We are now nearing the end of the second decade of the AIDS epidemic. Although major advances in treatment have prolonged and improved the quality of life of those infected with HIV, there is still no cure for, or a vaccine to prevent, this deadly disease. Perhaps most important, it has become increasingly clear that primary prevention must focus on behavior and behavior change. AIDS is first and foremost a consequence of behavior. It is not who people are, but what people do that determines whether or not they expose themselves or others to HIV, the virus that causes AIDS. As Kelly, Murphy, Sikkema, and Kalichman (1993) pointed out, the task confronting the behavioral sciences is to develop theory-based intervention programs to reduce "risky" behaviors and increase "healthy" behaviors.

In order to change behavior, however, it is first necessary to understand why people behave the way they do. The more that is known about the variables underlying a person's decision to perform or not to perform a given behavior, the more likely it is that successful behavioral intervention programs can be developed. Given the severity of the AIDS epidemic, it seemed appropriate to bring together the developers and/or leading proponents of five major behavioral theories in order to identify a finite set of variables to be considered in any behavioral analysis. To this end, the National Institute of Mental Health (NIMH) organized a theorists workshop.

The participants at the workshop were Albert Bandura (social cognitive theory), Marshall Becker (health belief model), Martin Fishbein (reasoned action), Frederick Kanfer...
Theories of Behavior and Behavior Change

Although there are a number of theories of behavior and behavior change available in the literature, there are three theories that have had a major impact on much of the behavioral research in the AIDS area: the health belief model (e.g., Becker, 1974, 1988; Janz & Becker, 1984; Montgomery et al., 1989), social cognitive theory (e.g., Bandura, 1986, 1992, 1994) and the theory of reasoned action (e.g., Ajzen & Fishbein, 1980; Fishbein, 1980; Fishbein & Ajzen, 1975; Fishbein, Middlestadt, & Hitchcock, 1991).

According to the health belief model, two major factors influence the likelihood that a person will adopt a recommended health protective behavior. First, individuals must feel personally threatened by the disease (i.e., they must feel personally susceptible to a disease with serious or severe consequences). Second, they must believe the benefits of taking the preventive action outweigh the perceived barriers to (and/or costs of) preventive action.

From the perspective of social cognitive theory, the initiation and persistence of an adaptive behavior depends on beliefs of self-efficacy and outcome expectancies. That is, in order to perform a given behavior individuals must believe in their capability to perform the behavior in question under different circumstances and they must have an incentive to do so (i.e., expected positive outcomes of performing the behavior must outweigh expected negative outcomes). Incentives may involve physical outcomes, social outcomes, or self-sanctions.

According to the theory of reasoned action, performance or nonperformance of a given behavior is primarily a function of the person’s intention to perform (or to not perform) that behavior. The intention is, in turn, viewed as a function of two primary determinants—the individual’s attitude toward performing the behavior (based on their beliefs about the consequences of performing the behavior, i.e., beliefs about the costs and benefits of performing the behavior) and their perception of the social (or normative) pressure exerted on them to perform the behavior.

The aforementioned three theories represent a public health, a clinical, and a social psychological approach to the prediction and understanding of behavior. Although there is no real competitor to the health belief model in the public health domain, there are other, well-established, clinical and social psychological behavioral theories. For example, in the clinical domain, the theory of self-regulation and self-control (e.g., F. H. Kanfer, 1970; F. H. Kanfer & Schefft, 1988; R. Kanfer & F. H. Kanfer, 1991), has received considerable attention. And, within social psychology, the theory of subjective culture and interpersonal relations (e.g., Triandis, 1972, 1977, 1980) is often viewed as a major competitor to the theory of reasoned action.

The theory of self-regulation and self-control describes how self-regulatory processes (i.e., self-observation, self-evaluation, and self-reinforcement) lead to satisfaction with behavioral performance and continuation of the behavior, or to dissatisfaction and either self-corrective action or termination of the behavior. Although more of a process than a predictive model, the theory identifies goal-setting (or intentions), self-efficacy, outcome expectancies, skills, and affective states (e.g., mood and emotion) as important determinants of behavior.

According to the theory of subjective culture and interpersonal relations, the likelihood of performing a given behavior is determined by intentions, habits, and facilitating factors. Intentions are, in turn, viewed as a function of perceived consequences of performing the behavior (i.e., outcome expectancies), social influences (including norms, roles and the self-concept), and emotions.

Among them, the five theories, briefly described above, have developed or contain almost all of the variables that have been utilized in attempts to understand and change a wide variety of human behaviors.

Main Points of Consensus

Early on, it became very clear that a distinction must be made between theories of behavioral prediction and theories of behavioral change. Whereas models of behavioral prediction focus on variables (or factors) that “determine” the performance or nonperformance of any behavior at a given point in time, models of behavior change focus on “states” of the organism or “stages” individuals may go through in their attempt to change behavior.

Generally speaking, there was agreement that people will continue to behave as they have in the past until some internal or external stimulus (e.g., a symptom, a mass media message) interrupts this “normal” flow of behavior. Behavioral prediction models attempt to identify variables that serve as determinants of ongoing behaviors. That is, these models focus on those variables that help to explain why some members of a given population are performing a given behavior while other members of the same population are not. In contrast, behavior change models focus first on the stimuli that “disrupt” ongoing behavior and then on the processes individuals may utilize in moving from one state or stage to another in their attempt to eliminate old or adopt new behaviors.
For example, a TV ad that informs the public about AIDS transmission (i.e., a "cue to action") may be an important first step in getting someone to consider behavior change. But whether a person is or is not exposed to such an ad may not be a determinant (and in fact may be a very poor predictor) of whether the person is or is not performing any given AIDS protective behavior (e.g., using a condom). Similarly, recognition that people's behavior is putting them at risk for AIDS may be, at least for some, a necessary step in a change process. Nevertheless, perceived risk may be unrelated to (and not be a determinant of) whether individuals are or are not performing a given AIDS-protective behavior.

Although behavioral prediction and behavior change theories often have different foci, they are quite complementary. Indeed, the intensity and direction of the variables identified in behavioral prediction theories often serve as markers or indicators of a state of the organism or a stage of change. For example, as is described later, there was general consensus that the intention to perform a given behavior is one of the immediate determinants of that behavior. The stronger the intention to perform a given behavior, the greater the likelihood that the person will, in fact, perform that behavior. By recognizing that intention is a continuous variable (ranging from strong intention not to perform a behavior through uncertainty to strong intentions to perform the behavior), it can be argued that the strength of a person's intention may serve as an index of a given state of the organism or of a stage in a change process. Thus, as people move from strong negative through neutral weak positive intentions, they may be moving from what Prochaska and DiClemente (1983, 1986) called the precontemplative to the contemplative stage. Similarly, as individuals move from weak to strong positive intentions, they may be moving from what F. H. Kanfer and Schefft (1988) called an intentional state through a decisional state to a state of commitment.

