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ABSTRACT

A study was conducted to test the hypothesis that individuals who rely solely on interactive channels for Human Immunodeficiency Virus (HIV) prevention information will have different levels of accurate Tactical Mobilizing Information (MI) on HIV prevention than those who rely solely on non-interactive channels. The hypothesis was tested using data collected in a telephone survey of 358 undergraduate students at the University of Oregon in late February and early March 1988. The survey questions dealt with the mass media, AIDS, and sexual and drug-use behavic . The response rate for the survey was 68%. A one-way analysis of variance was done with Tactical MI as the dependent variable, channel reliance as the factor, and concern and attention as covariates. Results showed no evidence that reliance on interactive or non-interactive information channels predicts to higher levels of tactical mobilizing information on HIV transmission. This finding would be consistent with suggestions that "pitting" information channels against each other in a search for various effects tends to reify the role of the sender in the communication process. Findings are lacking in that they do not illuminate much about what channel reliance might mean in terms of the strategies or mechanisms individuals use to negotiate their communication environment or the antecedent conditions for reliance on one kind of channel versus another for information on HIV transmission. (Three tables of data and 41 footnotes are included.) (MG)

The Impact of Channel Reliance on Tactical Mobilizing Information About HIV Transmission

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Abstract

Communication researchers have searched, and sometimes found, evidence that reliance on particular information channels is associated with certain cognitive, affective or behavioral effects. However, results of a survey of undergraduates at the University of Oregon show no evidence that reliance on interactive or non-interactive information channels predicts to higher levels of tactical mobilizing information on HIV transmission. This finding would be consistent with suggestions that "pitting" information channels against each other in a search for various effects tends to reify the role of the sender in the communication process. The authors argue that for salient information, individuals will effectively exploit channels in their "communication environment" that are accessible and that best suit their informational needs and skills.

The Impact of Channel Reliance on Tactical Mobilizing Information About HIV Transmission

One of the most crucial tasks facing public health officials today is developing effective strategies for preventing the spread of the Human Immunodeficiency Virus (HIV), which causes AIDS. Public information programs are seen as an essential part of those strategies.[1]

Today, a variety of channels are used to distribute AIDS-related information. Government agencies -- federal, state and local -- have embarked on mass media advertising campaigns to provide information about AIDS and how to prevent it. These campaigns are in addition to information provided through stories in the news media and from specialized non-interactive communication channels, such health pamphlets and the gay press. Other programs exist to provide AIDS-related information through interpersonal channels, such as school courses, call-in "help lines," speakers from AIDS prevention organizations and public health counselors. At base, all these efforts make the assumption that having information about AIDS is necessary to prevent the spread of the HIV virus.

Indeed, having information about a health risk is an explicit or implicit component of most models for modifying individuals' health-related behaviors.[2] Relevant information could be on topics such as the degree of risk an individual perceives from a potential health threat, the

level of personal concern an individual has about that health threat, the causes of the health threat, and the behaviors necessary to prevent the health threat. It is that last category of information that is being examined here. Specifically, we are interested in what has been called Tactical Mobilizing Information. Lemert coined the term Mobilizing Information (MI) to characterize information that allows people to act on attitudes toward a particular attitude object.[3] Tactical MI, one of three kinds of mobilizing information Lemert identified, is an explicit or implicit behavioral model that could facilitate the carrying out of some objective.[4] Examples of Tactical MI are recipes, beauty tips, the modus operandi of crimes, etc. In the context of AIDS, Tactical MI would be instructions on carrying out sex or drug-use practices that can prevent the spread of HIV. Safer sex instructions would be an example of Tactical MI.

The central questions we address in this paper are: When it comes to Tactical MI, does it matter which channels individuals rely upon for AIDS-related information? Do individuals who rely on interactive channels for AIDS-related information have different levels of Tactical MI than individuals who rely on non-interactive channels, when other factors are held constant?

These questions are important both in their implications for communication policy and communication theory. There is a long tradition in communication research of interest in channel-related effects, particularly

television vs. newspaper effects or interpersonal vs. mass communication effects. But recent examinations of channel-related differences question the utility of a perspective grounded in the assumption that the channel by which information is sent necessarily creates differential communication effects in individuals.[5] This paper should add to understanding about channel-related differences. This understanding, in turn, could influence decisions about strategies that public health officials use to develop effective communication programs on AIDS or, at least, make them more aware of some limitations associated with assumptions about the impact of communication on health behaviors.

