1995; Wimmer and Dominick, 1997). To check the response/non-response bias, respondents of this study were compared against the demographic composition of the population from which the sample was drawn. The sample validation information and detailed results of the survey are reported in the following chapter.

CHAPTER 5

ANALYSES AND RESULTS

Results of the survey are reported in this chapter. The results are ordered and described in relation to particular hypotheses and research questions. The statistical techniques used to produce reported results are first presented, followed by the results themselves. Following is a descriptive comparison of the characteristics of the 264 survey respondents relative to population characteristics.

Profile of Survey Respondents and Population

Table 1 depicts demographic and socio-economic characteristics of the survey respondents and of the population from which the sample was drawn. Chi-square tests were conducted to check for significance of differences between characteristics of the survey respondents and of the population. Difference of proportions tests (z-score tests) were conducted to check proportional differences between the specific characteristics. The population profile was obtained from the 2000 U.S. Census data for the Athens-Clarke County area (available at <http://censtats.census.gov>).

Analysis revealed that those who responded to the survey were similar to the population on gender. Forty-seven percent of the survey respondents were men and 53 percent were women; 48 percent of the population were men and 52 percent were women (based on population 18 years or over). The proportions were not significantly different.

However, the survey respondents and the population were different on age, education, race, and marital status. As shown in Table 1, the respondents were older than the adult population. About 18 percent of the respondents were 24 years or younger compared to 30 percent among the population ($z\text{-score}=4.387$). Also, while only 11 percent of the adult population in the Athens-Clarke County were age 65 years or older, about one-fifth of the respondents (19.5 percent) fell into that category ($z\text{-score}=2.774$). The average age of the respondents was 44.8 and ranged from 19 to 95 years of age.

The survey respondents were better educated than the population. Thirty-five percent of the respondents had a graduate degree; only 19 percent of the adult population (25 years and over) had a graduate degree ($z\text{-score}=5.360$).

More white and married respondents participated in the survey than in the population. Eighty-five percent of the respondents were white; whites comprised 65 percent of the population. Only ten percent of the respondents were black; in the population, 27 percent of the people were black ($z\text{-score}=6.531$ for the difference in proportions for “white”, $z\text{-score}=5.496$ for the difference in proportions for “black”). Forty-seven percent of the respondents were married; 38 percent of the population were married ($z\text{-score}=2.844$).

Even though the sample was drawn by a systematic random sampling method, the discrepancies among characteristics of the survey respondents and of the population suggest that caution should be exercised in generalizing the study’s results to the general population. More will be said about the implications of these discrepancies in Chapter 6.

Table 1. Characteristics of Survey Respondents in Comparison with the Population

	Respondents		Population		Z-score	Chi-square
	Frequency	Percent	Frequency	Percent		
Gender						
Male	123	46.9	40,229	48.2	-0.420	
Female	139	53.1	43,152	51.8	0.420	
Total	262	100	^a 83,381	100		0.068
Age						
24 or younger	46	17.6	23,389	31.2	-4.387*	
25-34	56	21.5	16,626	22.2	-0.226	
35-44	43	16.5	11,182	14.9	0.516	
45-54	37	14.2	9,683	12.9	0.419	
55-64	28	10.7	5,942	7.9	0.903	
65 or older	51	19.5	8,208	10.9	2.774*	
Total	261	100	^b 75,030	100		14.031*
Education						
Grade 1-8	5	1.9	3,703	7.1	-1.679	
High school incomplete	6	2.3	6,125	11.8	-3.068*	
High school graduate	24	9.2	11,205	21.6	-4.004*	
Some college	46	17.6	8,174	15.8	0.581	
Associate degree	19	7.2	1,992	3.8	1.098	
Bachelor's degree	69	26.3	10,860	20.9	1.744	
Grad/professional degree	93	35.5	9,786	18.9	5.360*	
Total	262	100	^c 51,845	100		37.798**
Race						
White	223	85.1	65,852	64.9	6.531*	
Black/African American	27	10.3	27,656	27.3	-5.496*	
Asian	3	1.1	3,173	3.1	-0.647	
Hispanic/Latino	4	1.5	N/A	N/A		
Native American/Alaska Native	1	0.4	214	0.2	0.065	
Other/mixed race	4	1.5	4,594	4.5	-0.970	
Total	262	100	^d 101,489	100		20.364**
Marital Status						
Single	92	35.1	41,429	48.1	-4.202*	
Married	122	46.6	32,574	37.8	2.844*	
Other	48	18.3	12,099	14.1	1.358	
Total	262	100	^e 86,102	100		6.813*

a. Based on population 18 years and over

b. Based on population 20 years and over

c. Based on population 25 years and over

d. Based on entire population

e. Based on population 15 years and over

** Significant at the 0.01 level.

* Significant at the 0.05 level.

Computing Third-Person Effect Scores and Summated Indices

Before testing the hypotheses and research questions, a series of statistical techniques was performed to obtain third-person effect scores, to identify third-person effect dimensions, and to create summated indices for subsequent analyses. Following is a description of those procedures.

Third-Person Effect Scores

As noted in Chapter 4, the perceived effects of DTC prescription drug advertising on self and on others were measured by two sets of 22 Likert scales: one set measured perceived effects on self and the other measured perceived effects on others. The respondents were required to rate each of the statements in the two sets on seven-point scales, where 1 meant “strongly disagree” and 7 meant “strongly agree.” The respondents were allowed to choose “Don’t know” for each statement. “Don’t know” answers were recoded as a middle value on the seven-point scale because studies have demonstrated that a “Don’t know” answer reflects equivocation, or no attitude about an item. The research suggests that if given a Likert scale without a “Don’t know” option, respondents are more likely to choose the middle option (Coombs and Coombs, 1976; Feick, 1989).

A third-person effect score was operationalized as the difference between a perceived DTCAd effect on self (first person) and on other people (third person). Third-person effect scores were computed by subtracting the size of the perceived effect on self from the size of the perceived effect on others for the 22 self-other statement pairs. Table 2 presents descriptive statistics of the 22 third-person effect scores.

Table 2. Third-Person Effect Scores for the 22 DTCA_d Effect Statements

DTCA _d Effect Statements	N	Mean	Std.Dev.
Make an appointment to see their doctors.	260	2.485	2.132
Misuse a prescription drug.	260	2.338	2.165
Ask their doctors to change a prescription drug they're already taking.	261	2.276	2.332
Feel that something is wrong with their health.	260	2.262	2.135
Abuse prescription drugs.	260	2.246	1.959
Ask their doctors to prescribe a specific drug brand.	260	2.212	2.286
Self-diagnose a medical condition.	261	2.126	2.037
Become confused about treatment options and medical conditions.	260	2.038	2.481
Experience conflict with their doctors.	259	2.000	2.115
Spend more money on their healthcare.	260	1.965	2.199
Be deceived about the benefits of a prescription drug.	260	1.831	2.197
Question the advice of their doctors.	259	1.510	2.434
Talk with their pharmacists about a prescription drug, treatment, or medical condition.	259	1.413	2.455
Talk with friends and relatives about healthcare.	260	1.173	2.060
Talk with their doctors about a prescription drug, treatment, or medical condition.	259	0.973	2.467
Go to other media sources to get information about medical conditions and treatment options.	260	0.946	2.344
Be more involved in their healthcare.	260	0.754	2.118
Retain useful information about new drugs.	261	0.609	1.798
Learn more about treatment options and medical conditions.	260	0.342	2.310
Learn about the risks and benefits of an advertised drug.	261	0.326	2.124
Ask their doctors intelligent questions about treatments and medical conditions.	261	0.314	2.200
Become distrustful of drug company-sponsored information.	259	0.239	2.045

A positive sign indicates a third-person effect (respondents perceive greater DTCA_d effect on others than on themselves); a zero indicates a second-person effect (same perceived effect on self and others); and a negative sign indicates a reverse third-person effect or first-person effect (respondents perceive a greater effect on self than on others). As shown in Table 2, positive values were found for all 22 third-person effect

scores, suggesting that the respondents perceived DTCA_d to have greater effects on others than on themselves regardless of effect type (i.e., negative, positive, etc.). The self/other effect pairs in Table 2 are ordered by degree of perceived third-person effect.

Cronbach's Alpha Reliability Testing

As pointed out in Chapter 4, the 22 perceived effects items were initially categorized into four effect types: positive behavioral effects, negative behavioral effects, positive cognitive effects, and negative cognitive effects. To test the appropriateness of the *a priori* perceived effects categorization and to create summated indices for subsequent analysis, Cronbach's alpha reliability tests were conducted to determine how well the individual items within the four perceived effects categories grouped together (i.e., positive behavioral effects, negative behavioral effects, positive cognitive effects, and negative cognitive effects).

The alpha levels were as follows: 0.795 for the "positive behavioral effects" category; 0.807 for the "negative behavioral effects" category; 0.742 for the "positive cognitive effects" category; and 0.670 for the "negative cognitive effects" category. The Cronbach's alpha for the overall reliability of the 22 third-person effect scores was 0.904.

The generally accepted lower limit for Cronbach's alpha is 0.70, but the minimum level can decrease to 0.60 in exploratory research (Hair, Anderson, Tatham, and Black, 1998). From the analysis, acceptable reliability levels were achieved for the four effects categories.

Factor Analysis of Third-Person Effect Scores

The computed 22 third-person effect scores were also subjected to factor analysis to identify the dimensional structure and relationships among the third-person effects and

to determine whether the *a priori* categorization of perceived effects was an appropriate representation of the actual factor structure. A principal component factor analysis was performed using both orthogonal (VARIMAX) and oblique (OBLIMIN) rotation methods. A scree test and eigenvalues of 1.0 were applied as extract criteria. Table 3 presents the factor analysis results, generated by the VARIMAX rotation method.⁶

The factor solution extracted four factors with eigenvalues greater than 1.0, explaining 59 percent of the total variance. The percentage of variance explained may be relatively low. However, in the social science, where information is often less precise than in the natural science, it is not uncommon to consider 60 or even lower percentages of the total variance as satisfactory (Hair, Anderson, Tatham, and Black, 1998).

The factor structures were somewhat different from the initial perceived-effect categorization. However, the *a priori* distinction between perceived positive and negative DTCAd effects emerged reasonably intact. The four factors were labeled as follows: Factor 1 - Negative DTCAd Effects, Factor 2 - Learning & Involvement, Factor 3 - Patient/Provider Interaction, and Factor 4 - Distrust of DTCAd Information.

Factor 1, “negative DTCAd effects,” represents an aggregation of all negative effects of DTCAd, except one variable: “self-diagnose a medical condition” was initially categorized as a positive cognitive effect but was found highly correlated with negative effect variables. This suggests that self-diagnosing a medical condition might be perceived by consumers as an undesirable byproduct of exposure to DTCAd.

⁶ A factor analysis using oblique (OBLIMIN) rotation showed low correlation between factors and suggested that the factors were naturally orthogonal. Also, although there is no right or wrong answer for choosing rotational method, it is generally recommended to use an orthogonal rotation method when the goal of the analysis was to reduce the number of original variables to a smaller set of uncorrelated variables for subsequent use in other analyses (Hair, Anderson, Tatham, and Black, 1998). Both oblique (OBLIMIN) and orthogonal (VARIMAX) rotations generated almost the same factor structures.

Table 3. Factor Analysis of DTCAd Third-Person Effect Scores (N=254)

	Factor1	Factor2	Factor3	Factor4
Experience conflict with their doctors.	0.771	0.077	0.123	-0.133
Misuse a prescription drug.	0.759	-0.115	0.242	0.037
Abuse prescription drugs.	0.744	-0.157	0.065	-0.005
Self-diagnose a medical condition.	0.730	0.285	0.000	0.130
Feel that something is wrong with their health.	0.694	0.105	0.266	0.005
Become confused about treatment options/medical conditions.	0.664	0.242	0.156	-0.015
Ask their doctors to change a prescription drug they're already taking.	0.616	0.168	0.373	-0.061
Be deceived about the benefits of a prescription drug.	0.568	0.356	-0.119	0.231
Spend more money on their healthcare.	0.503	0.448	0.150	0.352
Learn about the risks and benefits of an advertised drug.	-0.037	0.810	0.175	-0.054
Ask their doctors intelligent questions about treatments and medical conditions.	0.020	0.787	0.267	-0.102
Be more involved in their healthcare.	0.187	0.761	0.235	0.243
Go to other media sources to get information about medical conditions and treatment options.	0.191	0.660	0.190	-0.098
Learn more about treatment options and medical conditions.	0.059	0.616	0.445	-0.054
Talk with friends and relatives about healthcare.	0.223	0.453	0.284	0.105
Talk with their pharmacists about a prescription drug, treatment, or medical condition.	0.180	0.303	0.691	0.138
Ask their doctors to prescribe a specific drug brand.	0.351	0.188	0.675	0.174
Talk with their doctors about a prescription drug, treatment, or medical condition.	0.121	0.357	0.660	0.259
Retain useful information about new drugs.	-0.048	0.283	0.602	-0.179
Question the advice of their doctors.	0.373	0.262	0.572	0.000
Make an appointment to see their doctors.	0.436	0.109	0.505	0.274
Become distrustful of drug company-sponsored information.	0.058	0.087	-0.149	-0.827
Eigenvalue	4.765	3.848	3.155	1.221
% of variance explained	21.661	17.490	14.341	5.551
Total variance explained	59.044			

Factor 2, “learning & involvement,” included *a priori* positive effects categories, while Factor 3, “patient/provider interaction,” represented the aggregation of behavioral effects involving interactions with healthcare providers. Factor 3 included relatively more positive DTCAd effects than negative effects.

Factor 4 “distrust of DTCAd information,” was composed of a single item: “distrust of drug company-sponsored information.” This variable was initially categorized as a negative DTCAd effect; however, the derived factor solution suggests that consumers may perceive it neither negatively nor positively. Because “distrust of DTCAd information” was not associated with Factor 1, “negative DTCAd effects” or Factors 2 and 3 which describe positive effects, it was interpreted a separate factor. If it were perceived as a negative effect by consumers, it would have loaded on Factor 1.

Cronbach’s alpha tests were performed to examine the reliability and internal consistency of the effect items in each of the three factors (excluding Factor 4 because it consists of only one variable). The alpha score for Factor 1 was 0.879; Factor 2’s alpha score was 0.848; and Factor 3’s alpha level was 0.828. The three factors achieved high reliability levels, and the reliability test results for the factors were better than reliability levels for the *a priori* categorization. As a result, the factor solution, rather than the *a priori* categorization, was used as the summated third-person effect indices in the subsequent analytical tests of research questions and hypotheses.

To create a set of summated third-person effect indices, items in each of the four factors were averaged, except for Factor 4. All 22 third-person effect scores were averaged to obtain a summated index representing the magnitude of the global third-

person effect. The following section reports the results by each hypothesis and research question.

Testing Perceptual Hypotheses

H1a: Respondents will perceive DTCAd to exert greater influence on other people (third person) than on themselves (first person).

To test Hypothesis 1a at the aggregate level, a paired t-test was conducted between the summated means of DTCAd effects on self and effects on others. Differences between the 22 perceived-effects items were tested by a series of paired t-tests for each 22 DTCAd effect pairs on self and on others (see Table 4). To control inflation of the overall Type I error rate caused by multiple t-tests, the alpha level was adjusted for the number of tests by applying the Bonferroni inequality approach. The adjusted alpha level was 0.002 ($=0.05/22$).