Although process models of behavioral change are important, as a first step it is helpful to explain why people behave the way they do. Thus, the focus of the workshop was on identifying key variables that would enable the prediction and understanding of behavior. Clearly, if a limited number of variables that serve as potential determinants of any given behavior can be identified, it should be possible to measure these variables and examine the strength of the associations among them as well as the strength of the associations between each of these variables and the behavior in question. These analyses should lead to the identification of the one or two variables that most strongly influence the decision to perform (or not perform) a given behavior in a given population. Once identified, these variables should then serve as the primary focus of an intervention.

Variables Underlying Behavioral Performance

After a consideration of each of the five theories, a set of eight variables was identified that appear to account for most of the variance in any given deliberate behavior: intention, environmental constraints, skills, anticipated outcomes (or attitude), norms, self-standards, emotion, and self-efficacy. For a person to perform a given behavior, one or more of the following must be true:

1. The person has formed a strong positive intention (or made a commitment) to perform the behavior.
2. There are no environmental constraints that make it impossible for the behavior to occur. The person has the skills necessary to perform the behavior.
4. The person believes that the advantages (benefits, anticipated positive outcomes) of performing the behavior outweigh the disadvantages (costs, anticipated negative outcomes); in other words, the person has a positive attitude toward performing the behavior.
5. The person perceives more social (normative) pressure to perform the behavior than to not perform the behavior.
6. The person perceives that performance of the behavior is more consistent than inconsistent with his or her self-image, or that its performance does not violate personal standards that activate negative self-sanctions.
7. The person's emotional reaction to performing the behavior is more positive than negative.
8. The person perceives that he or she has the capabilities to perform the behavior under a number of different circumstances; in other words, the person has perceived self-efficacy to execute the behavior in question.

Generally speaking, the first three factors are viewed as necessary and sufficient for producing any behavior. That is, for behavior to occur, a person must have a strong positive intention (i.e., have a commitment) to perform the behavior in question; the individual must have the skills necessary to carry out the behavior; and the environment must provide a context of opportunity, or be free of constraints, such that the behavior can occur. Thus, for example, if a male injecting drug user (IDU) is committed to using bleach every time he shares injection equipment, has bleach available, and has the skills necessary to use the bleach, the probability is close to 1.0 that he will bleach before sharing. Similarly, if this same person has formed a strong intention to always use a condom for vaginal sex with his spouse, has a condom available, does not experience strong resistance to condom use from his spouse, and has the necessary skills to use the condom, the probability will again be close to 1.0 that he will use a condom when he engages in vaginal sex with his spouse.

The remaining five variables are viewed as influencing the strength and direction of intention. For example, it can be argued that individuals will not form a strong intention to perform a behavior unless they first believe that behavioral performance will lead to more positive than negative outcomes and/or they believe that they have the skills and abilities necessary to perform that behavior (i.e., they believe that they can perform the behavior). In other words, attitudes and/or self-efficacy may influence the strength of a person's
intention. It is important to recognize however, that one or more of these variables may also have a direct influence on behavior. Thus, for example, by influencing the amount of effort someone expends, and by influencing an individual's persistence in the face of barriers, self-efficacy may also have a direct impact on behavior.

It should also be recognized that behavioral performance can influence one or more of these five variables. Individuals may form a positive intention to perform, and may in fact perform a given behavior, at least in part because they believe that performance of the behavior will lead to a positively valued outcome. When individuals perform the behavior, however, this outcome may not occur. Clearly, this information will influence the person's behavioral beliefs (or outcome expectations), which may in turn influence intentions and future behavioral performances.

MEASUREMENT CONSIDERATIONS

Having identified eight variables (or factors) that are assumed to underlie the performance (or nonperformance) of any behavior, it is necessary to consider how each of these variables can be assessed. First, however, it is important to distinguish between variables that have "fixed" contents and those that have "variable" contents. To a certain extent, this distinction parallels the distinction between etic (i.e., universal) and emic (i.e., population specific) considerations. That is, for some variables (e.g., intention), item content is "fixed" and the assessment question is not "what" to measure, but how to best measure the construct in a given population. For other variables, however (e.g., behavioral beliefs or outcome expectancies), item content depends on the population being considered, and it is necessary to first go to a representative sample (and/or trained observers) of the population being studied in order to determine item content.

Thus, prior to attempting to develop any fixed item assessment instrument, the use of standardized elicitation procedures (see Ajzen & Fishbein, 1980) are recommended to identify four broad classes of variables: perceived outcomes of performing the behavior; relevant referents (either individuals or groups) vis-à-vis the behavior; perceived facilitators of, and barriers to, behavioral performance; and characteristics, qualities, and attributes of people who do and do not perform the behavior. In addition, it is sometimes necessary to consider a fifth class of variables, namely, action alternatives.

As becomes clear later, outcomes are necessary for developing measures of behavioral beliefs or outcome expectancies; relevant referents are necessary for developing normative measures; barriers and facilitator are necessary for assessing both environmental constraints and self-efficacy; and personal characteristics are necessary for assessing self-image and violations of self-standards. Action alternatives help one to identify relevant behaviors that either define a behavioral category (e.g., safe sex) or identify skills or courses of action necessary for goal attainment.

Clearly, however, outcomes, referents, barriers, facilitators, personal characteristics, and action alternatives will vary from behavior to behavior as well as from population to population. Thus, it is essential that open-ended elicitation questions be asked with respect to the specific behavior under consideration. Unfortunately, selecting this behavior is often more difficult than may first appear. Consider, for example, a situation in which a heterosexual male resists using a condom for vaginal sex with a casual partner. If the goal is to try to increase condom use in this situation, should the focus be on increasing the likelihood that the male will use a condom or on increasing the likelihood that the female will get her partner to use a condom? Although it can be argued that getting a partner to use a condom is no less a performance attainment than putting on a condom, it can also be argued that getting a partner to use a condom is a goal that may be attained only by performing one or more behaviors, such as "telling one's partner to use a condom," "refusing to have sex unless one's partner uses a condom," or "negotiating condom use with one's partner." Thus, it could also be argued that in an attempt to increase condom use in this situation, the focus should be on increasing the likelihood that the woman will perform one or more of these behaviors. Note, however, that in contrast to "telling one's partner to use a condom" or "refusing to have sex," "negotiating condom use" is not a single behavior but a behavioral category involving a number of different behaviors.

This distinction between goals (e.g., avoiding AIDS, getting a partner to use a condom), behavioral categories (e.g., practicing safe sex, negotiating condom use), and behaviors (e.g., using a condom, telling one's partner to use a condom) is discussed in more detail later. At this point, however, it is sufficient to point out that, with relatively few exceptions, the assessment of the eight variables is essentially identical whether the focus is on a goal, a behavioral category, or a specific behavior. Perhaps the major difference is that when the focus is on a behavioral category or a goal, it is also necessary to identify the behaviors comprising the category or the behaviors to be performed in the attempt to attain the goal. Given the primary concern with behavior, for illustrative purposes this chapter focuses on a specific behavior, namely, the likelihood that males will always use a condom for vaginal sex with their wives (or their main sexual partners). In addition, when appropriate, ways in which assessment procedures can be adapted for consideration of a behavioral category or a goal are illustrated. Generally speaking, however, in the examples, phrases such as "getting my husband (or main sexual partner) to always use a condom for vaginal sex," "engaging in safe sex," or "negotiating condom use for vaginal sex with my husband (or main sexual partner)," can be substituted for the phrase "always using a condom for vaginal sex with my spouse (or main sexual partner)."