Knowledge as a Variable in Health Communication Research

Researchers have developed several models that identify factors likely to cause individuals to change behaviors that potentially threaten their health. None envisions that having information about desirable health-related behaviors is sufficient to ensure that an individual will adopt healthy behaviors. However, most models either explicitly or implicitly consider having information about desirable health behaviors necessary for such behavior. That is why knowledge or information-holding is an important variable to study. For example, one such model, the Dual Process Model, postulates that individuals react in two stages to health communications. The first stage involves "an evaluation of

the particular threat and the second stage involves the selection and rehearsal of specific steps for the execution of recommended actions."[6] Becker, in an evaluation of another model, the Health Belief Model, suggests that gaining patient compliance for a health regimen will be more successful if the specifics of that regimen are clearly and carefully spelled out.[7] This need for specific, prescriptive knowledge is echoed in some literature on health communication and AIDS. Solomon and DeJong[8] argue that when it comes to AIDS prevention, people are less likely to deny the validity of a message or to adopt a fatalistic attitude about the disease if they are presented with concrete steps to take to prevent it.

As might be expected, "AIDS knowledge" is one of many independent variables included in studies on reducing HIV infection, and it is a variable conceptualized and treated in several different ways. As the above models suggest, AIDS knowledge is often used in bivariate or multivariate analyses in which the dependent variable is behavior changes that reduce the risk of HIV infection. But it also has been used as a focal variable in univariate analyses or a dependent variable in multivariate analyses.

The univariate analyses, which often are part of more complicated projects in which the variable of interest is behavioral change, have measured AIDS knowledge or information holding in a variety of ways for a variety of populations.[9] Generally, these studies find that:

--Awareness of AIDS is nearly universal among all groups studied.

--Levels of information-holding or knowledge are higher for adults or members of high-risk groups (gay or bisexual men, intravenous drug users) than for adolescents. Also, lower levels of education are associated with lower levelsof information holding.

--More often than not, individuals know the most common ways HIV can be transmitted -- sex and needle-sharing. But sizable minorities of the population have misconceptions about ways HIV cannot be transmitted -- kissing, sharing drinking glasses, eating foods prepared by people with AIDS, giving blood, etc.

The bivariate or multivariate studies typically have examined such things as the impact of public information campaigns on AIDS knowledge; the relationship between information sources used and AIDS knowledge; the effect of HIV counseling on AIDS knowledge; the relationship between AIDS knowledge and prevalence of HIV infection in a community; and the relationship of AIDS knowledge to behaviors that puts an individual at risk for HIV infection. These studies tend to cast AIDS knowledge or information-holding in the role of either an independent variable or dependent variable, though occasionally it is a control variable.

In general, there does not seem to be much of a direct relationship between AIDS knowledge, operationalized several different ways, and risky behavior. For example, Hingson et

al.[10] found that among individuals who had multiple sexual partners, there was no difference in knowledge between those who had unprotected sex and those who practiced safer sex. Knowledge was measured with true-false questions about modes of HIV transmission. Lasorsa and Shoemaker[11] also measured AIDS knowledge with a battery of true-false questions. Theyfound no relationship to risky behavior, though knowledge was correlated significantly with various demographic variables, use of national television, AIDS as a salient issue and what they called a "gambling attitude" toward risky behavior. The primary purpose of their study was to examine the impact of "gambling attitude" on behavior; knowledge was used as a control variable. Emmons et al.[12] found a significant positive relationship between knowledge and behavioral change in the first phase of a longitudinal study of 900 gay men in Chicago. However, that relationship did not hold up through subsequent phases of the study. Knowledge was measured with seven questions asking about the modes of HIV transmission and the causal agent for AIDS. It was not clear in their report whether the questions were open ended or closed ended.

When AIDS knowledge functions as a dependent variable, stronger relationships occasionally surface with some communication and situational variables. For example, Dunwoody and Neuwirth[13] identified three kinds of AIDS knowledge in their study of University of Wisconsin-Madison undergraduates. "Objective knowledge" was measured using 10 true-false questions intended to tap an understanding of the

factors and circumstances involved in HIV transmission. "Subjective knowledge" constituted an individual's assessment of his or her knowledge level relative to others. "Personal knowledge" was measured by asking whether a respondent knew someone with HIV disease. Though not the focus of their study, interpersonal communication about AIDS was negativelyrelated to objective knowledge, positively related to personal knowledge and not related to subjective knowledge. Among the mass communication variables, objective knowledge was positively related to attention to AIDS stories on television and subjective knowledge was positively related to attention to newspaper stories. Other relationships were not significant. In other studies in which AIDS knowledge was was the dependent variable:

--Valdiserri et al.[14] found that HIV counseling did not particularly help improve knowledge about AIDS among 1,700 gay and bisexual men in Pittsburgh, largely because knowledge levels were high before the counseling was done.

