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Action Control

From Cognition to Behavior

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Chapter 2

From Intentions to Actions: A Theory of Planned Behavior

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There appears to be general agreement among social psychologists that most human behavior is goal-directed (e.g., Heider, 1958; Lewin, 1951). Being neither capricious nor frivolous, human social behavior can best be described as following along lines of more or less well-formulated plans. Before attending a concert, for example, a person may extend an invitation to a date, purchase tickets, change into proper attire, call a cab, collect the date, and proceed to the concert hall. Most, if not all, of these activities will have been designed in advance; their execution occurs as the plan unfolds. To be sure, a certain sequence of actions can become so habitual or routine that it is performed almost automatically, as in the case of driving from home to work or playing the piano. Highly developed skills of this kind typically no longer require conscious formulation of a behavioral plan. Nevertheless, at least in general outline, we are normally well aware of the actions required to attain a certain goal. Consider such a relatively routine behavior as typing a letter. When setting this activity as a goal, we anticipate the need to locate a typewriter, insert a sheet of paper, adjust the margins, formulate words and sentences, strike the appropriate keys, and so forth. Some parts of the plan are more routine, and require less conscious thought than others, but without an explicit or implicit plan to guide the required sequence of acts, no letter would get typed.

Actions, then, are controlled by intentions, but not all intentions are carried out; some are abandoned altogether while others are revised to fit changing circumstances. The present chapter examines the relations between intentions and actions: the ways in which goals and plans guide behavior, and the factors that induce people to change their intentions, or prevent successful execution of the behavior. The first part of the chapter deals with prediction and explanation of behavior that is largely under a person's volitional control. A theory of reasoned action is described which traces the causal links from beliefs, through attitudes and intentions, to actual behavior. Relevant empirical research is reviewed, with particular emphasis on the intention-behavior link and the factors that may produce changes in behavioral intentions. The chapter's second part deals with a behavioral domain about which much less is known. There, an attempt is made to

extend the theory of reasoned action to goal-directed behaviors over which an individual has only limited volitional control. First, internal and external factors that may influence volitional control are identified. Next, a behavior-goal unit is defined, and the theory of reasoned action is modified to enable it to predict and explain such goal-directed behavior. The modified theory, called "a theory of planned behavior," differs from the theory of reasoned action, in that it takes into account perceived as well as actual control over the behavior under consideration.

Predicting and Explaining Volitional Behavior: A Theory of Reasoned Action

A great many behaviors of everyday life may be considered under volitional control in the sense that people can easily perform these behaviors if they are inclined to do so. To illustrate, under normal circumstances most people can, if they so desire, watch the evening news on television, vote for the candidate of their choice in an election, buy toothpaste at a drug store, pray before going to bed, or donate blood to the Red Cross. The theory of reasoned action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) is designed to predict volitional behaviors of this kind and to help us understand their psychological determinants.

As its name implies, the theory of reasoned action is based on the assumption that human beings usually behave in a sensible manner; that they take account of available information and implicitly or explicitly consider the implications of their actions. Consistent with its focus on volitional behaviors, the theory postulates that a person's *intention* to perform (or not to perform) a behavior is the immediate determinant of that action. Barring unforeseen events, people are expected to act in accordance with their intentions. Clearly, however, intentions can change over time; the longer the time interval, the greater the likelihood that unforeseen events will produce changes in intentions. It follows that accuracy of prediction will usually be an inverse function of the time interval between measurement of intention and observation of behavior.

Since we are interested in *understanding* human behavior, not merely in predicting it, we must next identify the determinants of intentions. According to the theory of reasoned action, a person's intention is a function of two basic determinants; one personal in nature and the other reflecting social influence. The personal factor is the individual's positive or negative evaluation of performing the behavior; this factor is termed *attitude toward the behavior*. Note that the theory of reasoned action is concerned with attitudes toward behaviors and not with the more traditional attitudes toward objects, people, or institutions. The second determinant of intention is the person's perception of the social pressures put on him to perform or not perform the behavior in question. Since it deals with perceived prescriptions, this factor is termed *subjective norm*. Generally speaking, people intend to perform a behavior when they evaluate it positively and when they believe that important others think they should perform it.

The theory assumes that the relative importance of these factors depends in part on the intention under investigation. For some intentions, attitudinal considera-

tions may be more important than normative considerations, while for other intentions normative considerations may predominate. Frequently, both factors are important determinants of the intention. In addition, the relative weights of the attitudinal and normative factors may vary from one person to another. The discussion of the theory up to this point can be summarized symbolically as follows:

$$B \sim I \propto [w_1 A_B + w_2 SN] \quad (1)$$

In Equation 1, B is the behavior of interest, I is the person's intention to perform behavior B , A_B is the person's attitude toward performing behavior B , SN is the person's subjective norm concerning performance of behavior B , and w_1 and w_2 are empirically determined weighting parameters that reflect the relative importance of A_B and SN . The wavy line (\sim) in Equation 1 is inserted to suggest that intention is expected to predict behavior only if the intention has not changed prior to performance of the behavior¹; and the intention itself is shown to be directly proportional to the weighted sum of attitude toward the behavior and subjective norm.

