A Contextual Approach to Research on AIDS Prevention

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The acquired immune deficiency syndrome (AIDS) is a disease that is transmitted almost entirely through behavioral factors. In the absence of a cure or vaccine, the modification of AIDS-risk behavior presents a unique challenge to behavioral scientists and should be taken as a clear imperative by behavior analysts. This paper discusses the currently dominant social-cognitive theories (the health belief model, the theory of reasoned action, and self-efficacy theory) that have been widely used to predict and understand AIDS-risk behavior. Although these theories have generated a voluminous literature on the cognitive, attitudinal, and demographic correlates of AIDS-risk behavior, they have not resulted in specific intervention strategies to influence risky behavior, most likely because they fail to specify manipulable variables. As an alternative to social-cognitive theories, this paper evaluates the usefulness of a behavior-analytic approach to stem the spread of HIV infection. It examines some of the philosophical differences underlying cognitive and behavioral approaches that are embedded in mechanistic versus functional contextualistic principles. It explores the theoretical and practical implications of adopting either predicting and explaining behavior or predicting and influencing behavior as the goals of science. To illustrate the value of adopting the goal of prediction and influence, behavior-analytic research on the social context of risky sexual behavior in adolescents is described. The paper argues that in order to alter the future course of the AIDS epidemic, the behavioral sciences must move beyond describing cognitive and attitudinal correlates of risky behavior and focus on the social context of the behavior of individuals. In addition, population-wide changes in AIDS-risk behavior can be accomplished only if research focuses on how to influence larger social systems, including the media, school systems, and community organizations.

Key words: acquired immune deficiency syndrome (AIDS), functional contextualism, health belief model, self-efficacy theory, theory of reasoned action

In 1981, the first few cases of a disease that later came to be known as acquired immune deficiency syndrome (AIDS) were reported by the Centers for Disease Control (1981). At first, the disease seemed to be confined to sexually active gay males and was labeled gay-related immune deficiency (GRID), based on presumptions that it was somehow associated with specific homosexual practices (e.g., Sonnabend, Witkin, & Purtilo, 1983). But when the syndrome also began to appear among heterosexual intravenous (IV) drug users and their sex part-

ners, medical researchers began to hypothesize that the disease was passed on through a virus that could be spread through the exchange of semen or blood in shared needles (Centers for Disease Control, 1983). Then, in 1983, medical researchers in France and the United States discovered a causative retrovirus, which in 1986 by international agreement was named HIV, short for human immunodeficiency virus.

Since the first AIDS cases were diagnosed in 1981, the disease has reached epidemic proportions. In the United States alone, by June 1993 a total of 310,680 AIDS cases have been officially diagnosed, and 191,824 persons have died from the disease (Centers for Disease Control, 1993). However, nobody knows how many individuals presently carry the virus, because AIDS has a long latency period with an estimated median incubation time of almost 10 years (Bacchetti, 1990). Estimates place the number

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of HIV-positive individuals in the United States at approximately 1 million. Worldwide, the virus has spread to every continent. The World Health Organization (WHO, 1993) estimates that as of mid-1993, over 13 million adolescents and adults and approximately 1 million children have been infected and that the great majority of them, barring some major medical breakthrough, will eventually die of an AIDS-related illness (Greene, 1993).

If one breaks down the 310,680 AIDS cases diagnosed in the U.S. by type of exposure, it becomes evident that almost all infections are attributable to risky behavior that, in principle, could have been avoided. The vast majority of infections have occurred through behavioral factors: unprotected sex between men (53%), needle sharing by IV drug users (20%), unprotected heterosexual intercourse (7%), and multiple modes of exposure (13%), such as IV drug use combined with homosexual, heterosexual, or bisexual contacts. In 4% of the cases, the type of exposure was undetermined, and only 3% of infections were accounted for by non-behavioral factors such as blood transfusions or hemophilia (Centers for Disease Control, 1993). From these data it is obvious that, in the absence of a cure or vaccine, containing the further spread of AIDS depends entirely on behavior change. The modification and eventual eradication of AIDS-risk behavior present a unique challenge to psychologists and should be taken as a clear imperative by scientists working in the domain of behavior analysis.