--Ginzburg et al.[15] found no relationship between knowledge levels and the prevalence of HIV infection in 10 New Jersey communities.

--McDermott et al.[16] found no relationship between various use of various mass media sources and AIDS knowledge measured with a series of true-false questions on HIV transmission, AIDS prevention methods and a wide-ranging set of items on AIDS-related information.

--Sherr et al.[17] reported that information levels increased after two AIDS advertising campaigns in Great Britain.

--DiClemente, Zorn and Temoshok[18] found, in a survey of 1,326 adolescents in the San Francisco Bay area, that AIDS knowledge was related to ethnic differences. They also found that adolescents living in that area, where AIDS is common, were more knowledgeable than youths in other parts of the country. AIDS knowledge was measured with 30 true-false questions on the cause, transmission modes and treatments for AIDS.

--Price et al.[19] found that those who used magazines were best-informed about AIDS, followed by those using television and then newspapers.

--Grunig and Childers[20] used open-ended questions to measure the "depth" and "breadth" of cognitions on AIDS.[21] In the Grunig and Childers study, information seeking and information processing showed no relationship to either breadth or depth of cognitions. Information seeking was measured by asking respondents how likely they would be to send for certain AIDS brochures and how many of such brochures they had actually read in the previous year. Information processing was measured by asking respondents how likely they would be to pay attention to hypothetical AIDS stories on television and how many such stories they had read or heard in the mass media in the previous month. These measures are similar in some respects to common operationalizations for media use and attention.

Mobilizing Information on HIV Transmission

Lemert's concept of Mobilizing Information suggests another potentially useful approach for studying AIDS-related knowledge because it is the kind of information specifically linked to prevention behaviors. Lemert has studied the content of the mass media for the existence of mobilizing information related to political processes.[22] From these studies, he identifies three kinds of MI:

--Locational, which is information on the time or placeof activities. The time and place of a meeting are examples of Locational MI.

--Identificational, which is descriptive information on the parties to activities. A name or physical description are examples of Identificational MI.

--Tactical, which is information on an explicit behavioral model for some activity. Recipes, beauty tips and the modus operandi of crimes are examples of Tactical MI.

Though most MI studies are content analyses, Bybee[23] conducted an experiment on the effects of MI in which he found some evidence that MI stimulated reader involvement in an issue. It appears that no other research has been published on MI as a characteristic of an individual -- that is, on "MI knowledge" or "levels of MI information-holding." As a knowledge or information-holding characteristic, MI might be studied as part of the array of

factors influencing specific behaviors or it might be studied as a dependent variable in which communication patterns are viewed as influences on levels of MI holding.

In the context of AIDS, having Tactical MI on safer sex and drug-use practices would seem to be essential for the adoption of behaviors that reduce the risk of HIV transmission. That is, an individual would need to know about safer sex techniques before he or she could practice them, or an individual would have to know how to clean needles and syringes before he or she could safely do so. Again, having MI oneffective HIV prevention would a necessary, though not sufficient, condition for behavior modification.

The Impact of Channel on Communication Effects

Communication scholars have written about the relationship between use of or dependence on a communication channel and various cognitive, affective and behavioral variables. Some research has pitted one mass medium against another -- usually television vs. newspapers -- and then hunted for individual-level differences on a variety of dependent variables on political or health issues.[24] Other research has explored effects from the perspective of interpersonal vs. mass communication[25] -- a perspective Chaffee has cogently challenged.[26] He writes that "the presumed competition between mass and interpersonal channels is a synthetic one, created by observers who reify 'channel

effects' based on the ways sources of messages, rather than receivers, utilize different channels."[27] He argues that that the sources a person uses for information are dictated mainly by their accessibility and their likelihood of having useful information for a given user. He says that a receiver-oriented perspective on channel use would examine how individuals make use of information available via the channels to which they have access.

