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Source credibility and public information campaigns: The effect of audience evaluations of organizational sponsors on message acceptance

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Source Credibility and Public Information Campaigns: The Effect of Audience
Evaluations of Organizational Sponsors on Message Acceptance

by

Deena G. Kemp

A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Arts
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personal involvement, information seeking, behavioral intent

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DEDICATION

This thesis is dedicated to my newborn daughter, Arianna, who was born one month before I defended my study. She won't remember me holding her in one arm as I typed my concluding chapter with the other, but, someday, I hope this manuscript reminds her that through Christ nothing is impossible.

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LIST OF ACRONYMS

ANOVA	Analysis of Variance
CRM	Cause Related Marketing
DCM	Dual Credibility Model
DTC	Direct-to-Consumer
FPP	First-Person Perception
HPV	Human Papilloma Virus
PSA	Public Service Announcements
RLS	Restless Leg Syndrome
STP	Situational Theory of Publics
TPE	Third-Person Effect
TPP	Third-Person Perception
TRA	Theory of Reasoned Action

Source Credibility and Public Information Campaigns: The Effect of Audience Evaluations of Organizational Sponsors on Message Acceptance

Deena G. Kemp

ABSTRACT

This study establishes a link between research on organizational source credibility and the effects of public information campaigns. Research has established that source credibility is one factor audiences evaluate when responding to messages and that credible information sources enhance message acceptance, while untrustworthy sources can interfere with desired message effects. Although source credibility studies have typically focused on the person delivering a message, recent studies indicate that audience perceptions of the organization sponsoring a message has a direct effect on message acceptance as well. Additionally, a few studies indicate that non-profit sources of health information are viewed as more credible, while such messages presented by for-profit organizations are less effective. This study uses an experimental procedure to investigate the relationship between organizational status, source credibility, and two possible effects of public service messages, information seeking and behavioral intent. Based on previous findings, the study hypothesized that the non-profit source would be rated as more credible and that as the audiences' perception of source credibility increases so would their willingness to seek additional information or perform the advocated behaviors. Findings indicate, however, that organizational status does not have a significant effect on perceptions of source credibility. Nor does it significantly influence message evaluation, information seeking, or behavioral intent. As predicted, there was a positive correlation between source credibility, message credibility, problem recognition, personal relevance, information seeking, and behavioral intent. The results also indicate that information seeking positively predicts behavioral intent.

CHAPTER 1: INTRODUCTION

Public service messages are considered altruistic promotional material in that they “address problems assumed to be of general concern to citizens at large... attempt to increase public awareness of such problems and their possible solutions, and in many instances also try to influence public beliefs, attitudes, and behaviors” related to these issues (O’Keefe & Reid, 1990, p. 67). Unlike commercial advertising, these messages do not sell or promote a product or service. Although they are a form of issue advertising, they also differ from other issue advertisements like institutional and advocacy advertisements because they neither tout the image of a company nor bolster the socio-political perspective of an organization. The term public service announcements or advertisements (PSAs) is commonly used to refer to public information campaigns, because most rely on television advertisements for dissemination. “Other widely used channels and modes are radio spots, newspaper publicity, and pamphlets”(Atkin, 2001, p. 26).

PSAs are an integral part of health promotion campaigns (Andsager, Austin, & Pinkleton, 2001). “Over the past half-century, thousands of mass media campaigns have disseminated messages about dozens of different health topics to the U.S. population” (Atkin, 2001, p. 1). Campaigns to prevent smoking, reduce drunk driving, and encourage healthy eating habits represent the historical and typical uses of PSAs. In today’s health care environment, which stresses proactive health behavior and the active involvement of

the healthcare consumer, health messages extend beyond promoting socially desirable behaviors to warning audiences about their risks for certain health conditions.

Government agencies and health associations are the typical sponsors of health information campaigns. “Most campaigns have very limited monetary resources” (Atkin, 2001, p. 27) and rely on “gratis placement in broadcast and print media” (O’Keefe, 1990, p. 67). Neither radio nor television stations are now required by law to donate a specific amount of time to PSAs. But, as part of their mandate to prove they are operating in the public interest, broadcast stations have continued to provide free spots for public health messages (U.S. Department of Health and Human Services, 1992). There is no such incentive for print media, but some newspapers and magazines provide free space as well (Atkin, 2001). However, competition for such spots is intense and PSAs are “ordinarily relegated to status behind regular paid ads or commercials and are often apt to appear only as space and time become available” (O’Keefe & Reid, 1990, p. 68). In recent years, as access to free media placement has diminished significantly, “governmental and association sponsors of health campaigns have frequently relied on paid ads to gain more frequent and favorable coverage” (Atkin, 2001, p. 2).

At the same time, the role of for-profit groups as sponsors of public information campaigns is increasing. Liesse (1990) reported that the cause related marketing (CRM) efforts of commercial firms make it difficult to determine the difference between public service and corporate promotion. “CRM aligns brands with social causes” and positions companies on a “social responsibility platform” (Deshpande & Hitchon, 2002, p. 905) . Corporations may fund the information campaigns of non-profit organizations or produce and disseminate their own public service messages. “A growing number of government

agencies are turning to corporate sponsors as a way to get across their public service messages” (Meyers, 1989, p. 22). As competition increases for donated media space, corporate funding may be essential for disseminating public service messages.

Yet, there is some concern that CRM activities may do more than improve a company’s image and that some companies use the guise of public service to increase profits (Liesse, 1990). This is a real concern for health communication campaigns as pharmaceutical companies recently began sponsoring disease awareness campaigns about diseases directly linked to the companies’ product lines. Unlike direct-to-consumer (DTC) advertisements, which encourage consumers with certain health conditions to ask their doctors about prescribing a specific brand of a drug, these messages encourage audiences to learn more about diagnosing and treating diseases they may or may not have. Though companies may not refer to these messages as public service campaigns, these “public service-type messages” (Liesse, 1990, p. 28) are indistinguishable from PSAs because they address a health issue without linking it to a product or service.

Disease mongering is the term used to describe marketing efforts designed to expand the market for products by convincing people they are sick and need medical intervention (Moynihan, Heath, & Henry, 2002). For example, to expand the market for Viagra, Pfizer developed disease education messages encouraging men to talk to their doctors about erectile dysfunction. In 2003, GlaxoSmithKline launched a campaign to promote awareness about restless leg syndrome (RLS). More recently, Merck funded a disease awareness campaign about the connection between the human papilloma virus (HPV) and cervical cancer only months before receiving approval to distribute the first HPV vaccine. While many may debate the ethics of such campaigns, a greater public

health concern is how these messages affect health education, particularly when genuine health risks are involved.

Do corporate sponsors as sources of public service messages enhance or inhibit the effectiveness of health information campaigns? This study seeks to answer this question by examining the relationship between audiences' perceptions of corporate versus non-profit sponsors of a health message and their responses to the message. Lynn, Wyatt, Gaines, Pearce and Bergh (1978) argue that the audiences' image of PSA sources is central to the issue of PSA effectiveness.

This study uses concepts from the source credibility literature to investigate perceptions of the source and the message. In general, source effects have been well documented. However, research that looks specifically at the effects of organizational sources is just developing, and while source credibility research is well established for specific messages such as news reports and consumer advertisements, it is an understudied area when it comes to public service announcements. More specifically, only two studies (Lynn, 1973; Lynn, Wyatt, Gaines, Pearce, & Bergh, 1978) look at the effect of organizational sponsors on audiences' responses to PSAs. This study establishes a link between the developing area of organizational source credibility research and research on the effects of public service messages.

The experimental design for this study builds on research models that test organizational source credibility effects, primarily from the area of consumer advertising. Because public service announcements advocate social issues rather than consumer behavior, the message effects concepts of brand attitude and purchase intentions from consumer marketing research do not apply. Thus, this article begins with a discussion of

the literature about the uses and effects of public information campaigns. Two main effects, information seeking and behavioral intention, have been offered as desirable outcomes of PSAs. The literature review continues with an overview of established source credibility concepts and key organizational credibility findings.

Following the literature review, the theories that form the theoretical base for the study including two theories that may prove useful for understanding message acceptance for PSAs, the situational theory of publics (STP) and the theory of reasoned action (TORA), are discussed. The problem recognition and personal involvement variables from the situational theory were used to operationalize message acceptance; however, there are strong parallels between these variables and the TORA attitude and subjective norms variables. Based on these parallels, the study also suggests that the situational theory can be extended to include behavioral intention, and thus, like the theory of reasoned action may also predict actual behavior.

The study utilized a 2x2 experimental design plus a control group. Research participants were students in an introductory mass communications course at the University of South Florida. The treatments were health messages sponsored by a corporate health organization versus a non-profit health agency. Students in the control group viewed a health message without a sponsor.

Based on current organizational credibility findings, the research hypotheses argued that the corporate sponsor would be viewed as less credible as would messages attributed to the corporate sponsor. These lower credibility estimates are expected to result in lower estimates of information seeking and intention to perform advocated behaviors. The study's results show, however, that organizational status does not have a

significant effect on perceptions of source credibility. Nor does it significantly influence message evaluation, information seeking, or behavioral intent. As predicted, there was a positive correlation between source credibility, message credibility, problem recognition, personal relevance, information seeking, and behavioral intent. The findings also indicate that information seeking positively predicts behavioral intent.

The final sections of the paper discuss these results and their implications in light of existing knowledge about source credibility and public information campaigns, and provide suggestions for future research.

CHAPTER 2: LITERATURE REVIEW

As with any communication campaign, public information campaigns can have direct effects at the cognitive, affective, and behavioral levels. Cognitive effects involve developing issue awareness, promoting knowledge gains and skill acquisition. These campaign outcomes tend to be easier to achieve. Affective responses include changed beliefs, values, and attitudes, increased perceptions of involvement with the issue and behavioral intention. Compared to cognitions, affective responses are harder to obtain. As with other messages, behavioral outcomes are usually the desired effect for public service messages. “Behaviors can range from minor actions to major practices; the latter is the gold standard that is most difficult to change and maintain” (Atkin, 2001, p. 15).

The Effects of Public Service Messages

Early research about information campaigns suggests they have limited effects on attitudes and behavior and are likely to fail (Hyman & Sheatsley, 1947). Recent research shows that most public service campaigns have limited direct effects on behavior. In a meta-analysis of 48 campaigns, Snyder (2001) found that most resulted in a 5 to 10% change in behavior. However, Mendelsohn (1973) argues that campaigns can succeed if communicators focus their objectives on what media messages can be expected to achieve—significant increases in knowledge and awareness. Researchers have supported this view of public information campaigns (Borzekowski & Poussaint, 1999; Ledingham, 1993). Similarly, Grunig and Ipes (1983) suggest that public communication campaigns

serve an agenda-setting function and accomplish “little more than putting a problem on a person’s personal agenda” (p. 38). Based on their argument that the purpose of communication campaigns is to increase perceptions that an issue is problematic and personally relevant to members of an audience, it is reasonable to expect that PSAs that inform target audiences of potential health risks can be effective. This agenda-setting function should not be overlooked because it can have an indirect effect on the development of health attitudes and behaviors.

Two message effects that may lead to behavioral outcomes include information seeking at the cognitive level and behavioral intention at the affective level. Information seeking is an active communication behavior that involves the planned scanning of the environment for messages about a specific topic (Clarke & Kline, 1974). Awareness messages should facilitate information seeking by prompting “active seeking from elaborated information sources such as web sites, hotline operators, books, counselors, parents, and opinion leaders” (Atkin, 2001, p. 17). Information seeking can impact the change process indirectly and may eventually lead to behavioral outcomes by providing access to more extensive information that incorporates multiple appeals, elaborate evidence and detailed instructions. People communicating actively about a situation are more likely to engage in behavior to do something about it (Grunig, 1989).

Behavioral intention can be described as a predisposition to respond in a given manner (Atkin, 2001). Several theories suggest that the intention to perform a behavior is the proximal determinant of volitional behavior (Ajzen, 1991; Fishbein & Ajzen, 1975; Fishbein & Cappella, 2006). “Intentions are assumed to capture the motivational factors that influence a behavior; they are indications of how hard people are willing

to try, of how much of an effort they are planning to exert, in order to perform the behavior” (Ajzen, 1991, p. 181). Therefore, campaigns that can foster behavioral intentions in the audience are better able to achieve behavioral responses. Such messages may do so by modeling the desired behavior, presenting reasons why the behavior is beneficial, providing incentives, and giving instructions about how to carry out the action, particularly for complex behaviors.

Source Credibility and Message Acceptance

“Source effects refers to perceptions of sources that make them more or less influential,” (Miller & Levine, 1996, p. 262). Describing step six of the RASMICE¹ procedure for constructing a persuasive communication campaign, McGuire (2001) stated that among other things, constructing the message involves selecting a source that has “the greatest potential for eliciting the output...needed to achieve the desired health behaviors” (p. 23). The effect of the source on message acceptance is one of the oldest lines of communication research (Self, 1996). It is widely accepted that communication effectiveness is based, in part, on who delivers the message.

Credibility has long been regarded as an important characteristic to increase the persuasive power of a message source. Webster’s dictionary defines credibility as the quality or power of inspiring belief. In one of the earliest source credibility studies, Hovland and Weiss (1951) concluded “the effect of an untrustworthy communicator is to interfere with the acceptance of the material” (p. 647). Similarly, Fishbein and Ajzen (1975) stated that source credibility affects the probability of message acceptance.

¹ RASMICE stands for 1. Reviewing the realities, 2. Axiological analysis, 3. Survey the sociocultural situation 4. Mapping the mental matrix, 5. Teasing out the target themes, 6. Constructing the communication, and 7. Evaluating effectiveness (McGuire, 1984a).

Researchers have established that individuals are more likely to accept messages from highly credible sources, while message acceptance is less likely to occur with low credibility sources.

The Organization as Source

Many credibility studies treat the spokesperson featured in a message as the source (Atkin & Block, 1983; Swartz, 1984; Homer & Kahle, 1990; Perse, Nathanson & McLeod, 1996; Yoon, Kim & Kim, 1998). These studies focus on spokesperson or endorser credibility by examining attractiveness, (i.e. familiarity, similarity, and liking); expertise; and believability. Spokesperson studies often examine the use of celebrities to endorse messages.

Some studies have begun to investigate the role of the message sponsor as the source (Goldberg & Hartwick, 1990; Goldsmith, Lafferty, & Newell, 2000a, , 2000b; Haley, 1996; Hammond, 1986; Lafferty & Goldsmith, 1999; Lafferty, Goldsmith, & Newell, 2002; Newell & Goldsmith, 2001; Reid, Soley, & Vanden Bergh, 1981). Stern (1994) proposed a revised communication model for advertising that recognizes the multidimensionality of the source element. According to Stern, the “without-text” source of an advertisement is dual, reflecting the existence of a financial source and a creative source, both of which are distinguished from the “within-text” source—the persona or communicator presented in the advertisement. The financial source is referred to as the sponsor. The sponsor’s “communicative responsibilities include commissioning the ad, paying for it, approving it, and being held legally liable for what is in the text. It is the sponsor’s name that permeates advertising” (p. 8). Message sponsors are often organizations that pay for or initiate message production and dissemination.

With the exception of early studies by Lynn (1973; Lynn, Wyatt, Gaines, Pearce, & Bergh, 1978), studies on source effects for PSAs have focused on the spokespersons presented in advertisements rather than examining the role of the sponsor as the source of a message. Lynn and colleagues (1978) identified several PSA source types: the private firm or profit making organization, the charitable organization, the non-profit institution, the governmental agency, and the Advertising Council. Using factor analysis, these five organizational sources were collapsed to three factors: the commercial source, the non-commercial source, which included charitable organizations, non-profit institutions, and governmental agencies, and the Advertising Council. This study did not investigate how participants' perceptions of source credibility varied across the three source groupings. Lynn (1973) found that experimental groups could not distinguish between the Advertising Council and a traditional advertiser.

Lynn et al. (1978) sought to investigate whether different sources produced distinguishable evaluative and behavioral responses to PSA messages. The findings indicated that messages attributed to commercial sources had the second highest message evaluation scores of the three types of organizational sources studied. Source attribution did not "adequately explain variability in behavioral responses" (p. 720). However, both the message evaluation and behavioral response hypotheses were vaguely described, as were methods used to measure these responses. Because behavior was defined as participants indicating a commitment to issues presented in the PSA and the study did not systematically monitor such responses, it revealed little about behavioral responses. It is difficult to draw conclusions about the relationship between sponsor type and message effects based on the result of this one study.