The seriousness and probable lethality of AIDS notwithstanding, attempts to modify AIDS-risk behavior to date have not been as successful as one might hope, especially in segments of the population that, due to the high base rate of HIV infections, are at particularly high risk (i.e., gay men, IV drug users, inner-city adolescents, and ethnic minority men). Although massive educational campaigns and health messages promoting condom use undoubtedly have had some impact, a sizable number of gay men either continue to engage in high-risk be-

havior or have reverted to risky sexual practices (e.g., Ekstrand & Coates, 1990; Kelly, St. Lawrence, & Brasfield, 1991; Stall, Ekstrand, Pollack, & Coates, 1990). Among IV drug users (e.g., Des Jarlais & Friedman, 1988) and ethnic minorities (McCray & Onorato, 1992), behavior changes have been even less consistent; the majority of heterosexuals continue to perceive themselves to be not at risk for HIV infection and have made no substantial changes in their sexual behavior (Catania et al., 1992; Siegel & Gibson, 1988; Wulfert, 1993).

In light of the steadily growing number of HIV infections, there is an urgent need for the development of more effective education, intervention, and prevention programs. Such programs must combat habits that are maintained by a longstanding history of reinforcement anchored in people's verbal repertoires (i.e., their expectations, attitudes, and beliefs), and are supported by the values and norms of their respective cultural subgroups. Although warning the public and disseminating facts about HIV transmission constitute important prerequisites, it is unlikely that health messages by themselves will be sufficient to change the behavior of those who are most at risk. If we are to develop more effective prevention and behavior-change programs, a better understanding of the influences on behavior that risks AIDS is required.

In an effort to discover variables that are causally involved in decision making about AIDS prevention, psychologists have begun to study safer sexual behavior within the frameworks of several cognitive theories. The conceptual models that most often have guided such research efforts are the health belief model (HBM), the theory of reasoned action (TRA), and self-efficacy theory (SET). Given their immense popularity and widespread use in mainstream psychology, it is appropriate to assess their value for preventing the spread of HIV infection. Therefore, one purpose of the present paper is to describe these three models and to examine how useful they are in predicting and influencing behavior. More specifi-

cally, we will articulate the strengths and weaknesses of these models in guiding the efforts of behavioral scientists to develop AIDS prevention programs. A second purpose of the present paper is to articulate how behavioral science research on AIDS prevention might be made more effective.

COGNITIVE MODELS OF AIDS-RISK BEHAVIOR

Explanation and Prediction of Risky Sexual Behavior

Health belief model. The HBM was originally developed to explain noncompliance with medical screening recommendations (e.g., M. Becker, 1974; Rosenstock, 1974) and has since been applied to a wide variety of preventive health behavior (see Janz & Becker, 1984, for a review), including the practice of safer sex (e.g., Hingson, Strunin, Berlin, & Heeren, 1990; Joseph et al., 1987; Wulfert, 1993). This model views people as rational decision makers who will change their behavior to protect their health when given the means to avoid an illness. Health protective actions are thought to be a joint function of the perceived susceptibility to and severity of a disease as well as the benefits and barriers to adopting preventive behavior. From these four constructs, the benefit/barrier dimension has most often predicted safer sexual behavior (for reviews, see Carmel, 1990–1991; Montgomery et al., 1989), but by and large the results have been inconsistent. For example, some studies found a relation between perceived vulnerability to HIV infection and risk reduction in gay men (e.g., Coates et al., 1987) and heterosexual singles and college students (Keeter & Bradford, 1988), but other studies found no relation between these variables (e.g., Wulfert, 1993; Wulfert & Wan, 1993) or reported a drifting of the association over time (Montgomery et al., 1989). Similar inconsistencies have also been reported for the other constructs of the HBM (e.g., Brown, DiClemente, & Reynolds, 1991; Carmel, 1990–1991).

Theory of reasoned action. The TRA, like the HBM, also views people as rational decision makers who can exercise volitional control over their actions (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975; Fishbein & Middlestadt, 1989). The immediate determinant of an action is thought to be the person's intention to perform that action. Intention, in turn, is a function of attitudes (expressed as expected outcomes of behavior and the importance attributed to these outcomes) and perceived social norms (beliefs about the degree to which significant others would approve of a behavior and motivation to comply with what others would approve of). Stated differently, attitudes and subjective norms combine to form a behavioral intention, which then becomes the proximal determinant of the behavior (Fishbein et al., 1992). The TRA is one of the most widely cited theories in the recent social-psychology literature (from 1985 through 1990, Fishbein and Ajzen's text was cited more than 1,700 times in the *Social Citation Index*). The TRA has been applied successfully to predict wide ranges of preventive health behavior, including moderation in alcohol use (Schlegel, D'Avernas, Zanna, DeCourville, & Manske, 1992), refraining from smoking (Norman & Tedeschi, 1989), engaging in exercise behavior (Hays, 1989), using seat belts (Budd, North, & Spencer, 1985), using contraceptives (Jaccard & Davidson, 1972), and adopting safer sexual behavior (Cochran, Mays, Ciarletta, Caruso, & Mallon, 1992; Fishbein et al., 1992; J. Jemmott, Jemmott, & Fong, 1992; L. Jemmott & Jemmott, 1991; Wulfert, 1993).