As hypothesized, the summated mean of DTCAd effects on others was significantly different from the summated mean of effects on self. The mean difference of 1.456 indicates that DTCAd was perceived to have a greater influence on others than on self at the aggregate level.

At the individual item level, significant differences were found for all but one of the perceived DTCAd effect pairs (effects on others versus self) at the $p < 0.05$ level. Only “causing people to become distrustful of drug company-sponsored information” exhibited a non-significant difference (at the $p \leq 0.05$ level) between perceived DTCAd effects on self and others.

Table 4. T-tests between DTCAd Effects on Self and Effects on Others

	Effect on self	Effect on other	Mean difference	T-value	Df	P-value
Mean of 22 items	3.102	4.558	1.456	18.479	262	0.000
Make an appointment to see their doctors.	2.444	4.924	2.485	18.794	259	0.000
Retain useful information about new drugs.	3.871	4.454	0.609	5.475	260	0.000
Ask their doctors to prescribe a specific drug brand.	2.943	5.157	2.212	15.600	259	0.000
Question the advice of their doctors.	2.916	4.437	1.510	9.981	258	0.000
Misuse a prescription drug.	1.626	3.969	2.338	17.415	259	0.000
Talk with their pharmacists about a prescription drug, treatment, or medical condition.	3.605	4.996	1.413	9.264	258	0.000
Talk with their doctors about a prescription drug, treatment, or medical condition.	4.276	5.222	0.973	6.346	258	0.000
Feel that something is wrong with their health.	2.260	4.525	2.262	17.083	259	0.000
Become confused about treatment options and medical conditions.	2.523	4.567	2.038	13.251	259	0.000
Learn more about treatment options and medical conditions.	4.328	4.651	0.340	2.389	259	0.000
Experience conflict with their doctors.	1.785	3.789	2.000	15.219	258	0.018
Become distrustful of drug company-sponsored information.	3.851	4.081	0.239	1.884	258	0.061
Ask their doctors to change a prescription drug they're already taking.	2.350	4.621	2.276	15.765	260	0.000
Talk with friends and relatives about healthcare.	3.828	4.981	1.173	9.182	259	0.000
Self-diagnose a medical condition.	2.506	4.644	2.126	16.865	260	0.000
Go to other media sources to get information about medical conditions and treatment options.	3.492	4.429	0.946	6.508	259	0.000
Be more involved in their healthcare.	3.866	4.640	0.754	5.738	259	0.000
Spend more money on their healthcare.	2.668	4.644	1.965	14.410	259	0.000
Learn about the risks and benefits of an advertised drug.	4.285	4.622	0.326	2.477	260	0.014
Ask their doctors intelligent questions about treatments and medical conditions.	4.318	4.609	0.314	2.307	260	0.022
Abuse prescription drugs.	1.405	3.655	2.246	18.485	259	0.000
Be deceived about the benefits of a prescription drug.	2.668	4.510	1.831	13.434	259	0.000

When the adjusted alpha level, $p < 0.002$ was applied, four items (experience conflict with their doctors, become distrustful of drug company-sponsored information, learn about the risks and benefits of an advertised drug, ask their doctors intelligent questions about treatments and medical conditions) did not reach statistical significance. However, all positive signs in mean differences between DTCAd effects on others and effects on self indicate that respondents, in general, attribute greater effects of DTCAd on other people than on themselves.

Based on these results, **H1a** was supported – people perceive DTCAd to exert a greater influence on others than on themselves. Put another way, people believe that DTCAd influences the behavior of other people more than it influences their own behavior.

H1b: The magnitude of the third-person DTCAd effect will be greater for negative effects of DTCAd than for positive effects of DTCAd.

To examine how the magnitude of third-person effect differs between negative and positive effects of DTCAd, a series of paired t-tests was performed among the four third-person effect indices (factors): Factor 1, “negative DTCAd effects,” Factor 2, “learning & involvement,” Factor 3, “patient/provider interaction,” and Factor 4, “distrust of DTCAd information.” Table 5 presents the multiple t-test results for the paired third-person effect indices. The significance alpha level was adjusted for the number of tests by applying the Bonferroni inequality approach. The adjusted alpha level was 0.008 ($=0.05/6$).

Paired mean-comparisons revealed that all four third-person effect indices were significantly different from each other (at the $p < 0.05$ level). However, applying the

adjusted alpha level, the mean difference between Factor 2, “learning & involvement,” and Factor 4, “distrust of DTCAd information,” was non-significant.

Table 5. T-test of Mean Differences in Third-Person Effects
Among Paired Four DTCAd Third-Person Effect Indices

	Mean (I)	Mean (J)	Mean difference (I-J)	T-value	df	P-value
(Factor 1, negative DTCAd effects) – (Factor 2, learning & involvement)	2.111	0.638	1.473	13.521	260	0.000
(Factor 1, negative DTCAd effects) – (Factor 3, patient/provider interaction)	2.111	1.523	0.588	6.289	260	0.000
(Factor 1, negative DTCAd effects) – (Factor 4, distrust of DTCAd information)	2.111	0.239	1.875	11.619	258	0.000
(Factor 2, learning & involvement) – (Factor 3, patient/provider interaction)	0.638	1.523	-0.885	-10.059	260	0.000
(Factor 2, learning & involvement) – (Factor 4, distrust of DTCAd information)	0.638	0.239	0.393	2.395	258	0.017
(Factor 3, patient/provider interaction) – (Factor 4, distrust of DTCAd information)	1.523	0.239	1.284	7.317	258	0.000

Among significant mean differences, the greatest mean difference was found between “negative DTCAd effects” and “distrust of DTCAd information,” followed by the difference between “negative DTCAd effects” and “learning & involvement.” The mean difference between “negative DTCAd effects” and “patient/provider interaction” showed relatively small differences in the size of the DTCAd third-person effect.

As hypothesized, the “negative DTCAd effects” dimension showed the biggest third-person effect among various DTCAd third-person effect dimensions. “Distrust of DTCAd information” and “learning & involvement” exhibited relatively smaller third-person effects, but the third-person effect was still found for the two factors.

The nature of DTCAd effect on “distrust of DTCAd information” was unclear – whether it is perceived as either negative or positive to the respondents. However, the

small third-person effect for “learning & involvement” suggests that people tend to perceive differences between DTCAd effects on self and others to lesser degree when it comes to positive DTCAd effects.

Based on these findings, **H1b** was supported – negative effects produced by DTCAd are more strongly associated with the perceived third-person effect than are positive DTCAd effects. Put another way, people differentiate between the negative and positive effects of DTCAd, and believe that the negative effects of DTCAd are more pronounced in the behavior of other people than in their own behavior.

H2: The magnitude of the third-person DTCAd effect will be positively related with the level of perceived importance of DTCAd as an information source.

The second hypothesis was tested with the summated third-person effect index and the four third-person effect factors. A correlation analysis was conducted between the level of perceived importance of DTCAd as a source of information and the size of the third-person effect. As shown in Table 6, all of the third-person effect factors were significantly correlated with perceived importance of DTCAd at the $p < 0.05$ level.

Table 6. Correlation between Perceived Importance of DTCAd and Third-Person Effect Indices

Third-person effect indices	Perceived Importance
Summated third-person effect	-0.328**
Third-person effect for “negative DTCAd effects”	-0.340**
Third-person effect for “learning & involvement”	-0.222**
Third-person effect for “patient/provider interaction”	-0.248**
Third-person effect for “distrust of DTCAd information”	0.143*

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

However, contrary to the hypothesis, the direction of four of the correlations was negative, indicating that lower perceived importance of DTCAd as an information source is associated with a greater third-person effect. Only the third-person effect factor, “distrust of DTCAd information,” was positively related to perceived DTCAd importance.

Based on these results, **H2** was not supported – perceived third-person DTCAd effects are negatively related with consumer judgment of the importance of DTCAd-delivered information. Put another way, the more important people consider DTCAd, the less difference they see between the effects of DTC drug ads on the behavior of other people and on their own behavior. The less important they see DTCAd, the more difference they see between DTCAd effects on themselves and others.

H3a: The magnitude of the third-person DTCAd effect will be greater among users than non-users of prescription drugs.

A one-way ANOVA was conducted to test Hypothesis **H3a**. As shown in Table 7, a significant relationship was found between the magnitude of the third-person DTCAd effect and prescription drug use (see Table 7).

The sizes of the third-person DTCAd effect differed significantly between users and non-users of prescription drugs for the summated third-person effect and for three of the third-person effect factors, “negative DTCAd effects,” “learning & involvement,” and “patient/provider interaction” (at the $p < 0.05$ level). However, non-users of prescription drugs were more likely to perceive greater third-person effects than prescription drug users contrary to what was hypothesized.

Table 7. One-Way ANOVA for Third-Person Effect
Between Users and Non-users of Prescription Drugs

Third-person effect indices		N	Mean	F-value	P-value
Summated third-person effect	Users	208	1.322	13.830	0.000
	Non-users	51	2.045		
	Total	259	1.464		
Third-person effect for “negative DTCAAd effects”	Users	207	1.9978	5.639	0.018
	Non-users	51	2.5708		
	Total	258	2.111		
Third-person effect for “learning & involvement”	Users	207	0.451	13.856	0.000
	Non-users	51	1.392		
	Total	258	0.637		
Third-person effect for “patient/provider interaction”	Users	208	1.340	13.010	0.000
	Non-users	51	2.257		
	Total	259	1.521		
Third-person effect for “distrust of DTCAAd information”	Users	206	0.340	2.059	0.153
	Non-users	50	-0.120		
	Total	256	0.250		

* Mean values are based on a 7-point scale.

The size of the third-person DTCAAd effect and the number of prescription drugs taken was also examined by correlation analysis. The analysis revealed a similar pattern as the ANOVA, finding a significant correlation between third-person DTCAAd effects and the number of prescription drugs taken and in the opposite direction of Hypothesis 3a (see Table 8).

At the aggregated level, as the number of prescription drugs taken increased, the magnitude of the third-person DTCAAd effect became smaller. However, at the individual level, the results were mixed: the third-person effect factors, “learning & involvement,” and “patient/provider interaction,” correlated negatively with the number of prescription drugs taken; the “negative DTCAAd effects” factor also showed a negative correlation between the size of third-person effect and the number of drugs taken but the Pearson correlation coefficient did not reach statistical significance. The third-person effect factor,

“distrust of DTCAd information,” was positively related with the number of prescription drugs taken.

Table 8. Correlation between the Number of Prescription Drugs Taken and Third-Person DTCAd Effect

Third-person effect factors	Number of prescription drugs
Summated third-person effect	-0.141*
Third-person effect for “negative DTCAd effects”	-0.058
Third-person effect for “learning & involvement”	-0.178**
Third-person effect for “patient/provider interaction”	-0.172**
Third-person effect for “distrust of DTCAd information”	0.185**

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

Based on these results, **H3a** was not supported – perceived third-person DTCAd effects are greater among non-users than users of prescription drugs. Among users and non-users, people who take no prescription drugs believe that DTCAd influences the behavior of other people more than it influences their own behavior, and light users are more likely than heavy users to believe that other people are more influenced than themselves.

H3b: The magnitude of the third-person DTCAd effect will be negatively related with the level of perceived health.

It was hypothesized that less healthy people would be more likely to exhibit a greater third-person DTCAd effect than healthy people. However, correlation analysis found that there was a significant relationship between size of the third-person effect and the level of perceived health, but in the opposite hypothesized direction. It was found that

there was a significant positive – not negative – relationship between perceived health and the third-person DTCAd effect (see Table 9).

Table 9. Correlation between Perceived Health and Third-Person DTCAd Effect

Third-person effect factors	Perceived health
Summated third-person effect	0.175**
Third-person effect for “negative DTCAd effects”	0.115*
Third-person effect for “learning & involvement”	0.133*
Third-person effect for “patient/provider interaction”	0.195*
Third-person effect for “distrust of DTCAd information”	0.015

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

Those who perceived themselves relatively healthy were more likely to exhibit a greater third-person effect than those who perceived themselves as unhealthy. This tendency was true for both the summated third-person effect and three of the third-person effect factors. However, the third-person effect factor, “distrust of DTCAd information,” did not significantly correlate with perceived health.

Based on these results, **H3b** was not supported – perceived third-person DTCAd effects are positively, not negatively, associated with perceived health. Put another way, the less healthy people consider themselves, the less difference they see between the effects of DTCAd on the behavior of other people and on their own behavior. The healthier they see themselves, the more difference they see between DTCAd effects on themselves and others.

H4a: The magnitude of the third-person DTCAd effect will be positively related with the level of perceived DTCAd knowledge.

Hypothesis **H4a** tested the relationship between perceived DTCAd knowledge and the third-person effect. The hypothesis was examined by two measures of knowledge: perceived level of knowledge of DTCAd and ad-recognition of dominant copy points from specific DTCAds.

Perceived knowledge was measured by asking respondents how familiar they were with DTCAd and how much they could remember about ads for specific prescription drug brands on two 7-point scales. A summated index of perceived DTCAd knowledge was created for use in a correlation analysis by averaging these two scores. Table 10 presents the results of the correlation analysis.

Table 10. Correlation between Perceived DTCAd Knowledge and Third-Person DTCAd Effect

Third-person effect factors	Perceived ad knowledge
Summated third-person effect	-0.092
Third-person effect for “negative DTCAd effects”	0.027
Third-person effect for “learning & involvement”	-0.205**
Third-person effect for “patient/provider interaction”	-0.085
Third-person effect for “distrust of DTCAd information”	-0.027

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

Perceived knowledge of DTCAd was not significantly correlated with the summated third-person effect nor with three of the third-person effect factors. Only the factor, “learning & involvement,” was significantly related to perceived DTCAd knowledge, but in the opposite direction of the hypothesis; higher levels of perceived

knowledge of DTCAd were associated with a smaller third-person effect for the factor.

Based on these findings, **H4a** was not supported – perceived third-person DTCAd effects are negatively, not positively associated with perceived DTCAd knowledge. Put another way, the more people believe they are familiar with and knowledgeable of DTC drug ads, the less difference they see between the effects of DTCAd on the behavior of others and on their own behavior. The less familiar and knowledgeable they are, the more difference they see between the effects of DTCAd on their behavior and the behavior of others.

H4b: The magnitude of the third-person DTCAd effect will be positively related with the degree of recognition of dominant copy points in DTCAds.

Recognition of specific dominant copy points in test ads was used as a proxy of actual knowledge of DTCAd to test the knowledge-related hypothesis, **H4b** – how much people actually know or remember about DTCAd. Ad recognition was measured by a set of brand/ad-content matching questions. Respondents were asked to match five specific brands of prescription drugs with dominant copy points from five ads for the drug brands. The number of correct matches among the five brand/ad-content sets was counted to create an ad-recognition score.

Table 11 presents the results of correlation analysis with the ad recognition score and the summated and individual third-person effect factors. As hypothesized, the analysis revealed that the summated third-person effect and the factor, “negative DTCAd effects,” were significantly and positively related to level of DTC-ad recognition at the level of $p < 0.05$.

Table 11. Correlation between DTCAd Recognition and Third-Person DTCAd Effect

Third-person effect factors	Ad recognition
Summated third-person effect	0.139*
Third-person effect for “negative DTCAd effects”	0.196*
Third-person effect for “learning & involvement”	0.035
Third-person effect for “patient/provider interaction”	0.097
Third-person effect for “distrust of DTCAd information”	-0.078

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

The correlations between the third-person effect factors, “learning & involvement” and “patient/provider interactions,” and ad recognition were positive but the Pearson correlation coefficients did not reach statistical significance. The third-person effect factor, “distrust of DTCAd information,” was also not significantly related to the ad recognition level.