The issue is not all that clear-cut, however, because research has established linkages between cognitive, affective and behavioral variables and an individual's self-professed dependence or reliance on a given communication channel. These might be explained in terms of differences among individuals in their channel access or their preference for using certain kinds of channels for certain kinds of information. Or, they might be explained in terms of differences in the nature of information carried by various channels. The question is, Are these channel effects a function of the channel itself, the skill of an individual in exploiting information in the channel, or both? Given the uncertainty that exists on this matter, we believe there is merit in exploring possible "channel-related differences" when it comes to Tactical MI on HIV prevention. But the purpose here is less to hunt for such channel-related differences than to see if different channels are equally effective for the acquisition of potentially important information by individuals who outwardly are quite similar. It is, in a sense, an indirect

examination of Chaffee's assertation that, in many respects, the issue of channel differences is synthetic.

Channel Differences

As mentioned above, much previous research has focused on channel-related differences. For example, research has suggested that mass media channels are used more to gain early awareness of innovations and for "news," and interpersonal channels are used more when adopting a new behavior or making a decision.[28] Though the comparison is not quite parallel, generalizations about health communication campaigns tend to follow that same line -- cognitive effects of mass communication usually are greater than the behavioral effects, and interpersonalchannels are more influential for attitudes and actions.[29] There are exceptions.[30] But as a rule, behavioral change resulting solely from a mass media information campaign is considered atypical. Differences in channel use were found in other studies that compared mass communication and interpersonal communication. Adolescents relied primarily on the mass media for drug information, rather than interpersonal sources. But drug users learned most from their friends and their own experience.[31] A study of general health knowledge found that whites rely primarily on print media and television for health information, while minority respondents used non-media sources.[32] In their work on methods to communicate health information to adolescents,

Hawkins et al. confront the limitations of a sender-oriented mass communications approach through interactive computer programming.[33] As they point out, interactive computer software provides the economy of scale characteristic of health communication campaigns through the mass media while still allowing information to be tailored to the specific needs of an individual. They, in fact, found that students used the interactive computer programs to obtain information about health behaviors specifically related to their needs. As mentioned above, both the Dunwoody and Neuwirth[34] and Lasorsa and Shoemaker[35] studies found relationships between channel measures and various other variables. Lasorsa and Shoemaker conclude that there are differences in the apparent effectiveness of newspaper and television as contributors to their dependent variable,AIDS risk behaviors. But they do not conjecture about precisely why this relationship might exist, beyond the observation that newspapers apparently are doing a better job of getting across to the public the message of AIDS risk than television. Another possible explanation might be that newspaper use taps what amounts to an individual's skill in exploiting his or her communication environment. That is, it may not be the use of the channel per se that creates the effect but cognitive skills associated with use of or reliance upon that channel. Lasorsa and Shoemaker did not include measures of interpersonal communication in their analyses, so it is not possible to compare channel effects more broadly. Another study actually finds some evidence to

support Chaffee's position that channels need not be viewed competitively. In interpreting results of their study, Dunwoody and Neuwirth assert that a detailed analysis suggests the individuals are actively seeking information -- though perhaps different kinds of information -- from a variety of channels.

Reliance on Channels for Tactical MI

Of particular interest here is the extent to which individuals say they rely on various channels for AIDS-related Tactical Mobilizing Information. The concept of source reliance or dependence[36] has been examined extensively in the political communication literature. Two models have emerged from the literature. One suggests thatan individual's dependence on a given medium produces certain distinctive cognitions, attitudes and behaviors.[37] Dependence is conceptualized as an interval-level dependent variable, not a category. Under this model, dependence on one source of information is considered independent of dependence on another source. That is, the same individual can be highly television and newspaper dependent. A second model envisions reliance as a contingent condition for analyzing the relationship between media use and associated cognitions and behaviors. McLeod and colleagues suggest that reliance is an orientation toward the use of the media for specific needs.[38] In their model, for example, various effects attributed to television use (e.g., distrust of the

political system) would be higher for television-reliant individuals than non-television-reliant individuals.

