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On motivations to act : safer sex communication and the individual

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**ON MOTIVATIONS TO ACT:
SAFER SEX COMMUNICATION
AND THE INDIVIDUAL**

A Thesis

Presented to

**The Faculty of the School of Journalism
and Mass Communications
San Jose State University**

**In Partial Fulfillment
of the Requirements for the Degree
Master of Science**

by

Jocelyn Dong

August 1995

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A handwritten signature in cursive script, reading "Dr. Diana Stover", written over a horizontal line.

Dr. Diana Stover

A handwritten signature in cursive script, reading "Professor Bob Rucker III", written over a horizontal line.

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A handwritten signature in cursive script, reading "Serena J. Stanford", written over a horizontal line.

ABSTRACT

ON MOTIVATIONS TO ACT: SAFER SEX COMMUNICATION AND THE INDIVIDUAL

by Jocelyn Dong

This thesis investigated the interaction between college students' attitudes towards safer sex communication and a media message on the topic. Rogers' (1983) protection motivation theory and Katz, Blumler, and Gurevitch's (1974) uses and gratifications theory constituted the theoretical foundation for the research. A posttest-only control group experiment was conducted with 484 unmarried students at San Jose State University using a video public service announcement (PSA) as the stimulus and a 57-item questionnaire as the measurement tool.

Results of the experiment lent support to the importance of self-efficacy, response efficacy, and risk in predicting people's intentions to adopt a recommended behavior. Reactions to the PSA varied across gender and levels of experience with safer sex, indicating dissimilar gratifications sought. Analyses of the attitudes of four groups of students suggested ways to approach them with messages that would enable each group's adoption of safer sex practices.

Acknowledgments

Researchers often look for factors that influence a particular outcome. In regard to this thesis, there can be no doubt that its successful completion was influenced by the talents and efforts of a number of people. Their names and contributions are presented below.

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Chapter 1

Introduction

Communication is the way by which people learn, seek fulfillment of their needs, and carry out the decisions they have made. Broadly defined, communication involves not only talking, but also listening, reading, and observing. It is interaction with a purpose, whether that be for problem solving, recreation, reinforcing values, or broadening one's intellectual horizons.

Communication facilitates progress. Applied to a field such as health care, progress can mean the difference between health and sickness, or even death. Not only does communication help patients deal with the physical and psychological effects of illness, but on the societal level, it also enables health educators to prevent the spread of disease among the public.

The purpose of this thesis was to explore AIDS prevention communication from an often-neglected perspective—that of the individual, the seeker of information. While much has been made of health educators' efforts to spread the prevention message, little consideration has been given to what should be an equal part of the formula for success—the motivations of the message receiver. This thesis used the experimental method to test a message addressing psychological processes of individuals. The message attempted to go beyond factual knowledge of HIV transmission, instead addressing personal efficacy and social skill, which are key to adopting and maintaining healthful behavior.

Acquired Immune Deficiency Syndrome (AIDS)

Acquired immune deficiency syndrome (AIDS) is the final stage of a fatal disease caused by the human immunodeficiency virus (HIV). Incurable, AIDS compromises the human immune system, leaving a person vulnerable to infections and cancers. Lesions on the skin, continual and severe weight loss, and neurological disorders, including dementia, are all characteristic symptoms of AIDS prior to death (Keeling, 1992).

AIDS is the number-one killer of American men aged 25 to 44, and it is the fourth-leading cause of death among women for this same age group. AIDS or AIDS-related illnesses have claimed the lives of more than 250,000 Americans since the disease was first identified in the early 1980s. Of its victims, 75% have been between the ages of 25 and 44 years (Altman, 1995). In 1993 alone, AIDS killed 28,090 in this age group ("AIDS is Top Killer," 1995).

An estimated 362,000 Americans are currently afflicted with AIDS. According to the federal Centers for Disease Control and Prevention (CDC), new AIDS cases in 1993 numbered 103,500, more than double the previous year's figure of 49,016. For the first time in the history of the disease in the United States, the percentage rise in new cases among heterosexuals was greater than among homosexuals (Hostetler, 1994). Women accounted for the greatest increase. Their AIDS-diagnosis rate grew six times as fast as that of the population as a whole. More than half of the women with AIDS contracted the virus through sex with an HIV-infected man ("AIDS Toll," 1995).

Because the HIV-incubation period typically lasts as long as seven years, the actual number of HIV-infected persons is far greater than the number of diagnosed AIDS cases. The significance of this fact lies not only in understanding

the epidemic's full scope but also in realizing that infected, yet asymptomatic, people can unknowingly spread the virus.

AIDS Prevention Efforts

As the medical community continues to search for a cure or vaccine, public health professionals, along with AIDS activists of diverse backgrounds, have fought the epidemic through action on multiple levels. AIDS workers have lobbied for policies making AIDS a top national health priority and for greater funding of research and services. AIDS workers have also created and mobilized community networks to educate people about AIDS, assist HIV-infected persons, and change societal perceptions about people with AIDS.

Addressing the spread of HIV on the individual level is simultaneously straightforward and complex. The principal ways in which HIV is transmitted are well-understood: (1) an HIV-infected person has unsafe (i.e., not using a latex condom) sex (primarily anal or vaginal) with someone who is not HIV infected; (2) an HIV-infected person shares hypodermic needles or syringes with someone who is not infected; and (3) an HIV-infected woman passes the virus to her unborn child. [Note: Other means of transmission exist, such as receiving an HIV-tainted blood transfusion, but are less prevalent. Male-to-male and male-to-female sexual transmissions remain the greatest risks. Female-to-female sexual transmission has not been recognized by the CDC.]

As rational as the behavior changes of practicing safer sex and using clean needles may seem, they are strongly influenced by a host of irrational personal, interpersonal, social, and societal factors. A person's desire to practice safe behavior can conflict with feelings about vulnerability to disease; attitudes

towards drug use or sex; difficulties communicating with others; peer pressure; cultural values about disease, death, and sex; and other societal norms such as the expectation of instant gratification or ideals of romantic love.

Choosing Health Behaviors

When confronted with conflicts between actual and recommended health practices, people choose to enact either the adaptive (recommended) behavior or maladaptive behaviors, such as wishful thinking or avoidance (Rippeto & Rogers, 1987). Some health choices are frequently re-evaluated, especially if the behavior is one that must be repeated consistently, as must condom use.

The decision to adopt a health behavior involves weighing information from a number of different health sources. These sources may be environmental (friends, media, or observations) or intrapersonal (personality variables or past health experiences; Rogers, 1983). In addition, depending on the health issue, societal and interpersonal factors may be considered in the decision-making. In the case of safer sex, for example, the reluctance of one's sexual partner to use a condom could cause interpersonal conflict that would make the practice of safer sex more difficult.

Where do people look for health information? A 1978 study by Freimuth and Marron found that in the age group of 18-to-35-year-olds, the three most popular sources of information were medical personnel (cited by 67% of those surveyed), friends (57%), and televised public service announcements (51%). The respondents judged the reliability of each information source as 88%, 57%, and 80%, respectively. Perhaps because of the extremely personal nature of AIDS transmission as well as social prohibitions about discussing sex, participants in a

national poll on sources of AIDS information ranked television as their prime source, more than newspapers or—unlike the 1978 general health survey—physicians (Wallack, 1990).

Public Service Announcements

The televised public service announcement (PSA) has far-reaching potential to spread the word about AIDS-prevention behavior. Regardless of social situation or access to a doctor—two potential sources of health information—almost all Americans have access to television. In the past decade, since the advent of AIDS, health educators have used PSAs to inform people of the disease's deadliness, how it is transmitted, how it is not transmitted, and recommended behaviors to prevent infection. The PSAs have taken a variety of approaches, including fear appeals, humor, guilt, touching emotional portrayals, and factual presentations (Freimuth, Hammond, Edgar, & Monahan, 1990). Creators of PSAs have even enlisted celebrities and used Madison Avenue glitz in their attempts to effectively communicate the safer sex message.

Still, continued incidence of infection among the population and critical analyses of AIDS education efforts indicate that there is room for improvement. A 1990 analysis of 127 televised AIDS PSAs concluded that most lack of the type of information for which people are looking (Freimuth et al., 1990). While the plain facts about AIDS transmission are apparently well-known and often repeated (DeJong & Winsten, 1992; Freimuth et al., 1990; Perloff, 1991; Winett, Altman, & King, 1990), information addressing personal barriers—those forces inhibiting people from adopting recommended behaviors—has been neither well-packaged nor widely disseminated. In the case of safer sex, people who are

intellectually aware of the need to use condoms nonetheless do not use them because of such barriers as being embarrassed to buy them or feeling apprehensive about negotiating their use. For people who may not have alternative sources of health information, public service announcements have the potential to address these barriers.

Thesis Framework and Rationale

This thesis was conducted within a framework of two approaches: Katz, Blumler, and Gurevitch's (1974) uses and gratifications theory and Ronald W. Rogers' protection motivation theory (Rogers, 1983). The research addressed the following issues: (1) the extent to which students' varying levels of protection motivation predicted their intentions to adopt a recommended behavior (safer sex communication); (2) the ways in which students used a safer sex PSA for different gratifications; and (3) the type of attitudes students held towards safer sex and what those attitudes revealed about their motivation—or lack of motivation—to interact with the PSA message.

To promote health behaviors, public health communication specialists use many motivation models and theories: the health belief model, the elaboration likelihood model, the protection motivation theory, and the theory of reasoned action, to name a few. For this thesis, the researcher elected to test the protection motivation theory because it most closely mirrors the state of AIDS awareness among the population. The dichotomy between awareness and behavior seen in the population is similar to the threat- and coping-appraisal components posited by protection motivation theory. This thesis, therefore, contributed to the

understanding of protection motivation theory as it relates to the AIDS health threat.

The researcher selected uses and gratifications theory because, like protection motivation theory, it approaches health behaviors from an individualist perspective. Both theories share fundamental assumptions, including an individual who is active rather than passive, an individual whose needs and motives guide a cognitive process, and a view of the media as one of many functional alternatives for providing health messages. This thesis examined the utility of the uses and gratifications model in explaining people's receptivity to those messages.

Thesis Method

This thesis used the experimental method to study a series of research questions. Students participating in the experiment were randomly assigned to either a control or experimental group. The students were shown one of two videotapes, one of which included the experimental stimulus, a 60-second public service announcement. The students then completed a survey about their sexual practices and attitudes towards safer sex. The experimental method was chosen because it is an ideal tool for detecting differences in students' attitudes as a result of viewing a public service announcement.

Internal validity in this experiment was assured through careful operationalization and control of experimental variables. The study's variables included the following: For the first research question, the four protection motivation theory components were treated as independent variables while intentions to discuss and seek information about safer sex served as the

dependent variable; for the second research question, gender, experience with safer sex, and the viewing of a public service announcement served as independent variables while protection motivation components, past behaviors, and intentions to discuss and seek information about safer sex served as the dependent variables; for the third research question, gender and experience with safer sex were used as independent variables while questions pertaining to protection motivation, past behaviors, and intentions to discuss and seek information about safer sex served as the dependent variables.

The experiment, furthermore, was conducted in one sitting, avoiding contamination and mortality issues. External validity was maximized through a posttest-only control group design with some randomization of subjects. Reliability of the variables was verified statistically.

The subjects in this research—college students—were selected as a target audience for three reasons. First, AIDS is the number one killer of 25-to-44-year-olds as a group. Because of the lengthy incubation period, the younger adults dying of the disease are being infected in their late teens and early twenties. Maticka-Tyndale's (1991) research suggested that college students often choose ineffective behaviors as coping responses. Interviews with college students revealed that the most popular prophylactic used to prevent sexually transmitted diseases (STDs) was choosing a partner who seemed safe. Clearly this is a population that is not responding to current messages about safer sex.

Second, feelings of invincibility, an emphasis on sexual pleasure and experimentation, and relative inexperience with health consequences (i.e., STDs) are characteristic of young adulthood and result in a population simultaneously

unconcerned and at-risk of contracting AIDS (Backer, Rogers & Sopory, 1992; Freimuth, Edgar & Hammond, 1987; Keeling, 1987).

Third, as people of approximately the same age and maturation level, college students face specific societal and intraindividual inhibitors to talking about safer sex. More research on the ability of messages to address these barriers will help public health educators increase their impact on this young population.