Based on these results, **H4b** was supported but weakly – to some degree, perceived third-person DTCAd effects are positively associated with ad recognition. In other words, ad recognition may lead to perception of third-person DTCAd effects – people who recognize specific DTCAd content are more likely to believe DTCAd has more influence on other people’s behavior than on their own behavior; people who do not recognized those ads are less likely to believe that DTCAd influences other people’s behavior more than their own.

H5: The magnitude of the third-person DTCAd effect will be negatively related with global DTCAd attitude.

Global attitude toward DTCAd was measured by three semantic differential scales, anchored by bad – good, pleasant – unpleasant, and favorable – unfavorable. For

analysis, the three scale scores were averaged to form a single attitude-to-DTCAd index. The reliability check revealed an acceptable level of Cronbach's alpha ($\alpha=0.830$) among the three variables. A correlation analysis was performed to examine the relationship between global DTCAd attitude and the third-person effect (see Table 12).

Table 12. Correlation between Global DTCAd Attitude and Third-Person DTCAd Effect

Third-person effect factors	DTCAd attitude
Summated third-person effect	-0.315**
Third-person effect for "negative DTCAd effects"	-0.354**
Third-person effect for "learning & involvement"	-0.201**
Third-person effect for "patient/provider interaction"	-0.247**
Third-person effect for "distrust of DTCAd information"	0.310**

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

A significant correlation was found between respondents' global DTCAd attitude and the size of third-person effect: the summated third-person effect was significantly and negatively related to global DTCAd attitude. At the individual level, the third-person effect factors, "negative DTCAd effects," "learning & involvement," and "patient/provider interaction," were negatively related to global DTCAd attitude. Only the third-person effect factor, "distrust of DTCAd information," was positively correlated with global DTCAd attitude.

Another test using an ANOVA technique supported the correlation analysis (see Table 13). For the ANOVA, the survey respondents were categorized into three groups: negative-attitude holders, neutral-attitude holders, and positive-attitude holders. Summated attitude-to-DTCAd index scores smaller than 4 were considered negative, an

index score of 4 was considered neutral, and scores larger than 4 were considered positive. As a result, 36 percent of respondents were categorized as negative-attitude holders (n=92), 27 percent as neutral-attitude holders (n=69), and 38 percent as positive attitude holders (n=97).

Table 13. One-Way ANOVA for Third-Person DTCAd Effect
Among DTCAd Attitude Groups

Third-person effect factors	Attitude grouping	N	Mean	F-value	P-value
Summated third-person effect	Negative attitude	92	1.847	8.577	0.000
	Neutral attitude	69	1.472		
	Positive attitude	95	1.092		
	Total	256	1.466		
Third-person effect for “negative DTCAd effects”	Negative attitude	92	2.704	11.526	0.000
	Neutral attitude	69	1.921		
	Positive attitude	95	1.675		
	Total	256	2.111		
Third-person effect for “learning & involvement”	Negative attitude	92	0.882	4.435	0.013
	Neutral attitude	69	0.860		
	Positive attitude	95	0.246		
	Total	256	0.640		
Third-person effect for “patient/provider interaction”	Negative attitude	92	1.904	5.626	0.004
	Neutral attitude	69	1.588		
	Positive attitude	95	1.107		
	Total	256	1.523		
Third-person effect for “distrust of DTCAd information”	Negative attitude	91	-0.495	11.040	0.000
	Neutral attitude	68	0.441		
	Positive attitude	95	0.842		
	Total	254	0.256		

The ANOVA revealed that there were significant differences in the magnitude of third-person effects among the DTCAd-attitude groups. Those who held negative attitudes toward DTCAd were associated with the greatest third-person effect, followed by those with neutral attitudes. Positive attitude holders exhibited the smallest third-person effect. This was true for the summated and for three of the third-person effect factors.

Only the third-person effect factor, “distrust of DTCAd information,” exhibited a different tendency: contrary to the other third-person effect factors, those with negative attitudes toward DTCAd were likely to exhibit a reversed third-person effect and positive attitude holders were associated with the greatest third-person effect.

Post hoc Scheffe test clearly demonstrated that there were significant differences at both the aggregate and individual third-person effect levels between the negative and positive attitude groups (see Table 14). Magnitudes of the summated third-person effect and the four individual third-person effect factors were significantly different between the negative attitude group and the positive attitude group.

Based on the correlational and ANOVA findings, **H5** was supported – perceived third-person DTCAd effects are negatively associated with global DTCAd attitude. Put another way, people who dislike DTCAd believe that it has more influence on the behavior of other people than on their own behavior. People who like DTCAd are less likely to believe that DTC drug ads are more impactful on other people than on themselves.

Table 14. Post Hoc Scheffe Test for Multiple Comparisons

Third-person effect factors	Attitude grouping (I)	Attitude grouping (J)	Mean Difference (I-J)	P-value
Summated third-person effect	Negative attitude	Neutral attitude	0.375	0.172
		Positive attitude	0.755	0.000
	Neutral attitude	Negative attitude	-0.375	0.172
		Positive attitude	0.381	0.158
Third-person effect for “negative DTCAAd effects”	Negative attitude	Neutral attitude	0.783	0.006
		Positive attitude	1.029	0.000
	Neutral attitude	Negative attitude	-0.783	0.006
		Positive attitude	0.246	0.590
Third-person effect for “learning & involvement”	Negative attitude	Neutral attitude	0.022	0.996
		Positive attitude	0.637	0.029
	Neutral attitude	Negative attitude	-0.022	0.996
		Positive attitude	0.614	0.060
Third-person effect for “patient/provider interaction”	Negative attitude	Neutral attitude	0.316	0.481
		Positive attitude	0.797	0.004
	Neutral attitude	Negative attitude	-0.316	0.481
		Positive attitude	0.481	0.179
Third-person effect for “distrust of DTCAAd information”	Negative attitude	Neutral attitude	-0.936	0.014
		Positive attitude	-1.337	0.000
	Neutral attitude	Negative attitude	0.936	0.014
		Positive attitude	-0.401	0.443

H6: The magnitude of the third-person DTCAAd effect will be positively related with time spent using mass media.

Hypothesis 6 was tested by correlation analysis. Media use time was measured by asking respondents to report how many hours on average they spend using five different media per week: newspaper, magazine, television, radio, and the Internet. Table 15 presents correlations between the third-person DTCAAd effect indices and time spent using each of the five media.

Table 15. Correlation between Media Use and Third-Person DTCAd Effect

Third-person effect factors	Mean of 5 media use	Newspaper use time	Magazine use time	TV use time	Radio use time	Internet use time
Summated third-person effect	-0.100	-0.059	-0.091	-0.064	-0.030	-0.059
Third-person effect for “negative DTCAd effects”	-0.121*	-0.046	-0.085	-0.068	-0.086	-0.052
Third-person effect for “learning & involvement”	-0.079	-0.066	-0.085	-0.047	-0.004	-0.059
Third-person effect for “patient/provider interaction”	-0.044	-0.063	-0.065	-0.049	0.045	-0.032
Third-person effect for “distrust of DTCAd information”	0.077	0.108*	0.077	0.070	0.015	-0.006

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

Two pairs out of 30 possible correlational pairs between respondents’ media use and the magnitude of third-person effect were found significant at the level of 0.05. Only the third-person effect factor, “negative DTCAd effects,” negatively correlated with the summated media use mean, and newspaper use time correlated positively with the third-person effect factor, “distrust of DTCAd information” (at the $p < 0.05$ level).

Based on these results, **H6** was not supported – there is no association between media use and perceived third-person DTCAd effects. Put another way, people’s media habits are unrelated to their perception of the effects of DTC drug ads on other people’s behavior or their own behavior.

H7a: The magnitude of the third-person DTCAd effect will be negatively related with perceived DTCAd credibility.

Hypothesis 7a was posed to examine the relationship between the third-person effect and the perceived DTCAd credibility. Perceived credibility of seven types of

DTCAd was measured by three 7-point semantic differential scales (believable – not believable, trustworthy – not trustworthy, credible – not credible). A summated credibility index was computed by averaging the three items for each DTCAd type. Reliabilities of summated indices were tested using Cronbach’s alpha. All seven indices showed acceptable alpha levels (see Table 16).

Table 16. Reliability Test of Summated DTCAd Credibility Indices

Summated credibility indices	Cronbach’s alpha
Credibility of newspaper ad	0.6925
Credibility of TV ad	0.7144
Credibility of magazine ad	0.8314
Credibility of radio ad	0.7782
Credibility of Internet ad	0.8182
Credibility of leaflets	0.7601
Credibility of direct mail	0.8016
Summated credibility of all seven forms	0.8934

A correlation analysis was performed with the summated perceived-credibility indices and the third-person effect indices (see Table 17). The summated third-person effect was significantly and negatively correlated with perceived credibility of various types of DTCAd. At the individual level, the third-person effect factors, “negative DTCAd effects,” “learning & involvement,” and “patient/provider interaction,” were negatively related with perceived DTCAd credibility. In other words, those who perceived DTCAd as less credible tended to show a greater third-person effect than those who perceived higher credibility levels. Only the third-person factor, “distrust of DTCAd information,” was an exception: a positive relationship was found between the size of the third-person effect and perceived credibility of DTCAd.

Table 17. Correlations between Perceived Credibility of DTCAd Types and Third-Person DTCAd Effect

Third-person effect factors	Mean of 7 scores	Newspaper ads	TV ads	Magazine ads	Radio ads	Internet ads	Leaflets	Direct mails
Summated third-person effect	-0.140*	-0.062	-0.193**	-0.176**	-0.003	-0.093	-0.116*	-0.154**
Third-person effect for “negative DTCAd effects”	-0.163**	-0.106*	-0.218**	-0.157**	-0.064	-0.140*	-0.097	-0.174**
Third-person effect for “learning & involvement”	-0.107*	-0.018	-0.143*	-0.190**	0.024	-0.043	-0.095	-0.118*
Third-person effect for “patient/provider interaction”	-0.117*	-0.049	-0.169**	-0.143*	0.014	-0.038	-0.127*	-0.108*
Third-person effect for “distrust of DTCAd information”	0.289**	0.202**	0.380**	0.280**	0.211**	0.077	0.148**	0.187**

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

The results also suggest that the degree of influence of perceived DTCAd credibility on the third-person DTCAd effect varies by the type of DTCAd. Of the different types of DTCAd, television and magazine advertising (the most commonly used types of DTCAd (Kaiser Family Foundation, 2001a, p. 9)) tended to show stronger relationships between perceived credibility and the third-person DTCAd effect.

Based on these results, **H7a** was supported – perceived third-person DTCAd effects are negatively associated with perceived DTCAd credibility. Put another way, the more credibility that people see in DTCAd, the less difference they see in the influence of DTC drug ads on their own behavior and the behavior of others. The less credible they consider DTCAd, the more they believe that it affects other people’s behavior more than their own behavior.

H7b: The magnitude of the third-person DTCAd effect will be negatively related with perceived DTCAd informativeness.

H7b was posed to test the relationship between the perceived informativeness of DTCAd and the third-person effect of DTCAd. Perceived informativeness of seven DTCAd types was measured by a seven-point semantic differential scale anchored by informative – not informative. A summated informativeness index combining the seven DTCAd types was computed by averaging the seven perceived informativeness scores. Cronbach’s alpha for the summated index of DTCAd informativeness was 0.712.

As hypothesized, correlation analysis found that the magnitude of the third-person effect was greater when the level of perceived DTCAd informativeness was relatively low (see Table 18). The finding is consistent with the test of Hypothesis 7a.

Table 18. Correlations between Perceived Informativeness of DTCAd Types and Third-Person DTCAd Effect

Third-person effect factors	Mean of 7 scores	Newspaper ads	TV ads	Magazine ads	Radio ads	Internet ads	Leaflets	Direct mails
Summated third-person effect	-0.191**	-0.050	-0.196**	-0.171**	-0.094	-0.122*	-0.027	-0.101
Third-person effect for “negative DTCAd effects”	-0.153**	-0.005	-0.097	-0.119*	-0.117*	-0.153**	0.040	-0.136*
Third-person effect for “learning & involvement”	-0.206**	-0.098	-0.251**	-0.233**	-0.058	-0.034	-0.092	-0.094
Third-person effect for “patient/provider interaction”	-0.159**	-0.027	-0.203**	-0.105*	-0.074	-0.122*	-0.052	-0.042
Third-person effect for “distrust of DTCAd information”	0.194**	-0.032	0.206**	0.110*	0.137*	0.121*	0.055	0.185**

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

Perceived informativeness of DTCAd was significantly and negatively correlated with the summated third-person effect and with three of the third-person effect factors, “negative DTCAd effects,” “learning & involvement,” and “patient/provider interaction.” Only the third-person effect factor, “distrust of DTCAd information,” exhibited a positive relationship between the size of the third-person effect and perceived DTCAd informativeness.

The negative relationship between third-person effect and perceived informativeness was also found to vary by DTCAd types: television and magazine ads were found to exert stronger relationships among perceived informativeness and third-person effect than the other DTCAd types (i.e., newspaper ads, radio ads, and leaflets). This finding is consistent with the test of **H7a** with one exception.

A difference was found regarding Internet advertising. Whereas in the previous hypothesis, perceived credibility of Internet advertising was not significantly related to the third-person DTCAd effect. Perceived informativeness of Internet advertising was significantly and negatively related to the magnitude of the summated third-person DTCAd effect and to the individual third-person DTCAd effect factors.

Based on these results, **H7b** was supported – perceived third-person DTCAd effects are negatively associated with perceived DTCAd informativeness. Put another way, the more informative people think DTC drug ads are, the less difference they see in the effects of DTCAd on their own behavior and on the behavior of others. The less informative they perceived DTCAd, the greater their perception of the influence of the effects of DTC drug ads on other people’s behavior.

Predictors of Third-Person Effect

Regression analysis was performed to explore which of the demographic, perceptual, and attitudinal variables are the strongest, most significant predictors of perceived third-person DTCAd effect, when all variables are considered together. Because the predictor variables exhibited high multicollinearity, a stepwise method was used to determine input variables. Table 19 presents the stepwise regression result. Among 16 predictor variables, excluded variables are perceived DTCAd credibility, perceived DTCAd informativeness, Perceived DTCAd knowledge, DTCAd recognition, media use, age, gender, education, race, employment status, and income.

Table 19. Regression for Predicting Summated Third-Person DTCAd Effect (N=219)

Predictors	Beta
Global attitude toward DTCAd	-0.293 **
Perceived health	0.174 **
Perceived DTCAd importance	-0.174 **
Marital status (being married)	0.151 *
Prescription drug use	-0.144 *
Adjusted R square	0.231 **
df=5, MS=16.348, F=14.129, p=0.000	

* P<.05, **P<.01

Of the predictor variables, global DTCAd attitude was found to be the strongest predictor of the summated third-person DTCAd effect, explaining 12 percent of variance alone. Global DTCAd attitude was negatively related with the third-person DTCAd effect. Perceived health was a positive predictor when entered, increasing slightly but significantly the amount of variance explained (R-square increment=5 percent).

The final regression model included global DTCAd attitude, perceived DTCAd importance, and prescription drug use as significant negative predictors, and perceived

health and being married as positive predictors of the third-person DTCAd effect. This model explained about 23 percent of variance in the summated third-person DTCAd effect index.