Sponsor credibility is studied most in the areas of advertising and consumer marketing. This line of research, which is also more recent, offers a more definitive understanding of the relationship between organizational sponsors and message effects. “As with spokesperson credibility, companies with positive reputations would seem to be in a better position to get consumers to believe their advertising claims” (Goldberg & Hartwick, 1990, p. 173).

The terms company reputation, corporate image, advertiser credibility, attitude toward the advertiser, and corporate credibility have been used interchangeably to refer to the credibility of the organizational source. Goldsmith, Lafferty, and Newell (2000a) argued that credibility is only one component, albeit a critical component, of corporate reputation because reputation is the overall impression of the company. Thus, the terms advertiser or corporate credibility are used frequently to refer to organizational sources in credibility studies. Advertiser credibility has been defined as the perceived truthfulness or honesty of the sponsor of an ad (MacKenzie & Lutz, 1989). Similarly, corporate credibility refers to stakeholder perceptions of a company’s trustworthiness and expertise—the believability of its intentions and communications at a particular moment in time (Goldsmith, Lafferty, & Newell, 2000b).

In one of the first studies to systematically manipulate advertiser credibility, Goldberg and Hartwick (1990) hypothesized that companies with positive reputations would be in a better position to get consumers to believe their advertising claims. They found participants in the negative sponsor reputation treatment rated the credibility of the advertisement presented more strongly negative than did participants in the positive reputation treatment.

Lafferty, Goldsmith and Newell's (2002) dual credibility model (DCM) is a response to Stern's (1994) argument that "it is necessary to investigate credibility as a bundle of effects flowing from different source components..." (p. 12). The model explains the main and interacting effects of corporate credibility and endorser credibility on advertisement outcomes. DCM claims that corporate credibility is positively and directly related to attitude-toward-the-ad, attitude-toward-the-brand, and purchase intentions. These claims are supported by a study that tested the model (Lafferty, Goldsmith, & Newell, 2002) and earlier studies that investigated the main and interacting effects of corporate credibility and endorser credibility on attitude-toward-the ad and purchase intentions (Goldsmith, Lafferty, & Newell, 2000a, , 2000b). Lafferty and Goldsmith (1999) found that corporate credibility is independent of endorser credibility, is positively related to attitude-toward-the-ad, and appears to have a greater impact on attitude-toward-the-brand and on purchase intentions than endorser credibility.

Non-profit versus Commercial Sponsors

The results of several studies indicate government and non-profit sources are perceived to be more credible than for-profit organizational sources (Haley, 1996; Hammond, 1986; Lynn et al, 1978). In the area of health communication, major medical institutions and physicians typically are viewed as more credible sources of health information (Christensen, Ascione, & Bagozzi, 1997; Cline & Engel, 1991; Dutta-Bergman, 2003; Frewer, Howard, Hedderley, & Shepherd, 1996). Reid, Soley, and Vanden Bergh (1981) found that participants view advocacy advertisements that present a commercially sponsored point of view more negatively than advertisements sponsored by a noncommercial source or no source. Their results also indicated that subjects "are

strongly disinclined to respond to a request advocated by a commercial source, but not to the same request advocated by a non-commercial source” (p. 315). The authors suggested that commercial sources are viewed as less objective and having something to gain. This conclusion is similar to Hovland, Janis, and Kelley’s (1953) hypothesis that when a person is perceived as having a definite intention to persuade others, the likelihood is increased that he or she will be perceived as having something to gain and as less trustworthy.

Based on this same hypothesis, Hammond (1986) investigated the credibility of organizations that advertise about health issues to determine if differences exist in the credibility of an organization when it is perceived as having something to gain from the advertisement. The study was designed to examine the effect when for-profit organizations use health information to support their advertising claims. It differentiated between organizations that conduct social advertising solely for corporate public relations reasons and organizations that make a direct profit from persuading customers through social advertising to adopt an advocated health behavior. The results indicated that the non-profit and combination non-profit/for-profit sources were perceived as significantly more credible than a for-profit source alone. Although no significant relationship between source credibility and message acceptance was found, source credibility did have an affect on behavioral intention. The non-profit or combination sources were more effective in producing an intention on the part of the respondent to change his or her behavior.

Hammond (1986), Reid et al. (1981), and Hovland, Janis, and Kelley’s (1953) findings suggest that certain organizational sponsors may not be the best sources of health messages if they cause audiences to respond passively, or even discount the

message. Haley (1996) argued that an organizational sponsor may be viewed as a credible source for some issues and not credible in relation to other issues.

Measuring Sponsor Credibility

It is often confusing to understand and define source credibility because of “the many operationalizations that appear in the literature” (Ohanian, 1990, p. 41). Reviewing eight studies of endorser credibility in the advertising, marketing, and speech communication fields, Ohanian identified 16 different dimensions that were used to measure credibility. These included: trustworthiness, expertness, dynamism, objectivity, safety, qualification, competence, attractiveness, likeability, evaluative, potency, activity, authoritativeness, character, believability, and sociability. Each scale combined seven or less of these dimensions. Perhaps this multiplicity of dimensions reflects the agreement among theorists that credibility is a multidimensional construct and the disagreement or uncertainty about what those dimensions are. Ohanian noted that only one of these scales was assessed for reliability and validity.

The issue of measuring source credibility is confounded more when the source is no longer defined as the “with-in text” communicator. For instance, in the field of mass communications the source concept represents the medium that disseminates a message such as a newspaper, radio or television station, magazine or even a website. In the present study, the source is conceptualized as the organization that sponsors the message.

In an exploratory study of the organization as source, Haley (1996) found that consumers evaluate organizational sponsors on a number of factors including recognizability, quality of product or service, history of pro-social involvement, congruency with personal values, logical association with the issue, personal investment

in the issue, and intent. Caruana (1997) found similar factors contribute to perceptions of corporate reputation. Supporting Ohanian's (1990) claims that three credibility dimensions are enduring, Haley concluded that this variety of elements confirms, rather than adds to, the three primary credibility dimensions: expertise, trustworthiness, and attractiveness. Similarly, McCroskey and Young (1981) argued that despite attempts to find new dimensions with which to measure source credibility, particularly for different types of sources, the construct has been "amply defined" (p.34).

However, contrary to McCrosky and Young's perspective that existing credibility scales provide adequate measures, requiring only minor modifications for different types of sources, Haley (1996) suggested that there are unique aspects of the organizational credibility construct and that a separate scale is required to measure it. Likewise, other researchers have concluded that not all dimensions of scales intended to measure endorser credibility apply to organizational credibility. For instance, Newell and Goldsmith (2001) argued that the dimensions of attractiveness and likeability, while suitable for a persona, "would not characterize corporate credibility" (p. 235).

Several scales have been used in studies that include the advertiser credibility construct (Goldberg & Hartwick, 1990; LaBarbera, 1982; MacKenzie & Lutz, 1989; Muehling, 1987; Settle & Golden, 1974). Agreeing with Haley's (1996) critique that organization credibility research has been hampered by the lack of a validated scale, Newell and Goldsmith (2001) proposed a scale to measure perceived corporate credibility based on the dimensions of expertise and trustworthiness from Hovland, Janis, and Kelley's (1953) source-credibility model. Hovland and colleagues defined expertise as the extent to which a communicator is perceived capable of making correct assertions and

trustworthiness as the degree to which the audience perceives assertions made by the communicator to be valid. Through a six-phase process, Newell and Goldsmith (2001) validated an eight-item scale with four items to measure the expertise factor and four items to measure the trustworthiness/truthfulness factor.

Audience Perceptions of Message Sponsors

Despite the use of objective measures to assess credibility, researchers agree that credibility is not an inherent trait of the source, but rather a perception of the receiver. Many researchers define and examine credibility as the receiver's response to the source (Berlo, Lemert, & Mertz, 1969; Gunther, 1992). As such, organizational credibility is situational, dependent upon characteristics of the communication context. Some factors that may influence audience interpretations of the sponsor's credibility include knowledge of the source, existing attitudes toward the source, and evaluation of the source's intent.

In order for receivers to evaluate sponsor credibility, they must first identify the organizational source of the message. The prominence of source identification may affect audience evaluations of source credibility. In several organizational credibility studies, participants were provided with descriptions of the organization that not only identified the sponsor but also induced perceptions of high or low credibility (Lafferty, Goldsmith & Newell, 2002; Lafferty & Goldsmith, 1999; Goldberg & Hartwick, 1990). Some endorser credibility researchers have focused on the relationship between the timing of identification for high versus low credibility sources and source effects (Homer & Kahle, 1990; Sternthal, Dholakia, & Leavitt, 1978; Ward & McGinnies, 1974). The findings of these studies indicate that the persuasability of low credibility sources may be increased

by delaying identification. For high credibility sources, identification before the message appears to increase the sources persuasiveness. However, delayed identification of high credibility sources does not appear to have a significant effect. Sternthal, Phillips, and Dholakia (1978) suggested that in some instances delayed identification of high credibility sources may reduce persuasiveness whereas in other instances a high credibility source is equally persuasive before or after the message. Reid, Soley, and Vanden Berg (1981) found that open identification of a commercial source for advocacy advertisements was related to low perceptions of the message. Thus, when identified, a commercial source had less of a persuasive effect.

An important factor in the effectiveness of communication is the attitude of the audience toward the communicator (Hovland and Weiss, 1951). The receivers' level of awareness of the message sponsor may trigger various reactions to the source based on their existing attitudes toward the organization. "Just as firms have a multitude of publics, they also have an array of reputations as each public often considers a different set of attributes. Moreover, even if the same attribute is considered by different publics it may be given a different weighting" (Caruana, 1997, p. 110). These attitudes may be based on direct experiences, such as purchasing products or utilizing services, or indirect experiences, such as news reports and the praise or complaints of others, with the organization. These attitudes may also be transferred from experiences with similar organizations or impressions about the category of organizations to which it belongs.

Receivers may also determine the credibility of an organization and the believability of the message based on their evaluation of the sponsor's intent. One scale used to measure the credibility of media organizations (Gaziano & McGrath, 1986) asked

participants to indicate whether the organization was concerned about the public interest or about making profits. This question is also applicable to for-profit organizations that promote health information campaigns. Hovland, Janis, and Kelley (1953) indicate a source is seen as less trustworthy when the audience perceives the source has something to gain. Walster, Aronson, and Abrahams (1966) found that the persuasiveness of a low credibility source was increased when the source advocated a position incongruent to its own interests.

Sponsor Credibility and PSA Effects: Information Seeking versus Behavioral Intent

Much of the source credibility research focuses on the effect the source has on eliciting the behaviors advocated by a message. In advertising and consumer marketing, the desired message effect is purchase behavior. Message acceptance has been shown to mediate the relationship between source credibility and behavioral intentions. That is, source credibility has a positive and direct effect on message acceptance. Greater message acceptance is positively related to increased purchase intentions (Lafferty & Goldsmith, 1999; Goldsmith, Lafferty & Newell, 2000a, 2000b). Message acceptance has been measured as attitude-toward-the-ad, whether positive or negative, and as ad credibility, the extent to which a consumer perceives the claims made about a given brand to be truthful (Mackenzie & Lutz, 1989).

Similar concepts can be applied to message acceptance for public service announcements. Therefore, source credibility can be seen as having a positive and direct effect on favorable or unfavorable responses to the PSA, or perceptions that claims made about a given issue are valid. Studying PSA perceptions, Lynn (1973) used the term message evaluation and measured it using agreement/disagreement. Lynn and colleagues

(1978) suggest that different types of sponsors may produce distinguishable evaluative and behavioral responses to PSA messages. As with product advertisements, greater message acceptance may also be expected to affect behavioral outcomes for PSAs. These outcomes may be changes in social or health-related behaviors. However, debates about the effectiveness of PSAs suggest that they are not effective at motivating behavior but are more likely to motivate information seeking (Atkin, 2001; Grunig & Ipes, 1983; Mendelsohn, 1973). Whether PSAs are more effective at motivating overt behavior or information seeking behavior has not been studied empirically.

CHAPTER 3: THEORETICAL FRAMEWORK

This study examines how audience perceptions of the credibility of organization sources affect responses to messages these organizations sponsor. The study applies existing knowledge of source credibility as an information processing cue to investigate the relationship between the source and message effects. Unlike most organizational credibility studies, which examine consumer advertising, this study looks at a health information message. As such, message acceptance is discussed in terms of problem recognition and personal involvement, which are expected to lead to message effects, namely information seeking. Prior research involving public service messages indicate these variables are likely outcomes for information campaigns. Health information campaigns often seek to modify behavior as well. Thus investigating behavioral intent as a message effect is also appropriate.

This chapter discusses the theoretical foundations that were used to formulate the research questions and hypotheses described in Chapter 4. It begins with a brief overview of information processing theory as it applies to organizational source credibility. It continues with a discussion of the situational theory of publics (Grunig & Hunt, 1984), which predicts a relationship between problem recognition, personal involvement, and information seeking. The study incorporates situational theory to investigate the relationship between source credibility and these variables. The third-person effect theory is used in conjunction with Grunig's situational theory to examine perceptions of

involvement as an outcome of message exposure. The chapter concludes with a discussion of the theory of reasoned action (Fishbein & Ajzen, 1975), which argues that behavioral intent is a strong predictor of actual behavior. This theory provides justification for the inclusion of behavior questions in message effects studies in general.

Source Credibility and Information Processing

Source credibility studies are often based on information processing theories such as the Elaboration Likelihood Model (ELM) of Persuasion (Petty & Cacioppo, 1986) and the heuristic/systematic processing model of persuasion (Chaiken, Liberman, & Eagly, 1989), which position source characteristics as a cue that audiences use to evaluate messages. Systematic or central processing is active and involves careful examination of the message and the arguments presented. Heuristic or peripheral processing is simplistic and focuses on non-content aspects of the message.

As a non-content element, source credibility often is considered a peripheral cue leading to low elaboration or passive/heuristic processing of a message. In some instances, source credibility may function as a central cue and can trigger high elaboration or systematic processing of both the message and the source. Mackenzie and Lutz (1989) indicate that advertiser credibility is more of a central processing cue rather than a peripheral processing cue. This implies that knowledge of an organizational sponsor will lead respondents to examine carefully the credibility of the source and the validity of the message. Lafferty and Goldsmith (1999) argue that this active processing makes advertiser credibility more influential on evaluations of and responses to the message. Although the current study does not test information-processing theory, it incorporates concepts from organizational credibility models based on the tenet that

organizational credibility is a central processing cue that leads individuals to evaluate a message systematically.

Situational Theory of Publics

Grunig and Ipes (1983) argue that communication campaigns function to increase perceptions that an issue is problematic and personally relevant to members of an audience. This links the study of PSA effects to Grunig's (Grunig & Hunt, 1984) situational theory of publics (STP). Grunig used problem recognition, level of involvement, and constraint recognition as independent variables to predict whether a public will engage in information-seeking or information-processing behavior. The independent variables of problem recognition and level of involvement are of particular importance to this study. Although the situational theory is intended to help understand the communication behaviors of publics by measuring how they perceive situations and also is used to differentiate between active and passive publics, these two independent variables also represent message acceptance for PSA campaigns according to Grunig and Ipes' (1983) rationale. Situational theory also includes constraint recognition as its third independent variable. However, constraint recognition is not considered in this study. Although Grunig and Ipes discussed the role PSAs play in reducing constraint recognition, message acceptance is conceptualized in this study based on the agenda-setting function—that an issue is a problem that is personally relevant. Thus, the constraint recognition variable does not fit this study's definition of message acceptance. Additionally, Grunig and Hunt (1984) proposed the variable to account for factors that hinder activist groups from forming.

Problem recognition is the extent to which individuals perceive that a situation has consequence for them and detect a problem in the situation. Involvement is the extent to which a problem or situation has personal relevance to an individual (Grunig & Hunt, 1984). Effective communication campaigns should increase individuals' problem recognition and perceptions of personal relevance (Grunig & Ipes, 1983).

The situational theory predicts that higher levels of problem recognition and involvement lead individuals to both process and seek information. Unlike information processing which involves passive, unplanned discovery of messages, information seeking is active and involves planned scanning of the environment for messages about a specific topic. Public service announcements can be viewed as an informative communication strategy. Informative strategies (Zaltman & Duncan, 1977) are effective in creating problem recognition and work best when immediate behavioral changes are not required. Atkin (2000) refers to these as awareness messages, which, among other things, can be used to create recognition of a topic or practice, and to encourage further information seeking about the topic. "A key role of awareness messages is to arouse interest or concern and to motivate further exploration of the subject. In particular, messages should include elements designed to prompt active seeking" (Atkin, 2000, p. 56). From this perspective, information seeking is the desired behavioral outcome of communication campaigns. Greater message acceptance through increased problem recognition and involvement should lead to greater information seeking.