A Quasi-Test of Two Models

The issue addressed here draws on the literatures on health communication campaigns, AIDS, mobilizing information, mass media reliance, mass communication vs. interpersonal communication, and interactive sources as a vehicle for health messages. Traditional approaches in channel-related research suggest that we should posit that individuals will differ in their levels of Tactical MI on preventing HIV transmission and that these differences may be related to the communication channels they say they use or rely upon for such information. But Chaffee's writingson the "false competition" between channels might predict to no differences if individuals have roughly comparable communication environments and cognitive skills that allow them to exploit the information channels that best suit their own needs. What we propose, then, is a quasi-test of two models. A sender-oriented model suggests that effects are linked more to the specific channel used for communication than to characteristics associated with the receiver of the communication. From a sender-oriented perspective, individuals should differ in their levels of Tactical MI on HIV prevention -- if channel reliance matters and if other factors expected to influence such information levels are held constant. From a receiver-oriented

perspective, channel reliance would not necessarily produce differences in levels of MI on HIV prevention. Individuals presumably would exploit the channels they see as most accessible to them and as most likely to contain the information they need. They would, in effect, negotiate their way through their "communication environment" to obtain relevant or necessary information. Consequently, patterns of channel reliance might be quite different for individuals with comparable levels of Tactical MI. When an individual states that she relies on a channel for certain purposes, she may essentially be stating not only a preference for that channel for that purpose but she also may be implying a confidence in her ability to effectively mine that channel for her information needs.

This "double-barreled" hypothesis creates somemethodological dilemmas. Statistical models for testing differences are intended to allow researchers to reject an assertion of "no differences" between or among groups with a certain confidence. They are not intended to allow the researcher to reject an assertion of "real differences" between or among groups (e.g., that the groups are "really" the same). Consequently, we will frame our hypothesis in terms of the traditional approach -- in this case, that channel reliance will produce differences in levels of Tactical MI on HIV prevention. Finding support for the hypothesis would tend to be consistent with the sender-oriented view that channels have an effect, in this case on levels of Tactical MI on HIV prevention. Failing to find

support for the hypothesis would not necessarily be evidence in favor of the countervailing receiver-oriented view, however. We also would need to assure ourselves that these are essentially comparable individuals who differ only in terms of how they exploit their communication environments.

To summarize, then, our hypotheses is:

Other things equal, individuals who rely solely on interactive channels for HIV prevention information will have different levels of accurate Tactical MI on HIV prevention than those who rely solely on non-interactive channels.

Methods

The hypothesis was tested using data collected in a telephone survey of 358 undergraduate students at the University of Oregon in late February and early March 1988.[39] The full names of respondents were not known to the interviewers, who were members of an upper-division class in mass media and public opinion. The survey questions dealt with the mass media, AIDS, and sexual and drug-use behavior. The names of potential respondents were selected randomly from registration rolls. The response rate for the survey was 68 percent. The majority of the non-respondents simply could not be reached during the survey time frame; they were not refusals. The demographic characteristics of the 358 respondents generally reflect the characteristics of all U of O undergraduates.[40]

The definitions and operationalizations of primary concepts in the research hypothesis are:

--Tactical mobilizing information: Knowledge of specific methods or procedures an individual can follow to accomplish a particular objective. This information is linked to behaviors only if a motivation exists to achieve that objective and if no barriers to the called-for behaviors are present. Tactical MI was measured using four open-ended questions in which respondents were asked to tell common ways HIV was transmitted, to tell how a person could avoid HIV infection sexually, to tell how a person could tell if he or she were HIV-infected and to tell how a personusing intravenous drugs could avoid HIV infection.[41] Respondents who gave only one answer to the question were prompted once, with the interviewer asking: "Can you think of any other ways?" In the data analyses, the number of correct responses offered were summed across the four questions for each respondent, resulting in a global Tactical MI measure on HIV transmission. This strategy was intended to produce a measure of the level of information held by the respondent on HIV transmission. (Table 1 shows the means and standard deviations for this and other variables.)

--Channel reliance: An individual's primary orientation to a particular channel for information on a particular topic. Reliance is distinct from channel use. An individual could use one channel more than another for certain information but rely on it less for that

information. (One could rely on the mass media more for AIDS-related information but use it less than interpersonal communication.) Channel reliance was operationalized with four questions asking respondents which of 15 possible information channels they relied upon for information about the way HIV was transmitted, for information on the ways to prevent HIV infection, for information on HIV antibody tests and for information on medical treatments for AIDS. Eight of the channels were interactive, meaning they permitted individualized feedback, usually immediate, to the respondent from the source using the channel. These would roughly correspond to interpersonal channels in otherresearch. They were family, friends, school courses, call-in AIDS information services, speakers, government agencies, physicians, and community AIDS groups. Seven of the channels were non-interactive, meaning they did not permit individualized feedback to the respondent. They were a campus daily newspaper, a general-circulation daily newspaper, television news, television advertising, magazines, pamphlets and gay-oriented newspapers or magazines. An additional non-interactive channel -- radio -- was added to the list during analysis. This is because several respondents mentioned it when asked about sources for AIDS-related information that had not been on the original list of 15. These channels correspond roughly to mass communication channels in other research. For data analysis, individuals were classified into two groups -- those reliant solely on non-interactive sources and those