Identifying Variable (Population-Specific) Content

As already indicated, the first stage in developing fixed-format assessment instruments is to identify salient outcomes, referents, facilitators, barriers, and personal characteristics with respect to the behavior in question. In addition, if the focus is on a behavioral category or a goal, it is necessary to identify the action alternatives that comprise the behavioral category and/or that lead to goal attainment. In order to obtain this information,
it is necessary to ask a representative sample of the population a series of open-ended questions.

**Perceived Outcomes.** Anticipated outcomes or behavioral beliefs are viewed as one of the key variables underlying behavioral performance. To identify salient outcomes associated with a male’s use of condoms for vaginal sex with his spouse (or main sexual partner), a representative sample of men could be asked questions such as the following:

1. What do you see as the advantages (positive outcomes of, benefits of, good things that would happen) of your always using a condom for vaginal sex with your spouse or main sexual partner?

2. What do you see as the disadvantages (negative outcomes, costs, bad things that would happen) of your always using a condom for vaginal sex with your spouse or main sexual partner?

3. What else comes to mind when you think about always using a condom for vaginal sex with your spouse or main partner? For example, how would always using a condom for vaginal sex with your wife (or main sexual partner) make you feel? How would it make others feel? How would they react?

Content analyses of the open-ended responses to these questions should allow the identification of a set of salient (frequently mentioned) outcomes or consequences. It is important to recognize that the same outcome may be seen as an advantage by some members of the population and as a disadvantage by others. For example, some people might see “preventing pregnancy” as a “good” thing whereas others may view this same outcome negatively. The content analysis should attempt to identify salient “outcomes” irrespective of their perceived value. Once this list is developed, the set of outcomes can be categorized in any number of ways. For example, a researcher might want to distinguish “costs” from “benefits,” or might want to distinguish between “long-term” and “short-term” outcomes. Similarly, it may be useful to distinguish between “physical” outcomes (e.g., will protect me from AIDS), “social” outcomes (e.g., will make my partner angry), and “self-sanctions” (e.g., would make me feel dirty). Irrespective of the particular category system used, the important point is to identify the set of outcomes or consequences that the people in the population under study are most likely to consider when they think about performing the behavior in question.

**Relevant Referents.** Perceived normative pressure is also expected to influence behavioral performance. It is thus necessary to identify those individuals or groups that the individual perceives as potential sources of social influence. More specifically, it is important to identify those individuals or groups who are perceived to be putting pressure on the individual to perform or not perform the behavior in question. In order to obtain this information, the representative sample of men should also be asked questions, such as:

1. Please list those individuals or groups who would support or approve of your always using a condom for vaginal sex with your spouse or main sexual partner.

2. Please list those individuals or groups who would oppose or disapprove of your always using a condom for vaginal sex with your spouse or main sexual partner.

3. Please list any other individuals or groups that come to mind when you think about always using a condom for vaginal sex with your spouse or main sexual partner.

Content analyses can be conducted to identify the most frequently mentioned referents. Once again, it is important to recognize that a given referent (e.g., friends, spouse) may be listed by some as a person who would approve of the behavior and by others as a person who would disapprove of the behavior. The purpose of the content analysis should be to identify the referents mentioned most frequently by the population, irrespective of their perceived positions.

**Barriers and Facilitators.** In order to identify environmental constraints as well as other internal and external circumstances that may influence behavioral performance, questions such as the following can be asked:

1. What makes it difficult or impossible for you to always use a condom for vaginal sex with your wife? (Probe: Can you think of any other barriers or circumstances that would prevent you from, or make it hard for you to always use a condom for vaginal sex with your wife or main sexual partner?)

2. What helps you or makes it easier for you to always use a condom for vaginal sex with your wife? (Probe: Can you think of anything else that would facilitate or increase the likelihood that you will always use a condom for vaginal sex with your spouse or main sexual partner?)

Content analyses of responses to these items should allow identification of a set of “circumstances” that increase or reduce the likelihood of the behavior occurring. In contrast to “outcomes” and “referents,” it is unlikely that the same circumstance will be seen as a facilitator by some respondents and as a barrier by others. Nevertheless, some people may mention the presence of a given factor or circumstance as a barrier whereas others may mention its absence as a facilitator. For example, some respondents may indicate that it is “harder” for them to always use a condom with their wives if they have been drinking or using drugs, and others may say it is “easier” for them to always use a condom if they have not been drinking or using drugs. Thus, once again, attempts should be made to develop a single set of circumstances whose presence or absence may facilitate or prevent the performance of the behavior in question.

It is important to note that the purpose is to identify circumstances that influence behavioral performance, and not outcomes of that performance and/or strategies that may help a person perform the behavior. Thus, for example, if a respondent says that one of the things that makes it more difficult for him to always use a condom with his wife is that “it will make my wife angry,” then he is reporting a perceived outcome.
rather than a circumstance. Similarly, if the individual says it would be easier to always use a condom with my wife "if I had talked to her beforehand," then he is reporting a strategy that may be used to increase the likelihood of condom use, rather than a circumstance that can facilitate or hinder performance. Although a researcher may wish to retain a list of "strategies" (to be used in developing action alternatives and/or in identifying skills), these responses should be excluded from the analysis of barriers and facilitators. Similarly, outcomes should also be excluded in developing the set of circumstances that influence the behavior in question. However, if a respondent lists outcomes that he had not previously mentioned in response to the outcome questions, these responses should be included in the content analysis of outcomes.

In addition to asking a representative sample of the population to identify circumstances that may increase or decrease the likelihood of behavioral performance, it is often useful (and sometimes necessary) to also ask trained observers (or people familiar with the population) to identify factors that may facilitate or inhibit the behavior. As Nisbett and Ross (1980) pointed out, people are often quite inaccurate in identifying factors that influence their own behaviors. Thus, the obtained list of respondent-elicited circumstances should be supplemented with circumstances identified by independent observers.

Once the set of circumstances influencing behavior has been identified, it can be categorized, like the set of perceived outcomes, in a number of different ways. Most obviously, a distinction can be made between facilitators and barriers. In addition and perhaps more important, each circumstance can be categorized as one that is "internal" or "external" to the individual. As is seen later, external circumstances are used to assess environmental constraints, and the full set of circumstances contribute to the development of self-efficacy items.