Involvement and Third-Person Perception

If public information campaigns, including public service announcements, function to increase perceptions of personal involvement, then it is ideal to measure

involvement as one form of message acceptance by determining if the audience views the issue as personally relevant. Third-person effect (TPE) theory (Davison, 1983), posits that people perceive media messages to have greater effect on others than on themselves. This is known as third-person perception. Gunther and Thorson (1992) were the first to study third-person perception using product advertisements and public service announcements. They found that public service announcements produced larger positive effect estimates for self and others than both neutral and emotional product ads. This suggests that the direction of third-person perception is influenced by consideration of the message's intent (Gunther & Thorson, 1992, p. 592). PSAs typically are viewed as altruistic messages. Therefore, it may be considered desirable to be persuaded by such messages. There is some evidence that socially desirable messages produce smaller estimates of third-person perception (Eveland & McLeod, 1999; Lambe & McLeod, 2005). Other studies have found that public service messages, unlike most messages, produce greater perceptions of impact on self (Duck & Mullin, 1995; Duck, Terry, & Hogg, 1995).

TPE studies ask participants to estimate media effects on themselves, referred to as first-person perception (FPP), and various groups of others. Higher TPP scores indicate that an individual does not see an issue as personally relevant, whereas higher FPP scores (often referred to as reversed TPP) indicate that the individual views the issue as personally relevant. Use of TPP and FPP to measure involvement differs significantly from the standard approach used in situational theory studies, which typically ask respondents to indicate the degree to which they feel concerned with or connected to an issue. While this may indicate level of involvement, it does not position that involvement

as an outcome of the message. Asking participants to indicate the effect of the message on themselves and others allows the involvement variable to be positioned as a factor of message acceptance.

Although it is known that some messages produce higher TPP scores, while others like PSA's may lower the TPP estimate, few studies have looked at the relationship between source credibility and TPP estimates. White (1997) points to perceived source bias as a predictor of the third-person effect. Studying defamation in news stories, Cohen, Mutz, Price, and Gunther (1988) found that as perceptions of source bias increase, estimates of persuasive impact on others versus self also increase. The relationship between TPP and perceived source bias for organizational sponsors of PSAs has not been studied.

Theory of Reasoned Action

Message effects studies frequently ask participants to indicate their intention to perform advocated behaviors. Hammond (1986) found a significant relationship between organizational credibility and behavioral intention. Although media effects studies often are criticized for measuring intent to act (i.e. purchase intention) rather than actual behavior, actual behavior is often difficult to measure. According to the theory of reasoned action (Fishbein & Ajzen, 1975), behavioral intention is a powerful predictor of actual behavior. Thus, measuring behavioral intent is sufficient. The theory of reasoned action (TRA) posits that intentions are the immediate antecedents to behavior and provide valid indications of how hard people are willing to try to perform a behavior. The greater an intention, the more likely it is the given behavior will be performed.

Behavioral intention is defined as a function of attitude and normative beliefs. Thus, messages can affect behavioral intention and the resulting behavior by influencing attitudes towards the behavior and beliefs about subjective norms regarding the behavior. The attitude variable encompasses personal feelings, whether negative or positive, about performing the behavior. Subjective norms refer to impressions of social pressures, that is what important others think about performing the behavior and whether or not important others would perform the behavior. As attitudes toward the behavior become more positive and beliefs about subjective norms become stronger, the greater an individual's intention to perform the behavior and the more likely the behavior will be performed.

Despite agreement among some researchers that public information campaigns are more successful at fulfilling knowledge objectives rather than attitude or behavior objectives, this assumption has not been tested. Furthermore, in addition to awareness objectives, public service announcements often include behavioral objectives, such as encouraging motorists to wear seatbelts or to abstain from drinking and driving. There is no evidence that such messages produce information seeking but not behavioral outcomes or that they are more effective at producing one but not the other. Therefore, it is important to include the behavioral intent variable. Doing so, adds another dimension to the study's purpose—testing the hypothesis that public information campaigns are more effective at producing awareness behaviors rather than actual behavior.

Although the situational theory (Grunig & Hunt, 1984) predicts that greater problem recognition and personal involvement lead to information seeking, it does not state that behavior is not a possible outcome of the two variables. Indeed, some parallels can be drawn between the attitude and subjective norms variables from the theory of

reasoned action and the situational theory's personal involvement and problem recognition variables. Personal involvement in STP, like attitude in TRA, involves personal evaluations of an issue. Though problem recognition also involves personal assessment, like subjective norms, it may also take into consideration the relationship between the issue and referent others. In a refinement of the situational theory, Grunig (1997) discusses the external components of problem recognition.

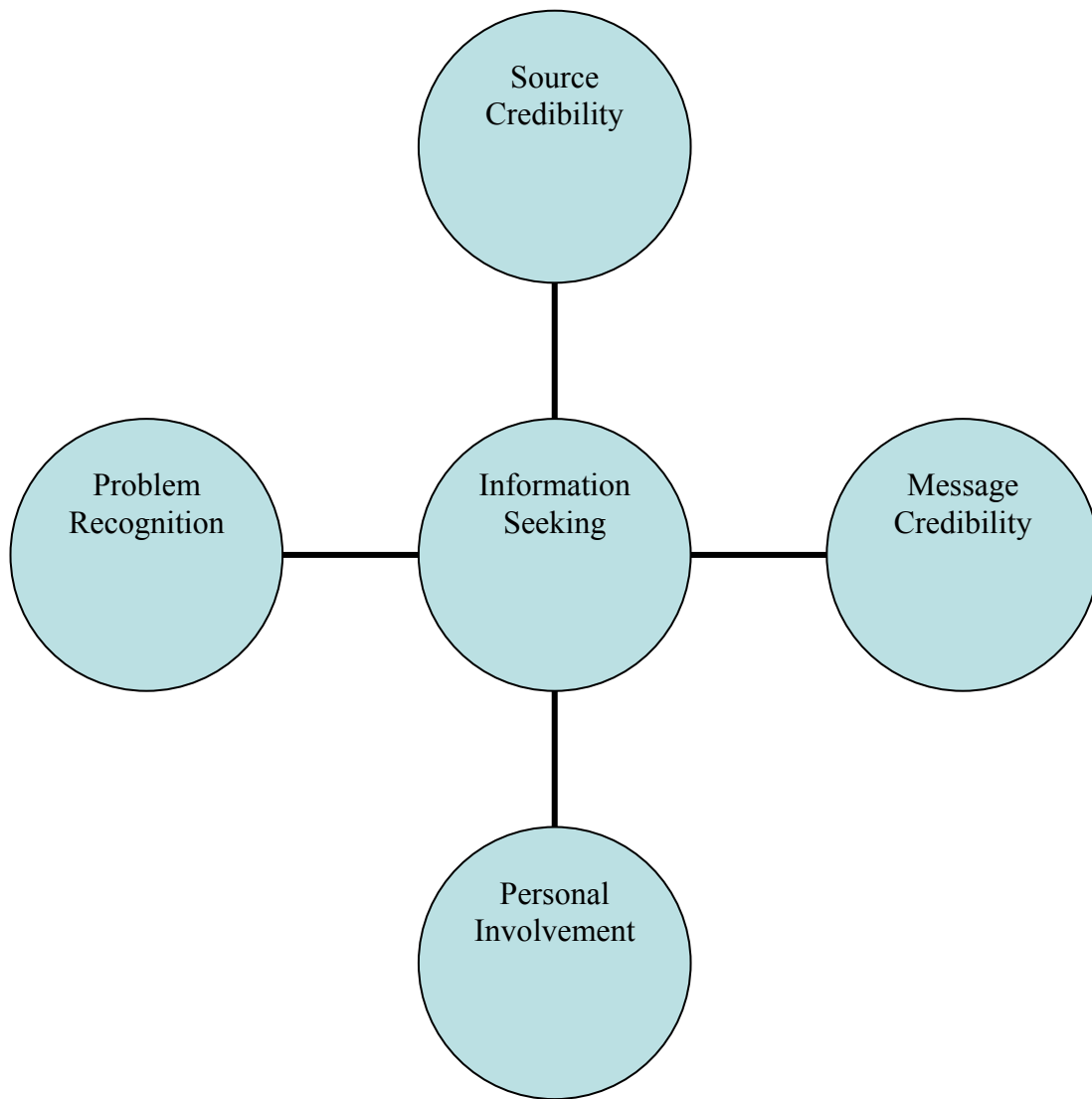
Numerous health communication studies have tested TRA and the theory has been extended to create new theories such as the theory of planned behavior (Ajzen, 1985) and the integrative model (Fishbein, 2000; Fishbein & Cappella, 2006). Rather than test TRA, this study posits that problem recognition and personal involvement may not only lead to information seeking but may also have an effect on behavioral intention similar to the relationship between attitudes, subjective norms and behavioral intention as demonstrated by the theory of reasoned action.

CHAPTER 4: RESEARCH QUESTIONS AND HYPOTHESES

This study was designed to examine the effect of different organizational sponsors on responses to public service messages. Existing research suggests a direct relationship between sponsor credibility ratings, perceptions of message credibility, and message effects. However, the relationship among these variables has not been examined adequately using public service announcements.

According to Grunig and Ipes (1983), problem recognition and perceptions of personal relevance represent message acceptance for public information campaigns. Applying situational theory, which predicts that greater problem recognition and perceptions of personal involvement lead to information seeking, information seeking behavior can be viewed as one possible effect of public service messages. Figure 1 shows the hypothesized relationships among source credibility, message credibility, message acceptance—represented by problem recognition and personal relevance—and information seeking.

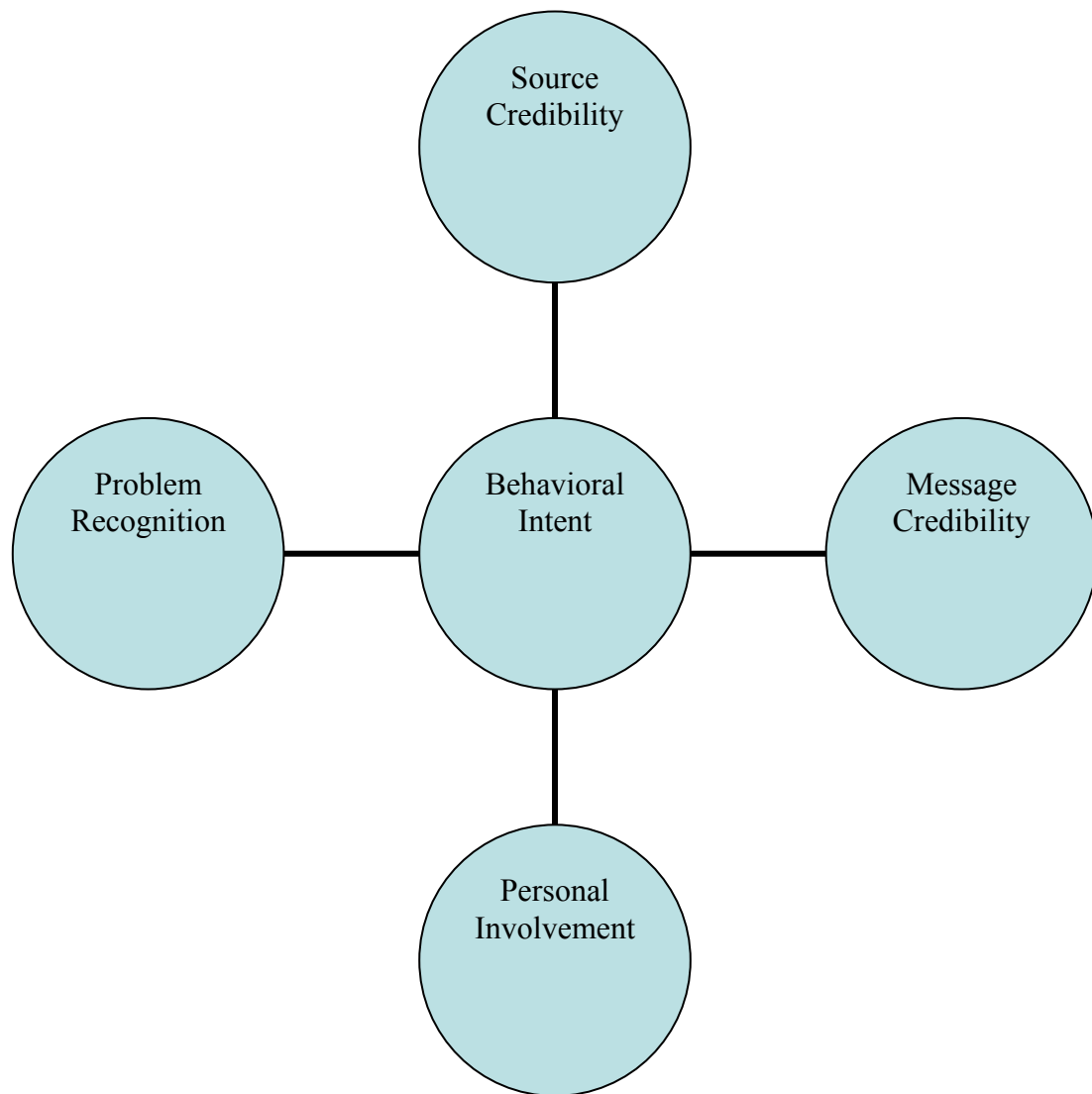
Figure 1. Relationships among source credibility, message credibility, message acceptance, and information seeking.



Based on the proposition, stated earlier, that greater problem recognition and perceptions of personal involvement may lead to behavior, this study also examines the effect of source credibility on behavioral outcomes. Source effect studies often ask participants to indicate their intent to perform a behavior, typically a purchase behavior.

According to the theory of reasoned action, intent to act is a valid indicator of actual behavior. Although some researchers argue that information campaigns are successful at motivating knowledge behavior rather than actual behavior, this has not been tested. Figure 2 shows the hypothesized relationship among source credibility, message credibility, message acceptance—represented by problem recognition and personal relevance—and behavioral intent.

Figure 2. Relationships among source credibility, message credibility, message acceptance, and behavioral intent.



The following research questions and hypotheses further explain the variables and relationships represented in the above figures.

Organizational Status, Source Credibility, and Message Credibility

RQ1: Are audiences aware of the for-profit or not-for-profit status of PSA message sponsors and how does this awareness affect perceptions of source credibility and message credibility?

Organizational credibility studies provide evidence that for-profit sponsors are rated more negatively than non-profit sponsors. The prominence of source identification may also impact audience evaluations of credibility. Rather than identify the corporate source by a logo alone, Lafferty, Goldsmith and Newell (2002; Lafferty & Goldsmith, 1999; Goldberg & Hartwick, 1990) provided participants with a background sketch of the organization. In this study, a detailed description was included on two stimuli as a means of openly identifying the source as a corporate or non-profit sponsor. Reid, Soley, and Vanden Bergh (1981) found that openly identifying a commercial source produced negative evaluations of an advocacy advertisement. However, the same message attributed to a non-commercial source or no source was evaluated more positively. Previous organizational credibility studies found that source credibility was directly related to evaluations of message credibility. Thus,

H1a: For-profit sponsors will be rated as less credible than not-for-profit sponsors.

H1b: Participants in the detailed-identification for-profit treatment group will report the lowest source credibility scores.

H1c: There will be a positive and direct correlation between participants' estimates of sponsor credibility and their estimates of message credibility.

Source Credibility, Problem Recognition, and Personal Involvement

RQ2: Is message acceptance different for for-profit message sponsors than for non-profit message sponsors?

This study tested the precept that public communication campaigns are primarily successful at placing problems on an individual's personal agenda (Grunig & Ipes, 1983). Based on this perspective, message acceptance is viewed here as perceptions of problem recognition and personal relevance or involvement. In this study, the first-person perception and third-person perception scales were used to measure involvement. Higher FPP scores would indicate greater estimates of personal impact. The magnitude of source credibility estimates as it related to greater awareness of the source was expected to produce greater message acceptance.

H2a: There will be a direct, positive correlation between participant's estimates of sponsor credibility and estimates of problem recognition.

H2b: There will be a positive correlation between higher source credibility ratings and estimates of personal relevance.

H2c: Participants in the detailed for-profit treatment will report the least problem recognition.

H2d: Participants in the detailed for-profit treatment will report the lowest levels of personal relevance.

Source Credibility, Information Seeking, and Behavioral Intent

RQ3: Is there a difference in information seeking for for-profit message sponsors than for non-profit message sponsors?

Public communication campaigns may trigger indirect behavioral outcomes, such as information seeking. The situational theory of publics predicts that when problem recognition and level of involvement are high information seeking behavior will occur.

H3a: Higher levels of problem recognition will correlate with greater intention to seek information.

H3b: Higher levels of involvement will correlate with greater intention to seek information.