From these results, it can be stated that marital status, prescription drug use, perceived health, DTCAd attitude, and perceived DTCAd informativeness are the best predictors of third-person DTCAd effects. The implication suggested by the results – married, nonprescription drug users with a dislike for DTCAd, who perceive themselves as relatively healthy, and who perceive DTCAd uninformative, are likely to believe that other people are more influenced by DTC ads than they are.

Behavioral Hypothesis - Support for DTCAd Regulation and Patient Behaviors

The behavioral aspect of the third-person effect framework focuses on types of behaviors that may result from exposure to media content. This study explored relationships between the perceived DTCAd third-person effect and two types of behaviors – support for DTCAd regulation and DTCAd-targeted patient behaviors.

The following section addresses the hypotheses and research questions on the behavioral aspect of the third-person DTCAd effect. First, descriptive statistics on the two types of behaviors – support for DTCAd regulation and patient behaviors – are presented.

Support for DTCAd Regulation

Support for DTCAd regulation was measured by nine 7-point scale items, where 1 indicated “strongly disagree” and 7 indicated “strongly agree.” The nine items included regulatory remedies suggested by existing FDA guidelines and previous consumer studies (Foley, 2000; Wilkes, Bell, and Kravitz, 2000; Findlay, 2001). Table 20 presents the

descriptive statistics of the nine DTCAd regulation items. As shown in the table, there was more support for governmental regulation of DTCAd than industry self-regulation.

Table 20. Descriptive Statistics of Support for DTCAd Regulation

Support for DTCAd regulation items	N	Mean	Std. Deviation
Ads should be submitted to the government for prior approval.	264	5.061	2.224
Ads should be totally banned.	263	2.886	2.020
Ads should be allowed to without any regulation.	263	2.167	1.787
Ads should include all of a drug's potential risks.	263	6.338	1.329
The government should leave the regulation to the prescription industry.	262	2.637	1.940
Ads should provide alternative information sources.	263	6.049	1.340
Ads should include a statement that a consumer must talk to doctors and/or pharmacists.	263	6.137	1.402
Ads should present both benefits and risks of the advertised drug.	262	6.324	1.300
Drugs that are completely safe should be advertised directly to consumers.	263	4.780	2.094

All governmental remedies adopted from existing FDA guidelines (e.g., “ads should include all of a drug's potential risks,” “ads should provide alternative information sources,” “ads should include a statement that a consumer must talk to doctors and/or pharmacists,” and “ads should present both benefits and risks of the advertised drug”) exhibited high levels of agreement (i.e., mean scores of over 6). However, the average score for the “total ad ban” remedy was 2.9, suggesting disagreement with the remedy of mandated elimination of DTCAd. The two industry self-regulatory remedies (“ads should be allowed to without any regulation” and “the government should leave the regulation to

the prescription industry”) produced levels of agreement means slightly above 2 on a seven-point scale base.

A summated index of support for DTCAd regulation was created by averaging the nine remedy scores for use in subsequent analysis. In computing this summated index, two industry-autonomy related items (“any company that wants to advertise its prescription drugs should be allowed to without any regulation” and “the government should leave the regulation of prescription drug ads to the pharmaceutical industry”) were reversed for conceptual directional consistency. Cronbach’s alpha produced an alpha level of 0.62 for the summated index. The average score of summated index of support for DTCAd regulation was 5.4.

DTCAd-Targeted Patient Behaviors

DTCAd-targeted patient behaviors were measured by asking respondents who were exposed to DTCAd what kinds of actions they took after seeing or hearing DTC prescription drug ads. Table 21 presents the six behavioral outcomes.

A little less than one-fifth of the respondents who indicated exposure to DTCAd did not act in any of the six ways. The most common acts following exposure to DTCAd were “talking with friends or relatives” and “talking with a doctor.”

Table 21. Descriptive Statistics of Ad-targeted Patient Behaviors (N=152)

Ad-targeted patient behavior items	Frequency	Percent
Talked with my friends or relatives about an advertised drug.	67	44.1
Talked with my doctor about an advertised drug.	63	41.4
Searched for more information about a drug.	43	28.3
Talked with my pharmacist about a drug.	33	21.7
Asked my doctor to prescribe an advertised drug.	20	13.2
Something else	5	3.3
None	27	17.8

For the subsequent analyses, a patient-behavior index was created by counting the number of behaviors engaged in among the six items by each respondent. The patient-behavior index showed an average score of 1.52 acts ranging from 0 to 5.

Testing Behavioral Hypotheses

Two behavioral hypotheses were tested: **H8** was posed to test the relationship between third-person DTCAd effect and support for DTCAd regulation; and **H9** was posed to test the relationship between the third-person DTCAd effect and ad-targeted patient behaviors.

H8: Relationship between the third-person DTCAd effect and support for DTCAd regulation

Hypothesis 8 was tested as two sub-hypotheses:

H8a: Among those who hold relatively negative DTCAd attitudes, the magnitude of the third-person DTCAd effect will be a significant positive predictor of support for DTCAd regulation.

H8b: Among those who hold relatively positive DTCAd attitudes, the magnitude of the third-person DTCAd effect will not predict support for DTCAd regulation.

The first sub-hypothesis examined the subgroup of respondents who held negative DTCAd attitudes and the second sub-hypothesis examined respondents who held positive attitudes. Using the two split samples, Hypothesis 8 tested how relationships between the third-person effect and support for DTCAd regulation varied by liking and disliking of the advertising practice.

The general relationship between the third-person effect and support for DTCAd regulation was examined first with the entire sample before the sub-hypotheses were tested. Table 22 presents results of a regression analysis with the third-person DTCAd effect indices as predictor variables and support for DTCAd regulation as the criterion variable. Because of high correlation among the summated and individual third-person DTCAd effect indices, a stepwise method was used.

Table 22. Regression Analysis for Predicting Support for DTCAd Regulation (N=259)

Predictors	Beta
Third-person effect for “negative DTCAd effects”	0.174**
Third-person effect for “distrust of DTCAd information”	-0.174**
Adjusted R square	0.055**
df=2, MS=6.041, F=8.479; p=0.000	

* P<.05, **P<.01

Of the third-person DTCAd effect indices, the third-person effect factors, “negative DTCAd effects” and “distrust of DTCAd information,” were found to be significant predictors of support for DTCAd regulation. The third-person effect factor, “negative DTCAd effects,” was a positive predictor of regulatory support and the factor, “distrust of DTCAd information,” was a negative predictor. However, although the regression models met a statistical significance, the explanatory power of the regression equations were not strong, explaining only about six percent of variance in support for DTCAd regulation.

In the next step, a hierarchical regression was conducted using an interaction term, “(summated third-person effect) x (attitude toward DTCAd)” to examine the moderating effect of global DTCAd attitude on the relationship between third-person

DTCAd effect and support for DTCAd regulation. The predictors were entered in blocks with statistical tests to indicate the significance of each. Third-person effect indices were entered into the first block of predictors using a stepwise method; global DTCAd attitude was entered into the second block; and the interaction term was entered into the third block. The hierarchical regression results of the four models are presented in Table 23.

Table 23. Hierarchical Regression for Predicting Support for DTCAd Regulation by Interaction between Third-Person DTCAd Effect and Global DTCAd Attitude (N=254)

	Predictors	Beta
Model 1	Third-person effect for “distrust of DTCAd information”	-0.195**
	Third-person effect for “negative DTCAd effects”	0.177**
	Adjusted R square	0.064**
	df=2, MS=6.594, F=9.580; p=0.000	
Model 2	Third-person effect for “distrust of DTCAd information”	-0.139*
	Third-person effect for “negative DTCAd effects”	0.114
	Global attitude toward DTCAd	-0.185**
	Adjusted R square	0.087**
	df=3, MS=6.058, F=9.027; p=0.000	
Model 3	Third-person effect for “distrust of DTCAd information”	-0.135*
	Third-person effect for “negative DTCAd effects”	0.158
	Global attitude toward DTCAd	-0.162*
	(Third-person effect) x (Global attitude toward DTCAd)	-0.056
	Adjusted R square	0.085
	df=4, MS=4.602, F=6.839; p=0.000	

* P<.05, **P<.01

*, ** for Adjusted R Square indicates significance of R-squared increments

As found in the previous regression models, the third-person effect factor, “distrust of DTCAd information,” was a significant negative predictor of support for DTCAd regulation and the third-person effect factor, “negative DTCAd effects,” was a significant positive predictor.

However, when the second block – global DTCAd attitude – was entered, the variable was a stronger negative predictor than the third-person effect predictors, increasing significantly the amount of variance explained (R-Square increment=2.3 percent). In the second regression equation, entering global DTCAd attitude resulted in weakening the predictability of third-person effect indices: the third-person effect for “negative DTCAd effects” became non-significant as a predictor of support for DTCAd regulation.

In the last regression model, the interaction term was entered but was not a significant predictor of support for DTCAd regulation; the regression model produced no increase in the amount of variance explained. Thus, the result suggests that, although some dimension of the third-person effect predicts support for DTCAd regulation, global DTCAd attitude may be a stronger main predictor of support for DTCAd regulation. The split-sample test for each sub-hypothesis – **H8a** and **H8b** – supports the finding.

As explained earlier, the sample was split into three groups to test the sub-hypotheses: a negative attitude group (if attitude-to-DTCAd index was smaller than 4 on a seven-point scale), a neutral attitude group (if attitude-to-DTCAd index was exactly 4), and a positive attitude group (if attitude-to-DTCAd index was larger than 4). As noted earlier, the negative attitude group was analyzed to test **H8a** and the positive attitude group was analyzed to test **H8b**.

Regression analysis produced no significant model of third-person effect predicting support for DTCAd regulation in either the negative and positive attitude group. This indicates that the third-person effect’s ability to predict support for DTCAd

regulation, which was found in a regression model with the entire sample, disappears when global DTCAd attitude is controlled.

From these results, **H8** was not supported by the overall results – ability of the third-person DTCAd effect to predict support for DTCAd regulation does not vary by global DTCAd attitude. In both positive and negative global DTCAd attitude groups, the third-person DTCAd effect was not a significant predictor of support for DTCAd regulation. When global DTCAd attitude was controlled, third-person DTCAd effects did not predict support for DTCAd regulation. Put another way, the likelihood of support for DTCAd regulation is not associated with the degree to which people differentiate the effects of DTCAd on their or other people's behavior. However, people who dislike DTCAd are more likely to support DTCAd regulation than those who like DTCAd.

RQ1: Mediating Factors of Support for DTCAd Regulation

To examine the mediating influence of other factors (i.e., in addition to the third-person effect) on support for DTCAd regulation, a regression analysis was run using the following variables: perceived DTCAd importance, global DTCAd attitude, perceived DTCAd credibility and informativeness, perceived DTCAd knowledge, ad recognition of dominant DTCAd copy points, prescription drug use, perceived health, media use, and demographic characteristics of the respondents. Because of the high multicollinearity among the predictor variables, a stepwise method was used to determine input variables. Table 24 presents the results of the stepwise regression analysis.

Significant predictors of support for DTCAd regulation included perceived DTCAd credibility, perceived DTCAd knowledge, global DTCAd attitude, educational

level, age, and employment status. The final regression model explained 19 percent of the total variance in support for DTCAd regulation.

Table 24. Regression of Predictors of Support for DTCAd Regulation (N=220)

Predictors	Beta
Perceived credibility of DTCAd	-0.178**
Perceived DTCAd knowledge	0.216**
Global attitude toward DTCAd	-0.274**
Education	-0.196**
Age	0.210**
Employment status (being employed)	0.199**
Adjusted R square	0.194**
df=6, MS=5.665, F=9.794, p=0.000	

* P<.05, **P<.01

Standardized regression coefficients (Betas) indicate relative predictive power and the direction of each predictor. Consistent with the findings of the test of Hypothesis 8, global DTCAd attitude was the strongest predictor, followed by perceived DTCAd knowledge and respondent age.

The results suggest that older, employed, and less educated consumers, who dislike DTCAd, but perceive themselves more familiar and knowledgeable of DTCAd are more likely to support DTCAd regulations. Those who perceive DTCAd as credible are less likely to support the DTCAd regulation.

A hierarchical regression was conducted to determine if the third-person effect remained a significant predictor of support for DTCAd regulation after controlling for other predictor variables. Various respondent demographic, perceptual, and attitudinal variables were entered as the first block using a stepwise method, and the summated third-person effect and the four third-person effect factors were entered into the second block. The hierarchical regression results are consistent with the results reported in Table

24; none of the third-person effect factors were significant predictors of support for DTCAd regulation when the other predictor variables are controlled for. The implication suggested by these results is that people's support for DTCAd regulation is not associated with their perceptions of the effects of DTC drug ads on their or other people's behavior.

RQ2: Relationship between Third-Person DTCAd Effects and Patient Behavior

As mentioned earlier, most behavioral hypothesis tests in third-person effect research have focused on the media audience's tendency to support the regulation of socially undesirable media content. This research explores the question of relationships between the third-person effect and patient behavioral outcomes (e.g., advertising-targeted acts).

A regression analysis was performed with the summated third-person effect index and the four third-person effect factors as predictor variables and the patient-behavior index as a dependent variable. The patient-behavior index measured the number of different types of acts engaged by the respondents as a function of DTCAd exposure. Because of multicollinearity among the third-person effect indices, a stepwise method was used to determine the entered variables.

The regression analysis revealed that the third-person effect associated with "learning & involvement" was a significant negative predictor of patient behavior: in other words, as consumers attributed greater DTCAd influence on other people than on themselves, they were less likely to take actions after exposure to DTCAds (see Table 25). Third-person effects associated with other types of DTCAd effects were not a significant predictor of advertising-targeted patient behaviors.

Table 25. Regression Analysis for Predicting the Patient Behavior (N=148)

Predictor	Beta
Third-person effect for “learning & involvement”	-0.416**
Adjusted R-Square=0.167, df=1, MS=35.789, F=30.538, p=0.000	

* P<.05, **P<.01

RQ3: Mediating Factors of DTCAd-targeted Patient Behaviors

To examine the mediating influence of other variables on ad-targeted patient behaviors, a regression analysis was conducted using a stepwise method. Predictor variables included in the analysis were: perceived DTCAd importance, global DTCAd attitude, perceived DTCAd credibility and informativeness, perceived DTCAd knowledge, ad recognition of dominant DTCAd copy points, prescription drug use, perceived health, media use, and demographic characteristics of the respondents (see Table 26).

Table 26. Regression Analysis of Predictors of the Patient Behavior (N=125)

Predictors	Beta
Perceived importance of DTCAd	0.338**
Race (white)	0.197*
Adjusted R square	0.116**
df=2, MS=10.621, F=9.135, p=0.000	

* P<.05, **P<.01

The regression analysis revealed that perceived DTCAd importance and respondent race were significant positive predictors of patient behavior. White consumers who perceived DTCAd as an important source of health-related information were more likely to act in an ad-targeted manner (i.e., taking actions that are expected by an

advertiser) than those who perceived DTCAd of little informational importance, especially minority consumers.

Another hierarchical regression analysis was conducted to determine if third-person effect remained a significant predictor of patient behavior after controlling for other consumer characteristics. Specific demographic, perceptual, and attitudinal characteristics were entered into the first block using a stepwise method, and the summated third-person effect index and the four third-person effect indices were entered into the second block. Table 27 presents the results of the regression analysis.