**Personal Characteristics.** In order to determine whether performance of the behavior in question is consistent or inconsistent with individual’s self-image or self-standards, it is necessary to know how they perceive people who do and do not perform the behavior in question. Thus, the respondents can be asked questions such as:

1. How would you describe a man who ALWAYS or ALMOST ALWAYS uses a condom for vaginal sex with his wife (or main sexual partner)? That is, what do you believe are the characteristics, qualities, or attributes of such a person?

2. How would you describe a man who NEVER or ALMOST NEVER uses a condom for vaginal sex with his wife (or main sexual partner)? Once again, please list what you believe to be the characteristics, qualities, and attributes of such a person.

Content analyses of responses to these items should allow researchers to arrive at a single set of frequently mentioned characteristics or "traits" of men who do or do not perform the behavior in question.

**Action Alternatives.** Although the aforementioned questions are sufficient for obtaining information necessary for developing fixed-format items to assess each of the potential variable content determinants of a given behavior, it is necessary to obtain additional information if the focus is on a behavioral category or a goal. More specifically, as already indicated, if the focus is on a behavioral category (e.g., safe sex, negotiating condom use), then it is necessary to identify those behaviors that comprise the behavioral category. Similarly, if the focus is on a goal or outcome (e.g., getting my partner to use a condom, avoiding AIDS), then it is necessary to identify the behaviors (or courses of action) that may increase the likelihood that the person will attain that goal. Note, however, that a given individual’s perception of what behaviors define a behavioral category and/or of what behaviors will lead to goal attainment, may be very different from those held by a group of experts. For example, epidemiologists may include a very different set of behaviors in their definition of safe sex than will a layperson. Similarly, a clinician may see a different set of behaviors leading to goal attainment than will the patient. Thus, in identifying action alternatives, information should be obtained from knowledgeable experts as well as from a representative sample of the population under investigation.

For example, if the goal of an intervention was to increase the likelihood that women will engage in a behavioral category, such as practicing safe sex with their husbands (or main sexual partners), then a representative sample of women could be asked questions such as: What do you consider to be safe sex with your husband? That is, what sexual behaviors are safe? What sexual behaviors are dangerous?

Content analyses of responses to these types of questions should allow the identification of the behaviors that the population sees as comprising the behavioral category. In addition, they should help form an understanding of what respondents mean when they respond to questions about "safe sex" or other behavioral categories. A similar set of questions could be asked of a small sample of "experts." By looking at differences between the behaviors identified by the population and those identified by experts, an investigator can clarify and explicitly define (for the respondent) what is meant by the behavioral category. In addition, once a complete list of behaviors comprising a behavioral category is developed, one may wish to focus on one or more specific behaviors that could be studied in their own right and/or that could serve as the focus of an intervention.

Similarly, if there is interest in increasing the likelihood that women will attain a specific goal (e.g., get their husbands or main sexual partners to always use a condom for vaginal sex), a representative sample of women (as well as a small group of "experts") could be asked questions such as: What is involved in getting your husband (or main sexual partner) to always use a condom for vaginal sex? That is what you would have to do or
say to get your husband to always use a condom for vaginal sex? What other behaviors could you perform to increase the likelihood that he will use a condom for vaginal sex?

Content analysis of responses to this set of questions again identifies a more specific set of behaviors that a respondent may use to attain the behavioral goal in question. Discrepancies between action alternatives identified by the population and those identified by experts provide important information. Moreover, responses to these questions provide insight into skills that may be required to attain that goal. In addition, this information, along with information on circumstances described earlier, provides the basis for developing self-efficacy items.²

As mentioned earlier, it is important to recognize that the salient sets of outcomes, referents, circumstances, and traits (as well as action alternatives) are expected to vary as a function of both the behavior under consideration and the population of interest. Clearly, the outcomes of using a condom for vaginal sex with a spouse (or main sexual partner) may be very different from those associated with using a condom for vaginal sex with a new or occasional partner. Similarly, heterosexual males may see different consequences of using a condom for vaginal sex with their wives (or main sexual partners) than do bisexual males or men with hemophilia. Moreover, Black males may perceive different outcomes and have different referents than White or Hispanic males. Thus, to fully understand the determinants of a given behavior in a given population, it is necessary to elicit outcomes, referents, circumstances and traits vis-à-vis that behavior in that population. This information can then be used to develop closed-format assessment items.

Suggestions for Assessing Each of the Eight Key Variables

In order to illustrate how the previous information may be used to develop fixed alternative assessment items, and to illustrate how variables with “fixed” content can be assessed, the focus continues to be on men’s use of condoms for vaginal sex with their wives (or main sexual partners). Once again, however, it is important to note that the same set of procedures and types of items would be developed for investigations of behavioral categories or goal attainment.

Intentions to Perform the Behavior. As described earlier, there is general consensus that men who intend to “always use a condom for vaginal sex with my main partner” are significantly more likely to use a condom every time they have vaginal sex with their main partners than are men who do not have this intention. Moreover, the stronger the person’s intention to “always use a condom for vaginal sex with my main partner,” the more likely he is to carry out this behavior.

Unfortunately, the term intention has been used in different ways. For some, an intention is simply a weak statement of a wish or desire to perform a given behavior; for others, intentions have been viewed as a commitment or a self-instruction to carry out the behavior. The problem is a distinction between treating “intention” as an on/off variable (i.e., the person either intends or does not intend to act) and treating intention as a continuous variable varying in strength or intensity.

In the field of social psychology, where the concept of intention has been used most widely, the concept is viewed as a continuous variable, and it is usually measured with one or more of the following scales:

I will always use a condom for vaginal sex with my main partner
likely___:__:__:__:__:__:__: unlikely
I intend to always use a condom for vaginal sex with my main partner
likely___:__:__:__:__:__: unlikely
I will try to always use a condom for vaginal sex with my main partner
likely___:__:__:__:__:__: unlikely

These scales assess respondents’ subjective probability or subjective likelihood that they will perform (or will try to perform) the behavior in question.¹ Because probability or likelihood may be a difficult concept in some cultures, it is possible to substitute such scales as “agree–disagree,” “certain–uncertain,” or “true–false” for “likely–unlikely.”

Similarly, there may be concern that respondents cannot handle 7-point (or 5-point or 9-point) scales. In these cases, this information can be obtained with a two-part question: Do you think it is likely or unlikely that you will always use a condom for vaginal sex with your main partner?

Responses of “I don’t know,” “neither,” or “it’s as likely as it is unlikely” are taken as indications that the respondent is at the midpoint of the scale. Those answering likely (or unlikely), should then be asked the following: And would you say that it was extremely likely (unlikely), quite likely (unlikely), or only slightly likely (unlikely)?

Once again, it should be recognized that both the judgment scale (i.e., Do you agree or disagree that . . . ) and the descriptive adverbs (do you agree strongly, moderately, or only slightly) can be changed. Needless to say, exactly how the question is asked should depend on the population being considered.