Self-efficacy theory. Finally, according to SET (Bandura, 1986, 1990) behavioral intentions and behavior are mediated by self-efficacy. Preventive health behavior purportedly results from a cognitive appraisal process by which people integrate knowledge about a disease, the effects of past experiences, outcome expectancies associated with adopting preventive behavior, and social influences. This appraisal process culminates in a self-efficacy judgment (an estimate of one's

ability to cope with a difficult situation) that is causally linked to the adoption of preventive behavior. Hence, individuals practice safer sex only to the degree that they believe they have the ability to protect themselves. Like the other two theories, SET has also been applied to a wide range of health behavior (Strecher, DeVellis, Becker, & Rosenstock, 1986), including alcohol abuse (Marlatt & Gordon, 1985; Monti, Abrams, Kadden, & Cooney, 1989), smoking cessation (Garcia, Schmitz, & Doerfler, 1990; Perry, Klepp, & Shultz, 1988), and HIV-preventive behavior (O'Leary, Goodhart, Jemmott, & Boccher-Lattimore, 1992; Wulfert, 1993; Wulfert & Wan, 1993).

In summary, the HBM, the TRA, and SET have received considerable empirical support when applied to predict safer sexual behavior. An advantage of these theories is that they provide an organized analysis of the way in which specific private events (cognitions, beliefs, expectancies, attitudes, etc.) relate to overt behavior. By elucidating the cognitive antecedents (often called proximal determinants) of behavior, these models enable scientists to predict with a reasonable degree of accuracy from beliefs, attitudes, and other cognitive constructs whether people are likely to engage in sexually risky behavior. The greatest disadvantage of these theories is, of course, that they do not speak to the antecedents of the so-called proximal causes or suggest specific interventions to alter sexually risky behavior. This issue is discussed in more detail below.

Intervention and Prevention of Risky Sexual Behavior

Despite the voluminous literature on cognitive, attitudinal, behavioral, and demographic variables from which AIDS-risk behavior has been predicted in a variety of populations, there is a paucity of well-controlled outcome studies that have applied the social-cognitive models discussed above. Most intervention studies designed to bring about changes in sexual risk taking have not *systematically* applied any of these theories but instead

have relied on generic behavioral and cognitive-behavioral principles. Apparently based on the assumption that most people would practice safer sex if they had the prerequisite skills, researchers have trained individuals at risk for HIV infection in a variety of sexual assertiveness, communication, and problem-solving skills in order to motivate and empower them to negotiate safer sexual behavior with their partners (e.g., Jemmott et al., 1992; Kelly, St. Lawrence, Betts, Brasfield, & Hood, 1990; Kelly, St. Lawrence, Hood, & Brasfield, 1989; Rotheram-Borus, Koopman, & Haig-nere, 1991; Valdiserri et al., 1988).

One possible reason why cognitive models have not generated more intervention research may be their emphasis on simply predicting and understanding behavior (e.g., Ajzen & Fishbein, 1980) rather than on predicting behavior *and influencing* the probability of its occurrence (Skinner, 1970). Although all models discussed above have been successful in identifying specific attitudes, beliefs, and expectations associated with risky sexual behavior, they have not identified specific variables that might be manipulated to change such cognitions in order to increase the likelihood of self-protective behavior. A behavior-analytic approach, in contrast, places a premium on identifying environmental variables or at least correlates of AIDS-risk behavior that are potentially manipulable. Hence, from a behavior-analytic perspective, much greater emphasis is placed on studying the social context in which risky sexual behavior occurs because such studies would be more likely to identify variables that can be used to influence such behavior than studies examining their attitudinal, cognitive, or behavioral correlates.