How Thesis Differed

Although based on extensive AIDS media campaign research, this thesis differed from previous studies in its specific investigation into the power of protection motivation theory to directly motivate behavior through public service announcements. Previous studies in protection motivation theory either have not studied AIDS (Rippetoe & Rogers, 1987) or have not studied protection motivation theory in relation to the broadcast media (Rippetoe & Rogers, 1987; Tanner, Jr., Day & Crask, 1989; Tanner Jr., Hunt & Eppright, 1991). Furthermore, while many researchers have studied AIDS PSAs, few of these messages contained explicit information about one barrier to safer sex—communication. Finally, this thesis approached media effects from the audience perspective, unlike many studies on AIDS-education campaigns, which have addressed behavior change from the perspective of convincing or persuading obstinate audiences (Wartella & Middlestadt, 1991), rather than of fulfilling extant, audience-generated needs.

Chapter 2

Literature Review

Uses and Gratifications

The uses and gratifications approach to studying mass communications is concerned with interactions between individuals and media and with the results of those interactions. In contrast to effects research, which has been characterized as “what media do with people,” uses and gratifications tries to explain “what people do with the media” (Windahl, 1981, p. 176).

The approach lacks a single coherent theory; however, despite the diversity of research emphases in the field, Katz et al.’s (1974) definition of uses and gratifications has been widely accepted. It is concerned with

(1) the social and psychological origins of (2) needs, which generate (3) expectations of (4) mass media or other sources, which lead to (5) differential patterns of media exposure (or engagement in other activities), resulting in (6) needs gratifications and (7) other consequences, perhaps mostly unintended ones. (p. 510)

With a focus on audience needs as opposed to media effects, uses and gratifications makes three basic assumptions about interactions: (1) the audience is active and goal-oriented rather than passive; (2) media choices are made by the audience, based on needs; and (3) media use is one of many options for satisfying needs (Katz et al., 1974). The fact of audience activity has been much recognized (and lamented) by effects researchers. As Wartella and Middlestadt (1991) commented: “Media power and influence are often lessened by obstinate

audiences that resist, reformulate, and selectively retain media messages” (p. 214).

Several uses and gratifications models have been proposed (McLeod & Becker, 1981; Palmgreen, 1984; Rosengren, 1974; Windahl, 1981). Each has, through varying degrees of schematic complexity, attempted to capture the interrelations among societal, social, and intraindividual forces. Slight variations notwithstanding, however, the models all portray key elements of the process: antecedent conditions contributing to motives, assessment of media and functional alternatives, use of media or non-media alternatives, and effects or gratifications resulting from media or non-media use.

Antecedent Conditions

McLeod and Becker’s (1981) conceptualization of audience initiative is the simplest of the models: Initiative is formed from basic needs, social situation, and background. This schema contains the essential principle that individual characteristics (psychological traits) combined with extra-individual characteristics (membership in social group, social status, etc.) form integrated (as opposed to basic) needs.

A key point that must be made is that initiative is so fundamental as to exist irrespective of the availability of media. This distinction was first asserted by Katz, Gurevitch, and Haas (1973), who noted in their seminal work: “Media-related needs . . . ought to be viewed within the wider range of human needs” (p. 180). Thus, although uses and gratifications theorists are concerned with how media use satisfies needs, they make no claim to any notion that media use creates needs.

Variations on the basic conceptualization of audience initiative include intermediary states of having perceived problems and solutions (Rosengren, 1974) and values (Palmgreen, 1981), which in turn contribute to the development of motives. Also, a largely untested schema of 16 psychological motives was proposed by McGuire (1974).

Assessment of Alternatives

The assessment of media and functional alternatives is either portrayed as occurring before (Palmgreen, 1984; Rosengren, 1974) or after (McLeod & Becker, 1981; Windahl, 1981) the cognitive formation of motives. As in the case of most attempts to portray complex psychological processes in a readable, linear fashion, such differences should be taken as minor. More significantly, these means for satisfaction are influenced by prior experiences with each alternative (Palmgreen, 1984; Windahl, 1981) and the alternative's availability in terms of access, cost, and ease of use (McLeod & Becker, 1981; Windahl, 1981).

Attempts to categorize the functions of the media have resulted in such labels as diversion, personal relationships, personal identity, and surveillance (McQuail, Blumler & Brown, 1972) and instrumental, adjustive/utilitarian, ego-defensive, value-expressive, and knowledge (Katz, 1960). Katz et al. (1973) proposed that media use assists in instrumental, affective, and integrative relations with various others, including self, friends, family, and society.

Katz et al. (1973) also found that specific media possessed different functions. Television, for example, was the least specialized of the media, fulfilling multiple needs. In the same study, the researchers observed that interpersonal alternatives were in many cases preferred to media for certain purposes.

Use of Media

The use of media or functional alternatives has been examined in a variety of ways. Windahl's (1981) uses and effects model proposed that use of the media can be measured in three parts (amount of content used, type of content used, and relation of audience to content) and that these variables partly determined effects. Taking a different angle, Blumler (1979) suggested a relationship between time within media consumption (before, during, and after) and audience activity. Because this present experiment held viewing conditions essentially constant, the use variable of uses and gratifications had little if any impact on the experimental results.

Gratifications and Effects

The results of media use have been called gratifications obtained, consequences, effects, and even "consequences" (Windahl, 1981). Though definitions of these labels are not completely agreed upon, most researchers have acknowledged that results can be intended or unintended (Katz et al., 1974), cumulative or immediate (Katz et al., 1974; Rubin & Windahl, 1986), subjective or objective (McLeod & Becker, 1981), and affecting the individual or the society as a whole (Ball-Rokeach & DeFleur, 1976; Windahl, 1981).

On the individual level, gratifications obtained have been observed to differ from gratifications sought (Palmgreen, 1984). One explanation for this difference was hypothesized by Windahl (1981), who proposed that an audience's intentions can interact with characteristics of the media content to produce "consequences"—a combination of media-induced effects and media-use-generated consequences.

Applicability of Uses and Gratifications

The utility of the uses and gratifications approach lies in the explanation of behavior or attitude change as a result of motivations. Formulating a complete theory of uses and gratifications may be a hopeless task, as the diversity of audience needs and media functions as well as their unique interactions cannot possibly be cohesively knitted together. However, when applied specifically to a field like health communications, the number of variables is considerably reduced. Motives are more easily hypothesized and their relationship to specific effects testable.

The idea of availability of media or functional alternatives is a key concept in the battle against AIDS. As previously mentioned, most people receive AIDS information from television, more even than from physicians (Wallack, 1990). Whatever the reasons may be, non-media alternatives for learning about the disease are less available, and television has presented itself as a viable means of need satisfaction.

Uses and gratifications models, through their depictions of the complex nature of effects, indicate that many factors, including message characteristics, contribute to outcomes. To test all of the variables of even a single uses and gratifications model in one study would be a formidable undertaking. Instead, this research was carried out with the intent of addressing a basic premise of uses and gratifications theory—that different individuals' needs lead to differentiated uses of the media.

AIDS Media Campaigns

Perhaps the best-known AIDS information campaign has been America Responds to AIDS (ARTA), undertaken by the federal government beginning in 1987. The campaign consisted of five phases, each phase having a different goal, from *General Awareness* to *Preventing HIV Infection and AIDS: Taking the Next Steps* (Woods, Davis, & Westover, 1991).

The campaign used a variety of communication tools, including public service announcements (Woods et al., 1991). All materials urged people to call the national hotline, 1-800-342-AIDS, or local community AIDS organizations (Goldsmith, 1990). Between October 1987 and January 1991, the PSAs were given airtime equivalent to \$67.8 million, with 47% of the PSAs airing during the daytime and 9% during primetime (Woods et al., 1991).

Evaluations of ARTA yielded two main findings: First, knowledge gains among Americans proved minimal (Singer, Rogers, & Glassman, 1991), and second, ARTA impacted demographic subgroups within the population differently (Snyder, 1991).

The lack of significant knowledge gains was interpreted by several researchers not as a sign of failure, but instead as a reflection of a population already familiar with AIDS risks (Perloff, 1991; Singer et al., 1991). Media coverage of the AIDS crisis in years prior to ARTA had successfully imparted essential knowledge among the population, the researchers maintained. For example, a study of the 1988 *Understanding AIDS* pamphlet, which was mailed to all U.S. postal customers, reported that only 13% of those surveyed learned from the pamphlet. According to Snyder (1991): "The most common reason offered . . . for not learning from the pamphlet was that it contained nothing new" (p. 49).

The hypothesis was further supported by the observation that those who had read the pamphlet did not know much more than people who hadn't (Snyder, 1991).

Snyder (1991) also found that "demographic and risk groups differed in their knowledge, attitude, and behaviors" (p. 54) about AIDS, supporting a call by many researchers for greater targeting of messages to specific subgroups (Freimuth, 1992; Freimuth et al., 1990; Winett et al., 1990; Witte, 1992). Although ARTA program developers reported using audience segmentation techniques, Winett et al. (1990) asserted: "Minimal segmentation and targeting was evidenced in the PSAs and brochures" (p. 93). Furthermore, in the year between Gallup Polls, there was no shrinking of the knowledge gap among less knowledgeable subgroups, showing that either these groups had not been targeted to receive messages that the general population did not also receive or that the messages had been ineffective (Singer et al., 1991).

In a review of 127 televised AIDS public service announcements, Freimuth et al. (1990) found that most (1) were designed for a general audience and (2) urged factual learning as opposed to specific behavioral changes. Researchers, since then, have called for improved effectiveness through the tailoring of messages to different populations (Freimuth, 1992; Freimuth et al., 1990; Snyder, 1991; Winett et al., 1990; Witte, 1992) and a greater emphasis on behavioral change as opposed to additional awareness and factual knowledge gains (Freimuth et al., 1990; Perloff, 1991; Winett et al., 1990).

AIDS Prevention Effort Research

Fear appeals have often been used in AIDS prevention efforts. A study by Johnson and LaTour (1991) tested two AIDS video ads with different fear appeals on 179 juniors and seniors in college. The ads were shown separately, each to a different sample of students. One ad, sponsored by the Centers for Disease Control and Prevention (CDC), featured a straightforward presentation about the need to use condoms and did not mention death from AIDS. The second ad, titled "Grim Reaper," showed a figure of death killing men, women, and children and piling their bodies in a heap. Subjects completed a questionnaire following the viewings, rating each ad on a series of adjectives such as "irritating," "informative," "appropriate," and so forth.

The results of this experiment were that those who were more sexually active expressed greater irritation at the prevention-through-condom-use message and that women expressed greater irritation at both ads than men. Both findings reinforced the uses and gratifications perspective that media effects vary according to characteristics of the audience. Indeed, the study illustrated that media messages cannot be expected to affect all people in the same—or even the intended—manner. Regarding the gender difference, the researchers speculated that the use of male narrators in both ads may have been a key variable, and therefore they suggested further study to examine women's receptivity to a message as a function of an authority's gender.

Baldwin and Baldwin (1988) conducted a study of safer sex behaviors among a university population, surveying 851 students on a variety of demographic, cognitive-emotional, and behavioral variables. Using regression analysis, the researchers found gender to be a predictor of cautious sexual

behavior. Women took more sexual precautions than men. Also, worry about AIDS was linked to slightly greater condom use, but knowledge about AIDS and perceived risk were not predictive. The researchers concluded that AIDS prevention messages solely emphasizing knowledge were less likely to influence cautious behavior than messages fostering both knowledge gains and personal concern.

Brown (1991) investigated the relationships between accurate knowledge, personal concern, and communication about AIDS with 257 college students. Brown used a pretest-posttest quasi-experimental design with a 25-minute AIDS videotape as the stimulus. Four of Brown's findings are relevant to the present research. First, those students who viewed the video increased in knowledge and concern about AIDS. This significant effect begs the question, can learning also be achieved in shorter video spots, such as public service announcements?

Second, Brown found that, although interpersonal communication did not increase as a direct result of the videotape, communication did relate to both knowledge and, separately, concern. This finding suggested the process of influencing one variable (communication) as a result of addressing intermediary variables (knowledge and concern).