For those who view intention as self-instruction, an additional scale, such as the following should also be developed:

When I am about to have vaginal sex with my spouse or main partner, I say to myself “Use a Condom.”
Always______________________________Never

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¹For those who view intention as self-instruction, an additional scale, such as the following should also be developed:

When I am about to have vaginal sex with my spouse or main partner, I say to myself “Use a Condom.”
Always______________________________Never
considered. However, for the question to assess intention as it is used here, it is necessary to arrive at a continuous measure that indicates the likelihood that a person will (or the strength of the individual’s commitment to) perform or try to perform the behavior in question.

Environmental Constraints Preventing Behavioral Performance. Although often overlooked, there may be a number of environmental constraints that make performance of the behavior virtually impossible. With respect to condom use for vaginal sex with a spouse or main sexual partner, one environmental constraint that would prevent this behavior is the absence of condoms. Clearly, if a condom is not available, or the person does not have the money to buy one, this behavior cannot occur. Similarly, if a spouse (or main sexual partner) refuses to have vaginal sex if the individual uses a condom, then condom use is quite unlikely. Note that the concern here is with circumstances or factors that are external to the individual.

Unfortunately, there is no standardized procedure for assessing the degree to which such environmental constraints are present. However, it seems reasonable to assume that such a measure could be developed by considering the set of external circumstances identified during the elicitation phase of the research. That is, a measure could be developed by considering those “external” circumstances that serve as barriers to behavioral performance. For example, respondents could be asked questions, such as the following, to indicate the extent to which each external circumstance was usually present or absent:

When you are about to have vaginal sex with your spouse (or main sexual partner), how often do each of the following occur?

Each item could be scored from 1 (Never) to 5 (Always), and the sum of the items could serve as an index of the degree to which environmental constraints were present.4

1. Condoms are NOT available

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<thead>
<tr>
<th>Never</th>
<th>Almost</th>
<th>Sometimes</th>
<th>Almost</th>
<th>Always</th>
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2. Your spouse (or main sexual partner) resists your use of condoms

<table>
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<th>Never</th>
<th>Almost</th>
<th>Sometimes</th>
<th>Almost</th>
<th>Always</th>
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Skills Necessary for Behavioral Performance. It is becoming increasingly clear that those interested in understanding behavioral performance must pay attention to skill dimensions. With respect to a male’s use of a condom for vaginal sex with his spouse or main sexual partner, the skills involved are those related to buying (or otherwise obtaining) and using a condom. Clearly, if the person does not know what a condom is, where to get it, or how to use it, then one will not be used. Moreover, as already described, if a partner is opposed to, or resists, condom use, additional skills, such as those involved in negotiating condom use, may also be necessary. Needless to say, such social negotiation skills become particularly relevant and important when the focus is on a woman’s attempt to get her partner to use a condom.

It is therefore necessary to develop skill measures. Fortunately, some measures are already available. For example, Cleghorn et al. (1991) developed a highly reliable, observational test of condom use skills. More specifically, respondents are given a packaged condom and are asked to put the condom on a dildo. Trained observers then record the extent to which the person does or does not perform a number of specific actions such as “unrolling the condom,” “holding the tip of the condom,” and “covering 100% of the shaft of the penis.”

With respect to negotiation skills, Kelly, St. Lawrence, Hood, and Brasfield (1989) constructed a set of eight role-play scenes following standard paradigms for assertion assessment (cf. Eisler, Miller, & Hersen, 1973; Hersen & Bellack, 1976). Each role play consisted of a scene narration in which a sexual partner attempts to pressure subjects to engage in a high risk practice or another person proposes a sexual encounter. The narrations were presented on audiotape, with each narration being followed by three prompts delivered live by a trained assistant who simulated the verbal conduct of the coercive partner. Subjects’ responses were audiotape recorded and were later coded for overall effectiveness (on a scale from 1 = very ineffective to 7 = very effective), as well as for discrete components of skill. For example, in scenes depicting coercions to engage in high risk behavior, respondents were coded for acknowledging the partner’s request, specifically refusing the high risk behavior, providing the reason for the refusal, noting the need to be safer, and suggesting a specific low risk alternative.

Generally speaking, the set of action alternatives identified during the elicitation phase of the research should provide guidelines and serve as the basis for developing skill measures. More specifically, by knowing the actions a person would have to perform to reach a given goal and/or by knowing what behaviors are included in a behavioral category, it should be possible to develop skill measures.

Behavioral Beliefs, Outcome Expectancies, Costs and Benefits, Perceived Consequences. In almost every behavioral theory, there is some recognition of the proposition that people will not perform a given behavior unless they believe (or anticipate) that the advantages (benefits, positive outcomes) of performing the behavior outweigh the disadvantages (costs, negative outcomes). That is, all theories agree that, at some level, people consider the possible outcomes of behavioral performance. Moreover, there is general consensus that it is not possible to simply generate a set of outcomes or consequences, but rather it is necessary to go to the population of interest and find out what the individuals believe to be the outcomes or consequences of engaging in a given behavior.
The previous section described procedures for identifying a set of salient outcomes with respect to the performance of a given behavior in a given population. This set of salient outcomes can then serve as the basis for developing fixed alternative assessment items.

The assessment instrument should contain two questions for each outcome: One assessing the respondent's belief that performing the behavior will lead to the outcome; and another assessing the value the respondent places on the outcome. For example, among men, two frequently mentioned outcomes of using a condom for vaginal sex with a spouse (or main sexual partner) are that this behavior will "prevent pregnancy" and "reduce my sexual pleasure." Given these outcomes, item pairs such as the following can be developed:

1a) My always using a condom for vaginal sex with my main partner will prevent her from becoming pregnant.
likely:________:________:unlikely

1b) Preventing my main partner from becoming pregnant is:
good:________:________:bad

2a) My always using a condom for vaginal sex with my main partner will reduce my sexual pleasure.
likely:________:________:unlikely

2b) Reducing my sexual pleasure is:
good:________:________:bad

Individuals are positively motivated when they believe that behavioral performance leads to positive outcomes or prevents negative ones. They are negatively motivated (i.e., motivated not to engage in the behavior) when they believe that behavioral performance leads to negative outcomes or prevents positive ones. In order to capture the psychologic of the "double negative" (i.e., in order to insure that the prevention of a bad outcome will be seen as a positive motivator), it is essential to score both beliefs and outcome evaluations in a bipolar fashion (i.e., from -3 to +3). When this scoring system is used, it is possible to determine whether a given belief is serving as a positive or negative motivator (for performance of the behavior in question) by multiplying each belief (1a) by its corresponding outcome evaluation (1b). These products can then be summed algebraically across the set of salient outcomes to arrive at a single score that can be seen as an index of propensity or motivation to perform (or not perform) the behavior in question.

Within social psychology, such a cost–benefit or expectancy-value index has often been viewed as an indirect measure of the respondent's attitude toward performing the behavior in question (see, e.g., Fishbein & Ajzen, 1975). More specifically, the process already described uses a compensatory expectancy-value model to arrive at an indirect assessment of attitude. The recognition that "outcome expectancy scores," "perceived consequent scores" and "cost–benefit analyses" are related to (or underlie) attitudes toward performing the behavior in question, suggests that, in addition to utilizing such an indirect estimate, it is also possible to measure the relevant attitude more directly.