H3c: Participants in the detailed for-profit treatment will report lesser intent to seek information.

RQ4: Is there a difference in behavioral intent for for-profit message sponsors than for non-profit message sponsors?

Rather than assume that information seeking is the only effect of public service announcements and that problem recognition and personal involvement do not lead to behavior, this study also investigated participants' intentions to perform the health behaviors advocated by the message. The source credibility model presented in Figure 2 indicates a possible relationship between problem recognition, personal involvement, and behavioral intent.

H4a: Higher levels of problem recognition will correlate with greater behavioral intention.

H4b: Higher levels of involvement will correlate with greater behavioral intention

H4c: Participants in the detailed for-profit treatment will report lower behavioral intent.

Information Seeking versus Behavioral Intent

RQ5: Are there differences in participants' willingness to engage in information seeking and their intent to perform behaviors advocated by the message?

H5a: Participants across all treatment groups will report greater intention to carryout information seeking behavior than expressing intent to perform advocated health behaviors.

RQ6: Which of the factors examined in this study contribute most to behavioral intent?

The theory of reasoned action identifies attitude toward the action and subjective norms as predictors of behavioral intent. This study suggests that there are parallels between these two variables and the personal involvement and problem recognition variables from situational theory. In general, this study hypothesizes that the sponsors organizational status influences behavioral outcomes. Since overt behavioral responses are the often the desired effect for public service messages, identifying the factors that are most likely to produce behavior has important implications for message effectiveness.

CHAPTER 5: METHODOLOGY

This experiment used a 2X2 factorial design with a control group based on the manipulation of the independent variables organizational source and level of source identification (Table 1). The first independent variable, organizational source, was operationalized using a for-profit pharmaceutical company versus a non-profit health agency as the sources. The second independent variable, level of source identification, was operationalized as subtle identification, use of each organization's logo alone, and detailed identification, use of the logo along with a brief description of the organization and references to the organization in the body of the brochure. The detailed identification concept is based on Reid, Soley, and Vanden Bergh's (1981) discussion of open identification of organizational sponsors and is intended to increase the participants' level of awareness of the for-profit (FP) or non-profit (NP) sponsor.

Table 1. Experimental Treatments

	<i>For-profit</i>	<i>Non-profit</i>
<i>Subtle Id</i>	Subtle FP	Subtle NP
<i>Detail Id</i>	Detailed FP	Detailed NP

Study Participants

The study's participants were 381 undergraduate students enrolled in an introductory mass communications course at the University of South Florida. The course is required of students entering mass communications courses but is also open to the general student body as an elective course option fulfilling the university's general

education requirements. Thus, the sample was not randomly selected. However, the fact that the course is open to all students makes it more likely that the sample is diverse in terms of student majors.

Stimulus Materials

The stimulus for each treatment was a tri-fold brochure (see Appendix B). The brochure's copy discussed the risks of and complications associated with the human papilloma virus (HPV). This topic represents a recent health awareness campaign that was sponsored by both for-profit and not-for-profit health organizations. The stimulus material was adapted from brochures created by the Centers for Disease Control for message testing. Key phrases from actual messages produced by a pharmaceutical company and a non-profit company were included to reflect the message tones used in the information campaigns of both groups.

In terms of content and layout, each brochure was exactly the same with the exception of the source identification. The back panel of each brochure displayed the logo of the pharmaceutical company, for the two *FP* treatment groups, or the logo of the non-profit health agency for the two *NP* treatment groups. The pharmaceutical company Merck was chosen as the for-profit source and the American Cancer Society was selected as the non-profit source. For the subtle identification treatment groups, the logo appeared smaller than the logo used in the detailed identification treatment. The detailed identification stimuli also included a small logo on the front panel and a short description of the organization on the back panel. Each description was approximately 20 words and appeared below the organization's logo in the same font and size. The descriptions were written objectively using a neutral tone. In addition, the organizations name appeared

several times throughout the body of the pamphlet. The message for the control group did not contain logos or any other organizational identifiers.

Manipulation Check

A manipulation check was conducted to confirm that the subtle identification treatments and the detailed identification treatments actually differed in terms of level of source awareness. The manipulation check measured the degree to which subjects were aware of the sponsor and the sponsor's status as a for-profit or non-profit organization under each treatment condition. Students from an introductory public relations class and an upper level public relations research class participated in the manipulation check ($N = 75$). The students viewed one of the five stimuli and then responded to four items that measured their level of awareness of the source (see Appendix C).

The participants were asked to indicate the level to which they recalled the organization's name, and to rate how easily they were able to identify the sponsor. A one-way analysis of variance (ANOVA) showed that differences in the level of source identification had a significant effect on both level of recall ($F(4,58) = 2.66, p = .041$) and ease of identification ($F(4,60) = 2.482, p = .053$). Participants reported higher levels of recall in the detailed for-profit ($M = 4.07$) and non-profit treatment ($M = 3.29$) groups than did those in the subtle for-profit ($M = 2.78$) and non-profit groups ($M = 3.08$) and the control group ($M = 2.08$). Ease of identification was also greater for participants in the for-profit ($M = 4$) and non-profit treatment ($M = 3.08$) groups than for those in the subtle for-profit ($M = 2.58$) and non-profit groups ($M = 2.93$) and the control group ($M = 2.27$).

Measurement Apparatus

The measurement instrument for this experiment (see Appendix C) consisted of a 39-item questionnaire that included questions about the participants' perception of source credibility, their perception of message credibility, their level of problem recognition, their estimations of the message's influence on themselves and on specified groups of others, their intention to seek information, and their intention to perform behaviors advocated in the message. The questionnaire solicited demographic information as well.

Source Credibility. A nine-item, five-point Likert scale anchored by the terms strongly agree/strongly disagree was used to measure source credibility. Participants were also able to indicate if they had no opinion about source credibility. Three items measured trustworthiness (e.g. The organization can be trusted to provide factual information) and three items measured expertise (e.g. The organization is qualified to provide information about this issue). Hovland, Janis, and Kelley (1953) operationalized source credibility using the dimensions of trustworthiness and expertise and numerous studies have illustrated the endurance of these dimensions to measure credibility. Newell and Goldsmith (2001) validated an eight-item, Likert scale to measure corporate credibility based on the dimensions of trustworthiness/truthfulness and expertise. There is also evidence that consideration of the source's motive affects evaluations of source credibility. (Hovland, Janis, & Kelley, 1953; Walster, Aronson, & Abrahams, 1966) Thus, the final three items measured participants' perceptions of the source's intent (e.g. The organization is concerned with making profits/the public's well being). These items are based on Gaziano and McGrath's (1986) study of the perceived credibility of news organizations.

Message Credibility. Participants' perceptions of the message was measured by a six-item, five-point semantic differential scale anchored by the terms boring/interesting, unprofessional/professional, misleading/accurate, dull/exciting, deceptive/truthful and overemphasizes/underplays. The first five items are based on Goldberg and Hartwick's (1990) measure of ad credibility. Goldberg and Hartwick used the items misleading/sincere and deceptive/honest to measure ad credibility. The remaining three items were used "to provide a larger set to minimize the focus on the ad credibility items" (p. 176). The final item, overemphasizes/underplays, was added here as a third message credibility dimension.

Problem Recognition. Three five-point Likert items on a scale that ranges from strongly agree to strongly disagree were used to measure problem recognition (e.g. HPV is a serious health problem). Participants also had a no opinion option. These items are based on Grunig and Hunt's (1984) conceptualization of problem recognition as defined by situational theory.

Personal Relevance. Personal relevance was measured using three five-point Likert items anchored by the terms less relevant/more relevant. Participants also had a no opinion option. These items are based on Davison's (1983) third-person effect theory. The items replicate questions asked by Gunter and Thorson (1992) in a TPP study involving public service announcements where participants were asked to indicate how the message affected the relevance of the issue for themselves and other groups of people.

Information Seeking. The main dependent variable in this study, information seeking, will be measured based on the typical method used in studies that test the

situational theory. Four five-point Likert items with end points not like/very likely asked participants to indicate their intention to actively seek information in various forms related to the information seeking cues presented in the message (e.g. calling a toll-free number to request an information kit). Participants also had a no opinion option.

Behavioral Intent. The instrument also included questions to measure behavioral intention. Participants indicated their intention to perform each of the three behaviors advocated in the brochure. These were measured using five-point Likert items with end points definitely do/definitely do not, definitely will/definitely will not, and definitely false/definitely true. The items are based on one method commonly used to assess behavioral intention in studies that test the theory of reasoned action (Madden, Ellen, & Ajzen, 1992).

Source Identification. The four source-identification questions used in the manipulation check were repeated in the main experiment instrument to test the participants' level of awareness of the source.

Prior Knowledge. Grunig and Hunt's (1984) situational theory indicates that there are differences in the communication behavior of individuals who have prior awareness of or involvement with an issue and those who do not. This concept is also addressed by the Elaboration Likelihood Model (Petty & Cacioppo, 1986), and at least one study has examined the relationship between levels of involvement and the effect of high versus low credibility sources (Gotlieb & Sarel, 1991). Although this study did not manipulate the awareness/involvement variable, three questions were asked to identify possible differences in responses based on whether or not participants had prior awareness of the issue. Two five-point Likert items with the end-points nothing/a lot and not at

all/frequently measured participants level of awareness of the issue and exposure to messages about the issue. One categorical-level item was included to determine which participants have personal experience with the issue.

Demographic Information. In addition to the previous items, participants were asked three demographic questions which yielded categorical-level data. Two questions asked participants to indicate their academic rank and academic discipline at the college level. Because of the diversity of students enrolled in the class, these questions allowed for determining differences in responses among students at different academic levels or from different colleges within the university to be identified. Participants also indicated their gender, which allowed for the final sample of female respondents to be identified. Age was collected as ratio-level data and collapsed to categorical data.

Procedure

The experiment was conducted during the first session of the class' weekly meeting. The researcher explained the purpose of the exercise and the survey process to the students. The participants were told that this was a master's thesis study seeking to gauge college students' attitudes toward health messages. Students were randomly assigned to treatment groups. Each participant received a packet containing one version of the stimulus brochure and a questionnaire booklet. Both the envelope and the questionnaire included an identifying number that corresponded with the treatment material included in the packet. Students were unaware that the survey packets they received were different from most of their fellow classmates.

Directions for completing the process appeared on the outside of the stimulus packets (See Appendix A). The directions listed the contents of the envelope and step-by-

step instructions for participating in the study. These directions were read to participants before they viewed the stimulus material. First, participants were instructed to remove the brochure leaving the questionnaire booklet inside. Participants were not given a set amount of time to read the brochure. Next, the directions instructed them to return the brochure to the envelope and remove the questionnaire. Without referring to the brochure, participants were to proceed to answer the question items. Instructions at the top of the questionnaire briefly stated the purpose of the items included and asked participants to answer them as honestly as possible. Upon completing the questionnaire, participants were instructed to return the booklet to the envelope, reseal the package and refrain from communicating with others in the room until all questionnaires were collected.

Data Analysis

Data analyses for this study were performed using SPSS 15.0 for Windows. A $p \leq .05$ significance was used as the basis for rejecting the null hypothesis for all tests performed. One-way analyses of variance (ANOVA) tests were used to identify the between groups and within group differences for each of the items. Linear regressions were used to test the hypotheses that predict correlations between variables. Finally, multiple regressions were used to analyze the relationship between source credibility, message credibility, problem recognition, personal relevance, and information seeking, and the relationship between source credibility, message credibility, problem recognition, personal relevance, and behavioral intention.

CHAPTER 6: RESULTS

The study focused on the responses of female students to a women's health issue, therefore, the final sample excluded the responses of male students. The final sample yielded 222 female respondents. As expected, a majority of respondents ($n = 89$) were in their sophomore year of college. The mean age was 19.4. Table 2 summarizes the demographic characteristics of the sample.

Table 2. Categorical Demographics

		n	%
Academic rank	Freshman	72	32.4
	Sophomore	89	40.1
	Junior	53	23.9
	Senior	8	3.6
	Other	0	0.0
	College	Arts & Sciences	135
Business		71	32.0
Education		4	1.8
Honors		5	2.3
Medicine		2	0.9
Nursing		3	1.4
Missing		2	0.9
Age		17	2
	18	69	31.1
	19	74	33.3
	20	47	21.2
	21	21	9.5
	22	4	1.8
	23	3	1.4
	26	1	0.5
	53	1	0.5

Table 3 shows the distribution of participants among the four treatments and the control group.

Table 3. Distribution of Participants to Treatments

	N	%
Control	43	19.4
Subtle NP	44	19.8
Subtle P	50	22.5
Detailed NP	42	18.9
Detailed P	43	19.4

Descriptive Statistics

In addition to items intended to collect demographic data about the study participants, the research instrument included items to measure participants' level of prior knowledge, awareness of the source, perceptions of source credibility and message credibility, estimates of problem recognition, personal relevance, information seeking, and behavioral intention. Table 4 presents the means and standard deviations for each of the items used to measure these eight constructs.

Results of the items used to measure prior knowledge indicate that participants were somewhat knowledgeable about the issue ($M = 3.43$) and were exposed to a moderate amount of information on the topic ($M = 3.15$).

The source credibility construct included items that measured trustworthiness, expertise, and intent. In general, participants indicated agreement that the organizational sources were trustworthy, knowledgeable, and concerned about the public. Of the nine source credibility items, study participants most strongly agreed that the organization was concerned with the public's well being ($M = 4.46$). The participants reported low levels of source recall ($M = 2.34$) and ease identifying the source ($M = 2.43$).

Of the six items used to measure message evaluation, three measured participants' perceptions of message credibility. Responses to these items indicate that the participants viewed the message as truthful (M = 4.24), professional (M = 4.23) and accurate (M = 4.09).

In response to the problem recognition items, study participants almost strongly agreed that HPV was a serious health problems (M = 4.48), with serious complications (M = 4.66), that people should be concerned about (M = 4.66). In terms of personal relevance, they agreed that the message made the issue relevant for them (M = 3.96), but also indicated that it was more relevant to their fellow classmates (M = 4.12) and other college students (M = 4.15).

The results of the information seeking items show that participants were somewhat unlikely to speak to a health care professional about HPV (M = 2.70), less likely to visit a website (M = 2.19) and unlikely to pick up a pamphlet from a student health center (M = 1.93) or call a toll free number to get more information (M = 1.37).

In terms of behavioral intent, participants were likely to get vaccinated against HPV (M = 3.80), less likely to get tested for it (3.47), and somewhat likely to tell a friend about the disease (M = 3.02).

Table 4. Descriptive Statistics

Construct	Item	Mean	Std. Deviation
Prior Knowledge			
	How much you knew about HPV prior to reading this brochure.	3.43	1.00

	How frequently you have come across information about HPV in the last 12 months.	3.15	1.13
Source Credibility			
	The organization is qualified to provide information about HPV.	4.20	0.78
	The organization can be trusted to provide factual information about HPV.	4.15	0.81
	The organization is concerned with the public's well being.	4.46	0.76
	The organization is not an expert on HPV. (recoded)	3.54	1.11
	The organization cannot be trusted to present reliable information about HPV. (recoded)	4.03	1.01
	The organization is concerned with making profits. (recoded)	3.88	.98
	I believe the organization provides unbiased information about HPV.	3.84	1.09
	I believe the organization is knowledgeable about HPV.	4.24	0.80
	I believe the organization has something to gain from publishing this information. (recoded)	2.84	1.19
Message credibility			
	Boring/Interesting	3.46	1.04
	Unprofessional/Professional	4.23	0.82
	Misleading/Accurate	4.09	0.93
	Dull/Exciting	2.90	0.84
	Deceptive/Truthful	4.24	0.88
	Overemphasizes/Downplays	2.96	0.69
Problem Recognition			
	HPV is a serious health problem.	4.48	0.74
	People should be concerned about the risks of HPV.	4.66	0.58

	HPV can have serious complications.	4.66	0.63
Personal Relevance			
	Has this brochure made the issue of HPV more relevant or less relevant for you?	3.98	0.85
	Do you think this brochure made the issue of HPV more relevant or less relevant for other students in the class?	4.12	0.80
	Do you think this brochure would make the issue of HPV more relevant or less relevant for college students in general?	4.15	0.79
Information Seeking			
	I will visit the web site to learn more about HPV.	2.19	1.20
	I will call the toll-free number to request the HPV	1.37	0.68
	I will ask a health professional about HPV risks.	2.70	1.43
	I will pick up a pamphlet about HPV from the student health center.	1.93	1.16
Behavioral Intent			
	I intend to tell a friend about HPV.	3.02	1.32
	I intend to get tested for HPV.	3.47	1.46
	I intend to get vaccinated against HPV.	3.80	1.36
Source Identification			
	I recall the name of the organization that sponsored this brochure	2.34	1.49
	It was easy to identify the organization that sponsored this information	2.43	1.40

Reliability

Prior to testing the hypotheses, Cronbach's alpha was used to assess the internal consistency of the multiple-item indices for source credibility, message credibility, problem recognition, personal relevance, information seeking behavior, and behavioral intent respectively. Reversed items were transformed before performing the reliability analysis. The results of the analyses are shown in Table 5. Good reliability estimates are coefficients of .70 or higher, while values between .80 and 1.00 indicate high reliability (Stacks, 2002).