Third, no relationship existed between knowledge and concern, casting doubt on the commonly accepted persuasion model that states that a change in beliefs precedes change in attitude. This finding suggested numerous implications. For example, it may be surmised that behavior, rather than being the result of a linear process, is instead the product of interaction among multiple variables. In addition, since knowledge and concern are related to interpersonal communication but not to one another, the variables must foster two different

types of interpersonal communication. Brown's research, however, did not attempt to quantify the types of communication in which the students engaged.

Fourth, Brown observed that women engaged in more AIDS-related interpersonal communication than men, a finding that would suggest the usefulness of targeting messages to women about safer sex communication, which the present thesis did. The need for these messages was also supported by other research, including that of Johnson and LaTour (1991), a 1995 poll that found that 69% of women believed it is their responsibility to insist on safer sex (compared to only 12% of men; "Survey Reveals," 1995), and statistics showing that heterosexual women comprise the fastest-growing segment of the newly HIV-infected population. Baldwin and Baldwin's (1988) finding that women show more sexual caution than men should not be seen as contradictory: Women are more vulnerable to the consequences of unsafe sex (STDs and pregnancy) and are in greater need of safer sex strategies.

The discrepancy between communicating about AIDS in general versus communicating about safer sex practices was investigated by Cline, Johnson, and Freeman (1992) in their study of 588 undergraduate college students. They, too, noted the difference in interpersonal communication about AIDS as a function of gender; however, the difference was deceptive. The percentage of sexually active students in the sample who reported having discussed AIDS with their sexual partners totaled 64%; by gender, the total represented 73% of the women and 54% of the men. However, when distinguishing between discussion about safer sex (prevention behaviors, condom use, sexual history, or monogamy) as opposed to AIDS in general, the gender distribution was equal. Men and women discussed safer sex in equal numbers.

Unfortunately for public health efforts, the survey revealed that only 21% of sexually active students reported having talked about safer sex. Those who talked about condom use accounted for only 6% of the sample. Because of their findings, the researchers criticized public health recommendations that people discuss AIDS with their partners; the recommendations should have recommended safer sex topics, not just AIDS. Based on this concern, the present experiment avoided the conflict, phrasing all questions about communication as concerning safer sex rather than AIDS.

Golden and Johnson (1991) investigated the role of core health beliefs in health information acquisition and behavioral change. The core health beliefs were derived from the health belief model and consisted of perceived susceptibility to disease, perceived severity of the disease, perceived lack of barriers to taking action, and perceived benefits to taking action. Two of these health beliefs, severity and susceptibility, are shared with the protection motivation theory, which was under investigation in this thesis. Among the dependent variables were the reading of a booklet, "Understanding AIDS," published by the U.S. Surgeon General, and additional information-seeking behavior.

The experiment results showed that those who perceived themselves to be more at risk of contracting AIDS were more likely to have read the booklet and be receptive to receiving additional information. However, those who perceived the severity of the disease to be higher were less likely to seek out additional information. The researchers suggested that extreme fear may inhibit people from feeling able to cope. The study pointed to the potential usefulness of

positive coping or self-efficacy messages to help fearful people take action, which was addressed in this thesis.

Flora and Maibach's (1990) study of cognitive responses to AIDS information tested the variable of "issue involvement" with dependent variables, including memory and the higher-order effects of information seeking and behavioral intentions. Like the present experiment, these researchers investigated a characteristic of their subjects (issue involvement) as a predictor of effects in combination with public service announcements. Differential effects were confirmed: A significant interaction was found for type of message appeal (emotional or rational) and issue involvement on message recall, although no main effect was found for involvement on the higher-order effects of information seeking and behavioral intent.

Two methodological factors in this research were also of interest. First, the variable of "issue involvement" was operationalized similarly to a variable in the protection motivation theory—risk. Second, the researchers found that only 10% of their sample population had high issue involvement, limiting the relevance of the PSAs to most of the students and hence the conclusions that were drawn. The study indicated a relationship between message effects and the protection motivation variable of risk only when combined with media use. It also suggested the need for a large sample when involving college students in studies on AIDS.

Protection Motivation Theory

Knowledge of AIDS risk does not necessarily translate to a personalization of that risk or to behavior change (Baldwin & Baldwin, 1988;

DeJong & Winsten, 1992). In a study of black college women, for example, 94% of those who were sexually active knew that condoms could reduce the risk of AIDS, yet 17% reported never using condoms and 48% reported rarely using condoms (DeJong & Winsten, 1992).

In designing a message or campaign that goes beyond the information stage, a planner needs to focus on theories of psychology and social psychology. Maibach, Kreps, and Bonaguro (1992) wrote: "Theories of human behavior . . . enable campaign planners to predict, explain, and prescribe strategies for influencing risky health behaviors" (p. 23).

A conceptual model of the process an individual undergoes when adopting a new behavior is useful here. From a communications perspective, the process begins with exposure to the message and ends with reinforcement of behavior change (see McGuire, 1989, for a 12-step hierarchy). Maccoby and Solomon (1981) conceptualized a five-step hierarchy: awareness, information, motivation, training, and behavior maintenance.

The motivation stage of which Maccoby and Solomon (1981) wrote has been addressed by Rogers' (1975) key concept of protection motivation—the decision by an individual to adopt behaviors that will effectively protect him or her from a threat, such as disease. Before discussing the dynamics of protection motivation theory, it is necessary to introduce some fundamental concepts: (1) a cognitive versus emotional appraisal process and (2) maladaptive versus adaptive behaviors.

Cognitive Appraisal

Rogers (1975) found that the protection-motivation decision is based on a cognitive appraisal process rather than on emotions or a physiological reaction.

Although initially drawing support for his theory from fear-appeal research, Rogers concluded that the mere existence of a state of fear does not motivate protective behavior. While this finding may seem contrary to common sense, Rogers theorized that fear plays a secondary role, that of initiating a cognitive process, which in turn motivates a person to proper action (Rogers, 1975; Rogers, 1983).

Maladaptive and Adaptive Behavior

Action taken to reduce a threat is known as adaptive behavior. However, acts are sometimes performed that deal with the *fear* of the threat but not the threat itself. These acts are called maladaptive behavior. Avoidance thinking, wishful thinking, and hopelessness fall into this category (Rippetoe & Rogers, 1987). By definition, only adaptive behaviors are produced by the protection motivation decision.

Four Protection Motivation Variables

Rogers' (1983) protection motivation theory posited that, prior to taking action, individuals appraise four main variables: severity of the threat, risk of the threat's occurrence, efficacy of the recommended response, and self-efficacy to perform the recommended response. (The last—and most important—variable was drawn from the work of Bandura, 1977.) Secondary variables in the protection motivation theory included perceived rewards for performing maladaptive behavior (both extrinsic and intrinsic) as well as possible costs (social and intrapersonal) of performing adaptive behavior. (For a depiction of Rogers' protection motivation theory, see Appendix A.) The present study focused on the four main variables, on which there has been considerable research.

Severity of threat. One of the bases for fear appeals has been the influence of severity of threat on people's attitudes. Evidence for the persuasive power of this variable was found in the research of Dabbs, Jr. and Leventhal (1966), Leventhal, Singer, and Jones (1965), Rogers and Mewborn (1976), and Rippetoe and Rogers (1987).

In Rippetoe and Rogers' work (1987), the researchers studied the impact of written messages about breast cancer and breast self-examinations (BSE) on college women. A path analysis of data from this experiment revealed that students who read essays depicting the most severe effects of breast cancer reported greater intentions to act. Significantly, however, these students chose not only adaptive but also maladaptive forms of coping. Severity seemed to energize action indiscriminately.

Efficacy of recommended response. The power of believing that a recommended response will reduce or eliminate a threat has also been substantiated (Maddux & Rogers, 1983; Rippetoe & Rogers, 1987; Rogers & Deckner, 1975; Rogers & Mewborn, 1976; Rogers & Thistlethwaite, 1970). In Rogers and Mewborn's (1976) experiment on three different threats (smoking, driving, and venereal disease), for example, a path analysis revealed that efficacy and noxiousness (severity of threat) contributed to subjects' intentions to adopt recommended behavior, accounting for 32% and 19%, respectively. In addition, the researchers found that the high-efficacy condition was a prerequisite to the effectiveness of the noxiousness (severity) and probability (risk) variables. Subjects in low-efficacy groups reported fewer intentions to adopt the recommended behavior, no matter how severe or probable the threat.

The importance of high efficacy relates to what is commonly thought of in fear appeals as reassurance. Wrote Devine and Hirt (1989): "Recipients are more persuaded by fear-arousing communications when a direct behavioral plan for dealing with the negative outcomes is provided and when communication recipients are provided with assurances that the recommendations will help eliminate the negative consequence" (p. 246). As an example, in a study of sexually transmitted diseases and college students, Tanner, Jr. et al. (1991) found that literature containing a high-risk message followed by coping response (efficacy) information was the most effective in producing intentions to perform the adaptive behavior.

Risk of threat occurring. The potency of the risk variable remains somewhat questionable, despite the supportive findings of the Tanner, Jr. et al. (1991) and other researchers (Maddux & Rogers, 1983; Rogers & Mewborn, 1976). Certainly, this varying potency can be partially attributed to the different ways that researchers have operationalized the variable. At best, it can be said that under certain conditions, higher perception of personal risk increases a person's intentions to adopt recommended behavior. However, under other conditions, such as the combination of high-risk and low-efficacy stimuli, a "boomerang" effect occurs: Intentions to adopt the recommended behavior decrease as efficacy decreases and probability (risk) increases (Rogers & Mewborn, 1976).

Further contradictory evidence was found by Rippetoe and Rogers (1987). Their path analysis of vulnerability (risk) and a variety of coping responses (five maladaptive behaviors and two adaptive ones) showed that vulnerability in no way contributed to adaptive behavior but instead contributed to maladaptive behaviors, such as hopelessness.

Self-efficacy. Self-efficacy is a person's perception of his or her capability to carry out a specific behavior. These perceptions affect a person's choice of behavior, amount of effort expended, and degree of persistence in pursuing the behavior. Self-efficacy also influences thought patterns and emotional reactions that occur in regard to performing the behavior (Bandura, 1986).

Its importance cannot be underestimated. "Self-efficacy theory," wrote Maddux and Rogers (1983), "maintains that all processes of psychological change operate through the alteration of the individual's expectancies of personal mastery or efficacy" (p. 470). Their investigation into the strengths of the four protection motivation variables confirmed this statement and led the researchers to conclude: "Self-efficacy . . . proved to be the most powerful predictor of behavioral intentions" (p. 476).

Likewise, Rippetoe and Rogers' (1987) study showed that the women who were given essays emphasizing self-efficacy and the importance of breast self-examinations (BSE) reported greater intentions to practice self-examinations regularly. However, women who read essays on the difficulty of BSE and the futility of detecting breast cancer early reported coping responses ranging from avoidance thinking to fatalism. Also in this study, a path analysis revealed that both self-efficacy and response efficacy contributed solely to adaptive coping behaviors, accounting for 19% and 43% respectively.

A similar study manipulated the self-efficacy variable in brochures about sexually transmitted diseases (Tanner, Jr. et al., 1989). The high self-efficacy brochure discussed storage, use, and purchase of condoms and included techniques for avoiding embarrassment when purchasing condoms. College students who read the high self-efficacy brochures reported significantly greater

intentions to use condoms to prevent sexually transmitted diseases than those who read the low self-efficacy brochure.

Interaction of Variables

The protection motivation decision is based on two appraisal processes, threat and coping. The threat appraisal process is viewed as the probability that the individual will adopt a maladaptive response to the threat. The coping appraisal process is viewed as the probability that the individual will adopt an adaptive response to the threat (i.e., the recommended response).

The threat appraisal is the sum of intrinsic and extrinsic rewards (for enacting the maladaptive response) minus estimations of risk and severity. These variables behave additively within the threat appraisal process. The coping appraisal is the sum of self-efficacy and response efficacy estimations minus response costs. Response costs may include social or intrapersonal factors that would decrease the likelihood of enactment of the adaptive response. These variables, too, are additive.

It should be noted that second-order interactions have been hypothesized to occur between the two efficacy variables and the severity and risk variables (Rogers, 1983). Although the second-order interactions were not tested here, acknowledgment of this possibility should be considered when reviewing the results of this experiment.