reliant solely on interactive sources. Those reliant on a combination of interactive and non-interactive sources were eliminated because conceptually it was not clear what relationship "mixed" reliance might have on information-holding and because using "pure" groups would tend to maximize channel effects.

Some previous health communication studies show that knowledge about health risks can be affected by an individual's personal concern with a topic and his or her attention to that topic. In our analyses, concern and attention were treated as control variables. Concern was measured by asking the respondent to rate, on a four-pointscale ranging from "very concerned" to "not concerned," his or her personal level of concern about becoming infected with the AIDS virus. Attention was measured by constructing an additive index from eight questions in which respondents were asked to rate, on a four-point scale from "a lot" to "none," the amount of attention they paid to various news stories about AIDS (Table 1).

Results and Conclusions

The analysis strategy was straightforward. A one-way analysis of variance (Table 2) was done with Tactical MI as the dependent variable, channel reliance as the factor, and concern and attention as covariates. Individuals who rely soley on interactive channels have slightly higher levels of Tactical MI than individuals who rely on non-interactive

channels, but the difference is not significant at the .05 probability level. The model showed no significant main effect for channel reliance and no significant effects for the covariates, though the zero-order correlation coefficient between Tactical MI and attention is significant.

The failure to find differences between the groups reliant on interactive and non-interactive channels could be interpreted as consistent with Chaffee's assertion that a search for the relative efficacy of channels in a communication transaction is too simple-minded. In this instance, the failure to find differences in information-holding between groups reliant on channels with very different characteristics may suggest that receivers put to good use the communication channels that best suit their cognitive needs and skills. The survey findings provide other information that suggests this is the case. A comparison of these two groups on a variety of other characteristics finds them remarkably alike on the more obvious factors that might influence their levels ofinformation-holding on HIV transmission (Table 3). They are comparable in their level of attention to AIDS stories and to AIDS public service announcements, their level of concern about HIV infection and their estimate of the likelihood that they are now HIV-infected. They have comparable levels of knowledge about the degree of risk certain sex and drug-use practices present for HIV infection, which was measured using a series of closed-ended

questions. On factors we measured, they differ largely in terms of channel reliance, which suggests that this factor is irrelevant as a determinant of the level of information-holding on Tactical MI for HIV transmission. Further support for such a conclusion is provided by two other pieces of information from the survey. In another group of open-ended questions, respondents were asked where they would seek Tactical MI on HIV transmission if they needed it. We have labeled this "pre-Tactical MI," which could be defined as an information-seeking capability of an individual about HIV transmission. Those reliant on interactive channels rated significantly higher on pre-Tactical MI (Table 3) than those reliant on non-interactive channels. By in large, the potential information sources cited by respondents were associated with interactive channels, not non-interactive channels. It would make sense, then, that individuals reliant on interactive channels for Tactical MI also would be most able to identify more potential sources for HIV information. It also seems reasonable that individuals reliant on non-interactive sources, where Tactical MI would be gleaned from the pool of information provided but not sought out, might be less able to identify other potential sources for such information. Again, the key issue becomes how the information receiver makes the best use of various channels in his or her communication environment to acquire information, not which channel does the best job of providing information. The second piece of information comes from a comparison of the

number of different channels respondents used for AIDS information. Those reliant on interactive channels also tended to use significantly more kinds of channels than those reliant on non-interactive channels (Table 3). Again, this suggests the concept of reliance is linked more to differences in other communication activity than to a channel effect.