Three items were developed to measure each of the three dimensions of source credibility—trust, expertise, and concern. None of these produced a reliability coefficient of .70 or higher. Next, these nine source credibility measures were submitted to factor analysis. The analysis produced three initial factors. Although each factor met the criteria for a measurement dimension, with a minimum of two items loading at greater than .60 on one factor and not greater than .40 on any other factor (Stacks, 2002), only the items that loaded on Factor 1 were used to create a single index to measure source credibility. This factor contained four items with at least one item to represent each of the three dimensions of source credibility used in this study: trust—“the organization can be trusted to provide factual information about HPV”; expertise—“the organization is qualified to provide information about HPV,” and “I believe the organization is knowledgeable about HPV”; and concern— “the organization is concerned about the public’s well being.” These four items produced a coefficient alpha of .828.

Six items were used to measure participants’ perceptions of the message. Only two of these items were intended to measure message credibility. However, an

exploratory factor analysis showed that three items loaded on the credibility factor: professional/unprofessional, misleading/accurate, and deceptive/truthful. These three items produced an alpha of .843.

The three items included to test problem recognition produced a reliability coefficient of .777. The three items included to test personal relevance produced an alpha of .803. The four items used to measure information seeking behavior produced an alpha of .762. The three items used to measure behavioral intent produced a coefficient alpha .706.

Based on the results of the reliability tests, the items were collapsed into indices for the six constructs: source credibility, message credibility, problem recognition, personal relevance, information seeking, and behavioral intent. Table 6 reports the means and standard deviations for each index, from the highest to the lowest.

Table 5. Cronbach's alphas

Variables	α	N of items
Source Credibility	0.83	4
Message Credibility	0.84	3
Problem Recognition	0.78	3
Personal Relevance	0.80	3
Information Seeking	0.76	4
Behavioral Intent	0.70	3

Table 6. Descriptive Statistics for Construct Indices

	Mean	Std. Deviation
Problem Recognition	4.60	0.54
Source Credibility	4.28	0.64
Message Credibility	4.18	0.76
Personal Relevance	4.09	0.68
Behavioral Intent	3.44	1.09
Information Seeking	2.03	0.88

Research Question 1 and Hypothesis 1

Research Question 1 asked whether audiences are aware of the for-profit or not-for-profit status of message sponsors and what affect that awareness has on perceptions of source credibility and message credibility.

Hypothesis 1a. Hypothesis 1a predicted that for-profit sponsors would be rated as less credible sources than not-for-profit sponsors. A one-way analysis of variance (ANOVA) was conducted to test this hypothesis. Although the differences in source credibility scores for the non-profit versus for-profit treatments were as predicted, the between group differences were not significant ($F(1,151) = 3.155; p = .078$). However, the mean source credibility scores for the non-profit treatment groups ($M = 4.38$) were higher than the mean source credibility scores for the for-profit treatment groups ($M = 4.20$). A cursory analysis of the mean scores of the five groups on this index showed the mean source credibility scores for both the subtle-id non-profit ($M = 4.36$) and detailed-id non-profit ($M = 4.4$) were higher than those of the control group ($M = 4.26$). The mean scores of the subtle-id for-profit and detailed-id for-profit ($M = 4.15, M = 4.25$) were lower than both non-profit treatment groups and the control group. Nonetheless, hypothesis 1a was not supported.

Hypothesis 1b. Results from the same ANOVA were used to address hypothesis 1b. Hypothesis 1b predicted that participants in the detailed-id for-profit treatment would report the lowest source credibility scores ($M = 4.25$). However, participants in the subtle-id for-profit treatment reported the lowest source credibility scores ($M = 4.15$).

Thus, hypothesis 1b was not supported. Table 7 reports the source credibility means and standard deviations for each treatment group, from the highest to the lowest.

Table 7. Means and Standard Deviations for Source Credibility

Treatment Group	N	Mean	Std. Deviation
Detailed NP	38	4.40	0.55
Subtle NP	36	4.36	0.71
Control	34	4.26	0.64
Detailed FP	39	4.25	0.70
Subtle FP	40	4.15	0.58

Hypothesis 1c. Hypothesis 1c predicted a direct and positive relationship between participants' estimates of source credibility and their estimates of message credibility. Pearson's correlation analysis was used to test this hypothesis. (See Appendix F for the results of a comprehensive correlation analysis between indices). There was a statistically significant but moderate correlation between source credibility and message credibility ($r = .490, p = .000$). This hypothesis was also tested using linear regression analysis, which supported the statistical significance but moderate effect of the relationship. Message credibility, the dependent variable, was regressed on source credibility, the independent variable. The regression indicated that 23.6% of message credibility is explained by source credibility, $R^2 = .24$, $\text{Adj. } R^2 = .236$, $F(1, 183) = 57.793$, $p = .000$. Message credibility also produced a statistically significant contribution to the prediction equation, $\beta = .490$, $t(183) = 7.602$, $p = .000$.

To further explore the implications of this hypothesis an ANOVA was conducted to compare participants' evaluation of message credibility across the five treatment groups. Although the differences in message credibility scores for the non-profit versus for-profit treatments were as predicted, the between group differences were not

statistically significant ($F(4, 214) = .928; p = .173$). However, a cursory analysis of the mean scores of the five groups on this index showed a similar pattern as for source credibility. The mean message credibility scores for the subtle-id non-profit ($M = 4.36$), detailed-id non-profit ($M = 4.18$) and the control group ($M = 4.26$) were higher than those of the subtle-id for-profit ($M = 4.01$) and detailed-id for-profit ($M = 4.10$). Thus, hypothesis 1c was supported. Table 8 reports the message credibility means and standard deviations for each treatment group, from the highest to the lowest.

Table 8. Means and Standard Deviations for Message Credibility

Treatment Group	N	Mean	Std. Deviation
Subtle NP	43	4.36	0.92
Control	41	4.30	0.67
Detailed NP	42	4.18	0.61
Detailed FP	43	4.10	0.69
Subtle FP	50	4.01	0.85

Research Question 2 and Hypothesis 2

Research Question 2 asked if message acceptance was different for for-profit message sponsors than for non-profit sponsors. Message acceptance was defined in terms of estimates of problem recognition and levels of involvement or personal relevance.

Hypothesis 2a. Hypothesis 2a predicted that participants' perception of source credibility would affect their levels of problem recognition. Pearson's correlation analysis showed that although the relationship between source credibility and problem recognition was statistically significant, the correlation was weak ($r = .272, p = .000$). To further test this hypothesis and to determine to which extent problem recognition affected source credibility, linear regression analysis was conducted. The regression indicated that only 6.9% of problem recognition was explained by source credibility, $R^2 = .074$, Adj. R^2

= .069, $F(1, 182) = 14.543$, $p = .000$. Source credibility also produced a statistically significant contribution to the prediction equation, $\beta = .272$, $t(182) = 3.813$, $p = .000$.

Thus, hypothesis 2a was supported.

Hypothesis 2b. Hypothesis 2b predicted a direct and positive relationship between participants' estimates of source credibility and their estimates of personal relevance. Pearson's correlation analysis indicated there was a statistically significant but moderate correlation between source credibility and personal relevance ($r = .437$, $p = .000$). This hypothesis was also tested using linear regression analysis, which supported the statistical significance but moderate effect of the relationship. Personal relevance, the dependent variable, was regressed on source credibility, the independent variable. The regression indicated that 18.7% of personal relevance is explained by source credibility, $R^2 = .191$, $\text{Adj. } R^2 = .187$, $F(1, 167) = 39.520$, $p = .000$. Source credibility also produced a statistically significant contribution to the prediction equation, $\beta = .437$, $t(167) = 6.287$, $p = .000$. Thus, hypothesis 2b was supported.

Hypothesis 2c. Hypothesis 2c predicted that participants in the detailed-id for-profit treatment would report the least problem recognition ($M = 4.57$). A one-way analysis of variance (ANOVA) was conducted to test this hypothesis. The between group differences were not statistically significant ($F(4,213) = 1.166$, $p = .327$). Additionally, participants in the subtle-id for-profit treatment reported the lowest problem recognition scores ($M = 4.47$). Thus, hypothesis 2c was not supported. Table 9 reports the problem recognition means and standard deviations for each treatment group, from the highest to the lowest.

Table 9. Means and Standard Deviations for Problem Recognition

Treatment Group	N	Mean	Std. Deviation
Control	43	4.67	0.46
Subtle NP	43	4.67	0.54
Detailed NP	42	4.64	0.48
Detailed FP	42	4.57	0.56
Subtle FP	48	4.47	0.63

Hypothesis 2d. Hypothesis 2d predicted that participants in the detailed-id for-profit treatment would report the lowest levels of personal relevance. A one-way analysis of variance (ANOVA) was conducted to test this hypothesis. The between group differences were not statistically significant ($F(4,195) = .696, p = .596$). Additionally, participants in the control group reported the lowest personal relevance scores ($M = 3.96$). Participants in the subtle-id for-profit treatment reported lower personal relevance scores ($M = 4.04$) than those in the detailed-id for-profit treatment ($M = 4.14$). The detailed-id non-profit group reported personal relevance scores ($M = 4.20$) that were higher than the for-profit treatments and the control group. However, personal relevance scores for the subtle-id non-profit group ($M = 4.12$) were only higher than the control group and the subtle-id for-profit group. Thus, hypothesis 2d was not supported. Table 10 reports the personal relevance means and standard deviations for each treatment group, from the highest to the lowest.

Table 10. Means and Standard Deviations for Personal Relevance

Treatment Group	N	Mean	Std. Deviation
Detailed NP	38	4.20	0.70
Detailed FP	39	4.14	0.65
Subtle NP	40	4.12	0.59
Subtle FP	45	4.04	0.66
Control	38	3.96	0.82

Research Question 3 and Hypothesis 3

Research Question 3 asked if there were differences in the information seeking behavior of participants exposed to the not-for-profit treatments than for those exposed to the for-profit treatments.

Hypothesis 3a. Hypothesis 3a predicted a positive relationship between levels of problem recognition and intention to seek information. Correlation analysis was used to test this hypothesis. Although the relationship was significant, the correlation was weak ($r = .218, p = .002$). This hypothesis was further explored using linear regression analysis, which supported the statistical significance but moderate effect of the relationship. Intent to seek information, the dependent variable, was regressed on problem recognition, the independent variable. The regression indicated that 4.3% of intent to seek information was explained by problem recognition, $R^2 = .047$, $\text{Adj. } R^2 = .043$, $F(1, 207) = 10.300$, $p = .002$. Problem recognition also produced a statistically significant contribution to the prediction equation, $\beta = .218$, $t(207) = 3.209$, $p = .002$. Thus, hypothesis 3a was supported.

Hypothesis 3b. Hypothesis 3b predicted a positive relationship between levels of personal relevance and intention to seek information. Correlation analysis was used to test this hypothesis. Although the relationship was statistically significant, the correlation was weak ($r = .312, p = .000$). To further explore this relationship regression analysis was conducted between intent to seek information, the dependent variable, and personal relevance, the independent variable. The regression indicated that 9.3% of intent to seek information was explained by personal relevance, $R^2 = .097$, $\text{Adj. } R^2 = .093$, $F(1, 190) = 20.525$, $p = .000$. Personal relevance also produced a statistically significant

contribution to the prediction equation, $\beta = .312$, $t(190) = 4.530$, $p = .000$. Thus, hypothesis 3b was supported.

Hypothesis 3c. Hypothesis 3c predicted that participants in the detailed for-profit treatment would report the least intention to seek information. A one-way analysis of variance (ANOVA) was conducted to test this hypothesis. The between group differences were not statistically significant ($F(4,208) = 1.048$, $p = .384$). Additionally, participants in the control group reported the lowest intention to seek information ($M = 1.82$). Participants in the subtle-id for-profit treatment reported lower information seeking scores ($M = 1.99$) than those in the detailed-id for-profit treatment ($M = 2.07$). Both the subtle-id non-profit and detailed-id non-profit groups reported information seeking scores ($M = 2.11$, $M = 2.17$) that were higher than the for-profit treatments and the control group. Thus, hypothesis 3c was not supported. Table 11 reports the information seeking means and standard deviations for each treatment group, from the highest to the lowest mean.

Table 11. Means and Standard Deviations for Information Seeking

Treatment Group	N	Mean	Std. Deviation
Detailed NP	42	2.17	0.86
Subtle NP	44	2.11	0.97
Detailed FP	39	2.07	0.89
Subtle FP	46	1.99	0.79
Control	42	1.82	0.87

Research Question 4 and Hypothesis 4

Research Question 4 asked if there were differences in the behavioral intent for participants exposed to the not-for-profit treatments than for those exposed to the for-profit treatments.

Hypothesis 4a. Hypothesis 4a predicted that higher levels of problem recognition would correlate with greater behavioral intent. Correlation analysis was used to test this hypothesis. Although the relationship was significant, the correlation was weak ($r = .356$, $p = .000$). Subsequently, behavioral intent, the dependent variable, was regressed on problem recognition, the independent variable. The regression indicated that 12.2% of behavioral intent was explained by problem recognition, $R^2 = .127$, $\text{Adj. } R^2 = .122$, $F(1, 197) = 28.622$, $p = .000$. Problem recognition also produced a statistically significant contribution to the prediction equation, $\beta = .356$, $t(197) = 5.350$, $p = .000$. Thus, hypothesis 4a was supported.

Hypothesis 4b. Hypothesis 4b predicted that higher levels of personal relevance would correlate with greater behavioral intent. Correlation analysis was used to test this hypothesis. There was a statistically significant but moderate correlation between personal relevance and behavioral intent, $r = .422$, $p = .000$. Subsequently, behavioral intent, the dependent variable, was regressed on personal relevance, the independent variable. The regression indicated that 17.8% of behavioral intent was explained by personal relevance, $R^2 = .178$, $\text{Adj. } R^2 = .174$, $F(1, 182) = 39.429$, $p = .000$. Personal relevance also produced a statistically significant contribution to the prediction equation, $\beta = .42222$, $t(182) = 6.279$, $p = .000$. Thus, hypothesis 4b was supported.

Hypothesis 4c. Hypothesis 4c predicted that participants in the detailed-id for-profit treatment would report the lowest levels of behavioral intent. A one-way analysis of variance (ANOVA) was conducted to test this hypothesis. The between group differences were not statistically significant ($F(4, 198) = .448$, $p = .384$). Additionally, participants in the control group reported the lowest behavioral intent ($M = 3.33$).

Participants in the subtle-id for-profit treatment reported lower behavioral intent scores ($M = 3.43$) than those in the detailed-id for-profit treatment ($M = 3.46$). The detailed-id non-profit group reported behavioral intent scores ($M = 3.63$) that were higher than the for-profit treatments and the control group. However, behavioral scores for the subtle-id non-profit group ($M = 3.38$) was only higher than the control group. Thus, hypothesis 4c was not supported. Table 12 reports the behavioral intent means and standard deviations for each treatment group, from the highest mean to the lowest.

Table 12. Means and Standard Deviations for Behavioral Intent

Treatment Group	N	Mean	Std. Deviation
Detailed NP	39	3.63	1.11
Detailed FP	38	3.46	1.05
Subtle FP	42	3.43	1.09
Subtle NP	43	3.38	1.21
Control	41	3.33	1.03

Research Question 5 and Hypothesis 5

Research Question 5 asked if there were differences in participants' willingness to engage in information seeking and their intent to perform behaviors advocated by the message.

Hypothesis 5a. Hypothesis 5a predicted that participants across all treatment groups would report greater intention to seek information than to perform the advocated health behaviors. There was a significant but moderate correlation between information seeking and behavioral intent, $r = .541$, $p = .000$. However, a comparison of means between groups in terms of information seeking and behavioral intent showed that participants in all treatment groups reported lower levels of information seeking ($M = 2.03$) than levels of behavioral intent ($M = 3.44$). This indicates that in this study the

participants were more likely to behave as was requested, than to seek more information. Thus, hypothesis 5a was not supported. Table 13 reports the means for information seeking and behavioral intent for each treatment group.