Most people would agree that attitude is indexed along a bipolar evaluative (good/bad) or affective (I like/I dislike) dimension. It is important to note, however, that when a person evaluates something as "good" or says "I like something," that person can mean one or more of the following:

1. The behavior is "wise," "beneficial" and "safe."
2. The behavior is "pleasant," "enjoyable" and "easy."
3. The behavior is "moral," "correct," and "appropriate."

Thus, it is important that a direct measure of attitude capture these potentially different meanings of the attitude concept. In order to do this, a semantic differential measure of attitude is recommended. The semantic differential is, by far, the most widely used attitude measurement instrument, and when properly constructed, there is considerable evidence to support its reliability and validity. Generally speaking, the process begins with a large number of bipolar adjective scales, relevant to the concept (or behavior) under consideration. By using factor analyses or other standardized item selection procedures, it is possible to identify the set of items that are the best indicators of the underlying attitudinal dimension. In order to insure that the three potential meanings of attitude are represented, items such as the following can be used:

My always using a condom for vaginal sex with my spouse or main partner

wise:________:________:foolish
pleasant:________:________:unpleasant
correct:________:________:incorrect
easy:________:________:difficult

safe:________:________:dangerous
enjoyable:________:________:enjoyable
moral:________:________:immoral
beneficial:________:________:harmful
I like:________:________:I dislike
good:________:________:bad

A preliminary "attitude" score can be obtained by summing responses (scored from +3 [wise, enjoyable, good] to -3 [foolish, unenjoyable, bad]) on each bipolar adjective scale. Item total correlations can then be computed and used to eliminate scales unrelated to the underlying attitude dimension. The final set of items can then serve as a relatively direct measure of atti-

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As described earlier, there are a number of ways in which a set of outcomes can be categorized. More specifically, it might be desirable to distinguish between short- and long-term outcomes or between physical outcomes, social outcomes, and self-sanctions. Consistent with this, it may be useful to disaggregate the overall expectancy-value score into a number of subscores. From a social–psychological perspective, however, the individual's attitude toward performing a given behavior is based on all of their salient outcome expectancies or behavioral beliefs.
The sum over these scales is the attitude score. The higher the score, the more favorable the respondent's attitude toward performing the behavior in question. This direct measure should be highly correlated with, and may be used to validate, the indirect expectancy-value estimate.

**Perceived Normative Pressure.** As described earlier, some outcomes of performing a given behavior may be "social" in nature (e.g., My using a condom for vaginal sex with my spouse will make her think I don't trust her; will make her angry). Like other outcomes, these social outcomes enter into expectancy-value considerations and thus should be included in the analysis of outcome expectancies. It is important to recognize, however, that norms can referent, item pairs such as the following are necessary:

The first step in developing a measure of social pressure is to identify those individuals or groups that may be exerting pressure on the individual to perform or not perform the behavior. Once again, this cannot be done by simply making up a list of potential referents, but instead, as described earlier, it is necessary to go to the population of interest to identify a set of relevant individuals or groups. Thus, for example, when males are asked to list individuals or groups who would approve or disapprove of their always using condoms for vaginal sex with their wives or main sexual partners, two frequently mentioned referents are "my wife (or main sexual partner)" and "my friends." Although individuals may believe that a given referent thinks they should (or should not) perform a given behavior, this belief may have little impact on behavior unless they are motivated to comply with that referent. Note that this concern is with assessing the degree to which a person is motivated to comply with a given referent rather than the degree to which the person is motivated to comply with the specific behavioral prescription of that referent. Recognize, however, that a given referent may exert social pressure in some behavioral domains but not in others. Thus, in order to assess the social pressure exerted by a given referent, item pairs such as the following are necessary:

(1a) My wife (or main sexual partner) thinks
I should ______:____:____:____:____:____:____ I should not always use a condom when we have vaginal sex

(1b) When it comes to AIDS prevention,

I want to do____:____:____:____:____:____:____ I do not want to do what my wife thinks I should do

(2a) Most of my friends think:
I should____:____:____:____:____:____:____ I should not always use a condom when I have vaginal sex with my spouse (or main partner)

(2b) When it comes to AIDS prevention,
I want to do____:____:____:____:____:____:____ I do not want to do what most of my friends think I should do

In order to capture the normative pressure exerted by a given referent, each normative belief should be weighted (i.e., multiplied) by people's motivation to comply with the referent. In contrast to an expectancy-value estimate, however, the psychologic of the "double negative" does not apply to social influence. That is, when individuals say they are not motivated to comply with a given referent, this does not imply that they perceive social pressure to do the opposite of what that referent thinks they should do. Thus, although normative beliefs (i.e., items 1a and 2a) may be scored from -3 to +3, motivation to comply (i.e., items 1b and 2b) should be scored from 1 (I do not want to do what the referent thinks I should do) to 7 (I want to do what the referent thinks I should do). Summing these products across all relevant referents leads to an index of perceived normative pressure.

A more direct assessment of perceived social pressure can be obtained by using measures such as the following:

1. (1) Most people who are important to me think
I should____:____:____:____:____:____:____ I should not always use a condom when I have vaginal sex with my spouse (or main partner)

2. (2) People I respect and admire
want me to____:____:____:____:____:____:____ do not want me to always use a condom when I have vaginal sex with my spouse (or main partner)

This direct measure should be highly correlated with, and may be used to validate, the indirect index of perceived social pressure to perform (or not perform) the behavior in question.

In addition to the social pressure created by individuals' perceptions (or beliefs) that specific referents think they should or should not perform a given behavior, their behavior is often also influenced by the behavior of others. For example, although parents often tell their children to "do what I say, not what I do," children often emulate their parents' behaviors. That is, parents often serve as "models" for their children's behaviors. As French and Raven (1959) pointed out, people often behave like others not because they believe that their behavior will "please" or "displease" the referent, or because they believe that the referent will "reward" or "punish" them, but because they want to be like the referent. Although there is no known standardized procedure for assessing this aspect of normative pressure, it seems reasonable to assume that an instrument analogous to the one already described...
could be developed. For example, it might be useful to employ item pairs such as the following:

(1a) Most of my friends always use a condom when they have vaginal sex with their wives (or main sexual partners)
likely: ______:________:________:______ unlikely

(1b) When it comes to AIDS prevention,
I want to be: ______:________:________:______ I do not want to be like most of my friends

In addition, this aspect of social pressure could be directly assessed with items such as:

(1) Most of the people who are important to me always use a condom when they have vaginal sex with their wives (or main sexual partners)
likely: ______:________:________:______ unlikely

(2) Most of the people I respect and admire
Always: ______:________:________:______ never
Use a condom when they have vaginal sex with their wives (or main sexual partners)