Table 27. Hierarchical Regression of Predictors of Patient Behavior (N=124)

	Predictors	Beta
Model 1	Perceived importance of DTCAd	0.336**
	Race (white)	0.197*
	Adjusted R square	0.115**
	df=2, MS=10.494, F=8.954, p=0.000	
Model 2	Perceived importance of DTCAd	0.215*
	Race (white)	0.185*
	Third-person effect for “learning & involvement”	-0.379**
	Adjusted R square	0.240**
	df=3, MS=14.015, F=13.928, p=0.000	

* P<.05, **P<.01

*, ** for Adjusted R Square indicates significance of R-squared increments

The hierarchical regression analysis revealed that the third-person DTCAd effect factor, “learning & involvement,” remained a significant negative predictor of patient behavior after controlling for other predictors. The third-person DTCAd effect factor significantly increased the amount of explained variance in the patient behavior index by 12.5 percent.

H9: Interaction Effect of Global DTCAd Attitude on Relationship between the Third-Person DTCAd Effect and Patient Behaviors

Hypothesis 9 was tested as two sub-hypotheses:

H9a: Among those who hold relatively positive global DTCAd attitudes, the magnitude of the third-person DTCAd effect will be a significant positive predictor of DTCAd-targeted patient behaviors.

H9b: Among those who hold relatively negative global DTCAd attitudes, the magnitude of the third-person DTCAd effect will not predict DTCAd-targeted patient behaviors.

A hierarchical regression was conducted using an interaction term “(summated third-person effect) x (attitude toward DTCAd)” to determine if there was an interaction effect. The summated third-person DTCAd effect and the four third-person DTCAd effect factors were entered into the first block of predictors using a stepwise method. Then, DTCAd attitude was entered into the second block and the interaction term was entered as the third block. Table 28 presents the results of the hierarchical regression.

The hierarchical regression revealed that neither DTCAd attitude nor the interaction term was a significant predictor of patient behavior. None of the regression coefficients reached statistical significance and the R-square changes were also non-significant. This finding suggests that there is no interaction effect between the third-person effect and DTCAd attitude in predicting DTCAd-targeted patient behavior.

Table 28. Hierarchical Regression for Predicting Patient Behavior with Interaction between Third-Person DTCAd Effect and Global DTCAd Attitude (N=145)

	Predictors	Beta
Model 1	Third-person effect for “learning & involvement”	-0.420**
	Adjusted R square	0.170**
	df=1, MS=35.905, F=30.552, p=0.000	
Model 2	Third-person effect for “learning & involvement”	-0.415**
	Global attitude toward DTCAd	0.026
	Adjusted R square	0.165
	df=2, MS=18.018, F=15.236, p=0.000	
Model 3	Third-person effect for “learning & involvement”	-0.335**
	Global attitude toward DTCAd	0.055
	(Third-person effect) x (Global attitude toward DTCAd)	-0.121
	Adjusted R square	0.168
	df=3, MS=12.568, F=10.659, p=0.000	

* P<.05, **P<.01

*, ** for Adjusted R Square indicates significance of R-squared increments

Although no interaction effect was found, a split sample regression analysis was performed for the negative and positive attitude groups to test **H9a** and **H9b**. As in the test of **H8**, the sample was divided into three groups: a negative attitude group (n =56), a neutral attitude group (n =30), and a positive attitude group (n= 62). The total number of respondents was smaller than the numbers reported in the test of **H8** because only those who reported DTCAd exposure were included.

The positive attitude group was analyzed to test **H9a** and the negative attitude group was analyzed to test **H9b**. Table 29 presents the results of regression analysis for each attitude group.

Table 29. Regression Analysis for Predicting Patient Behavior by Global DTCAd Attitude Groups

	Predictor	Beta
Positive attitude group (N=60)	Third-person effect for “learning & involvement”	-0.379
	Adjusted R-Square=0.129, df=1, MS=10.272, F=9.757, p=0.003	
Negative attitude group (N=56)	Third-person effect for “learning & involvement”	-0.517
	Adjusted R-Square=0.254, df=1, MS=18.164, F=19.681, p=0.000	

H9a and **H9b** hypothesized that when DTCAd was perceived positively, the third-person effect would be a significant positive predictor of patient behavior, but when DTCAd was perceived negatively the predictive ability of third-person effect would disappear. The analysis revealed significant relationships between the third-person DTCAd effect and patient behavior for both positive and negative attitude holders. In both conditions, the third-person effect factor, “learning & involvement,” was a significant negative predictor of the patient behavior.

However, comparison between the standardized regression coefficients (Betas) and R-squares of the attitudinal groups revealed that there was a difference in the predictive power of the third-person effect between the positive and negative groups. The third-person DTCAd effect was a stronger negative predictor of DTCAd-targeted patient behaviors and explained more variance in the negative attitude group.

Based on these results, **H9** was not supported – the ability of the third-person DTCAd effect to predict DTCAd-targeted patient behavior does not vary by global DTCAd attitude. In both positive and negative global DTCAd attitude groups, the third-person DTCAd effect was a significant negative predictor of DTCAd-targeted patient

behavior. Put another way, no matter how much people like or dislike DTCAd, those who believe that DTCAd has greater effects on other people's behavior than on their behavior are less likely to take actions after exposure to DTCAd.

Summary

In the following chapter, the major findings reported in this chapter are summarized and discussed relative to the research literature reviewed in Chapter 2. The significance of the findings are then discussed followed by a presentation of the study's limitation and recommendations for future research.

CHAPTER 6

SUMMARY, DISCUSSION, AND IMPLICATIONS

In this chapter, the major findings of the research are summarized. Subsequent sections discuss the significance of the results relative to the body of knowledge about DTC prescription drug advertising and the third-person effect framework. As noted at the conclusion of the preceding chapter, limitations of the research design are then presented, followed by implications which are offered to advance future research efforts.

Summary of Findings

The third-person effect framework assumes that people attribute different effects of mediated messages on themselves and on others, and that they perceive persuasive media messages to have greater effects on others than on themselves. This study examined (1) whether and to what degree the third-person effect functions in the special case of DTC prescription drug advertising; (2) the mediating influence of selected demographic, perceptual, and attitudinal variables on consumer perceptions of third-person DTCAd effects, and (3) relationships between perceived third-person effects and two behavioral outcomes of DTC drug advertising: support for DTCAd regulation and DTCAd-targeted patient behavior. As was noted in Chapter 1, DTCAd is a growing form of product advertising about which substantive research evidence is emerging.

Nine hypotheses and three research questions were tested using a summated third-person DTCAd effect measure and four third-person DTCAd effect factor indices. The

four factors, “negative DTCAd effects,” “learning & involvement,” “patient/provider interaction,” and “distrust of DTCAd information,” emerged from a factor analysis of respondents’ rating of two sets of 22 effect statements: one set measured effects on self, the other measured effects on other people. Correlation, ANOVA, and regression analyses revealed clear and convincing evidence of the third-person effect in the context of DTC prescription drug advertising.

From the results, the following conclusions can be drawn about third-person perceptions of the effects of DTCAd:

- People perceive differences in the effects of DTCAd on themselves and on others. People believe that DTCAd exerts greater influence on other people’s behavior than on their own behavior.
- Negative effects produced by DTCAd are more strongly associated with perceived third-person effects than are positive DTCAd effects. People differentiate between the negative and positive effects of DTCAd, and believe that the negative DTCAd effects are more pronounced in the behavior of other people than in their own behavior. They perceive smaller differences between themselves and others when it comes to the positive effects of DTCAd, though they still see other people as being more influenced.

Of the potential mediating influences on third-person DTCAd effects, perceived importance of DTCAd-conveyed information, prescription drug use, perceived health, perceived DTCAd knowledge, DTCAd recognition, global DTCAd attitude, perceived DTCAd credibility, and perceived DTCAd informativeness were significantly related to people’s third-person perception of DTCAd effects. Specifically:

- Perceived third-person DTCAd effects are negatively related to consumer judgment of the importance of DTCAd-delivered information. The more important people consider DTCAd, the less difference they see between the effects of DTCAd on the behavior of other people and on their own behavior. The less important they see DTCAd, the more difference they see between DTCAd effects on themselves and on others.

- Perception of the third-person DTCAd effect was greater among non-users than among users of prescription drugs. Among the two groups, people who take no prescription drugs see more difference between DTCAd effects on themselves and on others. Light users are more likely than heavy users to believe that other people are more influenced by DTCAd than themselves.
- Perceived third-person DTCAd effects are positively, not negatively, associated with perceived health. The healthier people consider themselves, the more likely they are to believe that DTCAd influences other people's behavior more than their own behavior. The less healthy they see themselves, the less likely they are to think that DTCAd exerts greater influence on the behavior of others than on their own behavior.
- To some degree, perceived third-person DTCAd effects are negatively, not positively, associated with perceived DTCAd knowledge. The more familiar with and knowledgeable of DTCAd people are, the less difference they see between the effects of DTCAd on the behavior of others and on their own behavior. The less familiar and knowledgeable they are, the more difference they see between the effects of DTCAd on their behavior and the behavior of others.
- To some degree, perceived third-person DTCAd effects are positively associated with ad recognition. People who recognize specific DTCAd content are more likely to believe DTCAd has more influence on other people's behavior than on their own behavior. People who do not recognize those ads are less likely to believe that DTCAd influences other people's behavior more than their own.
- Perceived third-person DTCAd effects are negatively associated with global DTCAd attitude. People who dislike DTCAd believe that it has more influence on the behavior of other people than on their own behavior. People who like DTCAd are less likely to believe that DTC drug ads are more impactful on other people than on themselves.
- There is no association between media use and perceived third-person DTCAd effects. People's media habits are unrelated to their perception of the effects of DTCAd on other people's or their own behavior.
- The more credibility that people see in DTCAd, the less difference they see in the influence of DTCAd on their own and others' behavior. The less credible they consider DTCAd, the more likely they are to believe that DTCAd affects other people's behavior, but not their own behavior.
- Perceived third-person DTCAd effects are negatively associated with the perceived informativeness of DTCAd. The more informative people think

DTC drug ads are, the less difference they see in the effects of DTCAd on their own behavior and on the behavior of others. The less informative they perceive DTCAd, the greater is their perception of the influence of the effects of DTC drug ads on other people's behavior.

- Among various types of DTCAd, television and magazine advertising exhibited the strongest relationships among perceived DTCAd credibility, perceived DTCAd informativeness, and the third-person DTCAd effect.
- Marital status, prescription drug use, perceived health, DTCAd attitude and perceived DTCAd informativeness are the best predictors of third-person DTCAd effects. Married, nonprescription drug users with a dislike for DTCAd, who perceive themselves as relatively healthy and who consider DTCAd uninformative, are more likely to believe that other people are influenced by DTC ads.
- Perceived third-person DTCAd effect factors differed in their relationship to some variables. Of the four factors, "distrust of DTCAd information," exhibited association with variables in opposite directions of the relationships of the other three factors with perceived DTCAd importance, prescription drug use, DTCAd recognition, DTCAd attitude, DTCAd credibility, and DTCAd informativeness.

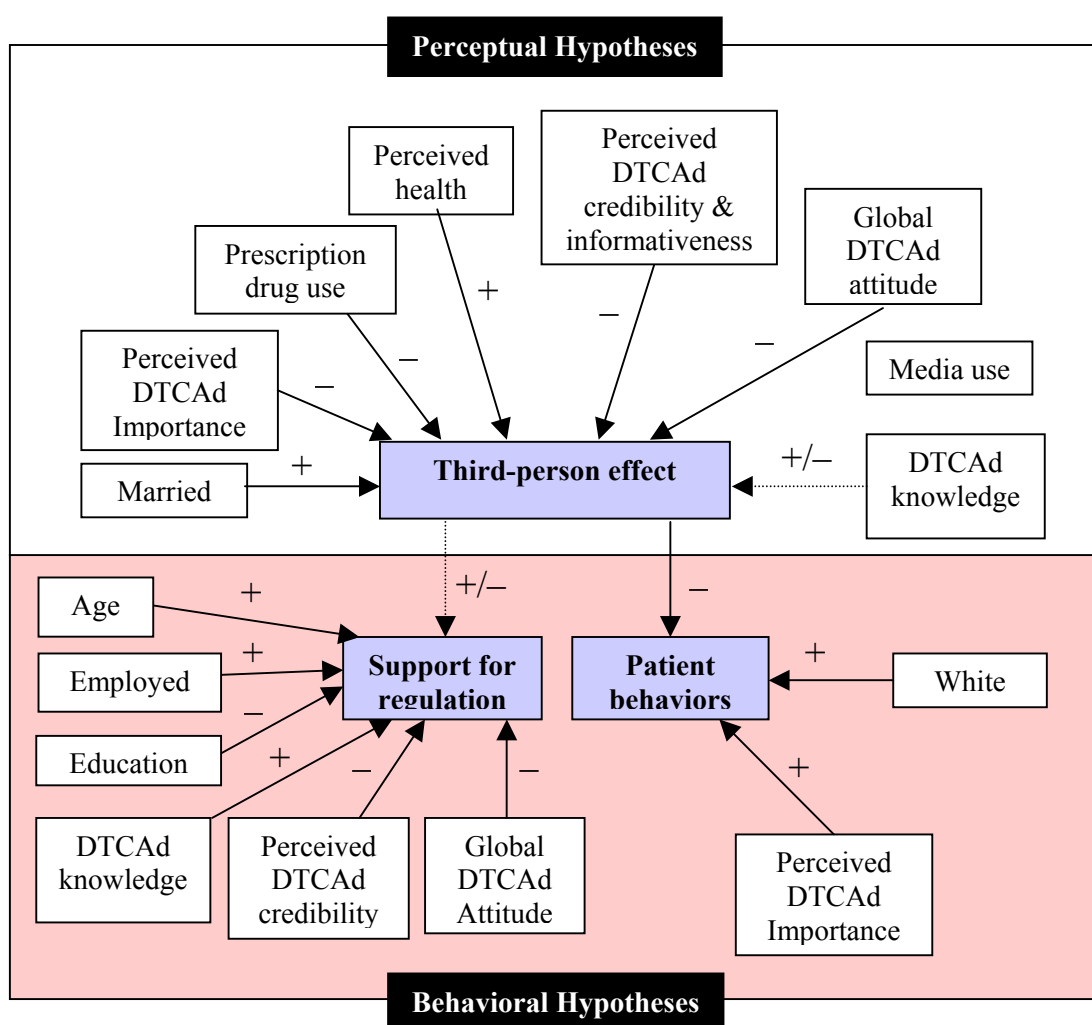
To examine the relationship between perceived third-person DTCAd effects and the two behavioral outcomes (e.g., support for DTCAd regulation and DTCAd-targeted patient behaviors) a series of regression analyses were conducted. The results revealed that third-person DTCAd effects are a significant predictor for DTCAd-targeted patient behaviors but not for support for DTCAd regulation. The analyses revealed:

- People's support for DTCAd regulation is associated with their perceptions of the effects of DTCAd on their or other people's behavior to some degree. However, when global DTCAd attitude was controlled for, the relationship disappeared.
- Older, employed, and less educated people, who perceive themselves as knowledgeable of DTCAd, see DTCAd as not credible, and dislike DTCAd are more likely to support DTCAd regulation.
- Third-person DTCAd effects are significantly associated with DTCAd-targeted patient behaviors regardless of global DTCAd attitude. Those who

believe that DTCAd has more influence on other people's behavior than on their behavior are less likely to take actions after exposure to DTCAd regardless of their like or dislike of DTCAd.

- White consumers who perceive DTCAd as an important source of health-related information are more likely to act in a DTCAd-targeted manner than racial minorities who perceive DTCAd to be of little informational importance.

Figure 6 graphically summarizes the major conclusions suggested by the study's findings.