Table 13. Means for Information Seeking and Behavioral Intent

Treatment	Means for Information Seeking	Means for Behavioral Intent
Control	1.82	3.33
Subtle NP	2.11	3.38
Detailed NP	2.17	3.63
Subtle FP	1.99	3.43
Detailed FP	2.07	3.46

To further explore the research question, two linear regression analyses were conducted. In the first analysis the dependent variable, information seeking, was regressed on the independent variables of source credibility, message credibility, problem recognition, and personal relevance, as suggested in Figure 1. The regression indicated that 8.7% of information seeking was explained by these four variables, $R^2 = .110$, Adj. $R^2 = .087$, $F(4, 156) = 4.834$, $p = .001$. Of the four independent variables only personal relevance produced a statistically significant contribution to the prediction equation, $\beta = .233$, $t(156) = 2.705$, $p = .008$. The regression model for information seeking is presented in Table 14.

Table 14. Regression Model for Information-Seeking Behavior

Predictor	β	$t(149)$	p
Source Credibility	.029	0.309	.758
Message Credibility	.040	0.458	.647
Problem Recognition	.134	1.661	.099
Personal Relevance	.233	2.705	.008

In the second analysis the dependent variable, behavioral intent, was regressed on the same independent variables of source credibility, message credibility, problem recognition, and personal relevance, as suggested in Figure 2. The regression indicated that these four variables explained 20.3% of behavioral intent, $R^2 = .224$, $\text{Adj. } R^2 = .2037$, $F(4, 149) = 10.759$, $p = .000$. Of the four independent variables, two variables produced a statistically significant contribution to the prediction equation. Personal relevance contributed more to the prediction equation, $\beta = .273$, $t(149) = 3.309$, $p = .001$, than did problem recognition, $\beta = .174$, $t(149) = 2.237$, $p = .027$. The regression model for behavioral intent is presented in Table 15.

Table 15. Regression Model for Behavioral Intent

Predictor	β	$t(149)$	p
Source Credibility	.115	1.275	.204
Message Credibility	.081	0.968	.335
Problem Recognition	.174	2.237	.027
Personal Relevance	.273	3.309	.001

Research Question 6

Research Question 6 asked which of the factors examined in the study contribute most to behavioral intent. This research question was answered using linear regression analysis. Information seeking was added to the predictor variables shown in Table 15. The regression indicated that 37.3% of the variance in behavioral intent is explained by these five variables, $R^2 = .394$, $\text{Adj. } R^2 = .373$, $F(5, 145) = 18.865$, $p = .000$. These results indicate that information seeking accounted for an additional 17% of explained variance in behavioral intent. Of the five independent variables, two variables produced a statistically significant contribution to the prediction equation, personal relevance, β

= .150, $t(145) = 1.977$, $p = .050$ and information seeking, $\beta = .458$, $t(145) = 6.592$, $p = .000$. Information seeking made the greatest contribution to the prediction equation. With the addition of information seeking, problem recognition no longer made a unique contribution to the prediction equation. Thus, of the factors examined in this study, information seeking contributes most to behavioral intent. Table 16 presents the regression model for behavioral intent based on these five factors.

Table 16. Five-Factor Regression Model for Behavioral Intent

Predictor	β	$t(145)$	p
Source Credibility	.101	1.255	.212
Message Credibility	.084	1.123	.263
Problem Recognition	.085	1.199	.233
Personal Relevance	.150	1.977	.050
Information Seeking	.458	6.592	.000

CHAPTER 7: DISCUSSION

In recent years, the organizational sources of public service messages have diversified. Whereas, PSA sponsors were typically government agencies and non-profit organizations, for-profit organizations are sponsoring public information campaigns more frequently, particularly in the area of health communication. For instance, in an official statement about its operations, the pharmaceutical company Merck states that it “publishes unbiased health information as a non-profit service” (Merck, 2007). The increasing cost of producing effective information campaigns and decreasing access to dissemination channels have necessitated such changes.

Organizational Status, Source Credibility, and Message Credibility

Although public service messages produced by for-profit organizations do not promote the companies’ services, they often advocate health issues closely related to the companies’ product lines. In the professional arena, there has been some speculation about the potential profit motive of companies sponsoring such campaigns. In terms of source credibility, the results of several studies suggest that for-profit sources are viewed as less credible than non-profit sponsors because they are seen as having something to gain from the message (Haley, 1996; Hammond, 1986; Reid, Soley, & Vanden Bergh, 1981). Contrary to these findings, the results of this study indicate no significant differences in the perceived credibility of the commercial source versus the non-profit source. Although the source credibility means of both for-profit source treatments were

lower than the source credibility means of both the non-profit treatments and the control group, in general participants reported high source credibility ratings across all groups. This finding suggests that audiences do not evaluate the credibility of an organization based on its for-profit or non-profit status.

Thus, in previous studies where for-profit sources and messages attributed to these sources were found to be significantly less credible, the conclusion that audiences perceive for-profit sources as less objective and having something to gain may not be an accurate analysis of the process underlying credibility evaluations. While evaluation of intent is likely a valid measure of source credibility, it seems unlikely that this evaluation is made based on the sponsor's status as a for-profit or non-profit organization alone.

Based on an earlier conclusion that open identification of a commercial source related to greater perception that the source had something to gain (Reid, Soley & Vanden Bergh, 1981), this study included level of source identification as its second independent variable. The results indicate that more detailed or obvious references to the source is significantly related to greater recognition of the sponsor and the sponsor's status as a for-profit or non-profit source. The anticipated result was that as participants became more aware of the sponsor and the sponsor's organizational status, credibility ratings for the non-profit source would increase while perceived credibility of the for-profit source would decrease. However, in addition to the finding that there were no statistically significant differences in credibility ratings between the treatment groups, the results also show that the means of both the detailed-id non-profit and detailed-id for-profit treatments were higher than their subtle-id counterparts. Additionally, participants indicated strongest agreement that the source, in general, was concerned with the public's

well being. These results provide further support to the conclusion that the source is not evaluated based on its status as a for-profit or non-profit organization.

Particularly interesting is that 79% of participants in the control group, which had no sponsor, responded to the source credibility items, rather than indicating no opinion. Perhaps audiences assume there is an organizational source but pay little attention to the sponsor, thereby relying on other cues, such as content cues to evaluate the source. Some studies indicate that public service messages are viewed positively and assumed to have an altruistic intent (Duck & Mullin, 1995; Duck, Terry, & Hogg, 1995; Gunther & Thorson, 1992). This perception of PSAs as a message category may be transferred to the organizations that sponsor public service messages. Thus, if a message appears to function in the best interest of the audience, then the source of the message may also be viewed as publishing the information in the audience's best interest.

Alternatively, greater awareness of the source may lead the audience to evaluate it on individual factors, such as familiarity or reputation. Messages in the for-profit treatments of this study were attributed to the pharmaceutical company Merck. A recent article published by the Harris Interactive reported that 60% of adults think pharmaceutical companies generally do a good job compared to 39% who think the industry generally does a bad job (Harris Interactive, August 8, 2007). Thus, high-credibility ratings of the for-profit source in this study may be related to increased awareness that the organizational sponsor is a pharmaceutical company.

However, according to the poll, the pharmaceutical industry has a 21 point positive rating, placing it near the bottom of the list of industries that received a positive rating and ranking higher than only six of the 21 industries rated in the poll. And

although perceptions of the industry have increased over the last four years, they are still significantly lower than 10 years ago. The fact that Merck is a pharmaceutical company may not contribute as much to perceptions of the sponsor's credibility as might perceptions of Merck's reputation itself.

No significant differences were found in the credibility ratings of messages attributed to non-profit sponsors versus for-profit sponsors. There was a significant positive correlation between source credibility and message credibility. Participants reported high message credibility ratings across all groups. However, participants in the for-profit treatments reported lower message credibility ratings than did participants in the non-profit treatments and the control group. This is not surprising, given the similar source credibility ratings for each group.

These finding indicates that regardless of the for-profit/non-profit status of the sponsor, the audience's perception of the source does affect its perception of the message. This finding supports previous organization credibility studies that showed a direct relationship between source credibility and message evaluation or attitude-toward-the-ad (Goldberg & Hartwick, 1990; Goldsmith, Lafferty, & Newell, 2000a, , 2000b; Lafferty & Goldsmith, 1999; Lafferty, Goldsmith, & Newell, 2002) with the exception of one study that found no significant relationship between source credibility and message evaluation (Hammond, 1986).

Problem Recognition and Personal Relevance

Of the three types of campaign messages—awareness, instructional, and persuasive—most campaign messages can be classified as awareness messages. These messages aim to create recognition of a topic and impart new information. Mendelsohn

(1973) argued that campaigns can succeed if they focus on increasing knowledge and awareness. The current study did not test for knowledge gains as a result of exposure to the message. For the purpose of this study, message acceptance was operationalized as estimates of problem recognition and personal relevance, two independent variables from the situational theory of publics. Atkin (2001) states that awareness messages should convey the impression that the health problem is important.

This study examined the relationship between the organizational status of the source and message acceptance. That is whether for-profit and non-profit sources produced different levels of problem recognition and personal relevance. Although there was a significant correlation between source credibility and problem recognition, neither organizational status nor level of identification produced significant differences in levels of problem recognition. Likewise, neither organizational status nor level of identification produced significant differences in levels of personal relevance. Just as source credibility ratings were high across all treatment groups so were levels of problem recognition. In general, personal relevance estimates were moderately high. The results do not support the study's hypothesis that for-profit sponsors produce lower estimates of problem recognition. Yet, they do support claims that public service messages, regardless of the status of the organizations that produce them, are successful at placing problems on an individual's agenda (Grunig & Ipes, 1983).

Across all groups, estimates of problem recognition were higher than estimates of personal relevance. While all participants agreed that the message made the issue relevant to them, they showed strong agreement that the issue was a problem. This suggests that participants were more willing to admit that HPV is a serious health problem, but less

willing to admit that it is relevant to them. The estimates of personal relevance or first-person perception scores were lower than the third-person perception scores. This finding supports the third-person effect hypothesis that people are less likely to admit greater impact on self than others even for socially desirable messages (Davison, 1983; Duck & Mullin, 1995; Duck, Terry, & Hogg, 1995). However, the first-person estimates were not significantly lower than the third-person estimates and indicated that participants felt the issue was personally relevant. This finding is consistent with previous studies that found smaller differences between first- and third-person estimates for public service messages (Duck, Terry, & Hogg, 1995; Gunther & Thorson, 1992).

Information Seeking and Behavioral Intent

According to Atkin (2001) awareness messages should encourage further information seeking. Although Mendelsohn's (1973) argument that public information campaigns can succeed in increasing knowledge and awareness was intended to counter Hyman and Sheatsley's (1947) pessimistic view of information campaigns, he essentially agreed with their argument that they have limited effects on behavior. Based on this agreement that campaigns are more successful at producing knowledge effects rather than behavioral effects, it was hypothesized that participants across all treatments would report greater levels of information seeking effects than behavioral effects. Although it was not possible to measure actual behavior in response to the message, the theory of reasoned action posits that intention to act is a valid indicator of actual behavior (Fishbein & Ajzen, 1975).

Comparing the estimates of information seeking to the estimates of behavioral intention found in this study calls into question the argument that public service messages

are more successful at prompting awareness-type behavior than they are at inducing actual behavior (Borzekowski & Poussaint, 1999; Ledingham, 1993; Mendelsohn, 1973). Neither the information seeking nor the behavioral intent estimates fell in the “likely” to “very likely” range of the scale. However, participants across all groups indicated that they were somewhat likely to perform the behaviors advocated in the message, while they disagreed that they would seek additional information. Thus, the participants indicated greater behavioral intent than intent to seek information. Although this finding did not support the study’s hypothesis that participants would be more likely to carry out information seeking behavior, it has significant implications for public service message effects.

One possible explanation for the low estimates of information seeking may be the channel used to deliver the public service message in this study. Unlike television PSAs and other such media which have the broadest reach but can only deliver a superficial amount of information (Atkin, 2001), pamphlets are able to deliver depth of information. Thus, participants may not see the need to seek more information based on a perception that the brochure provided sufficient information on the issue.

Neither organizational status nor level of identification produced significant differences in information seeking or behavioral intent. However, source credibility was positively related to information seeking and behavioral intent. The relationship between source credibility and behavioral effects has been well established in the literature. These findings support the results of other organizational credibility studies that have looked at purchase intentions (Goldberg & Hartwick, 1990; Goldsmith, Lafferty, & Newell, 2000a, 2000b; Lafferty & Goldsmith, 1999; Lafferty, Goldsmith, & Newell, 2002) and health

behaviors (Hammond, 1986). Lynn et al. (1978) looked at behavioral intent as a result of source attribution for a public service announcement. However, that study did not examine source credibility and the results indicated. Thus, the present study represents initial evidence of a relationship between source credibility and behavioral effects for public service messages.

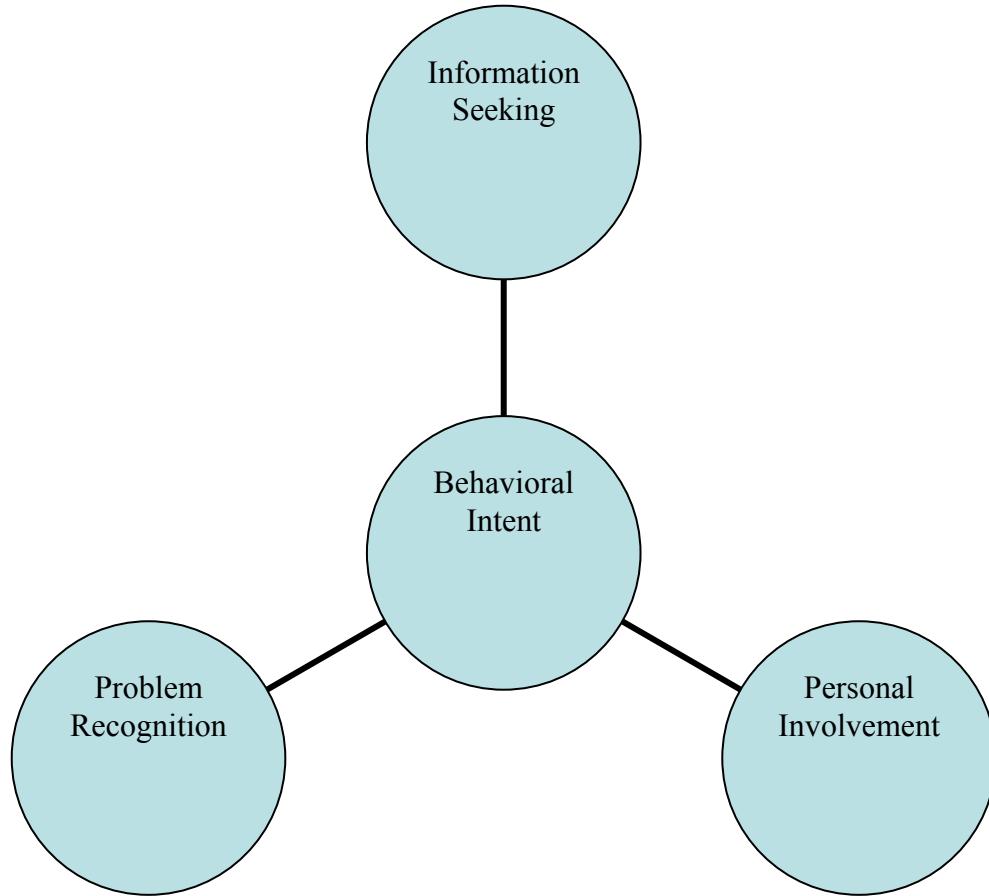
The situational theory predicts that increasing an individual's level of problem recognition and personal involvement will result in greater information seeking (Grunig & Hunt, 1984). The results of this study, which show that both problem recognition and personal involvement were positively related to information seeking, provide further support for the theory. However, as predicted in this study, problem recognition and personal involvement were also positively related to behavioral intent. This study argued that there were parallels between the problem recognition and personal involvement variables from situational theory and the attitude and social norms variables from the theory of reasoned action. The findings provide initial support for this claim.

What the study did not predict, but was a significant finding, was that problem recognition and personal relevance correlated more strongly with behavioral intent than they did with information seeking. Additionally, regression analysis showed that these two variables also predicted more of the variance in behavioral intent than they did in information seeking. The higher behavioral intent estimates, along with the stronger correlation between problem recognition, personal relevance, and behavioral intent, suggests that public service messages can successfully encourage behavior if they are able to increase audiences' perceptions of problem recognition and personal relevance.