Self-Standards and Sanctions. As Bandura (1986) and Kanfer (1970) pointed out, although people may respond to social pressures, they do not constantly shift their behavior to conform to whatever others might want. Rather, they adopt certain standards of behavior for themselves; they do things that give them a sense of self-pride and they refrain from behaving in ways that violate their self-standards. Indeed, as described earlier, some outcome expectancies may refer to feelings of self-worth and self-censure (e.g., My always using a condom when I have vaginal sex with my wife (or main partner) makes me feel dirty). Like other outcome expectancies, these positive and negative self-sanctions enter into expectancy-value considerations, and thus they should be included in the analysis of outcome expectancies. As Triandis (1977) argued, the more individuals perceive that they are the type of person who would perform the behavior in question, the more likely they are to intend to, and to actually perform that behavior. Thus, to fully understand why people do or do not perform a given behavior, it is necessary to consider the degree to which performance of the behavior is consistent with their self-image. For example, an item, such as the following could be used:

I’m the kind of person who always uses a condom when I have vaginal sex with my wife (or main partner).
agree: ______:________:________:______ disagree

Alternatively, a more indirect measure could be developed. As already described, a set of characteristics or traits can be identified that are associated with performance and nonperformance of the behavior. Then either an adjective check list or a semantic differential format could be used to assess the discrepancy between a person’s self-image and his or her perception of a person who does (or does not) perform the behavior in question. For example, the following characteristics or traits are often mentioned when men are asked to describe men who do and do not always use condoms for vaginal sex with their wives or main sexual partners: cautious, responsible, caring, macho, foolish.

Respondents could first be asked to rate themselves on scales such as the following:

I am cautious: ______:________:________:______ a risk taker
responsible: ______:________:________:______ irresponsible
self-centered: ______:________:________:______ wimpy
wise: ______:________:________:______ foolish

Respondents could then be asked to rate “A man who always uses a condom when he has vaginal sex with his wife (or main sexual partner)” on the same set of scales. An absolute discrepancy score could be calculated for each item, and the sum of the discrepancies would then serve as an index of the degree to which people’s self-image deviated from their perception of a man who performed the behavior in question. The larger the discrepancy, the more the behavior is inconsistent with a person’s self-image. This indirect measure should be highly correlated with the more direct measure suggested earlier.

Emotional Reactions. As already described, a behavioral performance that is consistent or inconsistent with a person’s self-image may lead to feelings of pride or shame. Behavioral performance may also result in strong emotional reactions, such as feelings of elation, depression, delight, disgust, fear, anxiety, and repulsion. Again, when anticipating these positive and negative self-sanctions, they are best viewed as outcome expectancies and should be included in expectancy-value or cost-benefit analyses. In addition, however, people may experience emotional reactions when they...
merely think about performing the behavior. Emotional reactions of this type may also influence a person's decision to perform or not perform a given behavior.

It is important to distinguish between these emotional reactions and what was earlier described as affective feelings vis-à-vis the behavior in question. Although clearly related to "affect," this concept is conceptualized as a much stronger, classically conditioned positive or negative "gut" reaction to the "thought" of performing the behavior in question. Although no standardized set of items has been developed to assess emotional response, it appears that a semantic differential such as the following could be used to assess one's emotional reactions to a given behavior:

When I think about always using a condom for vaginal sex with my spouse (or main sexual partner), I feel

delighted _____________________ disgusted
happy _____________________ angry
joyful _____________________ depressed
anxious _____________________ calm
nauseated _____________________ exhilarated
frightened _____________________ relaxed

Self-Efficacy. The concept of perceived self-efficacy refers to individuals' beliefs in their capability to perform the behavior in question under different circumstances. The stronger the perceived self-efficacy, the stronger the intention to perform the behavior, and the greater the likelihood that a person will perform the behavior, given some incentive to do so.

Perceived self-efficacy with respect to a given behavior (or behavioral category, or a course of action directed at goal attainment) is always measured in relation to task demands that vary in difficulty, threat, complexity, or some other type of challenge or obstacle. In short, measurement of perceived self-efficacy demands gradations of challenge. In addition, people should be asked to judge their perceived self-efficacy as of now, and not for some future time. To put this somewhat differently, efficacy items should measure current perceived capabilities and not future hypothetical capabilities. Finally, items should measure individuals' efficacy to perform the behavior regularly or always. It is often easy to perform a behavior (e.g., using a condom for vaginal sex with a spouse) occasionally but difficult to perform this same behavior routinely or regularly, unless the behavior becomes habitual or automatic.

In devising efficacy items, the first step is to identify internal or external conditions that make performance difficult. Procedures for arriving at such a set of conditions or circumstances vis-à-vis any given behavior (or set of behaviors) were described earlier. With respect to the behavior of "always using a condom for vaginal sex with my spouse (or main sexual partner)," internal challenges may include high sexual arousal, and being high on alcohol or drugs. External challenges might include not having a condom available, or they might describe difficult circumstances such as having a resistant partner who is argumentative, inebriated, or high on drugs. If the focus is shifted from a male's condom use to a female's attempt to get her partner to use a condom, then circumstances in which a partner is abusive, threatening, and/or coercive one must also be considered. Based on this information, a scale such as the following may be constructed to assess a male's self-efficacy with respect to using a condom for vaginal sex with his spouse (or main sexual partner):

Rate how confident you are that you can regularly do the things described below. Rate your degree of confidence as of now by recording a number from 0 to 100 using the scale given below:

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Cannot do at all</td>
</tr>
<tr>
<td>10</td>
<td>Moderately certain can do</td>
</tr>
<tr>
<td>20</td>
<td>Can do</td>
</tr>
<tr>
<td>30</td>
<td>Moderately can do</td>
</tr>
<tr>
<td>40</td>
<td>Can do</td>
</tr>
<tr>
<td>50</td>
<td>Moderately can do</td>
</tr>
<tr>
<td>60</td>
<td>Can do</td>
</tr>
<tr>
<td>70</td>
<td>Moderately can do</td>
</tr>
<tr>
<td>80</td>
<td>Can do</td>
</tr>
<tr>
<td>90</td>
<td>Moderately can do</td>
</tr>
<tr>
<td>100</td>
<td>Certain can do</td>
</tr>
</tbody>
</table>

___ I can use a condom for vaginal sex with my wife (or main sexual partner) while under the influence of alcohol or drugs.

___ I can delay vaginal sex with my wife (or main sexual partner) if a condom is not available.

___ I can use a condom for vaginal sex with my wife (or main sexual partner) while I am very sexually aroused.

The estimate of self-efficacy is obtained by summing responses (from 0 to 100) over the set of items. The higher the score, the greater the perceived self-efficacy.