The importance of the social context of sexual risk taking has been highlighted in an interesting series of intervention studies that were recently reported by Kelly and his associates (e.g., Kelly, St. Lawrence, Diaz, et al., 1991; Kelly et al., 1992). These researchers developed a community program based on E. M. Rogers' (1983) diffusion of innovations

theory. With the assistance of bartenders in gay bars, they enlisted popular patrons with leadership qualities and trained them to serve as risk-reduction endorsers to their peers. The intervention was based on the assumption that the behavior changes instigated and endorsed by popular members of a group would change social norms so that self-protective behavior would gradually be emulated by others. This assumption was corroborated, in that the researchers were able to document a significant decrease in the incidence of risky sexual behavior among patrons of several gay bars. Kelly et al.'s line of research is an excellent demonstration of an intervention targeting the social context of behavior. It also shows that it is possible to intervene in entire communities rather than focusing intervention efforts on individuals or small groups.

If the behavioral sciences are going to have an impact on stemming the further spread of AIDS, a critical analysis is needed on how well the most influential research paradigms are actually contributing to the prevention of AIDS-risk behavior. There is substantial evidence that the cognitive models reviewed above succeed in predicting intentions to reduce risky behavior and, perhaps, actual risky behavior. However, in other areas to which these models have been applied, they have not produced specific information about how the predicted behavior can be changed or prevented, and there is no reason to think that they will be more productive in contributing to the modification or prevention of AIDS-risk behavior.

A CONTEXTUAL APPROACH TO RESEARCH ON AIDS PREVENTION

The major difference between a behavior-analytic approach and cognitive theories lies in the emphasis the former places on identifying manipulable environmental variables rather than cognitive antecedents of behavior. This difference stems from different philosophies of science.

The Goal of Behavioral Research

As exemplified by the models described above, the currently dominant philosophical framework guiding behavioral research emphasizes the development of models of the interrelations among variables. The generality of these models is then tested in diverse samples of the universe of cases, and their truth or validity is judged by the degree to which the models can be replicated in these samples (Biglan & Hayes, 1993; Hayes, 1993; Hayes, Hayes, & Reese, 1988). The more widely replicable the model the better. Indeed, it seems that within this paradigm, the searching out of universal regularities is the ultimate goal. This framework has been labeled *mechanism* (Hayes et al., 1988; Pepper, 1942).

The cognitive models described above are well characterized by this philosophical framework. Let us take the TRA as an example. According to this theory, attitudes toward an act and subjective norms about the act will predict intentions to engage in the act, and intentions will predict actual behavior. In evaluating the TRA and its variants, Ajzen (1988) has shown that the theory has successfully predicted intentions toward diverse types of behavior, such as cooperation in a prisoner's dilemma game, using birth control, smoking marijuana, attending church, buying beer, and joining an alcohol treatment unit. The research cited above (Cochran et al., 1992; Fishbein et al., 1992; J. Jemmott et al., 1992; Wulfert, 1993) constitutes additional support for the theory's scope by extending it to the prediction of intentions to engage in safer sexual behavior. Thus, evaluated solely within a philosophical framework that emphasizes generalizable relations among variables, this theory has been enormously successful. What is seldom noticed, however, is that other frameworks, emphasizing other goals, are possible. And the prospects of the behavioral sciences contributing to the prevention of the further spread of AIDS may be directly affected by the framework scientists choose.

Behavioral scientists could explicitly adopt the goal of identifying variables that predict *and influence* behavior (Biglan & Hayes, 1993; Skinner, 1970). This means that the truth or validity of a theory is evaluated in terms of its contribution to predicting a given behavior *and* influencing the probability of its occurrence. The philosophical framework associated with adopting this goal is a particular version of contextualism (Hayes, Hayes, Reese, & Sarbin, 1993), which has been labeled *functional contextualism* (Hayes, 1993) because of its dual focus on the functional context for behavioral events and the functional utility of the analysis itself (Biglan & Hayes, 1993). Behavior analysis can be viewed as an exemplar of this approach (Morris, 1988), as can cultural materialism (Harris, 1979).

What effect would adopting the goal of "prediction and influence of behavior" have on AIDS prevention research? We submit that it would lead to a greater emphasis on intervention research and research that identifies *manipulable* variables that influence AIDS-risk behavior. The search for manipulable variables would become a higher priority because the strongest evidence that a variable is causally related to behavior is provided by manipulating the variable and demonstrating subsequent changes in behavior. For example, our best test of the hypothesis that social norms influence sexual risk taking would involve altering those norms and assessing whether behavior changed.