Sources

Thus far, the experiments reviewed have stimulated the protection motivation response in subjects by providing a source (pamphlets, video ads, etc.) that offered information on multiple protection motivation variables. However, as Rogers noted in 1983: "The theory has moved beyond fear appeals

and persuasion. The theory is now sufficiently broad to apply to any situation involving threat" (p. 172). Therefore, although a protection motivation process may draw upon media-delivered information, Rogers stated that prior experiences, observational learning, or personality factors could also be sources of information. The existence of these more latent sources are essential to this experiment, in which information was directly provided for only one protection motivation variable, self-efficacy.

Social Cognitive Learning Theory and Techniques

One reason commonly offered for people's lack of progression from AIDS knowledge to behavior change has been an inability to talk about sexual interaction (Freimuth et al., 1990). This barrier was addressed in the experimental PSA by two facets of the social-cognitive learning theory: self-efficacy and modeling (Bandura, 1986).

Self-efficacy

Perceptions of self-efficacy are influenced by trial or practice of a behavior, through vicarious experience, verbal persuasion, and by a person's physiological state. As it relates to media content, the concept of self-efficacy can be promoted directly through verbal encouragement and vicariously by showing that peers can successfully perform the behavior.

Although perceptions of self-efficacy affect a person's degree of motivation, Bandura (1986) wrote: "It will not produce new-fangled performances if necessary subskills for the exercise of personal agency are completely lacking" (p. 395). For this, it was necessary to turn to the concept of modeling.

Modeling

As Bandura (1986) noted, modeling is a demonstration of how to execute a behavior: "Most human behavior is learned by observation through modeling. By observing others, one forms rules of behavior, and on future occasions this coded information serves as a guide for action" (p. 47). Modeling builds the necessary psychological and behavioral skills. It is also well-suited to media messages: "A special virtue of modeling is that it can transmit simultaneously knowledge of wide applicability to vast numbers of people through the medium of symbolic models" (Bandura, 1986, p. 47).

Chapter 3

Method

Design

The study entailed a posttest-only control group experiment with 576 San Jose State University students. Participants viewed one of two videotapes and completed a 57-item questionnaire on their sexual practices and attitudes towards safer sex. Subjects were given assurance of confidentiality at the start of each 15-minute-long implementation of the experiment.

Participants

Students in 22 classes in the School of Journalism & Mass Communications, the departments of Sociology and Health Sciences, and the American Studies program participated in this study. The classes were selected to represent a range of undergraduate levels and disciplines. Classes were also selected on the basis of having a second section that could be included in the experiment (i.e., Public Relations 190B, sections 1 and 2). One class in each pair of classes was randomly assigned to either the control group ($N=257$) or experimental group ($N=319$). The other class in the pair was assigned to the alternate group. The study included 242 men and 328 women (6 participants did not provide their gender), ranging in age from 19 to 55 years, with 90% of the participants between the ages of 19 and 32.

This sample size was determined on the basis of previous studies that showed that only 10-20% of college students consider themselves at risk of AIDS

(Flora & Maibach, 1990; Ingram, 1989). Thus, potentially only 55 to 110 students would find the AIDS message relevant and attend to it.

Definition of Terms

The following two definitions of terms were used in this thesis:

Public service announcement (PSA): A broadcast piece commonly lasting 10, 20, 30, or 60 seconds in length that addresses a specific societal concern. PSAs are frequently aired free of charge by broadcast media in the public interest.

Safer sex: Sexual intercourse (vaginal or anal) during which a latex condom is used in the recommended manner.

Video Materials

The experimental stimulus used in this research was a 60-second video public service announcement. Created from an existing health-promotion video, the PSA depicted three girlfriends discussing safer sex (see Appendix B for PSA script). In the PSA, an inexperienced woman asked questions about condoms and how to negotiate their use. The second woman, acting as the expert and supporter, provided safer sex information and reassuring answers. The third woman, representing the opinions of the sexually active but irresponsible person, played devil's advocate with the second woman; however, the second woman was able to refute each of her points. The PSA concluded with the phone number for the CDC AIDS hotline and the offer of a free brochure on how to discuss safer sex. This PSA was designed to promote self-efficacy in safer sex communication as well as the higher-order effect of intentions to communicate about safer sex with one's partner. Using the technique of modeling with female

characters, the PSA was also designed to encourage women to talk with their friends about safer sex, thereby reinforcing both self-efficacy and intentions.

Although real-life television-watching conditions could not be replicated in the classroom setting, the essential quality of viewing a PSA within a continuous stream of video materials—as opposed to watching the PSA by itself—was replicated. The PSA was embedded into a 5-minute-long videotape, which consisted of two to three minutes of a weather forecast, a 30-second PSA about cigarettes, a 30-second advertisement for a weight loss clinic, the experimental PSA, and lastly another minute of a weather forecast. (This format was used by Flora and Maibach (1990) in their experiment on AIDS issue involvement.) The videotape was shown to subjects in the experimental group, while control group subjects viewed a second videotape that was identical except that it did not contain the safer sex PSA.

Questionnaire Design

A 57-item questionnaire was designed (1) to measure subjects' protection motivation through the variables of self-efficacy, efficacy of the recommended response, perceived personal risk, and perceived severity of risk and (2) to elicit information about subjects' current and past sexual practices, their rationales for unsafe practices, their intentions to communicate about safer sex in the future, and the demographic variables of age and marital status. The questionnaire incorporated original questions as well as items used by Flora and Maibach (1990), Tanner, Jr. et al. (1989), and Tanner, Jr. et al. (1991).

For most of the questions (excluding demographic items), the response format was a five-point Likert scale, which ranged from *strongly agree* to *strongly*

disagree. On items relating to behavior, a sixth response, *not applicable*, was also provided. The questionnaire is included as Appendix C.

In addition to items about safer sex, the questionnaire included a decoy subject: weight loss. These questions, relating to a weight loss clinic advertisement, were designed to make the focus and intent of the study less apparent to the subjects, thus reducing the problem of demand characteristics (i.e., responses that are given to satisfy the researcher but that do not reflect the subject's actual opinion). Another potential problem, that of response-set answers, was avoided by phrasing some questions positively and some negatively.

The questionnaire was pretested for language clarity and length of time needed for completion. The maximum length of time taken by a pretest subject was 10 minutes, which was deemed satisfactory. Suggestions for improving language clarity were incorporated prior to the actual experiment.

Operationalization of Variables

The following variables were constructed to measure the complex psychological schemas of self-efficacy, efficacy of response, perceived risk, perceived severity, personal acquaintance, and intentions to discuss and seek information. To measure the schemas as comprehensively as possible, the variables were operationalized to assess not only what people have done and continue to do, but also what people feel they should have done and what they plan to do in the future.

Self-efficacy. This six-item scale measured subjects' feelings about their ability to engage in safer sex activities, from finding information, to talking about the topic, to practicing safer sex with their partners. These questions asked

subjects whether they (1) currently used condoms when engaging in sexual intercourse (question 30); (2) had previously engaged in unsafe sex because talking about condoms was too difficult (question 32d); (3) felt they could in the future or had already talk(ed) to their friends about safer sex (question 34/36); (4) felt they could in the future or had already talk(ed) to their partners about safer sex (question 35/37); (5) felt they could find written information about safer sex (question 38); and (6) felt they could say “no” to partners who desired unsafe sex (question 39).

The third and fourth items, regarding communication with friends or partners, were constructed involving two contingency questions. These questions, 36 and 37, were contingent on the responses to questions 34 and 35, respectively. The reason for constructing the third and fourth items in this way stemmed from the need to accurately measure the self-efficacy of those who had not talked to friends or partners (possibly because they were not involved in a sexual relationship). Therefore subjects who had responded either *strongly disagree* or *not applicable* to the questions “I have talked to my friends . . .” and “I have talked to my partner . . .” were directed to respond to the two parallel contingency questions, which were phrased, “I feel I could talk. . . .” On the third and fourth items, then, subjects’ scores were drawn from either question 34 or question 36 and from either question 35 or question 37.

The reliabilities for this scale and those that follow were calculated using Cronbach’s alpha coefficient of reliability. With a maximum possible reliability of 1.0, the reliability for the self-efficacy scale was .63.

Efficacy of the recommended response. This four-item scale measured subjects’ beliefs in the effectiveness of using condoms to prevent transmitting HIV. The

questions asked subjects about their beliefs that (1) condoms must be used every time during intercourse (question 14); (2) condoms must be used in the correct manner (question 16); (3) latex condoms work because they act as a barrier to the virus (question 18); and (4) talking about safer sex with one's partner will promote condom use (question 22).

Cronbach's alpha for the efficacy of response scale was .55.

Perceived personal risk. This four-item scale measured the amount of risk subjects felt in regard to contracting AIDS. These questions asked subjects (1) how much they thought about AIDS (question 1c); (2) how much they felt at risk for AIDS (question 2b); (3) whether they had ever engaged in unsafe sex because they had felt their partners were disease-free (question 32e); and (4) whether their current and previous partners had been tested for HIV (question 33).

Cronbach's alpha for this scale was .62.

Perceived severity of risk. The severity scale measured subjects' estimations of the personal impact of AIDS on those who contract it. The two-item scale (questions 3 and 8) elicited responses to the statements, "AIDS is a fatal disease" and "People dying of AIDS suffer."

Cronbach's alpha for the severity scale was .51.

Personal acquaintance. This variable, personal acquaintance with someone with HIV or AIDS, is not one of the protection motivation variables; however, it is closely associated with perceptions of severity, measuring severity on an experiential rather than purely factual level. Personal acquaintance was operationalized through questions 11 and 12: "I know or have known someone who is HIV positive" and "I have visited someone who is ill with AIDS."

Cronbach's alpha for this scale was .70.

Intentions to discuss and seek information about safer sex. The four-item intentions scale measured subjects' interest in learning more and communicating more about safer sex. The questions asked subjects whether they (1) would read a brochure on safer sex (question 40); (2) would call a hotline to obtain a brochure on safer sex (question 41); (3) planned to talk to friends about safer sex (question 42); and (4) planned to talk to their current partners about safer sex (question 43).

Cronbach's alpha for this scale was .72.

Scale scores. The maximum score possible for each of the six scales was 5, and the minimum was 1. Each scale's score was calculated by adding the individual 5-point Likert item scores and then dividing by the number of items.

Research Questions

The study's three research questions were as follows:

1. *How effectively does protection motivation theory predict intentions to discuss and seek information about safer sex?*

Based on protection motivation research, discussed earlier in the literature review, it was expected that protection motivation would positively correlate to intentions to communicate about safer sex. Correlations for the variables of self-efficacy, efficacy of recommended response, and perceived severity of AIDS with intentions to communicate about safer sex were expected. A relationship between intentions and perceived risk was theoretically predicted but not consistently supported by experimental research.

2. In what ways are students' attitudes and intentions affected by the experimental stimulus (the PSA)?

The experiment was constructed so that differences in students' attitudes as a result of the experimental stimulus could be detected by comparing control and experimental group responses. It was expected that some, but not all, subjects in the experimental group would answer the questionnaire differently from their counterparts in the control group.

Uses and gratifications theory suggested that students who were most motivated to change their behavior would attend to the PSA messages, reporting stronger feelings of self-efficacy and intentions to adopt the recommended behaviors. In terms of the protection motivation theory, students using the PSA as a source for finding information would be those who were not practicing safer sex consistently (increasing their risk), who believed in the efficacy of using condoms, who rated the severity of AIDS as high, yet who lacked confidence in their ability to communicate about safer sex (low self-efficacy).

Conversely, as noted in Flora and Maibach (1990), it was expected that students who did not feel safer sex communication was relevant would not change their attitudes as a result of the stimulus. Like the majority of students in Maticka-Tyndale's (1991) study, those in the present research who were not practicing safer sex consistently and who did not seek information from the PSA were expected to report that they had practiced unsafe sex because they had trusted their partners to be disease-free.

Women were expected to respond more positively than men, according to the research of Baldwin and Baldwin (1988), Brown (1991), and Cline et al.

(1992) and based on current attitudes towards safer sex responsibility ("Survey Reveals," 1995). Also, because the PSA used female models, it was expected that women would find the message relevant (Johnson & LaTour, 1991).

Finally, based on Brown's (1991) research linking knowledge and concern with communication, it was also expected that some of the students would show attitude differences not in communication intentions, but in intermediary variables, such as knowledge or concern about AIDS.