For many practical purposes, this level of explanation may be sufficient. However, for a more complete understanding of intentions it is necessary to explain why people hold certain attitudes and subjective norms. According to the theory of reasoned action, the attitude toward a behavior is determined by salient beliefs about that behavior. Each salient belief links the behavior with some valued outcome or other attribute. For example, a person may believe that "going on a low sodium diet" (behavior) "reduces blood pressure," "leads to a change in life style," "severely restricts the range of approved foods," and so forth (outcomes). The attitude toward the behavior is determined by the person's evaluation of the outcomes associated with the behavior and by the strength of these associations. Specifically, the evaluation of each salient outcome contributes to the attitude in proportion to the person's subjective probability that the behavior will produce the outcome in question. By multiplying belief strength and outcome evaluation, and summing the resulting products, we obtain an estimate of attitude toward the behavior based on the person's salient beliefs about that behavior.² This information-processing theory of attitude is presented symbolically in Equation 2, where A_B stands for attitude toward behavior B , b_i is the belief (subjective prob-

$$A_B \propto \sum_{i=1}^n b_i e_i \quad (2)$$

ability) that performing behavior B will lead to outcome i , e_i is the evaluation of outcome i , and the sum is over the n salient behavioral beliefs.

It can be seen that, generally speaking, a person who believes that performing

¹ In addition, the theory of reasoned action requires that intention and behavior be operationally defined so that they correspond in their target, action, context, and time elements (see Ajzen & Fishbein, 1977).

² Theories of a similar nature have been proposed by Edwards (1954), Rosenberg (1956), and others (see Feather, 1959).

a given behavior will lead to mostly positive outcomes will hold a favorable attitude toward performing the behavior while a person who believes that performing the behavior will lead to mostly negative outcomes will hold an unfavorable attitude. The beliefs that underlie a person's attitude toward the behavior are termed *behavioral beliefs*.

Subjective norms are also assumed to be a function of beliefs, but beliefs of a different kind, namely the person's beliefs that specific individuals or groups think he should or should not perform the behavior. These beliefs underlying the subjective norm are termed *normative beliefs*. Generally speaking, a person who believes that most referents with whom he is motivated to comply think he should perform the behavior will perceive social pressure to do so. Conversely, a person who believes that most referents with whom he is motivated to comply think he should not perform the behavior will have a subjective norm that puts pressure on him to avoid performing the behavior. The relation between normative beliefs and subjective norm is expressed symbolically in Equation 3. Here,

$$SN \propto \sum_{j=1}^n b_j m_j \quad (3)$$

SN is the subjective norm, b_j is the normative belief concerning referent j , m_j is the person's motivation to comply with referent j , and n is the number of salient normative beliefs.

The above discussion of the theory of reasoned action shows how volitional behavior can be explained in terms of a limited number of concepts. Through a series of intervening processes the theory traces the causes of behavior to the person's salient beliefs. Each successive step in this sequence from behavior to beliefs provides a more comprehensive account of the factors determining the behavior. At the initial level, behavior is assumed to be determined by intention. At the next level, these intentions are themselves explained in terms of attitudes toward the behavior and subjective norms. The third level explains these attitudes and subjective norms in terms of beliefs about the consequences of performing the behavior and about the normative expectations of relevant referents. In the final analysis, then, a person's behavior is explained by reference to his or her beliefs. Since people's beliefs represent the information (be it correct or incorrect) they have about their worlds, it follows that their behavior is ultimately determined by this information. Other, more distal factors, such as demographic characteristics or personality traits, are assumed to have no direct effects on behavior. According to the theory of reasoned action, variables of this kind will be related to behavior if, and only if, they influence the beliefs that underlie the behavior's attitudinal or normative determinants.