These findings also provide initial justification for an expansion of Grunig's (Grunig & Hunt, 1984) situational theory. Currently the theory only predicts the conditions whereby information processing and information seeking will occur. However, the correlation between two of the theories independent variables, problem recognition and personal involvement, and behavioral intent, suggests that the theory can go beyond predicting awareness behavior to predicting actual behavior through behavioral intent. Given that the theory is often used to determine which segments of a population will become active, adding a behavioral dimension can add value to the theories predictive ability.

Atkin (2001) indicated that information seeking was an important effect of awareness messages because it had strong potential to produce behavioral outcomes. Grunig (1989) also stated that information seeking was related to behavioral outcomes. Neither author referenced empirical evidence of these claims. One of the most significant findings for this study is that, of the factors examined, information seeking has the most effect on behavioral intent. There was a significant relationship between information seeking and behavioral intent and the correlation of these two variables was the strongest of all the correlations found. Additionally, information seeking predicted almost 17% of the variance in behavioral intent. This finding provides an even greater argument for the expansion of the situational theory to incorporate behavioral intent. Figure 3. proposes a model of the theory based on a revision that incorporates behavioral intent.

Figure 3. Proposed Model of Behavioral Intention



CHAPTER 8: CONCLUSIONS

This study sought to investigate the relationship between message sponsors and message effects for public information campaigns. It asked whether for-profit organizations as sponsors of health information enhance or inhibit the effectiveness of health messages. The findings indicate that for-profit sources can be as successful as non-profit sources in increasing audiences' perceptions of problem recognition and personal involvement for a health issue. Additionally, while audiences may rate for-profit sources as somewhat less credible than non-profit sources, there were no significant differences in the levels of information seeking or behavioral intention generated by messages from either type of sponsor. Thus, it appears that for-profit sources do not inhibit the effectiveness of public service messages.

These findings do not support previous studies that have attributed lower source credibility and message credibility ratings of for-profit sources to audience evaluations of intent, namely that the for-profit source has something to gain. Although an organization may gain from a public service message, if the information presented is deemed accurate and unbiased, any evaluation of profit motive may not impact overall source evaluations. Alternatively, high message credibility ratings may lead to higher source credibility estimates and the potential profit motive may be overlooked. In other words, a credible message may create the impression of an altruistic source. This may be why participants reported higher levels of agreement that the source was concerned with the public's well

being, but were less apt to concede that the source had something to gain or was concerned with making a profit. It may also explain why participants in the control group reported high source credibility ratings, even though the message they were exposed to contained no sponsor information.

Perhaps the study's most significant finding is that problem recognition, personal involvement, and information seeking all positively predict behavioral intention, suggesting additional routes that can be used to maximize public service message effects.

Study Limitations

Although this study presents significant findings that link source credibility research to studies on the effects of public information campaigns, it also had several limitations that prevent generalization of the findings.

A common criticism of academic studies is the use of college students as the study participants. This study used a convenience sample of undergraduate students. Because the sample was not randomly selected the results cannot be taken as representative of a larger population. Additionally, the researcher noted that some students responded to the experimental exercise as they would a graded assignment. Even though there were no right answers, student responses may have been altered by their perceptions of what the answer should be.

The study only used one message channel as the stimulus. Thus, certain results may be more closely related to the channel selected rather than a result of public service messages in general. Additionally, the selected topic is popular. Although students reported moderate levels of awareness about the issue, it is still likely that their responses are affected by their existing levels of knowledge. Public service messages often seek to

create levels of awareness about problems that are not well known. Thus, responses to effective items in this study may have differed if the topic was less salient. Perhaps the audience is more critical of the source for issues that are not as well known.

The study used two organizations as the sources that are likely familiar and viewed favorably by participants. As a result, the lack of significant differences in the source credibility ratings may be due to actual perceptions of these organizations, than they are due to differences in the for-profit or non-profit status of each. Also, only two organizational categories, for-profit and non-profit were considered. Thus, this study cannot comment on or compare the effects of other organizational categories, such as governmental sponsors.

Although this study used established scales to measure problem recognition, information seeking, and behavioral intent, this study did not use validated scales to measure source credibility and personal relevance. As a result, comparing responses on these items to the findings of other studies will be limited.

Suggestions for Further Research

Based on the findings presented and the limitations discussed, several areas for further research can be identified. Few credibility studies or PSA effects studies use participants who are not college students. In order to learn more about the relationship between source credibility and message effects, future studies should seek to incorporate more diverse samples.

As noted, it is possible that the information seeking findings were a result of the message channel selected for the study. Because there are few organizational credibility studies that address public service messages, there is great opportunity to explore this

topic through the variety of message channels by which public information campaigns are disseminated. Broadcast spots are the most common dissemination method for PSAs; therefore, research budgets allowing, television or radio ads are a logical channel to incorporate in future studies.

In addition to examining source credibility effects for different PSA formats, future studies should also consider differing levels of issue salience. The stimulus in this study presented a somewhat salient issue. Manipulating issue salience as an independent factor along with source type may reveal how different sources are perceived for high versus low salient issues.

In marketing and advertising research, studies have begun to compare the effects of corporate sponsors versus spokespersons on message effects. This study did not include a spokesperson. However, PSAs typically use spokespersons to deliver the message. Comparing the role of sponsor credibility to spokesperson credibility will reveal more about the effects of organizational sponsors on message outcomes. Future studies should include message spokesperson as a variable.

This study manipulated organizational status and level of source awareness as the independent variables. Credibility studies are concerned with the effect that differing perceptions of credibility have on message effects. Therefore, it is desirable to manipulate participants' perceptions of credibility. In addition to manipulating the status of the sponsoring organization, future research may also manipulate credibility for the different sponsors as well. Doing so is likely to reveal more about the relationship between source credibility and the message effects variables addressed in this study.

One such relationship that warrants further study is the positive correlation found between source credibility and information seeking. Unlike the relationship between source credibility and behavioral intent, this relationship has not been studied before and more investigation is necessary before any conclusions can be drawn.

As noted, the relationship between the situational theory variables and behavioral intent is a major finding in this study. Testing the relationship between the situational theory variables and behavioral intent will allow for an expansion of the theory. In order for the inclusion of behavioral intent to truly expand the theory, the role of constraint recognition, which was excluded from this study, must also be investigated. The theory of planned behavior, the theory of reasoned actions successor, includes the variable behavioral control to account for the role that self-efficacy plays in behavior. In some ways, recognizing the constraints that prevent one from performing an action is akin to recognizing the level of control one has over that action.

Implications for Practice

Reid, Soley and Vanden Bergh (1981) suggested that commercial sponsors should avoid open identification for advocacy advertising. The results of this study indicate that increased awareness of the corporate sponsor through open identification will not necessarily have negative implications. In fact, the positive credibility ratings suggest that for-profit sponsors can benefit from open identification when it comes to public service messages. The perceived altruistic nature of the message may foster greater perceptions of credibility for the organizations. Sponsoring PSAs may not only help for-profit organizations build brand awareness, but also contribute to their philanthropic efforts and foster goodwill with key publics.

Hammond (1986) suggested that commercial sponsors partner with non-profit organizations to increase their credibility and improve message effectiveness. For-profit organizations often use front organizations or create a foundation for the purpose of disseminating public service messages. This study's findings indicate that neither strategy is necessary.

The changing nature of PSA dissemination has involved corporate sponsors in the process. The results indicate that it is feasible for non-profit organizations and government agencies to turn to corporate sponsors to address PSA production and dissemination problems. In terms of health messages, these sponsors appear to be as effective as non-profit sponsors at motivating information seeking and behavioral intent. It seems that the issue is not whether corporate sponsor inhibit these message effects, rather the issue is how to increase these responses regardless of message source. Participants in this study reported high levels of problem recognition and personal relevance but only moderate levels of behavioral intent and low levels of information seeking. This indicates a challenge for message development—to create high enough levels of problem recognition and personal relevance that can translate into greater intent to seek information and perform advocated behaviors.

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APPENDICES


Appendix A.1: Participant Directions

Directions: Read and follow all of the instructions below.

Do not open the envelope until instructed.

1. This packet contains a brochure and a questionnaire booklet. When instructed, open the envelope and remove only the brochure. **Leave the questionnaire booklet inside.**
2. Take as long as you need to read the entire brochure. Then, return the brochure to the envelope and remove the questionnaire. **Do not refer to the brochure again.**
3. Read the instructions for each section carefully. After answering all questions, return the booklet to the envelope and reseal the envelope. **The packet will be collected when everyone is finished.**

Appendix B.1: Subtle NP Treatment




Genital HPV and women


Low-risk HPV types can cause mild changes in a woman's cervix. They can also cause changes in the genital area called genital warts. It is important to know the link between genital HPV and cervical cancer. Untreated, high-risk HPV types can cause cancer if they persist and cause cell changes.

Genital HPV and men

Genital HPV is common in men. However, it rarely causes serious complications (such as cancers of the penis or anus) in heterosexual men. The most apparent result of HPV in men is genital warts, which can be seen with the naked eye. Men can have genital HPV with no symptoms and pass it on to their partners.

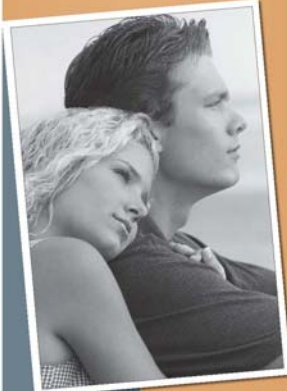


For more information or to order an HPV information kit, call 1.800.478.3223 or visit www.hpvfacts.com



Genital HPV

How a common virus sometimes leads to cancer - and how you can stop it.



www.hpvfacts.com

HPV is common in men and women


Genital human papillomavirus (HPV) is the most common sexually transmitted virus in the United States. It is passed on through sex (such as vaginal, anal and possibly oral).

At least 50% of sexually active people have genital HPV at some point in their lives. Most will never know it.

Anyone who has ever had genital contact with another person can have genital HPV. Both men and women can get it — and pass it on — without even realizing it. Since the virus can be “silent” for a long time, a person can have genital HPV even if years have passed since he or she had sex.

There are many different types of genital HPV, which fall into two main groups.

- The first group can cause genital warts in men and women (“low-risk” HPV types).
- The second group of genital HPV types is known as “high-risk” because these types can cause cervical cancer in women and are linked to other less common genital cancers, such as anal cancer.



There is no cure for the virus, genital HPV, itself. There are treatments for the health problems that it can cause, such as genital warts, cell changes and cervical cancer. Even after a person is treated for genital warts or abnormal cells, the virus can remain in the skin and be transmitted to a partner.

How can HPV and cervical cancer be prevented?

Condoms are not proven to prevent genital HPV. If used all the time and the right way, condoms may lower your chances of getting HPV and developing HPV-related diseases. But HPV can infect areas that are not covered by a condom.

The good news is cervical cancer is highly preventable with regular Pap tests and follow-up, and curable with early detection and treatment. A vaccine is also available now, which protects against the high-risk HPV types that cause most cervical cancers.

There are two ways to prevent cervical cancer:


- (1) Females ages 9 to 26 years old should get an HPV vaccine, AND
- (2) women should get regular Pap tests.

(1) **The new HPV vaccine protects** against four HPV types, which together cause 70% of cervical cancers and 90% of genital warts. The vaccine is given through a series of three shots over a six-month period.


(2) **The Pap test looks for cell changes** caused by genital HPV. It finds cell changes early — so the cells can be treated before they turn into cancer. This test can also find cancer in its early stages so it can be treated before it becomes life threatening.

Help a friend make the connection

A lot of people don't know about genital HPV. Of the women in the United States who develop cervical cancer, about half have never had a Pap test. In addition to protecting yourself against HPV, tell a friend about the risks and complications of genital HPV and what they can do to prevent it.



Appendix B.2: Subtle FP Treatment




Genital HPV and women


Low-risk HPV types can cause mild changes in a woman's cervix. They can also cause changes in the genital area called genital warts. It is important to know the link between genital HPV and cervical cancer. Untreated, high-risk HPV types can cause cancer if they persist and cause cell changes.

Genital HPV and men

Genital HPV is common in men. However, it rarely causes serious complications (such as cancers of the penis or anus) in heterosexual men. The most apparent result of HPV in men is genital warts, which can be seen with the naked eye. Men can have genital HPV with no symptoms and pass it on to their partners.

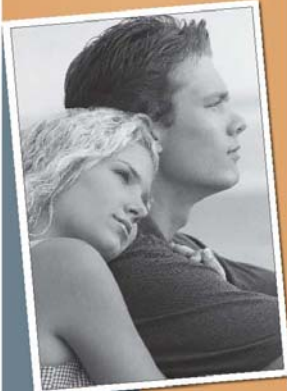


For more information or to order an HPV information kit, call 1.800.478.3228 or visit www.hpvfacts.com



Genital HPV

How a common virus sometimes leads to cancer - and how you can stop it.



www.hpvfacts.com

HPV is common in men and women


Genital human papillomavirus (HPV) is the most common sexually transmitted virus in the United States. It is passed on through sex (such as vaginal, anal and possibly oral).

At least 50% of sexually active people have genital HPV at some point in their lives. Most will never know it.

Anyone who has ever had genital contact with another person can have genital HPV. Both men and women can get it — and pass it on — without even realizing it. Since the virus can be “silent” for a long time, a person can have genital HPV even if years have passed since he or she had sex.

There are many different types of genital HPV, which fall into two main groups.

- The first group can cause genital warts in men and women (“low-risk” HPV types).
- The second group of genital HPV types is known as “high-risk” because these types can cause cervical cancer in women and are linked to other less common genital cancers, such as anal cancer.



There is no cure for the virus, genital HPV, itself. There are treatments for the health problems that it can cause, such as genital warts, cell changes and cervical cancer. Even after a person is treated for genital warts or abnormal cells, the virus can remain in the skin and be transmitted to a partner.

How can HPV and cervical cancer be prevented?

Condoms are not proven to prevent genital HPV. If used all the time and the right way, condoms may lower your chances of getting HPV and developing HPV-related diseases. But HPV can infect areas that are not covered by a condom.

The good news is cervical cancer is highly preventable with regular Pap tests and follow-up, and curable with early detection and treatment. A vaccine is also available now, which protects against the high-risk HPV types that cause most cervical cancers.

There are two ways to prevent cervical cancer:


- (1) Females ages 9 to 26 years old should get an HPV vaccine, AND
- (2) women should get regular Pap tests.

(1) **The new HPV vaccine protects** against four HPV types, which together cause 70% of cervical cancers and 90% of genital warts. The vaccine is given through a series of three shots over a six-month period.


(2) **The Pap test looks for cell changes** caused by genital HPV. It finds cell changes early — so the cells can be treated before they turn into cancer. This test can also find cancer in its early stages so it can be treated before it becomes life threatening.

Help a friend make the connection

A lot of people don't know about genital HPV. Of the women in the United States who develop cervical cancer, about half have never had a Pap test. In addition to protecting yourself against HPV, tell a friend about the risks and complications of genital HPV and what they can do to prevent it.



Appendix B.3: Detailed NP Treatment




Genital HPV and women


Low-risk HPV types can cause mild changes in a woman's cervix. They can also cause changes in the genital area called genital warts. It is important to know the link between genital HPV and cervical cancer. Untreated, high-risk HPV types can cause cancer if they persist and cause cell changes.

Genital HPV and men

Genital HPV is common in men. However, it rarely causes serious complications (such as cancers of the penis or anus) in heterosexual men. The most apparent result of HPV in men is genital warts, which can be seen with the naked eye. Men can have genital HPV with no symptoms and pass it on to their partners.



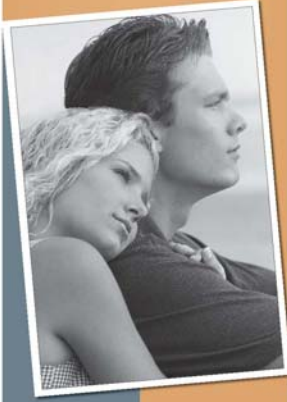
For more information or to order an HPV information kit, call 1.800.478.3228 or visit www.hpvfacts.com




The American Cancer Society is a non-profit organization dedicated to eliminating cancer through research, education, advocacy, and service

Genital HPV

How a common virus sometimes leads to cancer - and how you can stop it.



www.hpvfacts.com



HPV is common in men and women

Genital human papillomavirus (HPV) is the most common sexually transmitted virus in the United States. It is passed on through sex (such as vaginal, anal and possibly oral).

At least 50% of sexually active people have genital HPV at some point in their lives. Most will never know it.

The American Cancer Society wants you to know that anyone who has ever had genital contact with another person can have genital HPV. Both men and women can get it — and pass it on — without even realizing it. Since the virus can be “silent” for a long time, a person can have genital HPV even if years have passed since he or she had sex.