3. What is revealed about gratifications sought through analyses of students' attitudes?

It was anticipated that students who responded to the PSA would hold a variety of attitudes on safer sex and safer sex communication and that these attitudes would lead them to seek various gratifications. Those reasons for watching would range from information gathering to personal identity reinforcement to social interaction (McQuail et al., 1972). Because this research question was exploratory, there were few expectations as to what attitudes would be observed.

Data Analysis

Data were analyzed using the *Statistical Package for the Social Sciences*. A multiple regression was performed to determine the amount of variance of intentions explained by the four protection motivation variables, as well as by gender and personal acquaintance with a person with AIDS. One-way ANOVAs were used to compare the means for groups of protection motivation variables and groups varying by stimulus/gender/safer sex experience level. Factor

analyses were run to reveal components of students' attitudes, and descriptive procedures were used to explore the valences of the attitudes.

Limitations

Clearly, as a one-shot experiment, the impact of the PSA could not be as significant as if the subjects had been exposed to it repeatedly (Backer et al., 1992). The effects of a true mass media situation (e.g., cumulation, pervasiveness) were lost in this artificial simulation (Noelle-Neumann, 1978).

Second, the survey questions attempted to differentiate between people's past behaviors, feelings of self-efficacy, and future intentions. Students' unique interpretations of these questions undoubtedly led to some overlap in the three categories.

Female-to-female modeling was hypothesized to have an impact on women, but this experiment was not specifically designed to quantitatively measure the effects of female versus male models. Thus, any impact detected was unable to be attributed specifically to modeling.

Finally, because the sampling for this experiment was not conducted randomly from the entire university population, the study results cannot be generalized to San Jose State University students as a whole. Drawing students from only four of the university's 78 departments may have biased the sample, however indeterminable that bias may be.

Chapter 4

Results

The purpose of this research was to examine college students' attitudes towards safer sex communication in light of protection motivation theory and media use.

Analysis of the data confirmed the positive contributions of three protection motivation variables—self-efficacy, response efficacy, and risk—to intentions to discuss and seek information about safer sex. This finding was consistent with past research (Maddux & Rogers, 1983; Rippetoe & Rogers, 1987; Rogers & Deckner, 1975; Rogers & Mewborn, 1976; Rogers & Thistlethwaite, 1970; Tanner, Jr. et al., 1989; Tanner, Jr. et al., 1991). The percentage of variance explained by the three protection motivation variables, together with the gender and personal acquaintance variables, was 24% (See Table 1, p. 43).

Furthermore, it was confirmed that, in general, subjects whose protection motivation scores were higher reported greater intentions to discuss and seek information about safer sex than those whose scores were lower (See Tables 2 and 3, pp. 44 and 46).

Statistically significant effects as a result of viewing the public service announcement were found primarily among women, although effects were also noted among the group of men who had had some experience with safer sex. The chief differences between control and experimental groups were found for questions of risk, belief in the influence of communication on condom use, and personal communication behaviors (See Tables 5 through 7, pp. 49-51). Although differences in intentions to discuss and seek information about safer sex were

noteworthy among women with some experience with safer sex (the experimental group intentions were higher), they failed to reach statistical significance, and hence were not included in the results.

An analysis of the groups that interacted with the PSA revealed different attitudes towards safer sex (See Tables 8 through 11, pp. 53-56). The attitudes suggested possible reasons why the groups viewed and reacted to the PSA in dissimilar ways. The group of men who had had some experience with safer sex, for example, showed less conviction in the recommended behaviors of communication and consistent condom use. The three groups of women were differentiated not only by their experience levels with safer sex, but also by such characteristics as intentions to take action, receptivity to more information, and expressed competence in their safer sex communication abilities and practices.

Analysis

Before beginning the analysis, the sample was streamlined to include only those for whom the issue of safer sex was presumably relevant. To do so, subjects who had responded that they were sexually active with their spouses were eliminated from the sample. Of the original 576 subjects, 484 remained, including 58% who were sexually active with their partner, 5% who were active with multiple partners, and 37% who were sexually inactive. Women comprised 56% of the sample and men, 44%. The experimental group included 271 subjects (56%), and the control group included 213 subjects (44%).

To facilitate factor analysis and one-way ANOVAs, subjects were classified according to levels of protection motivation and, for a separate analysis, degrees of experience with safer sex. The protection motivation groups were composed

of the most influential three of the four protection motivation variables: self-efficacy, efficacy, and risk (degree of influence had been determined by a multiple regression). For each of the three variables, the high- and low-score boundaries were derived from their observed distributions. The high scores represented the top third of the scores for that variable. The low scores represented the bottom two-thirds of the scores for that variable. Eight subgroups resulted when the two levels of each of the three variables were combined. These subgroups were used to answer Research Question 1.

Varying degrees of experience with safer sex were reflected in three groups: no experience, some experience, and much experience. The no-experience group was composed of those subjects responding *not applicable* to the statements "I use a condom when I have sex" and "In the past, I have used a condom when I've had sex," as well as responding that they were not involved with either one or multiple partners. The much-experience group was identified by those who responded *strongly agree* to the statements "I use a condom when I have sex" and "In the past, I have used a condom when I've had sex." The some-experience group included all other subjects.

The research questions and results follow.

Research Question 1

How effectively does protection motivation theory predict intentions to discuss and seek information about safer sex?

A multiple regression and one-way ANOVA were used to answer this research question. Table 1 shows that the multiple regression supported the relationship of three protection motivation variables—self-efficacy, efficacy, and risk—to intentions. Personal acquaintance with a person with AIDS as well as gender were also found to be predictors.

Table 1

Summary of Multiple Regression Analysis for Variables Predicting Intentions to Discuss and Seek Information About Safer Sex (N=390) ^a

Variable	<i>B</i>	<i>SE B</i>	β
Self-Efficacy	.426	.068	.323***
Efficacy	.268	.092	.133**
Gender	.312	.115	.123**
Personal Acquaintance	.117	.043	.120**
Risk	.143	.061	.119*
Severity	-.003	.156	-.001

^a $R^2(6, 390) = .2412, F = 20.66, p < .00001$.

* $p < .05$ ** $p < .01$ *** $p < .001$

To investigate how the interaction among protection motivation variables affected levels of intentions, the researcher divided the sample into eight subgroups. (See previous Analysis section for an explanation of the groups' derivations.) The groups and their components are shown in Table 2.

Table 2

Eight Groups of Protection Motivation Variables

1. SELF-EFFICACY EFFICACY RISK	2. SELF-EFFICACY EFFICACY risk	3. SELF-EFFICACY efficacy RISK
4. self-efficacy EFFICACY RISK	5. SELF-EFFICACY efficacy risk	6. self-efficacy EFFICACY risk
7. self-efficacy efficacy RISK	8. self-efficacy efficacy risk	

NOTE. Capitalization denotes the variables for which subjects in each group rated themselves high. Lowercase type denotes the variables for which subjects in each group rated themselves low.

Using a one-way ANOVA, the mean intentions for each of the eight groups was compared with the other groups' mean intentions, $F(7, 262) = 6.87, p < .0001$. A Scheffé test with an alpha level of .05 revealed 3 of the 28 comparisons as statistically significant. The three pairs with significantly different means were: Groups 1 and 8, Groups 2 and 8, and Groups 4 and 8.

Table 3 shows the significances of each comparison, based on *CONTRAST* procedures. Note that in each pair the subjects in the groups with higher intentions (1, 2, and 4) rated themselves high in at least two protection motivation variables, while subjects in the group with lower intentions (8) did not rate themselves high in any protection motivation variables. Also note that group 3 was not included in the results, despite having subjects who rated themselves high for two protection motivation variables (self-efficacy and risk), because it did not significantly differ from other groups in mean intentions.

Table 3

Protection Motivation Groups with Significantly Different Mean Intentions to Discuss and Seek Information About Safer Sex

PM Groups	Intentions ^a		
	<i>M</i>	<i>n</i>	<i>p</i>
Contrast A			< .001
Group 1 ^b	3.94	22	
Group 8 ^e	2.79	62	
Contrast B			< .001
Group 2 ^c	4.03	22	
Group 8 ^e	2.79	62	
Contrast C			< .001
Group 4 ^d	3.91	27	
Group 8 ^e	2.79	62	

^a Maximum score = 5 (*strongly agree*); minimum = 1 (*strongly disagree*). Subjects responding *not applicable* to items were excluded from the analysis.

^b Group 1 = high self-efficacy, high efficacy, and high risk.

^c Group 2 = high self-efficacy, high efficacy, and low risk.

^d Group 4 = low self-efficacy, high efficacy, and high risk.

^e Group 8 = low self-efficacy, low efficacy, and low risk.

Research Question 2

In what ways are students' attitudes and intentions affected by the experimental stimulus (the PSA)?

To determine the effects of the experimental stimulus, the researcher assigned the sample's subjects to 12 subgroups based on three variables: gender (male or female), experience with safer sex (no, some, or much), and the stimulus condition (control or experimental). The 12 subgroups formed six control/experimental pairs, shown in Table 4.

Table 4

Six Pairs of Subgroups Based on Gender, Experience, and Stimulus Variables

Gender & Experience with Safer Sex	Stimulus Condition
1. Men with No Experience	a. Control
	b. Experimental
2. Men with Some Experience	a. Control
	b. Experimental
3. Men with Much Experience	a. Control
	b. Experimental
4. Women with No Experience	a. Control
	b. Experimental
5. Women with Some Experience	a. Control
	b. Experimental
6. Women with Much Experience	a. Control
	b. Experimental

For each of the six pairs, the mean responses of its control and experimental groups were compared on the 22 questions comprising the four

protection motivation scales, plus the personal acquaintance and intentions scales. The *ONEWAY* ANOVA and *CONTRAST* procedures were used for the comparisons.

The analysis revealed five significant differences as a result of the experimental stimulus. See Tables 5, 6, and 7 for the specific questions on which groups differed, the mean responses, and the *p*-values. The differences involved three general issues: how much people felt they were at risk, how strongly they believed that talking about safer sex would lead to condom use, and how they assessed their own safer sex communication behaviors. Most of the differences were found among women. Only one group of men, those with some experience with safer sex, responded with a measurable difference as a result of the PSA. In most cases, the experimental group means were higher than those of the control group. The one exception involved the group of women with no experience with safer sex (Table 5).

Two additional comparisons, while not statistically significant, are noteworthy because of their *p*-values of $\leq .10$. In comparing the control and experimental groups of women with no experience on question 1c, "Relative to other health concerns, how much do you think about AIDS?," the experimental group had a lower mean, $t(465) = 1.84, p = .066$, two-tailed. In comparing the control and experimental groups of women with some experience on question 35/37, "I've talked to my partner about safer sex, or after some planning I feel I could talk to my partner about safer sex," the experimental group had a higher mean (greater agreement), $t(410) = 2.57, p = .010$, two-tailed.

Table 5

Mean Scores for Questions 1c and 2b

Question 1c: Relative to other health concerns, how much do you think about AIDS? ^a			
Group	<i>M</i>	<i>SD</i>	<i>n</i>
Men with Some Experience ^b			
Control	2.60	1.20	69
Experimental	3.38	1.34	69
Question 2b: Given your behaviors and lifestyle, how much do you feel you are at risk for AIDS? ^c			
Group	<i>M</i>	<i>SD</i>	<i>n</i>
Women with No Experience ^d			
Control	1.53	.74	15
Experimental	1.05	.23	19

^a Scoring ranged from 1 to 5, with 5 as the maximum.

^b $t(465) = 3.75, p < .0001$, two-tailed.

^c Scoring ranged from 1 to 5, with 5 as the maximum.

^d $t(16) = 2.42, p = .028$, two-tailed (separate variance estimate).

Table 6

Mean Scores for Question 22

Question 22: Talking about safe sex with one's partner will increase the likelihood of using a condom during intercourse.			
Group	<i>M</i>	<i>SD</i>	<i>n</i>
Men with Some Experience ^a			
Control	3.41	1.23	69
Experimental	4.00	1.16	69
Women with Much Experience ^b			
Control	3.57	1.28	14
Experimental	4.38	0.90	29

^a $t(467) = 3.37, p = .001$, two-tailed.

^b $t(467) = 2.40, p = .017$, two-tailed.

NOTE. Scoring ranged from 1 (*strongly disagree*) to 5 (*strongly agree*).