Such a framework would not rule out research on the cognitive and attitudinal correlates of behavioral intentions and AIDS-risk behavior. However, it would evaluate this research in terms of its contribution to actually changing sexual risk taking. From our perspective, it has been too readily and uncritically assumed that research on the cognitive correlates of risky behavior will contribute to the prevention of sexual risk taking. It is entirely possible that a model of the attitudinal and normative correlates of AIDS-risk behavior accounts for a large amount of the variance in such behavior across diverse populations (e.g., Wulfert, 1993) and yet contributes little to our ability to

influence the behavior that leads to HIV infection. Consider, for example, research on attitudes toward condom use (e.g., Fishbein et al., 1992). Suppose we find that attitudes toward the use of condoms are highly correlated with actual use. This might be taken to mean that by changing those attitudes, we will increase condom use. However, it is quite possible that behavior influences attitudes rather than attitudes influencing behavior. For example, our own research suggests that young women may have negative attitudes toward condom use because males are coercive if women propose using them (Biglan, Noell, Ochs, Smolkowski, & Metzler, 1993). Given that a woman is pressured into not using them, she may have negative attitudes toward their use as a way of keeping her attitudes consistent with her behavior (e.g., Festinger, 1972).

In any case, an attitude-behavior correlation tells us nothing about the environment that may shape attitudes and behavior. Before we can proceed to prevention, we need to understand how the social environment affects attitudes and behavior and how it affects the relation between them. Thus, it is imperative that models of the cognitive and attitudinal correlates of sexual risk taking incorporate manipulable environmental variables.

The Social Context of Risky Sexual Behavior

This section will briefly review recent research on adolescents' risky sexual behavior as an example of a focus on the social context for behavior.

Behavioral correlates. At least among adolescents, engagement in risky sexual behavior is correlated with engaging in a variety of other problem behaviors. Metzler, Noell, and Biglan (1992) found that across three separate samples of adolescents, a scale of sexual risk taking was significantly (r s ranging from .26 to .54) related to measures of cigarette smoking, alcohol use, marijuana use, other drug use, antisocial behavior, and academic failure.

Of course, such information cannot be

used to influence risky sexual behavior directly. Even if reducing other kinds of problem behavior does bring about a reduction in risky sexual behavior, one must still figure out how to reduce the other problem behavior. These relations do have implications for prevention, however. They imply that efforts to prevent other problem behavior could contribute to preventing risky sexual behavior. Conversely, it may be very hard to prevent risky sexual behavior unless we prevent other problems such as substance abuse.

Family and peer contexts for adolescents' risky sexual behavior. Metzler, Noell, Biglan, Ary, and Smolkowski (in press) have delineated the social context that may need to be modified if risky sexual behavior among adolescents is to be prevented. They replicated a model of the concurrent social context correlates of risky sexual behavior across three samples of adolescents. Adolescents were more likely to engage in risky sexual behavior if they associated with peers who engaged in diverse problem behaviors, if their parents did little monitoring of their activities, and if parents were less available due to single parenting. Association with such deviant peers was, in turn predicted by poor parental monitoring of the young person's activities and coercive interactions with parents. This model of the social context for risky sexual behavior is remarkably similar to models of the social context for adolescent antisocial behavior (Patterson, Reid, & Dishion, 1992) and substance abuse (Dishion, Patterson, & Reid, 1988). It appears that varieties of problem behavior of youth might be prevented if we could improve parental monitoring and reduce coercive discipline practices (Patterson et al., 1992).

Male sexual coercion. A different factor that may influence adolescent women to engage in unprotected sexual intercourse is the coercive behavior of the men they interact with. Research was shown that women's reports of being sexually coerced were significantly associated ($r = .51$) with reports of engaging in risky sexual behavior (Metzler et al., 1992). This is serious because male sexual coercion

seems to be a rather common occurrence. For example, Biglan and his colleagues (Biglan et al., 1993) found that across five samples of young women, 22% to 68% reported having been forced to have sexual intercourse. Coding of the clinical records of young women in one sample, who were receiving clinical assistance to reduce risky sexual behavior, indicated that the majority of them experienced male coercion as an obstacle to safer sex. For example, 55% of the women described having to deal with situations in which men were angry, aggressive, or assaultive. The levels of sexual coercion found in this study were consistent with those reported in other research (Koss, 1990; Koss, Gidycz, & Wisniewski, 1987). Given its prevalence, it is surprising that so little has been done to reduce the occurrence of sexual coercion. Evidence that sexual coercion may contribute to women engaging in sexual behavior that risks AIDS and other sexually transmitted diseases provides an additional reason to take steps to reduce sexual coercion. If our society cannot be mobilized to reduce sexual coercion because it is wrong, perhaps we can do it to prevent disease.