Though the finding of no difference could be consistent with Chaffee's thesis about channel effects, it also should be noted that this might be explained by methodological difficulties, though we do not think evidence to that effect is persuasive. The number of individuals reliant solely oninteractive sources numbers only about 40 and that the difference in group means is in the direction formally hypothesized. However, even tripling the size of the interactive sample would not produce a statistically significant difference if the standard deviation of that group were roughly comparable to the non-interactive group and the difference in means stayed the same. Questions also arise about the validity of this strategy for measuring Tactical MI. Our assumption was that using an open-ended approach would be the most valid way to assess the information individuals actually had on sex and drug-use behaviors that prevent HIV transmission. This strategy was similar to the one Grunig and Childers used in measuring the breadth of cognitive knowledge on AIDS. Closed-ended questions offer an opportunity for educated guessing and, for this concept, were seen as a less appropriate way to

measure actual information-holding. As it turns out, the Tactical MI measure is not correlated with an index built out of another set of questions that asked respondents to assess the riskiness of certain sex and drug-use practices. Both those measures do show moderately strong zero-order correlations with the AIDS attention measures, and neither show much relationship to levels of individual concern about becoming HIV-infected or to the number of sources used for AIDS information. It seems quite plausible that the open- and close-ended questions are tapping different kinds of AIDS knowledge. We feel that there is more face validity to the open-ended measures than the closed-ended measures. We also might note that the Grunig and Childers measures of cognitive breadth and width of knowledge on AIDS also were not consistently related.

In sum, then, we do not believe methodological reasons can be considered an obvious explanation for the failure to find differences between the interactive and non-interactive groups. At the same time, our findings are lacking in that they do not illuminate much about what channel reliance might mean in terms of the strategies or mechanisms individuals use to negotiate their communication environment or the antecedent conditions for reliance on one kind of channel vs. another for information on HIV transmission.

TABLE 1

Summary Statistics on Selected Variables

Mean, standard deviation and minimum/maximum possible values for Tactical MI, Attention Index, Concern About Infection, Risk Knowledge Index, Number of Sources Used and Pretactical MI.

Variable	Mean	Std. Dev.	Max./Min.
Tactical MI	12.76	3.13	0-*
Attention to AIDS Stories Index	23.87	4.11	4-32
Concern About Infection	2.50	1.05	1-4
Risk Knowledge Index	5.28	.83	0-6
Number Sources Used	7.57	2.55	0-16
Pretactical MI	3.16	1.24	0-*

* Open-ended question with no maximum value.

TABLE 2

Analysis of variance for reliance on interactive/non-interactive channels by Tactical MI, controlling for Attention and Concern.

Source of Variation	Sum of Squares	Degrees Freedom	F
Covariates			
Concern	.01	1	.00
Attention	20.49	1	1.86
Main Effects			
Reliance Index	9.68	1	.88
Between Groups	31.47	3	.95
Within Groups	2394.91	218	
Total	2426.38	221	

TABLE 3

Means for Tactical MI, Attention Index, Concern About Infection, Risk Knowledge Index, Number of Sources Used and Pre-Tactical MI by Channel Reliance. (Number of cases)

Variable	Interact	Non-Interact
Tactical MI	8.71 (42)	8.19 (183)
Attention to AIDS Stories	24.10 (39)	23.34 (183)
Concern About Infection	2.42 (41)	2.50 (183)
Risk Knowledge Index	5.45 (42)	5.26 (183)
Number of Sources Used	8.17 (42)	7.16 (180) [a]
Pre-Tactical MI	3.57 (42)	3.10 (183) [b]

a: $p < .05$ for two-tailed t-test on difference of means.
b: $p < .01$ for two-tailed t-test on difference of means.

FOOTNOTES

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39 A university undergraduate population is an excellent population in which to examine these questions for several reasons: It is relatively homogeneous on important demographic variables like education and age; it is an environment rich in potential information channels, minimizing the problem of accessiblity ; and it is a sexually active population, which should magnify the salience of AIDS as an issue in their lives.

40 The respondents' mean age is close to the population's average age of about 22. Males and lower-division students are slightly underrepresented in the sample, and females and upper-division students are slightly overrepresented. The most pronounced difference on class rank is among seniors. This may be because many fourth-year

undergraduates consider themselves seniors, though the university would not categorize them as such based on credits earned. Sample and university figures on minority students were not categorized in similar ways, making comparisons impractical.

41 The exact wording of the questions was:

1 Can you tell me, what are the most common ways the AIDS virus is transmitted?

2 How could a person who was concerned about getting AIDS through sexual relations avoid becoming infected with the AIDS virus?

3 If a person wanted to find out whether he or she were infected with the AIDS virus, how could that be determined?

4) If a person were thinking about injecting illegal drugs intravenously, how could infection with the AIDS virus be avoided?