Table 7

Mean Scores for Question 32d

Question 32d: I haven't always used a condom because talking about using a condom is too difficult. ^a			
Group	<i>M</i>	<i>SD</i>	<i>n</i>
Women with Some Experience ^b			
Control	3.90	1.34	63
Experimental	4.56	1.02	86

^a $t(299) = 3.51, p = .001$, two-tailed.

^b Scoring ranged from 1 (*strongly agree*) to 5 (*strongly disagree*). Responses of *not applicable* were excluded.

Research Question 3

3. What is revealed about gratifications sought through analyses of students' attitudes?

To examine gratifications sought, factor analyses were run on the four groups who responded to the PSA. These analyses generated factors; each factor described a specific attitude towards safer sex. Questions were considered part of a factor if the question's loading was greater than .50 or less than -.50 after varimax rotation. Tables 8 through 11 show the distinct differences in the attitudes of the four groups that were observed, as reflected in the factors. Using means tables for further analysis, group responses were compared with those of the sample as a whole. Responses of *not applicable* were excluded from means calculations. Profiles for each group were then created and are described below.

Women with much experience. This group was characterized by safer sex competence, in terms of actual practices, ease of communication, and confidence in their information-finding skills. Their attitudes reflected beliefs in the efficacy of condom use and in the severity of AIDS. These women were differentiated from the other groups by their expressed competence and apparent lack of conflict over safer sex.

Factor 1, composed of questions 2b, 32d, 32e, and 33, concerned safer sex responsibility. Women in this group, by very definition, practiced safer sex consistently. However, they reported above-average agreement that they had practiced unsafe sex in the past because they felt their partners were safe. Still, they reported fewer inhibitions about talking about condoms. Perhaps because

Table 8

Factor Analysis for Women with Much Safer Sex Experience

Women with Much Experience ($n = 36$)	
Factors	% of variance
1. Safer Sex Responsibility	19%
2. Safer Sex Communication & Concern	13%
3. Perceived Ability to Find and Act Upon Information	11%
4. Perceived Severity of AIDS	9%
5. Plans to Talk to Friends and Partner about Safer Sex	7%
6. Efficacy of Condom Use	7%
7. Personal Acquaintance with a Person with HIV / AIDS	6%
8. Function of Condoms	5%

NOTE. Only factors that have eigenvalues > 1.00 are shown; the cumulative percentage of variance explained by the eight factors = 77%. The remaining 23% of the variance was shared by items with low factor loadings.

Table 9

Factor Analysis for Women with Some Safer Sex Experience

Women with Some Experience (<i>n</i> = 157)	
Factors	% of variance
1. Intentions to Discuss and Seek Information about Safer Sex	14%
2. Importance and Efficacy of Condom Use	9%
3. Personal Acquaintance with a Person with HIV/AIDS	8%
4. Perceived Personal Risk	7%
5. Perceived Ability to Find and Act Upon Information	6%
6. Attitude Towards Potential Safer Sex Problems	6%
7. Condom Use and Intent to Talk with Partner	5%
8. Attitudes about Safer Sex Communication	5%
9. Safer Sex Communication Behavior	4%

NOTE. Only factors whose eigenvalues > 1.00 are shown; the cumulative percentage of variance explained by the nine factors = 64%. The remaining 36% of the variance was shared by items with low factor loadings.

Table 10

Factor Analysis for Women with No Safer Sex Experience

Women with No Experience (<i>n</i> = 26)	
Factors	% of variance
1. Efficacy of Condom Use	22%
2. Safer Sex Communication & Concern	15%
3. Perceived Ability to Find and Act Upon Information	10%
4. Receptivity to More Information	9%
5. Personal Acquaintance with a Person with HIV / AIDS	8%
6. Personal Involvement with Issue of AIDS	7%
7. Perceived Severity of AIDS	6%

NOTE. Only factors that have eigenvalues > 1.00 are shown; the cumulative percentage of variance explained by the seven factors = 77%. The remaining 23% of the variance was shared by items with low factor loadings.

Table 11

Factor Analysis for Men with Some Safer Sex Experience

Men with Some Experience ($n = 114$)	
Factors	% of variance
1. Personal Acquaintance with a Person with HIV / AIDS	12%
2. Perceived Personal Risk	10%
3. Intentions to Seek Information about Safer Sex	8%
4. Safer Sex Practice Guidelines	7%
5. Safer Sex Efficacy and Past Condom Usage	6%
6. Interpersonal & Personal Conflict of Unsafe Sex	6%
7. Intent to Talk to Friends & Partner about Safer Sex	5%
8. Evaluating Partner as Risk	5%
9. Safer Sex Communication Competence	4%

NOTE. Only factors that have eigenvalues > 1.00 are shown; the cumulative percentage of variance explained by the nine factors = 63%. The remaining 37% of the variance was shared by items with low factor loadings.

of their safer sex practices, and because more of their partners had been tested for HIV, the group perceived themselves to be at less risk for contracting AIDS.

Factor 2, composed of questions 1c, 34/36, 35/37, and 41, addressed safer sex communication and concern. Subjects in this group reported the strongest agreement that they had talked or could talk to their friends and partners about safer sex. They reported an above-average amount of thinking about AIDS and intentions to call a safer sex hotline, although both were moderately weak.

Factor 3, composed of questions 38, 39, and 40, concerned the ability to protect oneself through information and assertiveness. They reported confidence in their ability to find information and in their willingness to read an AIDS brochure. Their estimation of their ability to refuse unsafe sex was highest among all groups.

Factor 4, composed of questions 3 and 8, concerned the severity of AIDS. Like all of the groups, they perceived the severity of AIDS to be high.

Factor 5, composed of questions 42 and 43, concerned intentions to discuss safer sex. They reported higher-than-average intentions to communicate with their friends and especially with their partners.

Factor 6, composed of questions 14, 16 and 22, concerned the efficacy of condom use. These women strongly agreed that condoms must be used consistently and that talking to one's partner about safer sex would lead to condom use.

Factor 7, composed of questions 11 and 12, concerned personal acquaintance with a person with AIDS or HIV. Like other groups, this group as a whole denied knowing anyone with the disease; however, their disagreement

was weakest of all the groups, indicating that at least some women were acquainted with a person with AIDS.

Factor 8, composed of questions 18 and 20, referred to factual knowledge about condoms. The women agreed that condoms act as a barrier to HIV, while birth control pills do not.

Women with no experience with safer sex. This group was characterized by opinions that, while similar to those of other groups, were weaker overall. The group believed in the necessity of condoms; had had less experience with safer sex issues, including communication; and was, most notably, willing to become more informed. They were differentiated from other groups by their openness to further information and expressed intentions to talk with friends.

Factor 1, composed of questions 14, 16, 18, and 22, concerned the efficacy of condom use. Women with little or no safer sex experience agreed that condoms are effective in preventing HIV transmission, but they generally agreed less strongly than other groups.

Factor 2, composed of questions 11, 34/36, 35/37, and 43, concerned safer sex communication and concern. As with Factor 1, the group agreed that they had talked or could talk about safer sex with friends and partners, but this agreement was weaker than other groups'. In response to the statement, "I do plan to talk to my partner about safer sex," half of the group responded with above-average agreement, while the other half of the group responded *not applicable*.

Factor 3, composed of questions 38, 39, and 40, concerned the ability to protect oneself through information and assertiveness. While they agreed that they could find information about safer sex, their agreement was the weakest of

all groups. As a consequence, perhaps, they reported the second-strongest agreement that if a brochure were given to them, they would read it. They rated their ability to refuse to engage in unsafe sex higher than the average.

Factor 4, composed of questions 41 and 42, concerned their receptivity to additional information about safer sex. Their willingness to call a hotline was higher than others', but still it was only neutral. However, they reported the highest intentions to talk to their friends about safer sex.

Factor 5, composed of questions 2b and 12, concerned personal acquaintance with a person with AIDS. In general, women in this group neither had visited a person with AIDS nor felt personally at risk for the disease.

Factor 6, composed of questions 11 and 20, revealed the women's lack of personal involvement with certain AIDS issues. They had the lowest score on knowledge that birth control pills do not prevent AIDS, and they also had less familiarity with a person with AIDS than others.

Factor 7, composed of questions 3 and 8, concerned the perceived severity of AIDS. This group's estimation of the disease's noxiousness, while strong, was lowest among all groups.

Women with some experience with safer sex. This group was characterized by self-reflection on behavior and risk; knowledge about and confidence in condom use; frustrations with practicing safer sex; and a view of communication as a continuing requirement of safer sex behavior. The group was differentiated from the other groups by an emphasis on taking action as well as by their focus on the communication challenges of safer sex.

Factor 1, composed of questions 40, 41, 42, and 43, concerned intentions to discuss and seek information about safer sex. Women in this group reported stronger-than-average intentions overall.

Factor 2, composed of questions 8, 14, and 18, concerned the importance and efficacy of condom use. The group reported stronger beliefs in the efficacy of condoms in light of the severity of AIDS.

Factor 3, composed of questions 11 and 12, concerned acquaintance with a person with AIDS. Like most of the sample, these women had neither known nor visited someone with AIDS.

Factor 4, composed of questions 1c and 2b, concerned perceived personal risk. Although this group reported thinking about and being at risk of AIDS very little, their responses were higher than the sample's average.

Factor 5, composed of questions 38 and 39, concerned the ability to protect oneself through information and assertiveness. The women reported higher-than-average ability on this factor.

Factor 6, composed of questions 3, 20, and 32d, concerned potential problems with enacting safer sex. This factor highlighted a frustration. Women reported weaker-than-average disagreement that inhibitions to talking about condoms had led to unsafe sex. Considerations of the severity of AIDS and the ineffectiveness of birth control pills, however, suggested that these women had faced a conflict between needing to but not feeling able to talk satisfactorily about safer sex.

Factor 7, composed of questions 30 and 43, concerned safer sex practices and intentions. Women in this group claimed both greater-than-average condom use and desires to talk to their partners about safer sex.

Factor 8, composed of questions 16 and 22, involved attitudes towards effective safer sex practices. The linking of these two questions suggested that this group felt it important to talk about condoms so as to ensure correct condom use.

Factor 9, composed of questions 34/36 and 35/37, referred to communication behaviors. These women agreed showed stronger-than-average agreement that they had talked or felt they could talk to friends and partners about safer sex.

Men with some experience with safer sex. This group was characterized by estimations of risk and knowledge, judgments of personal behavior in light of recommended behavior, observance of problems enacting safer sex, and lack of planned action. They were differentiated from the three women's groups by their focus on personal safer sex guidelines and by a lack of past or planned communication.

Factor 1, composed of questions 11 and 12, concerned personal acquaintance with a person with AIDS. This group of men, like the sample average, had very little experience knowing or visiting a person with AIDS.

Factor 2, composed of questions 1c and 2b, concerned personal risk. The group estimated their overall risk to AIDS as low, although their response was higher than the sample mean.

Factor 3, composed of questions 40 and 41, concerned intentions to seek information about safer sex. These men were less inclined than others to either read a brochure or to call a safer sex hotline.

Factor 4, composed of questions 14, 30, and 32e, concerned decision-making about practicing safer sex. Unlike other groups, these men reported

weaker agreement that trust in their partners was a factor in engaging in unsafe sex. Rather, the group believed that absolutely consistent condom use was not always necessary (although their overall mean score indicated general agreement). Paradoxically, or perhaps in light of their more lenient attitudes towards consistency, they estimated their frequency of using condoms as higher than other groups.

Factor 5, composed of questions 18, 22, and 31, concerned safer sex efficacy and past condom use. Of all the groups, these men exhibited the lowest agreement that condoms act as barriers and the lowest belief that talking will lead to condom use (although their score indicated some agreement). These beliefs were negatively linked to the men's unsafe sex practices in the past, which were slightly higher than average. That is, the greater the frequency of unsafe sex, the lower the belief in condom and communication efficacy.

Factor 6, composed of questions 8 and 39, concerned the interpersonal and personal conflict of engaging in unsafe sex. The group provided the weakest agreement within the sample that they could refuse if their partner wanted to have unsafe sex; however, they reflected a strong agreement that people dying of AIDS suffer.

Factor 7, composed of questions 42 and 43, revealed intentions to discuss safer sex. These men showed the lowest intentions of all groups to communicate with friends or partners.