There are many different types of genital HPV, which fall into two main groups.

- The first group can cause genital warts in men and women (“low-risk” HPV types).
- The second group of genital HPV types is known as “high-risk” because these types can cause cervical cancer in women and are linked to other less common genital cancers, such as anal cancer.



There is no cure for the virus, genital HPV, itself. There are treatments for the health problems that it can cause, such as genital warts, cell changes and cervical cancer. Even after a person is treated for genital warts or abnormal cells, the virus can remain in the skin and be transmitted to a partner.

How can HPV and cervical cancer be prevented?

Condoms are not proven to prevent genital HPV. If used all the time and the right way, condoms may lower your chances of getting HPV and developing HPV-related diseases. But HPV can infect areas that are not covered by a condom.

The good news is cervical cancer is highly preventable with regular Pap tests and follow-up, and curable with early detection and treatment. A vaccine is also available now, which protects against the high-risk HPV types that cause most cervical cancers. The American Cancer Society recommends taking these steps to protect yourself.

There are two ways to prevent cervical cancer:

- (1) Females ages 9 to 26 years old should get an HPV vaccine, AND
- (2) women should get regular Pap tests.

(1) **The new HPV vaccine protects** against four HPV types, which together cause 70% of cervical cancers and 90% of genital warts. The vaccine is given through a series of three shots over a six-month period.

(2) **The Pap test looks for cell changes** caused by genital HPV. It finds cell changes early — so the cells can be treated before they turn into cancer. This test can also find cancer in its early stages so it can be treated before it becomes life threatening.

Help a friend make the connection

A lot of people don't know about genital HPV. Of the women in the United States who develop cervical cancer, about half have never had a Pap test. In addition to protecting yourself against HPV, the American Cancer Society also encourages you to tell a friend about the risks and complications of genital HPV and what they can do to prevent it.



Appendix B.4: Detailed FP Treatment



Genital HPV and women

Low-risk HPV types can cause mild changes in a woman's cervix. They can also cause changes in the genital area called genital warts. It is important to know the link between genital HPV and cervical cancer. Untreated, high-risk HPV types can cause cancer if they persist and cause cell changes.

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For more information or to order an HPV information kit, call 1.800.478.3228 or visit www.hpvfacts.com



Merck & Co, Inc. is a pharmaceutical company that manufactures and markets vaccines and medicines for a broad range of health conditions.

Genital HPV

How a common virus sometimes leads to cancer - and how you can stop it.



www.hpvfacts.com



HPV is common in men and women

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At least 50% of sexually active people have genital HPV at some point in their lives. Most will never know it.

Merck wants you to know that anyone who has ever had genital contact with another person can have genital HPV. Both men and women can get it — and pass it on — without even realizing it. Since the virus can be “silent” for a long time, a person can have genital HPV even if years have passed since he or she had sex.

There are many different types of genital HPV, which fall into two main groups.

- The first group can cause genital warts in men and women (“low-risk” HPV types).
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There are two ways to prevent cervical cancer:

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Help a friend make the connection

A lot of people don't know about genital HPV. Of the women in the United States who develop cervical cancer, about half have never had a Pap test. In addition to protecting yourself against HPV, Merck also encourages you to tell a friend about the risks and complications of genital HPV and what they can do to prevent it.



Appendix B.5: Control Treatment




Genital HPV and women

Low-risk HPV types can cause mild changes in a woman's cervix. They can also cause changes in the genital area called genital warts. It is important to know the link between genital HPV and cervical cancer. Untreated, high-risk HPV types can cause cancer if they persist and cause cell changes.

Genital HPV and men

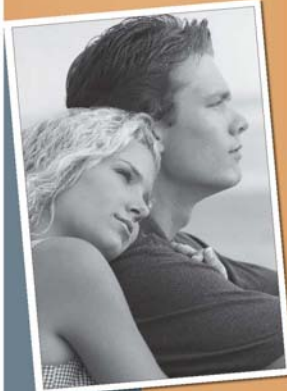
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Genital HPV

How a common virus sometimes leads to cancer - and how you can stop it.



www.hpvfacts.com

HPV is common in men and women


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Help a friend make the connection

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Appendix D.1: Measurement Instrument

Instructions

This booklet contains questions about your impression of the health message you just read. Please answer as honestly as possible. There are no right or wrong answers. Your responses will remain completely confidential. Thank you for completing the questionnaire.

Section I: Please respond by marking the appropriate box.

1. On the following scale, where 1 represents Nothing and 5 represents A lot, please indicate how much you knew about HPV prior to reading this brochure.

1	2	3	4	5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nothing				A lot	No opinion

2. On the following scale, where 1 represents Not at all and 5 represents Frequently, please indicate how frequently you have come across information about HPV in the last 12 months.

1	2	3	4	5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not all				Frequently	No opinion

3. Do you know anyone who has been diagnosed with HPV?

Yes No Unsure

Section II: The following questions ask your opinion of the organization that produced the brochure. On the following scales, where 1 represents Strongly Disagree and 5 represents Strongly Agree, please indicate your level of agreement with the following statements.

4. The organization is qualified to provide information about HPV.

1	2	3	4	5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Strongly Disagree				Strongly Agree	No opinion

5. The organization can be trusted to provide factual information about HPV.
- | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1 | 2 | 3 | 4 | 5 | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Strongly
Disagree | | | | Strongly
Agree | No
opinion |
6. The organization is concerned with the public's well being.
- | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1 | 2 | 3 | 4 | 5 | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Strongly
Disagree | | | | Strongly
Agree | No
opinion |
7. The organization is not an expert on HPV.
- | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1 | 2 | 3 | 4 | 5 | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Strongly
Disagree | | | | Strongly
Agree | No
opinion |
8. The organization cannot be trusted to present reliable information about HPV.
- | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1 | 2 | 3 | 4 | 5 | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Strongly
Disagree | | | | Strongly
Agree | No
opinion |
9. The organization is concerned with making profits.
- | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1 | 2 | 3 | 4 | 5 | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Strongly
Disagree | | | | Strongly
Agree | No
opinion |
10. I believe the organization provides unbiased information about HPV.
- | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1 | 2 | 3 | 4 | 5 | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Strongly
Disagree | | | | Strongly
Agree | No
opinion |
11. I believe the organization is knowledgeable about HPV.
- | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1 | 2 | 3 | 4 | 5 | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Strongly
Disagree | | | | Strongly
Agree | No
opinion |

12. I believe the organization has something to gain from publishing this information.

1	2	3	4	5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Strongly Disagree				Strongly Agree	No opinion

Section III: Finish the statement below by checking the box that best represents your opinion for each of the items listed.

Compared to most brochures I have seen about health issues, I found this brochure

13.	Boring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Interesting
14.	Unprofessional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Professional
15.	Misleading	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Accurate
16.	Dull	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Exciting
17.	Deceptive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Truthful
18.	Overemphasizes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Downplays

Section IV: On the following scales, where 1 represents Strongly Disagree and 5 represents Strongly Agree, please indicate your level of agreement with the following statements.

19. HPV is a serious health problem.

1	2	3	4	5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Strongly Disagree				Strongly Agree	No opinion

20. People should be concerned about the risks of HPV.

1	2	3	4	5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Strongly Disagree				Strongly Agree	No opinion

21. HPV can have serious complications

1	2	3	4	5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Strongly Disagree				Strongly Agree	No opinion

Section V: On the following scales, where 1 represents Less Relevant and 5 represents More Relevant, please indicate your response to the following questions.

22. Has this brochure made the issue of HPV more relevant or less relevant for you?

1	2	3	4	5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Less Relevant				More Relevant	No opinion

23. Do you think this brochure made the issue of HPV more relevant or less relevant for other students in the class?

1	2	3	4	5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Less Relevant				More Relevant	No opinion

24. Do you think this brochure would make the issue of HPV more relevant or less relevant for college students in general?

1	2	3	4	5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Less Relevant				More Relevant	No opinion

Section VI: On the following scales, where 1 represents Not Likely and 5 represents Very Likely, please indicate how likely is it that you will perform the actions described as a result of reading the brochure.

25. I will visit the web site to learn more about HPV.

1	2	3	4	5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not Likely				Very Likely	No opinion

26. I will call the toll-free number to request the HPV information kit.

1	2	3	4	5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not Likely				Very Likely	No opinion

27. I will ask a health professional about HPV risks.

1	2	3	4	5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not Likely				Very Likely	No opinion

28. I will pick up a pamphlet about HPV from the student health center.

1	2	3	4	5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not Likely				Very Likely	No opinion

Section VII: On the following scales, where 1 represents Not Likely and 5 represents Very Likely, please indicate how likely is it that you will perform the actions described as a result of reading the brochure.

29. I intend to tell a friend about HPV.

1	2	3	4	5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Definitely Will				Definitely Will Not	No opinion

30. I intend to get tested for HPV.

1	2	3	4	5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Definitely Do				Definitely Do Not	No opinion

31. I intend to get vaccinated against HPV.

1	2	3	4	5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Definitely True				Definitely False	No opinion

Section IIX: Please respond by marking the appropriate box.

On the following scales, where 1 represents Strongly Disagree and 5 represents Strongly Agree, please indicate your level of agreement with the following statements

32. I recall the name of the organization that sponsored this brochure.

1	2	3	4	5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Strongly Disagree				Strongly Agree	No opinion

33. It was easy to identify the organization that sponsored this information.

1	2	3	4	5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Strongly Disagree				Strongly Agree	No opinion

34. Do you recall if the organization that sponsored this information was a

<input type="checkbox"/> Government Agency	<input type="checkbox"/> Non-profit organization	<input type="checkbox"/> Health Care Facility
<input type="checkbox"/> Pharmaceutical Company	<input type="checkbox"/> I don't recall	<input type="checkbox"/> No sponsor

35. Please write the organization's name in the space provided below

Section IX: The following questions will help us understand your answers. Please respond by marking the appropriate box.

36. Please indicate your academic rank:

<input type="checkbox"/> Freshman	<input type="checkbox"/> Sophomore	<input type="checkbox"/> Junior
<input type="checkbox"/> Senior	<input type="checkbox"/> Other _____	

37. What college are you in?

<input type="checkbox"/> Arts/Sciences	<input type="checkbox"/> Business	<input type="checkbox"/> Education
<input type="checkbox"/> Engineering	<input type="checkbox"/> Honors College	<input type="checkbox"/> Medicine
<input type="checkbox"/> Nursing	<input type="checkbox"/> Public Health	<input type="checkbox"/> Visual/Performing Arts

38. What is your gender?

<input type="checkbox"/> Female	<input type="checkbox"/> Male
---------------------------------	-------------------------------

39. What is your age? _____

Thank you for participating in this study!

Appendix E.1: Data Coding Sheet

Section I: Prior Knowledge

Var. 1 knowledge <i>Scale: nothing/a lot</i>	How much you knew about HPV prior to reading this brochure.
Var. 2 exposure <i>Scale: not at all/frequently</i>	How frequently you have come across information about HPV in the last 12 months.
Var. 3 diagnosis <i>Categorical</i> <i>1=yes; 2=no; 3=unsure;</i> <i>9=no response</i>	Do you know anyone who has been diagnosed with HPV?

Section II: Source Credibility

Var. 4 expert_qualified <i>Scale: SD/SA</i>	The organization is qualified to provide information about HPV.
Var. 5 trust_factual <i>Scale: SD/SA</i>	The organization can be trusted to provide factual information about HPV.
Var. 6 concern_well being <i>Scale: SD/SA</i>	The organization is concerned with the public's well being.
Var. 7 expert_not <i>Scale: SD/SA</i>	The organization is not an expert on HPV.
Var. 8 trust_not reliable <i>Scale: SD/SA</i>	The organization cannot be trusted to present reliable information about HPV.
Var. 9 concern_profit <i>Scale: SD/SA</i>	The organization is concerned with making profits.
Var. 10 trust_unbiased <i>Scale: SD/SA</i>	I believe the organization provides unbiased information about HPV.
Var. 11 expert_knowledge <i>Scale: SD/SA</i>	I believe the organization is knowledgeable about HPV.
Var. 12 concern_gain <i>Scale: SD/SA</i>	I believe the organization has something to gain from publishing this information.

Section III: Message Credibility

Var. 13 boring_interesting <i>Scale: boring/interesting</i>	I found this brochure boring/interesting
Var. 14 unprof_professional <i>Scale: unprofessional/professional</i>	I found this brochure unprofessional/professional
Var. 15 mislead_accurate <i>Scale: misleading/accurate</i>	I found this brochure misleading/accurate
Var. 16 dull_exciting <i>Scale: dull/exciting</i>	I found this brochure dull/exciting
Var. 17 deceptive_truthful <i>Scale: deceptive/truthful</i>	I found this brochure deceptive/truthful
Var. 18 over_down <i>Scale: overemphasizes/downplays</i>	I found this brochure overemphasizes/downplays

Section IV: Problem Recognition

Var. 19 problem_serious <i>Scale: SD/SA</i>	HPV is a serious health problem.
Var. 20 problem_concern <i>Scale: SD/SA</i>	People should be concerned about the risks of HPV.
Var. 21 problem_complications <i>Scale: SD/SA</i>	HPV can have serious complications.

Section V: Personal Relevance

Var. 22 relevant_self <i>Scale: LR/MR</i>	Has this brochure made the issue of HPV more relevant or less relevant for you?
Var. 23 relevant_class <i>Scale: LR/MR</i>	Do you think this brochure made the issue of HPV more relevant or less relevant for other students in the class?
Var. 24 relevant_other <i>Scale: LR/MR</i>	Do you think this brochure would make the issue of HPV more relevant or less relevant for college students in general?

Section VI: Information Seeking

Var. 25 info_web <i>Scale: not likely/very likely</i>	I will visit the web site to learn more about HPV.
Var. 26 info_toll free <i>Scale: not likely/very likely</i>	I will call the toll-free number to request the HPV information kit.
Var. 27 info_doctor <i>Scale: not likely/very likely</i>	I will ask a health professional about HPV risks.
Var. 28 info_clinic <i>Scale: not likely/very likely</i>	I will pick up a pamphlet about HPV from the student health center.

Section VII: Behavioral Intent

Var. 29 tell someone <i>Scale: definitely will/will not</i>	I intend to tell a friend about HPV.
Var. 30 tested <i>Scale: definitely do/do not</i>	I intend to get tested for HPV.
Var. 31 vaccinated <i>Scale: definitely true/false</i>	I intend to get vaccinated against HPV.

Section IIX: Source Identification

Var. 32 name_recall <i>Scale: SD/SA</i>	I recall the name of the organization that sponsored this brochure
Var. 33 identify_easy <i>Scale: SD/SA</i>	It was easy to identify the organization that sponsored this information
Var. 34 org_status <i>Categorical</i> <i>1= gov.; 2=non-profit;</i> <i>3 = health facility;</i> <i>4=pharmaceutical; 5= no recall</i> <i>6 = no sponsor; 9 = no response</i>	Do you recall if the organization that sponsored this information was a Government Agency/Non-profit organization/Health Care Facility/Pharmaceutical Company/I don't recall/No sponsor
Var. 35 name <i>Categorical</i> <i>1=correct; 2=incorrect</i> <i>9 = no response</i>	Please write the organization's name in the space provided

Section IX: Demographic Information

Var. 36 academic rank
categorical

Please indicate your academic rank:

Var. 37 college
categorical

What college are you in?

Var. 38 age
ratio

What is your age?

Appendix F: Correlations

		Source Credibility	Message Credibility	Problem Recognition	Personal Relevance	Information Seeking	Behavioral Intent
Source Credibility	Pearson Correlation	1	.490	.272	.437	.170	.317
	Sig. (2 tailed)		.000	.000	.000	.022	.000
	N	187	185	184	169	180	174
Message Credibility	Pearson Correlation	.490	1	.190	.306	.102	.239
	Sig. (2 tailed)	.000		.005	.000	.142	.001
	N	185	219	216	199	211	200
Problem Recognition	Pearson Correlation	.272	.190	1	.325	.218	.356
	Sig. (2 tailed)	.000	.005		.000	.002	.000
	N	184	216	218	198	209	199
Personal Relevance	Pearson Correlation	.437	.306	.325	1	.312	.422
	Sig. (2 tailed)	.000	.000	.000		.000	.000
	N	169	199	198	200	192	184
Information Seeking	Pearson Correlation	.170	.102	.218	.312	1	.541
	Sig. (2 tailed)	.022	.142	.002	.000		.000
	N	180	211	209	192	213	199
Behavioral Intent	Pearson Correlation	.317	.239	.356	.422	.541	1
	Sig. (2 tailed)	.000	.001	.000	.000	.000	
	N	174	200	199	184	199	203