The Larger Social Context

A thoroughgoing contextualism does not end at the point of effective analyses of the behavior of individuals. If we are going to affect the incidence and prevalence of behavior, we need a science of the larger social systems within which individuals and their environments are embedded (Biglan, 1992, 1993; Biglan, Glasgow, & Singer, 1990). By itself, even the most successful analysis of the variables that predict and influence AIDS-risk behavior will not be enough to prevent the spread of AIDS. In addition, it will be necessary to disseminate effective interventions for behavior change. For example, if a clinical intervention has been shown to reduce the risky sexual behavior of gay men, how can organizations in communities around the country be influenced to adopt this intervention? Achieving dissemination of effective behavior-change strategies will require an

effective analysis of the variables that influence the practices of organizations and social systems that might adopt the intervention. Hence, research is needed on how to affect organizational practices.

Many of the variables that affect AIDS-risk behavior are probably beyond the reach of interventions focused on individuals. How much can we expect to reduce the risky sexual behavior of young women through clinical means, if their social system supports men being sexually coercive? If the incidence of male sexual coercion has to be reduced in order to reduce the prevalence of females' risky sexual behavior, we will need research on how to influence communities of young men—not only on the behavior of those men as individuals, but on the social interactions among them that may support coercive behavior toward women.

Affecting the prevalence of AIDS will also require research on community organizing (Ecklein, 1984). There are many fine examples of how communities have been organized to achieve specific goals relevant to health in general (e.g., Bracht, 1990). However, we are a long way from having a set of empirically confirmed principles about the variables that affect community practices relevant to AIDS.

CONCLUSION

Behavioral scientists can make an historic contribution to public health if they develop effective methods of reducing the incidence and prevalence of behavior that risk HIV infection. Studies that focus on identifying ways to change the social environment in order to bring about changes in risky behavior stand the best chance of contributing to this outcome. The work of Kelly and his associates (e.g., Kelly, St. Lawrence, Diaz, et al., 1991; Kelly et al., 1992) is exemplary in this regard. Studies that focus on identifying attitudes, expectancies, and beliefs that predict risky behavior are of some value, but such research is inadequate for preventing risky behavior if it does not also identify potentially manipulable environmental variables that influence the

probability, incidence, and prevalence of AIDS-risk behavior. The most useful studies will be those that involve an experimental manipulation of variables that are thought to influence risky behavior.

Research must also focus on how larger social systems can be influenced in order to bring about changes in the incidence and prevalence of behavior that risks HIV infection. Even the most successful prevention programs targeting small groups will fall short if we do not learn how to translate their findings into population-wide reductions of AIDS-risk behavior. Thus, besides prevention strategies that have been shown to be effective in changing the behavior of smaller target groups, interventions that promote healthy behavior in large segments of the population in general are needed. This requires that we learn how to influence the actions of groups and organizations. For example, we need to examine what small-scale studies imply for the use of media to influence risky behavior. Media are an important resource for community interventions, because they can promote behavior-change messages and methods that behavioral research has shown to be effective, and they can directly affect individuals through modeling and advocacy. We also need to explore how we can influence schools to adopt policies and programs that contribute to the prevention of HIV infection. Because 90% of the children in our society attend public schools, broad-scale intervention programs in these settings would be a natural next step in prevention (Coie et al., 1993) because it would allow access to large numbers of young people who are potentially at risk for contracting the AIDS virus. If schools are reluctant to address HIV prevention directly, perhaps prevention programs could be designed that target other problem behavior that has shown to be correlated with risky sexual behavior. Thus, rather than attempting to implement HIV prevention programs per se, school administrators might be more easily motivated to introduce large-scale smoking, alcohol, and drug-use prevention programs (Flay, 1985; Tobler, 1986) or to institute programs that target

general conduct problems and antisocial behavior (Bullis & Walker, 1993) and at the same time ensure academic success (Becker, 1986).

In sum, behavioral scientists are uniquely qualified to make a significant impact on the most pressing public health problem of modern times. By approaching this problem from the functional contextualist perspective outlined above, with its emphasis on predicting and influencing behavior, a useful framework exists for designing, implementing, and testing large-scale interventions. Applying this framework to HIV infection may enable behavioral scientists to occupy a primary leadership role in altering the future course of the AIDS epidemic.

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