Factor 8, composed of questions 32d and 33, concerned evaluating a partner as an HIV risk. The men in this group reported stronger disagreement that they knew their partners had been tested for HIV. When compared with other groups, they also reported more strongly that difficulty talking about

condoms had led to unsafe sex (although in general most of this group disagreed).

Factor 9, composed of questions 16, 34/36, and 35/37, concerned safer sex communication competence. The men were below-average in their agreement that they had talked or could talk to friends and partners about safer sex. In combination with an average agreement that condoms must be used correctly, the factor suggested a concern over being knowledgeable when talking about safer sex.

An interpretation of these results is provided in the next chapter.

Chapter 5

Discussion

The original impetus for this research was the question: How effective are AIDS public service announcements? This question led to a host of inquiries into people's use of the media and their attitudes towards practicing safer sex.

This research examined and partially confirmed the relationship between individuals' protection motivation and their intentions to discuss and seek information about safer sex. The data established the predictive power of three protection motivation variables.

In the course of the experiment, an information source was provided to individuals—the PSA, a message with the potential to help some students forge the link between information and motivation. Whether some students chose to make use of this source was under investigation.

Another line of inquiry, based on the perspective that media effects depend to some extent on the motivations of the individual viewer, looked for insights that could be gained into gratifications through analyses of students' attitudes about safer sex. Explaining gratifications in terms of attitudes may seem to present a chicken-and-egg dilemma. Are the attitudes towards safer sex indicators of a previously existing state of motivation (gratifications sought), which predisposed certain students to interact with the PSA? Or are students' attitudes a direct product of interacting with the PSA and therefore an indicator of gratifications obtained? The answer is that, in the complex matrix of motivations and attitudes, order is essentially irrelevant. The issue is not which came first, for attitudes and motivations develop through continuous

interactions with a variety of sources. Rather the question is, what are the characteristics of these cognitions and what do those characteristics reveal?

Contribution to Protection Motivation Theory

This thesis provided confirmation of the relationship of three of Rogers' (1983) four protection motivation variables to intentions to seek information and discuss safer sex. The failure of the severity variable to contribute may be attributed to either the variable's low reliability or to the lack of connection between factual knowledge and behavioral intentions (Baldwin & Baldwin, 1988; DeJong & Winsten, 1992). It is also possible that the severity perception was inadvertently measured by the other three variables and hence did not appear in the multiple regression.

The study also confirmed Maddux and Rogers' (1983) assertion that self-efficacy is the most important predictor of behavioral intentions. Furthermore, Rogers' conceptualization of self-efficacy and efficacy as relating to adaptive behavior was supported.

Maddux and Rogers' (1983) proposition that high levels of any two of three protection motivation variables—self-efficacy, response efficacy, and risk—would predict equally high levels of behavioral intentions was only partially confirmed. It was supported in that high intentions were seen among three groups: those rating high in all three variables, those rating high in self-efficacy and efficacy, and those rating high in efficacy and risk. It was also supported in that the highest intentions of all of the groups were not observed among those students rating high in all three protection motivation variables but rather those who were high in self-efficacy and efficacy only.

Maddux and Rogers' (1983) finding was not confirmed in that the variable combination of high self-efficacy and risk with low efficacy did not produce as high intentions as the other combinations. The discrepancy is likely attributable to the issue under investigation. Maddux and Rogers studied students' intentions to quit smoking, a behavior that involves only the individual. On the other hand, the recommended behavior in the present study—safer sex communication—is inherently interpersonal and may involve risks to a couple's relationship. It is not surprising, then, that people who do not believe in the efficacy of communicating about safer sex, even if they feel they are capable of doing so and may be at risk, would not express as strong intentions to act.

Compared with other protection motivation studies, the percentage of variance explained by the variables in the current study was lower (see section on protection motivation, Chapter 2, for comparisons). This may be attributable to differing constructs of the protection motivation variables. It may also be attributable to the decreased emphasis on stimuli in this study. Unlike previous research, which manipulated multiple protection motivation variables through written information, the present research manipulated only one variable, self-efficacy, and used a 60-second video. The implication here is that when individuals are presented with strong stimuli, previously held attitudes may be temporarily overshadowed by new thoughts, a hypothesis supported by effects researchers studying the power of message content.

Despite the smaller percentage of variance explained, the study was useful in its confirmation of Rogers' (1983) statement: "The theory has moved beyond fear appeals and persuasion. The theory is now sufficiently broad to apply to any situation involving threat" (p. 172). Although only one variable was manipulated

in this study, three protection motivation components were nonetheless found to correlate with intentions.

Clearly, and supportive of the uses and gratifications perspective as well, the pathway to intentions is paved with existing schemas. Media messages may tap into these schemas, but in terms of motivating behavior, the media do not create feelings of risk or beliefs in severity where none existed previously.

Contribution to Uses and Gratifications

This thesis provided validation of the uses and gratifications perspective. It was observed that only some students in the experimental group reported stronger or weaker attitudes than their control group counterparts after one viewing of the PSA, indicating that only some students found the PSA relevant. This result in itself confirms that mass media messages do not affect all people in the same way. Furthermore, the students who responded did so in dissimilar ways, suggesting that they did not share a singular motivation for interacting with the PSA.

The predictions that students would increase in feelings of self-efficacy and intentions to communicate were not confirmed. In fact, results took a turn in an unexpected direction. The group of women who most strongly identified with the self-efficacy message did so by reporting significantly higher estimations of their *past* behaviors, rather than reporting greater intentions or feelings of self-efficacy. (An explanation of this phenomenon is provided in the next section, *Contribution to Understanding Motivations Concerning Safer Sex.*)

On reflection, the lack of a genuine self-efficacy increase in the sample is not surprising. Self-efficacy, after all, is influenced by the trial and success of a

behavior (Bandura, 1977). Although the stimulus verbally encouraged self-efficacy, short-term results should not have been expected for such a complex psychological schema.

It was expected that people most likely to respond to the PSA's offer for more information on how to discuss safer sex would be those with high risk, severity, and efficacy but low self-efficacy. This expectation was not supported. By comparing experimental with control group responses, it was shown that women with no experience with safer sex paid the most attention to the "seek information" message. However, this group is least at risk. The subjects fitting the high risk/severity/efficacy profile and who were expected to show high intentions were the women with some safer sex experience. Apparently, though, the PSA did not provide sufficient incentive for these women to become more motivated to act because no significant difference between control and experimental groups was observed. Paradoxically, the same group of women expressed greater overall intentions to take action than other groups, but again, the intentions were independent of whether they had viewed the PSA.

In general, the effects observed in this study supported the uses and gratifications notion that one message may serve multiple functions for different individuals (Katz et al, 1974; McQuail et al., 1972). Students in this study used the PSA in a number of ways. As a source of information with which to compare their behavior (for estimations of risk, for example), the PSA was used by the students in an adjustive (Katz, 1960) or informational (McQuail et al., 1972) way. As a means for behavior reinforcement (on the efficacy of safer sex communication), the PSA was used by students in a value-expressive (Katz, 1960) manner that supported personal identity (McQuail et al., 1972). As a conveyor of

peer attitudes (that one should not engage in sex without discussing safer sex), the PSA was used by students for knowledge (Katz, 1960) or integrative (McQuail et al., 1972) purposes. Finally, to learn about others' behavior (for men to learn about women's concerns), men viewed the PSA as instrumental (Katz, 1960), using it for integration and social interaction purposes (McQuail et al., 1972). Specific explanations of these gratifications and their relationship to students' attitudes are discussed in the section that follows.

The prediction of a connection between trusting one's partner to be safe and a lack of interest in the PSA could be neither confirmed nor rejected due to the difficulty in operationalizing "interest." As just discussed, subjects used the PSA for different gratifications, prohibiting the identification of a single gratification as "interest."

The prediction that women would respond more than men to the message was confirmed. Although the exact reason for the gender difference was not determined by this experiment, it is likely that any number of findings of previous research, including women's predisposition to communicate and the use of female models in the PSA, may have contributed to the result.

Contribution to Understanding Motivations Concerning Safer Sex

This research provided new data about college students' attitudes towards practicing safer sex and offered insights into why some students responded in dissimilar ways to the PSA. Based on analyses of the subjects in the four groups who interacted with the PSA, distinctly different attitudes towards safer sex were observed.

Women with much experience with safer sex responded to the PSA's message that communication leads to the practice of safer sex. Because the group as a whole was characterized by communication competence and consistent safer sex practices, it is surmised that these women sought and obtained reinforcement for behaviors they already have incorporated into their lives.

In regard to messages that would help these women maintain their preventative practices, the women's attitude profile of confidence and competence would suggest that additional messages designed to validate and reinforce their safer sex efforts would be most helpful.

Women with no experience with safer sex responded to the issue of risk, rating themselves lower than the sample average. Because this group was not sexually active, the actual estimation was to be expected. However, the difference between the experimental and control group women (who rated themselves at slightly greater risk) indicated that the PSA provided some information that helped experimental group women clarify the risk factors and dispel a generalized fear of AIDS.

The women's attitude profile included beliefs in the efficacy of condoms, a perception of the severity of AIDS, and a willingness to learn more about safer sex. Because many sexually inactive women one day will become sexually active, the best messages to ensure their future practice of safer sex would do the following: prepare them for safer sex communication through modeling, teach them to find health information resources, continue to warn them of the dangers of unsafe sex, and reinforce their confidence in the efficacy of condoms.

Women with some experience with safer sex seemed to respond to the PSA's message, "If you can't talk to [your partner], you shouldn't be having sex

with him.” A look at the profile of these women, who by definition do not practice safer sex consistently, revealed some frustrations with talking to their partners about safer sex (Factor 6 in Table 9 of Research Question 3). They perceived the need to discuss safer sex but admitted to sometimes foregoing safer sex because they didn’t want to broach the subject. The frustration itself conflicted with the PSA message about talking, however. The phenomenon that these women inflated their estimations of their past safer sex communication behavior can be interpreted as a desire to “fit in” with the PSA’s—and presumably society’s—expectations.

For this group, messages that emphasize both a safer sex standard and a means of improving self-efficacy would be more helpful than standards alone. Since the goal is safer sex communication, a message implying that failure to discuss safer sex in the past was not smart, followed by encouragement and modeling of skills for future encounters would help these women enact safer sex communication behaviors.

Men with some safer sex experience responded to the PSA message that people who want to engage in safer sex with their partners should discuss the topic. However, based on their profile, which indicated a lack of intentions to communicate about safer sex, the men’s response seemed to refer more to the need for women to raise the topic of safer sex if they want the men to use condoms than for the men themselves to bring it up. Because the PSA presented safer sex concerns from a women’s perspective, it is possible that the men who responded to the PSA were reflecting support for and receptivity to women’s needs to communicate their concerns to men.

The men's higher response to the question of thinking about AIDS may be interpreted in light of a number of their attitudes. First, the men reported higher-than-average risk of contracting AIDS and less evaluation of their partners; thus, thinking about AIDS may have referred to those worries. However, since men strive to make realistic judgments about the need for safer sex practices, they may have reported thinking more because they have not conclusively decided how cautious they must be. Still another explanation involves the above-mentioned question of a woman's need to discuss safer sex. The time men spend thinking about AIDS may be in planning how to respond to women's concerns about the disease without appearing to compromise their competence.

Men's attitudes towards safer sex are vastly different from women's. Men do not appear receptive to messages urging safer sex discussion. Therefore, men would benefit more from factual information about how to use condoms correctly (thus fostering feelings of communication competence), modeled enactments of how to listen and respond to women's concerns about safer sex, and other messages that relate safer sex with competence or image enhancement.

These profiles, while strictly descriptive, nonetheless suggest new messages and types of information that can tap into individuals' true, albeit complex, motivations. Clearly, as Brown (1991) found in his research, intermediary variables may well be the key to behavioral enactments. These profiles have shown that there are many such keys, just as they have also shown that the intermediary variables differ by population. Public service

announcements can play a crucial role in addressing the barriers people face and in helping people take steps to overcome them.

Limitations of the Study

A few limitations of the study should be noted. First, the constructs of the variables in this research differed from those in other research. Also, population differences, even between studies of college students, affect the results. Hence, comparisons of results with those of other studies should be made carefully.