* “+” means a positive relationship, “-” means a negative relationship, and a dotted line means a weak relationship.

Figure 6. Summary of Research Findings

Discussion of the Research Results

Four objectives guided the research. Following is a discussion of the study's findings relative to each of the four objectives.

RO1: Testing Third-Person Effect Framework as a Conceptual Foundation for Studying Effects of DTCAd

The reported research demonstrates that the third-person effect perspective is a viable empirical framework to study DTCAd phenomena. Clear evidence is provided that people perceptually differentiate between DTCAd effects on others and on self, and that they believe DTC drug ads exert more influence over other people's behavior than their own behavior. These findings suggest that people are more likely to overestimate the power of DTCAd to influence other people and to underestimate the power of DTCAd to influence them.

This perceptual tendency involving DTCAd effects is consistent with attribution theory's fundamental attribution error and egotistical differential attribution (Rucinski and Salmon, 1990; Gunther, 1991; Gunther and Thorson 1992) and existing third-person effect research findings. Mass mediated messages that have explicit persuasive intention are associated with stronger third-person effects; these messages are generally perceived as something not desirable for "self" to be influenced by (Gunther and Thorson 1992; Gunther and Mundy, 1993; Brosius and Engel, 1996; Perloff, 1999).

Of particular importance, four distinct structural dimensions of the third-person DTCAd effect were uncovered, "negative DTCAd effects," "learning & involvement," "patient/provider interaction," and "distrust of DTCAd information," with the magnitude of the third-person effect differing between positive and negative DTCAd effects. People

perceived a greater third-person effect for negative effects of DTCAd than for positive DTCAd effects. This finding is consistent with and supportive of the notion that the third-person effect tends to be more pronounced when the media content is perceived as negative and socially undesirable (Perloff and Fetzer, 1986; Rucinski and Salmon, 1990; Brosius and Engel 1996; Rojas, Shah, and Faber, 1996).

RO2: Determining Variables Mediating Consumer Perceptions of DTCAd Effects

Most of the findings support what would be expected by third-person effect research: attitude toward DTCAd and perceived quality of DTCAd, measured by credibility and informativeness, were negatively related with the third-person DTCAd effect (Cohen, Mutz, Price, and Gunther, 1988; Gunther, 1991; Lasorsa, 1992; Gunther and Mundy, 1993; Brosius and Engel, 1996). This can be explained by the attribution theory's egotistical differential attribution or self-serving biases explanation: when people perceive a message as not credible, of low information quality, and as negative or undesirable to be influenced by, they tend to attribute greater message effects on others than on themselves. They consider themselves "too smart to be influenced" by messages, but others "not smart enough to avoid being influenced" (Jones, 1979; Gunther, 1991; Paul, Salwen, and Dupagne, 2000).

These findings are consistent with a number of existing studies which found a greater third-person effect when people hold negative attitudes toward a media message and when the issue or message is perceived as negative and socially undesirable (Perloff and Fetzer, 1986; Gunther and Thorson, 1992; Gunther and Mundy, 1993; Duck, Terry, and Hogg, 1995). Studies also have reported that the third-person effect is more likely to

occur under low-credibility than under high-credibility conditions (Lasorsa, 1992; Gunther and Mundy, 1993; Duck and Mullin, 1995).

How much people know about DTCA_d, measured by perceived DTCA_d knowledge and DTCA_d recognition, produced mixed findings: perceived DTCA_d knowledge showed a negative relationship with only one factor, “learning & involvement,” of third-person effect; a positive relation was found between ad recognition and the summated third-person effect and the factor, negative DTCA_d effect.” The positive relationship between DTCA_d recognition and the third-person effect can be explained by the third-person effect notion that more knowledgeable people are likely to show a stronger third-person effect because knowledge tends to provide them with confidence that they are less susceptible to media messages than others (Lasorsa, 1989; Driscoll and Salwen, 1997). However, given that other third-person effect studies have reported mixed findings (e.g., Price, Huang, and Tewksbury, 1997), this study’s finding that perceived DTCA_d knowledge was negatively, not positively, related with third-person DTCA_d effects calls for further inquiry of the relationship between perceived/actual knowledge and third-person effect.

Some discrepancies were found between this study’s findings and other third-person effect studies: perceived DTCA_d importance, prescription drug use, number of prescription drugs taken, and perceived health condition were associated with the third-person effect in the opposite direction of the hypotheses. It could be argued that all of these variables are related to the concept of issue-involvement/importance. As noted in Chapter 3, a person’s prescription drug use and perceived health are assumed to be directly associated with level of DTCA_d involvement (Perri and Dickson, 1988). The

third-person effect literature suggests that the third-person effect may be more pronounced among those who view an issue or a message topic as highly important than among those who perceive low issue/message importance (Perloff, 1989; Mutz, 1989). Studies also have demonstrated that a higher level of involvement is related to a greater third-person effect (Perloff, 1989).

However, the Price and Tewksbury (1996) study found no significant correlation between perceived importance of an issue and the third-person effect. This may suggest that the relationship between the third-person effect and perceived issue importance operates when the issue involves strong partisanship, but is nonexistent when the issue does not involve a strong commitment to a position or to a topic.

This study's finding, which was in the opposite direction of what was initially hypothesized, may also be attributed to the fact that perceived DTCAAd-information importance, prescription drug use, or perceived health involved neither a strong personal commitment to nor partisanship with DTCAAd.

Additionally, it seems reasonable to speculate that: (1) people are more likely to value the informativeness of DTCAAd and to perceive greater ad-influence on their behavior when they are in greater need of medical treatment and health-related information and (2) non-drug takers who consider themselves healthy are more likely to perceive greater third-person DTCAAd effects because they do not believe DTC drug ads are targeted at them.

Media use was unrelated to third-person DTCAAd effects. This finding provides additional evidence of a weak connection between the third-person effect and media use (e.g., the literature reports mixed findings). Rucinski and Salmon (1990) and Salwen

(1998) found that newspaper use was positively related to the third-person effect but not people's use of other media. Innes and Zeitz (1988) reported that television viewing was positively associated with the third-person effect but not with use of other media. Paxton (1997) and Brosius and Engel (1996) failed to find any relationship between media use and the third-person effect.

The emergence of the four DTCAd effect factors and their relationships with the mediating variables puts an interesting twist on the conventional third-person effect pattern. Of the four factors, "distrust of DTCAd information," often exhibited opposite correlations relative to the other three DTCAd effect factors. The counter direction of "distrust of DTCAd information" suggests that mediating variables may operate differently on different dimensions of the third-person effect.

For example, contrary to findings for the other three third-person DTCAd effect factors, the perceived third-person effects associated with the factor, "distrust of DTCAd information," were more pronounced with higher levels of perceived DTCAd importance, more positive global DTCAd attitude, and higher perceived DTCAd credibility and informativeness. Given that a strong third-person effect is mostly associated with perceived "negativity," it is not surprising that the DTCAd effect factor, "distrust of DTCAd information," indicates different patterns than other three third-person effect factors. Being distrustful and skeptical of the advertising-provided information may be one of people's most basic perceptual defenses to product advertising, including to DTCAd.

RO3: Examining Relationships between Third-Person DTCAd Effect and Behavioral Aspects

The behavioral hypothesis in third-person effect research predicts that the third-person effect is positively related to support for restrictions on media messages for two reasons: (1) people tend to believe that other people are less aware of the negative aspects of media influence and (2) people need protection from harmful media influences (Salwen, 1998). This study found a significant positive relationship between the third-person effect factors, “negative DTCAd effects” and “distrust of DTCAd information,” and support for DTCAd regulation. However, when other respondent demographic, perceptual, and attitudinal variables were controlled for, the relationship disappeared. These findings are in line with the mixed findings from the third-person effect research literature. Gunther (1995), McLeod, Eveland, and Nathanson (1997), and Youn, Faber, and Shah (2000) found significant relationships between the third-person effect and support for message regulation, but studies by Driscoll and Salwen (1997) and Price, Tewksbury, and Huang (1996) failed to support the connection. This study’s findings reconfirms that, as Perloff (1999) argued, the behavioral hypothesis of third-person effect has less support in the research than the perceptual hypothesis.

Some third-person effect studies suggest that the relationship between the third-person effect and support for message regulation might be contingent upon the nature of the message or perceived characteristics of the message (e.g., negative media content is more likely to produce a relationship between the third-person effect and support for regulation). It has been demonstrated that communication censorship is associated with the belief that the outcome of communications would be negative (Sullivan, Piereson, and

Marcus, 1982; Marcus, Sullivan, Theiss-Morse, and Wood, 1995). If people consider a message outcome as negative and socially undesirable, it is thought that a greater perceived third-person effect will lead them to support communication regulation (Davison, 1983; Rojas, Shah, and Faber, 1996; Salwen, 1998; Youn, Faber, and Shah, 2000).

In the case of DTCAd, because consumers tend to generally hold positive DTCAd attitudes (Perri and Dickson, 1987; Alperstein and Peyrot, 1993; Deshpande, Menon, Perri, and Zinkhan, 2003), they may not consider other people in need of protection from DTCAd effects. Therefore, greater perceived third-person DTCAd effects may not be a strong predictor of support for DTCAd regulation. The findings that global DTCAd attitude was a better predictor than third-person DTCAd effects, and that without other variables, the factor, “negative DTCAd effects,” was a significant positive predictor of support for DTCAd regulation would seem to support this explanation.

In addition to support for DTCAd regulation, relationships between third-person DTCAd effects and DTCAd-targeted patient behavior were also examined. The third-person effect factor, “learning & involvement,” was a significant negative predictor of DTCAd-targeted patient behaviors, even after controlling for other variables. The study found that those who perceived a greater third-person DTCAd effect were less likely to take action following DTCAd exposure.

A study by White and Scheb (2000) revealed a bandwagon effect as one possible consequence of the third-person effect when people encounter a positive message. However, a bandwagon effect was not replicated in the case of DTCAd. Even among those with positive DTCAd attitudes, respondents who perceived greater third-person

effects were less likely to act after DTCAd exposure. This suggests that regardless of message attitude, people likely consider being influenced by product advertising a threat to their self-esteem, a threat which apparently also holds for DTCAd. White and Scheb (2000) found a bandwagon effect for media coverage of Internet penetration, an information-driven medium, which has little of the explicit persuasive character of DTCAd.

RO4: Determining Variables Mediating DTCAd Behavioral Aspects

Support for regulation was predicted by various demographic, perceptual, and attitudinal variables: age, employment, and perceived DTCAd knowledge were positive predictors; education, global DTCAd attitude, and perceived DTCAd credibility were negative predictors.

Although there have been few systematic examinations of the factors that influence support for media/message regulation, the literature suggests that negative perceptions of possible message outcomes are linked to the likelihood of supporting message regulation (Sullivan, Piereson, and Marcus, 1982; Marcus, Sullivan, Theiss-Morse, and Wood, 1995; Salwen, 1998). This suggestion provides a possible explanation for the fact that negative DTCAd attitude and low perceived DTCAd credibility emerged as significant predictors of support for DTCAd regulation.

Demographic predictors of support for media/message regulation may be explained by the general tendency of “tolerance.” Salwen (1998) found that, because education and media use are associated with increased tolerance of negative media messages, those with higher educational level and heavy media use are less likely to support media/message regulation. The study’s findings that younger and more educated

people are less likely to support DTCAd regulation may be attributable to the fact that younger and more educated people tend to be more open-minded to diverse media messages and more tolerant of socially undesirable media content.

As predictors of DTCAd-targeted patient behaviors, perceived DTCAd informational importance and respondent race (being white) were significant positive predictors in addition to the third-person DTCAd effect. The finding that those who perceive DTCAd as an important source of health-related information are more likely to act following exposure to DTCAd is not particularly surprising, given that most common behavioral outcomes targeted by DTCAd are to get people to seek out additional information and to engage in interaction with others about health conditions and treatment options (Perri and Dickson, 1988; Williams and Hensel, 1995; Balazs, Yermolovich, and Zinkhan, 2002; Huh and Becker, 2002).

No other significant relationships between DTCAd-targeted behaviors and other consumer characteristics were found, though other DTCAd studies revealed that specific consumer characteristics are significant predictors of patient behavior. Peyrot, Alperstein, Doren, and Poli (1998) reported that females and higher-educated people with more mass media use were more likely to request specific prescription drugs. Williams and Hensel (1995) found that DTCAd attitude was positively associated with intention to seek information from a friend and pharmacist and that education and health status were negatively associated with DTCAd attitude. Huh and Becker (2002) found that perceived health was a negative predictor and prescription drug use was a positive predictor of drug information seeking and communication with doctors. Women were more likely to seek

information about drugs; younger and non-white people were more likely to communicate with their doctors.

It can be speculated that these consumer demographic, perceptual, and attitudinal variables may not directly influence patient behavior, but operate indirectly through perceived importance of DTCAd or perceived DTCAd effect. The findings from this study provide evidence that consumer demographic, perceptual, and attitudinal variables such as prescription drug use, perceived health, and global DTCAd attitude are significant predictors of the third-person DTCAd effect. The third-person DTCAd effect was a significant predictor of patient behavior.

Limitations of Study

Like all studies, this research has several limitations. One is potential survey respondent bias; another is sample representativeness. Although an attempt was made to increase returns, 47 percent of the sample did not participate in the survey. Consequently, there is a chance that the survey participants are different in character from those who decided not to respond to any of the three mailing waves.

As described in Chapter 5, survey respondents included more older and better-educated people and more white people than the population from which the sample was drawn. Furthermore, the survey was conducted in Athens/Clarke County, Georgia. It is possible that residents in Athens/Clarke County may be different from those in other areas of the nation and thus may not accurately reflect the population of the U.S., or for that matter, the rest of Georgia. As a consequence of both sample factors, caution must be exercised in generalizing the study's findings to other populations.

Another limitation involves some of the measures used in the study. Measures were carefully constructed based on extensive literature review. The developed measures were then pretested to ensure validity and reliability. However, due to the self-administrated nature of the mail survey method, some measures had to be simplified to reduce task complexity and to increase the likelihood of respondent participation. For example, the global DTCAd attitude measure included only three semantic differential scales. The three scales focused on the affective aspect of attitude, not on the cognitive and conative dimensional aspects of attitude. A more comprehensive measure would have been tri-dimensional.

Also, perceived knowledge of DTCAd was measured using only two statements and the weak and mixed findings on the variable may be attributable to how the perceived DTCAd knowledge was measured: it was measured by two 7-point scale items, the familiarity scale anchored by “not familiar” and “very familiar,” and the memory-for-ads scale anchored by “can’t remember at all” and “can remember a lot.” A more direct measure, asking “how much respondents think they know about DTCAd,” or more complex measures of DTCAd knowledge might produce different relationship between perceived knowledge and third-person DTCAd effects.

In addition, due to small sizes of sub-samples (the sample was screened using exposure to relevant DTCAd), each DTCAd-targeted patient behavior could not be separately analyzed. Furthermore, the summated index of patient behavior only reflected how many different types of behavioral actions had been engaged in by the respondents. It did not consider or measure how often and to what extent consumers acted after exposure to DTCAd. The number of different acts following DTCAd exposure might be a

fair measure of patient behavioral outcomes, but it is possible that the measure missed information on act frequency and the distribution of occurrence among specific acts.

Implications

The findings of this study contribute to the third-person effect research stream in four specific ways. First, since few studies have examined the third-person effect in the context of product advertising, this study adds significant evidence of the third-person effect in product advertising by demonstrating existence of the third-person effect specifically in DTC prescription drug advertising.