SOME UNRESOLVED ISSUES

Although there is consensus that the previous eight variables serve as the major determinants of behavior, at present there is no consensus concerning the causal model linking these variables to behavior. Indeed, each of the theorists have essentially proposed an explicit causal ordering of some (or all) of these variables in their theories and there was no agreement on the strength of interrelationships among these variables or on where each variable would be located in a causal chain. For example, although some see considerable theoretical and/or empirical overlap between some variables (e.g., intention and self-efficacy; attitude and emotion), others would argue that these concepts are relatively independent. As another example, some see perceived normative pressure as directly influencing intention, and others argue that norms only have force when they lead to (or are backed up by) anticipated consequences. A third example of disagreement concerns the mediating role of intention. That is, whereas some would argue

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3Studies that try to measure numerous variables place constraints on the number of items that can be used to measure any one of them. Researchers, therefore, have to sacrifice wide gradations of challenge and try to pick optimal levels of challenge for the population being studied.
that some variables (e.g., attitude, perceived norms) influence behavior only indirectly (i.e., through their influence on intention), others would argue for both a direct and an indirect effect of a given variable on behavior.

In general, however, there is agreement that intentions are most proximal to behavior, and the other seven variables may best be seen as either influencing the formation and strength of intentions and/or as influencing the likelihood that people will act on their intentions.

One implication of this is that it points out the necessity of measuring intentions prior to developing an intervention. Clearly, very different interventions will be necessary if a person (or group) has not yet developed a strong intention (or made a commitment) to perform a given behavior, than if the person has formed a strong intention, but is unable to act upon it.

Recall that we assume that a person will perform a given behavior if (a) he or she has a strong intention to do so, (b) he or she has the necessary skills to perform the behavior, and (c) there are no environmental constraints (or "external" barriers) to prevent behavioral performance. Thus, if one has formed a strong intention to perform a given behavior but is not acting upon that intention, the intervention should probably be focused upon improving skills and/or removing or helping one to overcome environmental constraints.

In contrast, if a person has not yet formed a strong intention to perform a given behavior, the goal of the intervention should be to strengthen the person's intention to perform that behavior. And, as indicated above, this could be accomplished by changing self-efficacy, outcome expectancies (or attitudes), perceived norms, self-standards, or emotions vis-à-vis that behavior. But what intentions should such interventions address?

Clearly, it is possible to try to change people's intentions to reach goals (e.g., to avoid AIDS), to engage in a category of behaviors (e.g., to practice safe sex), or to perform a given behavior (e.g., to always use a condom for vaginal sex with my spouse). Since there was general agreement that intentions to reach goals are often poor predictors of goal attainment or of the behaviors individuals may perform in their attempt to reach the goal, it was agreed that interventions should focus on behaviors rather than on goals or outcomes. For example, it was agreed that although little would be accomplished by strengthening someone's intention to "avoid AIDS," it would be appropriate to direct an intervention at strengthening a woman's intention to tell her partner to use a condom or at increasing a male's intention to use a condom. What was less clear, however, was whether it was appropriate to direct interventions at intentions to engage in behavioral categories such as "practicing safe sex," or "negotiating condom use with my partner." Unfortunately, intentions to engage in behavioral categories are not always good predictors (or determinants) of whether a person will (or will not) perform a given behavior within that category. For example, a young man may form a strong intention to engage in "safe sex," yet he may have little or no intention to "always use a condom." Similarly, a young woman may form a strong intention to "negotiate condom use with my partner," yet she may have little or no intention to "tell my partner to use a condom." Thus, if there is an interest in increasing the likelihood that men will use condoms or the likelihood that women will tell their partners to use condoms, it may be better to change intentions to use condoms and intentions to tell a partner to use condoms than to change intentions to practice "safe sex" or intentions to "negotiate condom use with my partner."

To complicate the issue even further, although condom use is a behavior for men, it is a goal for women. Women do not use condoms; at best, a woman can try to get her partner to use a condom. But is "getting my partner to use a condom" a goal or a behavioral category? As has been pointed out, in order to get a partner to use a condom, an individual may perform several specific behaviors (e.g., telling one's partner to use a condom, refusing to have sex unless one's partner uses a condom), at least some of which may reflect the behavioral category of "negotiating condom use with one's partner." Thus, once again, there is the question of whether it is more appropriate to try to increase a woman's intention to "get my partner to use a condom" or to increase her intention to perform one or more specific behaviors whose performance might increase the likelihood that a partner will use a condom. The way an individual answers this question has important implications for identifying the intention that the intervention should address. The question of what is or is not a goal, a behavior or a behavioral category, and the parallel question of what are appropriate intentions for interventions to address, are unresolved issues that require further attention.

Generally speaking, however, interventions that are not directed at increasing skills or removing environmental constraints should attempt to reinforce and strengthen intentions to engage in "desirable" (e.g., safe, healthy) behaviors and/or to weaken intentions to engage in "undesirable" (e.g., dangerous, unhealthy) behaviors.

By utilizing measures such as those already described, each of the eight potential determinants of behavior can be assessed and this information can be used to empirically identify the one or two variables that most strongly influence intentions to perform, and actual performance of, a given behavior in a given population. These empirically determined variables should then serve as the primary focus of an intervention.

For example, if norms are found to be most highly related to intentions and behavior, the intervention should focus on increasing perceived normative pressure to perform the behavior in question. In contrast, if self-efficacy is found to be most highly related to intentions and behavior, then the intervention should focus on increasing the person's self-efficacy with respect to that behavior. Because it is recognized that the relative importance of a given variable as a determinant of intention and/or behavior will depend on both the behavior under consideration and the population being studied, interventions should be based on empirical research. Little will be accomplished by directing an intervention at a given variable (e.g., outcome expectancies, norms, or self-standards) if the variable is unrelated (or only weakly related) to the behavior that needs to be changed. Given the limited resources available for prevention and change programs, it is essential that
interventions focus on changing those variables that have the greatest probability of influencing the likelihood that members of a given population will engage in the behavior in question.  

ACKNOWLEDGMENTS

This chapter is dedicated to Marshall Becker, a true pioneer in health psychology. His contributions and humanity will be greatly missed. The chapter is a slightly revised version of M. Fishbein, A. Bandura, H. C. Triandis, F. H. Kanfer, M. H. Becker, S. E. Middlestadt, & A. Eichler (1992), Factors Influencing Behavior and Behavior Change: Final Report—Theorist's Workshop. Bethesda: NIMH. We are greatful to Dr. Bandura for his input on social cognitive theory, and in particular, for the definition, description and assessment of self-efficacy. Because of his strong belief that science is best advanced by developing a single theory (rather than by integrating parts of different theories), Dr. Bandura chose not to be a coauthor of the present chapter.

REFERENCES


The theorists workshop that produced this paper was held in 1991. At that time, most AIDS psychosocial research was directed at identifying factors that put people at risk for acquiring or transmitting AIDS or at understanding the determinants of “safer” or “riskier” behaviors. There were few, if any, theory-based behavioral interventions to prevent the acquisition or transmission of HIV. Since that time, many of the ideas presented in this paper have served as the theoretical underpinnings for a number of successful behavior change interventions. For illustrations of how the concepts and measures described in the paper have been used to design, implement, and evaluate multi-site behavior change interventions at both the community and individual level, see Fishbein et al. (1996), the CDC AIDS Community Demonstration Projects Research Group (1999), and Kamb et al. (1998).