Second, and more practically, many TV stations will not broadcast public service announcements that last 60 seconds or that use the word "condom." Until stations can be persuaded to air longer and more explicit PSAs, the potential of this experiment's PSA as an information dissemination tool is inhibited.

Third, as mentioned previously, several methodological issues constrain the study's conclusions. Most notably, this experiment measured short-term effects of viewing a PSA, making no attempt to address the effects over the long term nor the cumulative impact of multiple viewings. Also, in the absence of a random sample, the results should be taken as neither representative nor conclusive, but rather as illustrative. The study's power lies in providing support for a variety of theories and in contributing to the body of research findings on AIDS prevention and the uses and gratifications of media.

Future Research

This study provided several avenues for future research. First, additional research on safer sex motivations should be conducted using the

effects/attitudes analysis method. By considering the full media-audience interaction, researchers remain open to dynamics not explained by either effects-only or attitudes-only research methods.

Second, applying the method to specific socio-economic populations, the experiment might be replicated with those who are less educated, for a correlation has been found between lower education and greater reliance on television for information.

Third, it has been observed that different ethnic groups, especially those with distinct cultures, possess different attitudes towards safer sex communication. To get at the heart of the AIDS crisis, researchers should focus their efforts on African American and Hispanic populations, among whom the toll of AIDS is greatest and to whom fewer AIDS prevention messages have been directed.

Fourth, the uses and gratifications' functional alternatives issue should be explored in light of safer sex behavior. Among populations with different levels of experience, what sources of health information are used? How much information do different populations derive from the media and in what ways do media health messages satisfy their needs?

Finally, previous researchers (Brown, 1991; Cline et al., 1992) have noted the need to establish whether a link exists between safer sex communication and safer sex practice—and if so, for which populations. This area still needs to be explored adequately.

If addressed, these issues would do much to illuminate the motivations of different groups, point the way to helping individuals practice more healthful behavior, and ultimately, slow the spread of a deadly disease.

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Appendix A

Ronald W. Rogers' Protection Motivation Theory Schema

1. SOURCES OF INFORMATION

Environmental:

VERBAL PERSUASION

OBSERVATIONAL LEARNING

Intrapersonal:

PERSONALITY VARIABLES

PRIOR EXPERIENCE

2. COGNITIVE MEDIATING PROCESSES

3. COPING MODES

Action or Inhibition of Action:

SINGLE ACT

MULTIPLE ACTS

REPEATED ACTS

REPEATED, MULTIPLE ACTS

NOTE. From *Effects of Components of Protection-Motivation Theory on Adaptive and Maladaptive Coping With a Health Threat*, by Patricia A. Rippetoe and Ronald W. Rogers, 1987, *Journal of Personality and Social Psychology*, 52 (3), p. 597. Copyright 1987 by the American Psychological Association, Inc. Adapted with permission.

Appendix B
Safer Sex PSA ©

Woman 1: I was thinking about having sex, like, you know, but I don't know, 'cause I don't want to get pregnant. I don't know what to use 'cause I don't want any diseases either, you know? I just . . . What do you use?

Woman 2: I use condoms.

Woman 3: I just can't believe it! Guys don't like using them. They ruin spontaneity. I mean, you can't just go into it. You have to stop, you have to take it out, you have to put it on. . . .

Woman 2: What does it take, two seconds to take it out of the package and put it on.

Woman 1: And what did your boyfriend think? Does he mind? Does he feel like they're not manly or macho?

Woman 2: He did at first, but then he found out some of his friends were using them.

Woman 3: He didn't mind??

Woman 2: No, he didn't mind. I was surprised.

Woman 1: Yeah, but I mean, what happens if the guy just doesn't want to use them and he walks out and I'm just like . . .

Woman 2: Then you sit him down and you talk to him. He cares about you.

Woman 3: Talk to him about . . . ? I can't believe it!

Woman 2: What's wrong with that? Don't you talk to your boyfriend about birth control?

Woman 3: No. I don't.

FADE to "How to Talk About Safe Sex"

Woman 2: Well if you can't talk to him, you shouldn't be having sex with him.

FADE to "Call (800) 342-AIDS for a free brochure."

###

Appendix C

SJSU Questionnaire

The following questionnaire on health issues is part of a graduate thesis. Your cooperation is appreciated. All of your answers will remain strictly confidential.

1. Relative to other health concerns, how much do you think about

	<u>A lot</u>				<u>Not at all</u>
a. Your weight	5	4	3	2	1
b. Lung cancer	5	4	3	2	1
c. AIDS	5	4	3	2	1

2. Given your behaviors and lifestyle, how much do you feel you are at risk for:

	<u>High Risk</u>				<u>No risk</u>
a. Lung cancer	5	4	3	2	1
b. AIDS	5	4	3	2	1
c. A serious weight problem	5	4	3	2	1

Please select the response that best reflects your opinion:

	<u>Strongly Agree</u>				<u>Strongly Disagree</u>
3. AIDS is a fatal disease.	5	4	3	2	1
4. Being 30 or more pounds overweight causes major health problems such as diabetes or high blood pressure.	5	4	3	2	1
5. Smoking causes lung cancer.	5	4	3	2	1
6. People dying of lung cancer suffer.	5	4	3	2	1
7. People who are 30 or more pounds overweight suffer.	5	4	3	2	1
8. People dying of AIDS suffer.	5	4	3	2	1
9. I know or have known someone with a serious weight problem.	5	4	3	2	1
10. I know or have known someone with lung cancer.	5	4	3	2	1

Please select the response that best reflects your opinion:

	Strongly <u>Agree</u>			Strongly <u>Disagree</u>	
11. I know or have known someone who is HIV positive.	5	4	3	2	1
12. I have visited someone who is ill with AIDS.	5	4	3	2	1
13. Exercise helps to prevent weight gain only if a person exercises <i>every day</i> .	5	4	3	2	1
14. To prevent the AIDS virus from being transmitted during intercourse, a person must use latex condoms <i>every time</i> .	5	4	3	2	1
15. A crash diet is a healthy way of dieting.	5	4	3	2	1
16. A latex condom used incorrectly might let the AIDS virus be transmitted.	5	4	3	2	1
17. Weight loss counselors act as motivational coaches for their overweight clients.	5	4	3	2	1
18. The latex condom acts as a barrier to prevent the virus from passing through.	5	4	3	2	1
19. Weight loss clinics are effective in helping people lose weight permanently.	5	4	3	2	1
20. Use of birth control pills will prevent the AIDS virus from being transmitted.	5	4	3	2	1
21. Talking about dieting with friends will increase the likelihood that a person will seriously diet.	5	4	3	2	1
22. Talking about safe sex with one's partner will increase the likelihood of using a condom during intercourse.	5	4	3	2	1

The following questions are about weight loss. Please select the response that best reflects your opinion.

	<u>Strongly Agree</u>			<u>Strongly Disagree</u>		<u>Not App.</u>
23. The Jenny Craig ad made me feel overweight.	5	4	3	2	1	0
24. I almost always eat healthy foods.	5	4	3	2	1	0
25. I regularly get enough exercise.	5	4	3	2	1	0
26. I would call a Jenny Craig Center to make an appointment.	5	4	3	2	1	0
27. If the weight loss center were on campus, I would drop in.	5	4	3	2	1	0
28. If the weight loss center offered free services, I would sign up.	5	4	3	2	1	0
29. I believe that weight loss centers don't know anything more about dieting than most people know.	5	4	3	2	1	0

The following questions are about safe sex and AIDS. Your answers will be kept confidential:

	<u>Strongly Agree</u>			<u>Strongly Disagree</u>		<u>Not App.</u>
30. I use a condom when I have sex. (If not currently sexually active, circle "0")	5	4	3	2	1	0
31. In the past, I have used a condom when I've had sex.	5	4	3	2	1	0
32. I haven't always used a condom because:						
a. Neither one of us brings a condom.	5	4	3	2	1	0
b. I think they decrease sexual pleasure.	5	4	3	2	1	0
c. My partner doesn't like them.	5	4	3	2	1	0

	Strongly <u>Agree</u>				Strongly <u>Disagree</u>	Not <u>App.</u>
32. I haven't always used a condom because:						
<u>d.</u> Talking about using a condom is too difficult.	5	4	3	2	1	0
<u>e.</u> I felt that my partner(s) were "disease free."	5	4	3	2	1	0
33. All my partner(s) have been tested for HIV.	5	4	3	2	1	0
34. My close friends and I have talked about safe sex.	5	4	3	2	1	0
35. I've talked to my partner about safe sex.	5	4	3	2	1	0
<i>If you have not talked about safe sex with anyone, please answer the following two questions.</i>						
36. I feel I could talk to my close friends about safe sex.	5	4	3	2	1	0
37. After some planning, I feel I could talk to my partner about safe sex.	5	4	3	2	1	0
38. I feel that I can find written information about safe sex if I need to.	5	4	3	2	1	0
39. I feel I could say "no" to my partner if she or he wanted to have unsafe sex.	5	4	3	2	1	0
40. If a brochure on how to talk about safe sex were given to me, I would read it.	5	4	3	2	1	0
41. I would call a hotline for a brochure on how to talk about safe sex.	5	4	3	2	1	0
42. I do plan to talk to my close friends about safe sex.	5	4	3	2	1	0
43. I do plan to talk with my current partner about safe sex.	5	4	3	2	1	0

The following questions are about demographic information:

44. How old are you? _____

45. Sex: _____M _____F

46. I am _____single _____divorced
 _____married _____widowed

47. I am currently

_____sexually active with my spouse

_____sexually active with my boyfriend/girlfriend/partner

_____sexually active with more than one partner

_____not sexually active

07-21-1995 07:44AM FROM: DONG

TO: 12053480400 P.02

July 20, 1995

Ronald Rogers
Dean, The Graduate School
University of Alabama
Tuscaloosa, AL 35487-0348
FAX: 205.348.0400

I am writing to obtain permission to use the following material: A redrawn version of the protection motivation schema based on the schema published in *Effects of Components of Protection-Motivation Theory on Adaptive and Maladaptive Coping With a Health Threat*, by Patricia A. Rippetoe and Ronald W. Rogers, 1987, *Journal of Personality and Social Psychology*, 52(3), p. 597.

I am requesting your permission to use this schema for the following purposes: (a) for use as Appendix A in my thesis (entitled "Motivations to Act: Safer Sex Communication and the Individual"), which will be bound and stored in the San Jose State University Library, available for circulation; and (b) use as Appendix A in my thesis, which will be published as microfilm through University Microfilm, Incorporated and will, in addition, be available to the public on demand in hard copy (single copies only).

The material will be accompanied on publication by the following credit line: "From *Effects of Components of Protection-Motivation Theory on Adaptive and Maladaptive Coping With a Health Threat*, by Patricia A. Rippetoe and Ronald W. Rogers, 1987, *Journal of Personality and Social Psychology*, 52(3), p. 597. Copyright © 1987 by the American Psychological Association, Inc. Adapted with permission."

Thank you for your prompt consideration of this request.

Very truly yours,

Jocelyn Dong

The above request is approved, subject to the conditions noted below.

Approved by:

Date: 7/21/95

Conditions: None

Best wishes.

Mr. Tom Boyd
ODN Productions
33 W. 17th St., 9th floor
New York, NY 10011

I am writing to obtain permission to use the following material: A 60-second excerpt from the 1986 video, "Sex, Drugs, and AIDS." Please see the attached for the exact excerpt.

I wish to use this material in the following work: My master's thesis in Mass Communications, entitled: "On Motivations to Act: Safer Sex Communication and the Individual," in which the transcribed excerpt is included as Appendix B. The video excerpt itself was used in a research experiment investigating students' attitude towards safer sex communication. The use of the excerpt was approved by you via telephone in August 1994.

I am requesting nonexclusive world rights to use this transcribed excerpt as part of my thesis, which would include: (a) using the attached sheet as Appendix B in my thesis, which will be bound and stored in the San Jose State University library, available for circulation; and (b) using the attached sheet as Appendix B in my thesis, which will be published as microfilm through University Microfilm, Incorporated and will, in addition, be available to the public on demand in hard copy (single copies only).

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Thank you for your prompt consideration of this request. After your review and signature, I would appreciate your returning it to me via FAX: (415) 493-2955.

Very truly yours,

Jocelyn Dong

The above request is approved, subject to the conditions noted above.

Approved for ODN Productions by

Date: 7/15/95