Second, this research strengthens the evidence of the third-person effect within the general public population. The majority of third-person effect studies have used student samples. As Perloff (1999) stated, over-reliance on student samples by third-person effect researchers may overstate third-person effects, considering students' tendency to perceive that they are more knowledgeable than others. The results of this study provide evidence that the third-person effect is not an artifact of using any particular group of people as study subjects.

Third, this study examined multiple dimensions of perceived DTCAd effects and convincingly demonstrates that the third-person effect operates in a multi-dimensional fashion. Most studies of the third-person effect have dealt with one-dimensional perceived media/message effects. This study revealed that different effect dimensions are influenced by different factors and produce different relationships with the behavioral outcomes of communication. For example, while the third-person effect factor, "distrust of DTCAd information," was a significant predictor of support for DTCAd regulation,

the factor, “learning & involvement,” was a significant predictor of ad-targeted patient behavior.

Fourth, this study expands the behavioral component boundary of third-person effect research to ad-targeted behavioral outcomes. The results demonstrate that the third-person effect can predict not only regulatory behaviors but also message-targeted behavioral outcomes. While some scholars have explored the behavioral hypothesis relative to the perceived advertising effects of public service announcements (PSAs) and political campaign messages, investigations linking the third-person effect to general product advertising effects is nonexistent. This study provides valuable insights as to how perceived advertising effects on self and on others operate in the product advertising environment.

As Umphrey (2002) has suggested, the third-person effect framework can significantly contribute to the understanding of what occurs in consumer minds after exposure to an advertising message and how the perceived effects of that ad message on self and on others might affect actual advertising-prompted outcomes. This study’s finding that the third-person effect associated with “learning & involvement” was a significant negative predictor of DTCAd-targeted patient behavior suggests that it would be useful to take the perceived effects of advertising into consideration along with consumer demographic and attitudinal factors in predicting ad-targeted consumer behaviors.

This study also has implications for pharmaceutical advertisers. The finding that the third-person DTCAd effect is a significant predictor of DTCAd-targeted patient behavior even after controlling for other variables suggests that various consumer

demographic, perceptual, and attitudinal variables, which have been known to predict DTCAd outcomes (Perri and Dickson, 1988; Williams and Hensel, 1995; Peyrot, Alperstein, Doren, and Poli, 1998; Balazs, Yermolovich, and Zinkhan, 2000; Huh and Becker, 2002), may not be direct predictors of patient behaviors. Including perceived DTCAd effect variables in research by pharmaceutical advertisers may change their models of DTCAd effects. Inclusion of perceived DTCAd effect could improve the assessment of real DTCAd effects and the industry's understanding of how DTCAd works.

Other than perceived third-person DTCAd effect, when consumers perceived DTCAd as an important source of health-related information, they were more likely to act after DTCAd exposure. This indicates the importance of perceived DTCAd informativeness in producing advertising effects. The common belief is that positive attitudes toward advertising lead to better advertising effects (Aaker and Myers, 1987; MacKenzie and Lutz 1989). However, this study found that global DTCAd attitude was not a significant predictor of DTCAd-targeted patient behavior. As a consequence, pharmaceutical advertisers should pay more attention to the informational value of their advertising messages and devise more effective and socially responsible ways to communicate essential information about their drugs and general health-related information to their consumers. It would appear that providing useful information is more important than getting people to like DTCAd.

Postscript: A Research Agenda

Both third-person effect research and DTC prescription drug advertising research are growing areas of communication research. This study demonstrates that the third-

person effect perspective is a viable research framework from which to examine the effects of DTC prescription drug ads. Among questions that future research might consider examining from the third-person effect framework are:

- Is there variation in how perceived DTCAd effects influence different patient behaviors (e.g., does perceived DTCAd effect have more influence on talking with their friends about the advertised drugs than on seeking out additional information in other media)?
- Do different forms of DTCAd (television, magazine, the Internet, or leaflets in a doctor's office) generate different patterns of third-person DTCAd effects and how are these differences linked to behavioral outcomes?
- Does the social distance corollary found in third-person effect research operate in the context of DTCAd (e.g., do people perceive third-person DTCAd effects to different degrees when they think about their close friends, people living in the same neighborhood, general public) and what is the relation of such influence to behavioral outcomes?

From a methodological perspective, future researchers should consider a number of ways to improve data quality. For example, devising more complete measures of the level of knowledge of DTCAd, DTCAd attitude, and behavioral outcomes would improve the understanding of how these variables affect perceived DTCAd effects and behavioral outcomes. In addition, applying different analytical methods would provide meaningful insight: instead of using a regression analysis, using a classification analysis method might reveal how those with third-person, second-person, and first-person effect perceptions differ from one another in terms of individual demographic, perceptual, attitudinal, and behavioral characteristics.

Future research may also wish to examine the third-person effects of DTC drug ads among healthcare professionals and how perceived DTCAd effects might influence interaction between healthcare professionals and patients. Given Davison's initial

speculation that ““experts” are particularly likely to overemphasize the effects of the media” (Davison, 1983, p. 8), it is surprising that none of the third-person effect studies examined “expert” perceptions of media effects on the general public.

Other research should attempt to replicate the bandwagon effect in DTCAd that might be caused by the third-person effect. These results failed to find any evidence to support the bandwagon effect hypothesis. It may be interesting for future researchers to examine a possible bandwagon effect in DTCAd as well as in other advertising contexts and with both informative and persuasive messages.

For the larger realm of product advertising research, the study suggests that researchers should consider applying the third-person effect framework to effects studies of other consumer products. For example, it would be interesting to explore if different consumer populations exhibit different perceptions of advertising effects for different consumer products and how these perceptions are related to ad-targeted behaviors for those products. It would also be interesting to explore how assumptions about perceived advertising effects (other/self) among different marketing groups (e.g., retailers, advertisers, agency planners) influence their planning for consumer advertising.

These and many other questions remain for future exploration. At the very least, the results reported in this research provide another empirical foundation for those “yet-to-come” studies of direct-to-consumer prescription drug advertising.

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APPENDIX A
SURVEY COVER LETTER

October 10, 2002

Dear Sir or Madam:

I am a doctoral candidate at The University of Georgia studying mass communication (phone: 706-542-7725). As part of my work, I am conducting research entitled 'Perceived Third Person Effects of Direct-to-Consumer Prescription Drug Ads'. This research is being conducted under the direction of Dr. Leonard N. Reid (College of Journalism and Mass Communication, University of Georgia, Phone: 706-542-7833).

You were randomly selected to participate in the study. Your opinions are very important to the final results of my project. I value all your input and ideas.

Attached is a questionnaire along with a postage-paid envelope. Please take a few minutes to complete and return the questionnaire **within ten days** to my address at the University of Georgia. It should take about 15 minutes of your time.

Be assured that your opinions will be strictly confidential and will not be released in any individually identifiable form without your prior consent, unless otherwise required by law. The master list of identity links will be used only to check your return status and send you a gift after receiving your completed questionnaire. The master list of identity links will be destroyed when the survey data collection is completed. As a token of my gratitude, I have included a \$1 bill. When you return completed questionnaire to me, I'll send you a \$2 bill as a small gift in return for your valued opinions.

Thank you very much for your time and cooperation. If you have any questions or comments regarding the study, please contact me at (706) 542-7725.

Sincerely,

Jisu Huh
Doctoral Candidate

Research at The University of Georgia is overseen by the Institutional Review Board. Questions regarding your rights as a participant should be addressed to:

Human Subjects Office
Office of the Vice-President for Research
606 Boyd Graduate Studies Research Center
The University of Georgia
Athens, Georgia 30602-7411
Telephone: (706) 542-3199
Fax: (706) 542-5638
e-mail: IRB@uga.edu

APPENDIX B
SURVEY QUESTIONNAIRE

**PERCEPTIONS OF DIRECT-TO-CONSUMER PRESCRIPTION
DRUG ADVERTISING**



Jisu Huh, Ph.D. Candidate
The University of Georgia

Study supervised by: Dr. Leonard N. Reid
The Grady College of Journalism & Mass Communication
The University of Georgia
Athens, GA 30602-3018

Respondent:

**Please turn page and begin answering questions. Your
cooperation is greatly appreciated.**

PERCEPTIONS OF DIRECT-TO-CONSUMER PRESCRIPTION DRUG ADVERTISING

In this survey, I ask a variety of questions about your opinions on prescription drug advertising. Please answer each question by marking an appropriate checkbox or space, or by writing your answer in an open space. **A prescription drug is a drug that you can only get with a doctor's prescription from a pharmacist; it can't be purchased over the counter.**

1. In the past 6 months, have you seen, read or heard advertisements for prescription drugs in any of the following ways?

(1) On television	1 Yes <input type="checkbox"/>	2 No <input type="checkbox"/>	3 Not sure <input type="checkbox"/>
(2) On the radio	1 Yes <input type="checkbox"/>	2 No <input type="checkbox"/>	3 Not sure <input type="checkbox"/>
(3) In a newspaper	1 Yes <input type="checkbox"/>	2 No <input type="checkbox"/>	3 Not sure <input type="checkbox"/>
(4) In a magazine	1 Yes <input type="checkbox"/>	2 No <input type="checkbox"/>	3 Not sure <input type="checkbox"/>
(5) On the Internet	1 Yes <input type="checkbox"/>	2 No <input type="checkbox"/>	3 Not sure <input type="checkbox"/>
(6) In a flyer or brochure	1 Yes <input type="checkbox"/>	2 No <input type="checkbox"/>	3 Not sure <input type="checkbox"/>

*** If you checked "2 No" for ALL 6 items, please stop here and return this questionnaire in the provided envelope. Thank you for your time.**

*** If you checked "1 Yes" or "3 Not sure" for ANY of 6 items, please go ahead and complete the questionnaire.**

2. Below is a list of information sources about prescription drugs. Please rate each source on the corresponding items by placing a check mark in one of 7 spaces.

For example, if you think that newspaper advertising about prescription drugs is very closely related to one end of the scale, you should place your check mark as follows:

Not Believable X : ___ : ___ : ___ : ___ : ___ : ___ Believable

or

Not Believable ___ : ___ : ___ : ___ : ___ : ___ : X Believable

If you think that newspaper advertising is neutral in terms of its believability, you should place your check mark as follows:

Not Believable ___ : ___ : ___ : X : ___ : ___ : ___ Believable

If you don't know or not sure, you should check "don't know" as follows: DK X

Newspaper advertising for prescription drugs

Not Believable ___ : ___ : ___ : ___ : ___ : ___ : ___ Believable : DK ___

Trustworthy ___ : ___ : ___ : ___ : ___ : ___ : ___ Not Trustworthy : DK ___

Not Credible ___ : ___ : ___ : ___ : ___ : ___ : ___ Credible : DK ___

Informative ___ : ___ : ___ : ___ : ___ : ___ : ___ Not Informative : DK ___

Television advertising for prescription drugs

Not Believable ___ : ___ : ___ : ___ : ___ : ___ : ___ Believable : DK ___

Trustworthy ___ : ___ : ___ : ___ : ___ : ___ : ___ Not Trustworthy : DK ___

Not Credible ___ : ___ : ___ : ___ : ___ : ___ : ___ Credible : DK ___

Informative ___ : ___ : ___ : ___ : ___ : ___ : ___ Not Informative : DK ___

Magazine advertising for prescription drugs

Not Believable ___ : ___ : ___ : ___ : ___ : ___ : ___ Believable : DK ___

Trustworthy ___ : ___ : ___ : ___ : ___ : ___ : ___ Not Trustworthy : DK ___

Not Credible ___ : ___ : ___ : ___ : ___ : ___ : ___ Credible : DK ___

Informative ___ : ___ : ___ : ___ : ___ : ___ : ___ Not Informative : DK ___

Radio advertising for prescription drugs

Not Believable ____ : ____ : ____ : ____ : ____ : ____ : ____ Believable : DK ____
 Trustworthy ____ : ____ : ____ : ____ : ____ : ____ : ____ Not Trustworthy : DK ____
 Not Credible ____ : ____ : ____ : ____ : ____ : ____ : ____ Credible : DK ____
 Informative ____ : ____ : ____ : ____ : ____ : ____ : ____ Not Informative : DK ____

Website/homepage about prescription drugs

Not Believable ____ : ____ : ____ : ____ : ____ : ____ : ____ Believable : DK ____
 Trustworthy ____ : ____ : ____ : ____ : ____ : ____ : ____ Not Trustworthy : DK ____
 Not Credible ____ : ____ : ____ : ____ : ____ : ____ : ____ Credible : DK ____
 Informative ____ : ____ : ____ : ____ : ____ : ____ : ____ Not Informative : DK ____

Internet advertising (e.g., banner ads) for prescription drugs

Not Believable ____ : ____ : ____ : ____ : ____ : ____ : ____ Believable : DK ____
 Trustworthy ____ : ____ : ____ : ____ : ____ : ____ : ____ Not Trustworthy : DK ____
 Not Credible ____ : ____ : ____ : ____ : ____ : ____ : ____ Credible : DK ____
 Informative ____ : ____ : ____ : ____ : ____ : ____ : ____ Not Informative : DK ____

Leaflet/brochure in a doctor's office or a pharmacy

Not Believable ____ : ____ : ____ : ____ : ____ : ____ : ____ Believable : DK ____
 Trustworthy ____ : ____ : ____ : ____ : ____ : ____ : ____ Not Trustworthy : DK ____
 Not Credible ____ : ____ : ____ : ____ : ____ : ____ : ____ Credible : DK ____
 Informative ____ : ____ : ____ : ____ : ____ : ____ : ____ Not Informative : DK ____

Direct mail about prescription drugs

Not Believable ____ : ____ : ____ : ____ : ____ : ____ : ____ Believable : DK ____
 Trustworthy ____ : ____ : ____ : ____ : ____ : ____ : ____ Not Trustworthy : DK ____
 Not Credible ____ : ____ : ____ : ____ : ____ : ____ : ____ Credible : DK ____
 Informative ____ : ____ : ____ : ____ : ____ : ____ : ____ Not Informative : DK ____

3. Now, I would like to ask you about the effects of prescription drug advertising on your behavior and on the behavior of other people. By effect, I mean the power of prescription drug advertising to cause you or others to act toward a brand of drug, an information source, a medical care provider, or a relative or friend in a specific way.

Below is a series of statements about the possible effects of prescription drug advertising on **you**. Please rate each of the following statements by placing a check mark in one of 7 spaces, where **1 means STRONGLY DISAGREE** and **7 means STRONGLY AGREE**. If you are not sure or don't know about a particular effect, mark **DK** for “**Don't know /Not sure**”.

Prescription drug advertising has caused ME to:

	Strongly disagree						Strongly agree	
Make an appointment to see my doctor.	___ 1	: ___ 2	: ___ 3	: ___ 4	: ___ 5	: ___ 6	: ___ 7	: DK ___
Retain useful information about new drugs.	___ 1	: ___ 2	: ___ 3	: ___ 4	: ___ 5	: ___ 6	: ___ 7	: DK ___
Ask my doctor to prescribe a specific drug brand.	___ 1	: ___ 2	: ___ 3	: ___ 4	: ___ 5	: ___ 6	: ___ 7	: DK ___
Question the advice of my doctor.	___ 1	: ___ 2	: ___ 3	: ___ 4	: ___ 5	: ___ 6	: ___ 7	: DK ___
Misuse a prescription drug.	___ 1	: ___ 2	: ___ 3	: ___ 4	: ___ 5	: ___ 6	: ___ 7	: DK ___
Talk with my pharmacist about a prescription drug, treatment, or medical condition.	___ 1	: ___ 2	: ___ 3	: ___ 4	: ___ 5	: ___ 6	: ___ 7	: DK ___
Talk with my doctor about a prescription drug, treatment, or medical condition.	___ 1	: ___ 2	: ___ 3	: ___ 4	: ___ 5	: ___ 6	: ___ 7	: DK ___
Feel that something is wrong with my health.	___ 1	: ___ 2	: ___ 3	: ___ 4	: ___ 5	: ___ 6	: ___ 7	: DK ___
Become confused about treatment options and medical conditions.	___ 1	: ___ 2	: ___ 3	: ___ 4	: ___ 5	: ___ 6	: ___ 7	: DK ___
Experience conflict with my doctor.	___ 1	: ___ 2	: ___ 3	: ___ 4	: ___ 5	: ___ 6	: ___ 7	: DK ___
Learn more about treatment options and medical conditions.	___ 1	: ___ 2	: ___ 3	: ___ 4	: ___ 5	: ___ 6	: ___ 7	: DK ___

Prescription drug advertising has caused ME to:

	Strongly disagree		Strongly agree	
Become distrustful of drug company-sponsored information.	___ 1	:	___ 2	:
	___ 3	:	___ 4	:
	___ 5	:	___ 6	:
	___ 7	:	DK	___
Ask my doctor to change a prescription drug I'm already taking.	___ 1	:	___ 2	:
	___ 3	:	___ 4	:
	___ 5	:	___ 6	:
	___ 7	:	DK	___
Talk with friends and relatives about healthcare.	___ 1	:	___ 2	:
	___ 3	:	___ 4	:
	___ 5	:	___ 6	:
	___ 7	:	DK	___
Self-diagnose a medical condition.	___ 1	:	___ 2	:
	___ 3	:	___ 4	:
	___ 5	:	___ 6	:
	___ 7	:	DK	___
Go to other media sources to get information about medical conditions and treatment options.	___ 1	:	___ 2	:
	___ 3	:	___ 4	:
	___ 5	:	___ 6	:
	___ 7	:	DK	___
Be more involved in my healthcare.	___ 1	:	___ 2	:
	___ 3	:	___ 4	:
	___ 5	:	___ 6	:
	___ 7	:	DK	___
Spend more money on my healthcare.	___ 1	:	___ 2	:
	___ 3	:	___ 4	:
	___ 5	:	___ 6	:
	___ 7	:	DK	___
Learn about the risks and benefits of an advertised drug.	___ 1	:	___ 2	:
	___ 3	:	___ 4	:
	___ 5	:	___ 6	:
	___ 7	:	DK	___
Ask my doctor intelligent questions about treatments and medical conditions.	___ 1	:	___ 2	:
	___ 3	:	___ 4	:
	___ 5	:	___ 6	:
	___ 7	:	DK	___
Abuse prescription drugs.	___ 1	:	___ 2	:
	___ 3	:	___ 4	:
	___ 5	:	___ 6	:
	___ 7	:	DK	___
Be deceived about the benefits of a prescription drug.	___ 1	:	___ 2	:
	___ 3	:	___ 4	:
	___ 5	:	___ 6	:
	___ 7	:	DK	___

4. Next, using the same scale, where **1 means STRONGLY DISAGREE** and **7 means STRONGLY AGREE**, please rate the degree to which you believe prescription drug advertising has caused **other people** to act toward a brand of drug, an information source, a medical care provider, or a relative or friend in a specific way. By other people, I mean consumers who are members of the general public. If you are not sure or don't know about a particular effect, mark **DK** for “Don't know /Not sure”.

I believe prescription drug advertising has caused OTHERS to:

	Strongly disagree						Strongly agree	
Make an appointment to see their doctors.	___	:	___	:	___	:	___	: DK ___
	1		2		3		4	
Retain useful information about new drugs.	___	:	___	:	___	:	___	: DK ___
	1		2		3		4	
Ask their doctors to prescribe a specific drug brand.	___	:	___	:	___	:	___	: DK ___
	1		2		3		4	
Question the advice of their doctors.	___	:	___	:	___	:	___	: DK ___
	1		2		3		4	
Misuse a prescription drug.	___	:	___	:	___	:	___	: DK ___
	1		2		3		4	
Talk with their pharmacists about a prescription drug, treatment, or medical condition.	___	:	___	:	___	:	___	: DK ___
	1		2		3		4	
Talk with their doctors about a prescription drug, treatment, or medical condition.	___	:	___	:	___	:	___	: DK ___
	1		2		3		4	
Feel that something is wrong with their health.	___	:	___	:	___	:	___	: DK ___
	1		2		3		4	
Become confused about treatment options and medical conditions.	___	:	___	:	___	:	___	: DK ___
	1		2		3		4	
Learn more about treatment options and medical conditions.	___	:	___	:	___	:	___	: DK ___
	1		2		3		4	
Experience conflict with their doctors.	___	:	___	:	___	:	___	: DK ___
	1		2		3		4	
Become distrustful of drug company-sponsored information.	___	:	___	:	___	:	___	: DK ___
	1		2		3		4	
Ask their doctors to change a prescription drug they're already taking.	___	:	___	:	___	:	___	: DK ___
	1		2		3		4	

I believe prescription drug advertising has caused OTHERS to:

	Strongly Disagree						Strongly agree	
Talk with friends and relatives about healthcare.	___	:	___	:	___	:	___	:
	1		2		3		4	
	___	:	___	:	___	:	___	:
	5		6		7			: DK ___
Self-diagnose a medical condition.	___	:	___	:	___	:	___	:
	1		2		3		4	
	___	:	___	:	___	:	___	:
	5		6		7			: DK ___
Go to other media sources to get information about medical conditions and treatment options.	___	:	___	:	___	:	___	:
	1		2		3		4	
	___	:	___	:	___	:	___	:
	5		6		7			: DK ___
Be more involved in their healthcare.	___	:	___	:	___	:	___	:
	1		2		3		4	
	___	:	___	:	___	:	___	:
	5		6		7			: DK ___
Spend more money on their healthcare.	___	:	___	:	___	:	___	:
	1		2		3		4	
	___	:	___	:	___	:	___	:
	5		6		7			: DK ___
Learn about the risks and benefits of an advertised drug.	___	:	___	:	___	:	___	:
	1		2		3		4	
	___	:	___	:	___	:	___	:
	5		6		7			: DK ___
Ask their doctors intelligent questions about treatments and medical conditions.	___	:	___	:	___	:	___	:
	1		2		3		4	
	___	:	___	:	___	:	___	:
	5		6		7			: DK ___
Abuse prescription drugs.	___	:	___	:	___	:	___	:
	1		2		3		4	
	___	:	___	:	___	:	___	:
	5		6		7			: DK ___
Be deceived about the benefits of a prescription drug.	___	:	___	:	___	:	___	:
	1		2		3		4	
	___	:	___	:	___	:	___	:
	5		6		7			: DK ___

5. The following statements pertain to the regulation of prescription drug advertising. Using a scale where **1 means STRONGLY DISAGREE** and **7 means STRONGLY AGREE**, please indicate your level of agreement with each statement. (**DK =don't know**)

	Strongly disagree							Strongly agree	
Advertisements for prescription drugs should be submitted to the government for prior approval before they are aired or published.	___ 1	: ___ 2	: ___ 3	: ___ 4	: ___ 5	: ___ 6	: ___ 7	: DK ___	
Advertisements for prescription drugs should be totally banned.	___ 1	: ___ 2	: ___ 3	: ___ 4	: ___ 5	: ___ 6	: ___ 7	: DK ___	
Any company that wants to advertise its prescription drugs should be allowed to without any regulation.	___ 1	: ___ 2	: ___ 3	: ___ 4	: ___ 5	: ___ 6	: ___ 7	: DK ___	
Advertisements for prescription drugs should include all of a drug's potential risks (side effects and contraindications).	___ 1	: ___ 2	: ___ 3	: ___ 4	: ___ 5	: ___ 6	: ___ 7	: DK ___	
The government should leave the regulation of prescription drug ads to the pharmaceutical industry.	___ 1	: ___ 2	: ___ 3	: ___ 4	: ___ 5	: ___ 6	: ___ 7	: DK ___	
Advertisements for prescription drugs should provide alternative information sources (toll-free numbers, websites).	___ 1	: ___ 2	: ___ 3	: ___ 4	: ___ 5	: ___ 6	: ___ 7	: DK ___	
Advertisements for prescription drugs should include a statement that a consumer must talk to doctors and/or pharmacists.	___ 1	: ___ 2	: ___ 3	: ___ 4	: ___ 5	: ___ 6	: ___ 7	: DK ___	
Advertisements for prescription drugs should present both benefits and risks of the advertised drug.	___ 1	: ___ 2	: ___ 3	: ___ 4	: ___ 5	: ___ 6	: ___ 7	: DK ___	
Only drugs that are completely safe should be advertised directly to consumers.	___ 1	: ___ 2	: ___ 3	: ___ 4	: ___ 5	: ___ 6	: ___ 7	: DK ___	

6. On a scale where **1 means NOT IMPORTANT** and **7 means EXTREMELY IMPORTANT**, how would you rate the importance of prescription drug advertising as a source of health information to you? By importance, I mean how essential is prescription drug advertising to your mental and physical well-being. (DK = don't know)

Not important : : : : : : Extremely important : DK

7. On a scale where **1 means NOT FAMILIAR** and **7 means VERY FAMILIAR**, please rate how familiar you are with prescription drug ads. (DK = don't know)

Not familiar : : : : : : Very familiar : DK

8. In general, how well can you remember ads for specific prescription drug brands? Please rate using a scale where **1 means CAN'T REMEMBER AT ALL** and **7 means CAN REMEMBER A LOT**. (DK = don't know)

Can't remember at all : : : : : : Can remember a lot : DK

9. Please rate prescription drug advertising on the following attributes.

For example, if you think that prescription drug advertising is very closely related to one end of the scale, you should place your check mark as follows:

Bad **X** : : : : : : Good

Or

Bad : : : : : : **X** Good

If you don't know or not sure, you should check "don't know" as follows: DK **X**

Bad	<u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u>	Good	: DK <u> </u>
Pleasant	<u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u>	Unpleasant	: DK <u> </u>
Unfavorable	<u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u>	Favorable	: DK <u> </u>

10. In the last 6 months, have you taken a prescription drug, that is a drug you can only get with a doctor's prescription? (check one)

- 1. Yes ☐
- 2. No ☐
- 3. Don't know ☐

10a. How many prescription drugs are you now taking? (write in)

11. In the last 6 months, have you seen or heard any prescription drug ads that seemed relevant to your health?

- 1. Yes ☐ → Go to the next question.
- 2. No ☐ → Go to Question #14.
- 3. Don't know ☐ → Go to Question #14.

12. After seeing or hearing the ads, have you done any of the following? (You can check more than one box, if needed)

- ☐ 1. I have talked with my doctor about an advertised drug.
- ☐ 2. I have talked with my friends or relatives about an advertised drug.
- ☐ 3. I have talked with my pharmacist about a drug.
- ☐ 4. I have searched for more information about a drug.
- ☐ 5. I have asked my doctor to prescribe an advertised drug.
- ☐ 6. Something else (specify) _____

→ If you checked "5. I have asked my doctor to prescribe an advertised drug", please answer Question #13. Otherwise, go to Question #14.

13. What was your doctor's response to your request for a prescription for the drug? (You can check more than one box, if needed)

- ☐ 1. Doctor prescribed the drug you asked about.
- ☐ 2. Doctor refused to prescribe the drug without explanation.
- ☐ 3. Doctor refused to prescribe the drug without explanation.
- ☐ 4. Doctor recommended a different prescription drug.
- ☐ 5. Doctor recommended an over-the-counter drug.
- ☐ 6. Doctor recommended no drug.
- ☐ 7. Doctor recommended that you make changes in your behavior or lifestyle.
- ☐ 8. Something else (specify) _____

14. How would you describe your overall health? Please rate your overall health using a scale, where **1 = UNHEALTHY** and **7 = EXTREMELY HEALTHY**. (DK = don't know)

Unhealthy $\frac{\quad}{1} : \frac{\quad}{2} : \frac{\quad}{3} : \frac{\quad}{4} : \frac{\quad}{5} : \frac{\quad}{6} : \frac{\quad}{7}$ Extremely healthy : DK ____

15. On average, about how many hours per week do you spend doing each of the following?
(Please write in: If you spend less than an hour, please answer using a fraction (e.g., 1/2). If you do not use the specific medium, please write "0".)

Reading newspapers: _____ hours per week

Reading magazines: _____ hours per week

Watching television: _____ hours per week

Listening to the radio: _____ hours per week

Using the Internet: _____ hours per week

16. Below are brands of prescription drugs and ad content from some of their ads. Please try to match each brand with the brand's ad content by writing the number of the brand in the space beside the brand's ad content. There are more brands than the number of elements from ad content. (If you don't know or not sure, you should check "don't know" as follows: X)

<u>Brand</u>		<u>Ad Content</u>	
1. Vioxx	_____	Former ice skater Dorothy Hamill testimonial	Don't know _____
2. Imitrex	_____	Atlanta Falcons' coach Dan Reeves testimonial	Don't know _____
3. Claritin	_____	"Celebrate, celebrate"	Don't know _____
4. Nexium	_____	Major leaguer Rafael Palmerio testimonial	Don't know _____
5. Zocor	_____	"Today's purple pill"	Don't know _____
6. Viagra	_____		Don't know _____
7. Celebrex	_____		Don't know _____

Now, I would like to ask some questions about you for classification purposes only.

17. What is your age in years? (write in)

_____ years

18. What is your gender? (check one)

1. Male ☐ 2. Female ☐

19. What is the last grade or class that you completed in school? (check one)

- ☐ 1. None
- ☐ 2. Grade 1-8
- ☐ 3. High School incomplete (Grades 9-11)
- ☐ 4. High School graduate (Grade 12 or GED certificate)
- ☐ 5. Some college, no 4-year degree
- ☐ 6. Associate degree – occupational
- ☐ 7. Associate degree – academic
- ☐ 8. Bachelor's degree
- ☐ 9. Master's degree
- ☐ 10. Professional degree
- ☐ 11. Doctorate degree

20. What race do you consider yourself to be? (check one)

- ☐ 1. White
- ☐ 2. Black or African American
- ☐ 3. Asian
- ☐ 4. Hispanic or Latino
- ☐ 5. Native American or Alaska Native
- ☐ 6. Native Hawaiian or other Pacific Islander
- ☐ 7. Other or mixed race

21. What is your current marital status? (check one)

- ☐ 1. Single
- ☐ 2. Married
- ☐ 3. Other (widowed, divorced, or separated)

22. What is your employment status? (check one)

- ☐ 1. Employed part-time
- ☐ 2. Employed full-time
- ☐ 3. Not employed
- ☐ 4. Retired

23. Before taxes, which of the following categories did your family income fall into last year?
(check one)

- ☐ 1. \$75,000 or more
- ☐ 2. \$55,000 - \$74,999
- ☐ 3. \$35,000 - \$54,999
- ☐ 4. \$15,000 - \$34,999
- ☐ 5. \$14,999 or less

Thank you very much for taking the time to complete this survey. Your thoughts will allow us to better understand the important subject of prescription drug advertising.

**PLEASE PLACE THE COMPLETED SURVEY IN THE STAMPED ENVELOPE PROVIDED
AND PUT IN THE MAIL.**