Empirical Support

A considerable amount of evidence in support of the theory of reasoned action has accumulated in a variety of experimental and naturalistic settings. To pro-

vide a complete test of the relationships specified by the theory, it is necessary to elicit salient behavioral and normative beliefs in a pilot study, and use these beliefs, among other things, to construct a standard questionnaire. This questionnaire would contain measures of the following variables: (1) behavioral beliefs and outcome evaluations which are assumed to determine attitude toward the behavior (see Equation 2) and can be used to compute a belief-based estimate of this attitude; (2) normative beliefs and motivations to comply which underlie subjective norm (Equation 3) and can be used to compute an indirect measure of the normative component; (3) direct measures of attitude toward the behavior and subjective norm; and (4) intention to perform the behavior. Although various measurement procedures could be developed, in most applications of the theory, evaluative (e.g., "good – bad") and probabilistic (e.g., "likely – unlikely") semantic differential scales have been employed. (See Ajzen & Fishbein, 1980, Appendices A and B, for detailed descriptions of measurement procedures used in tests of the theory.) The questionnaire thus constructed is administered to a sample of respondents whose actual behavior is subsequently recorded either by means of observation or, if direct observation is impractical, by means of self-reports.

Although complete applications of the theory require assessment of all variables from beliefs to overt behavior, many questions can be answered by investigating a more limited set of relationships. Thus, it is often sufficient to obtain direct measures of attitudes and subjective norms without assessing the underlying beliefs. In other cases, the intention-behavior relation is of little immediate concern; instead, the theory's ability to predict and explain intentions is at issue. In these instances, it is unnecessary to secure a measure of actual behavior. Viewed in combination, however, the available data span the whole range of relations from beliefs through attitudes, subjective norms, and intentions, to overt behavior.

Selected Research Findings

The extent to which the theory of reasoned action predicts behavioral intentions is usually evaluated by means of linear multiple regression analyses; the regression coefficients produced by these analyses serve as estimates of w_1 and w_2 , the weights of the attitudinal and normative predictors (see Equation 1). In addition, whenever possible the intention-behavior correlation is reported, as are correlations between direct (A_B , SN) and indirect ($\sum b_i e_i$, $\sum b_j m_j$) measures of attitudes and subjective norms. Finally, the sample of respondents can be divided into those who did (or intended to) perform the behavior and those who did not. Differences in behavior (or intentions) can then be explained by examining patterns of differences in behavioral beliefs, outcome evaluations, normative beliefs, and motivations to comply. (See Ajzen & Fishbein, 1980, for examples.)

Table 2.1 presents a sample of research findings on the major relationships specified by the theory of reasoned action. It can be seen that the theory permits highly accurate prediction in a wide variety of behavioral domains. Generally

speaking, people were found to act in accordance with their intentions. Strong intention-behavior correspondence was expected, given the largely volitional nature of the behaviors that served as criteria in these investigations. With one exception, all intention-behavior correlations exceeded 0.70. Interestingly, the exception occurred in the prediction of having another child where the intention-behavior correlation, although significant, was only 0.55. Having another child is, of course, only partially under volitional control since fecundity, miscarriage, and other factors also mediate attainment of the goal. We shall return to this issue below.

The second column in Table 2.1 shows that, in each case, a linear combination of attitudes and subjective norms permitted highly accurate prediction of intentions. The relative importance of the two components is revealed by inspecting the next four columns. Except for reenlisting in the military, where the regression coefficient of subjective norm did not attain significance, both attitudes and subjective norms made significant contributions to the prediction of intentions. In seven of the nine studies listed in Table 2.1, the relative contribution of attitudes exceeded that of subjective norms; but in two cases, the pattern was reversed. Not surprisingly, women's decisions to have an abortion, and a couple's decision to have another child, were strongly affected by perceived expectations of important others.

Finally, the last two columns of Table 2.1 report relations between direct and belief-based measures of attitudes and subjective norms. It can be seen that the results tend to support Equations 2 and 3: Behavioral beliefs and outcome evaluations can be used to estimate attitudes toward a behavior (Column 7), while normative beliefs and motivations to comply provide estimates of subjective norms (Column 8).

Clearly then, the theory of reasoned action can afford highly accurate prediction of intentions and behaviors that are under volitional control. By examining closely the underlying belief structure, one can also gain a good understanding of the factors that ultimately determine a person's decision to perform or not to perform a given behavior. To illustrate, consider women's use of birth control pills. With respect to behavioral beliefs Ajzen and Fishbein (1980, pp. 141-142) summarized the important research findings as follows. "The major considerations that entered into the women's decisions to use or to not use the pill revolved around questions of physiological side effects, morality, and effectiveness. Although all women believed that using the pill leads to minor side effects (such as weight gain), they differed in their beliefs about severe consequences. The more certain a woman was that using the pill would not lead to such negative outcomes as blood clots and birth defects, the more likely she was to intend using the pill. Also associated with intentions to use the pill were beliefs that this was the best available method for preventing pregnancy." In addition, it was found that women intended to use the pill only if they had no strong moral objections. "On the normative side, the women's major concerns centered on the prescriptions of their husbands or boyfriends and doctors. They were highly motivated to comply with these referents, and women who believed that their husbands or boyfriends and doctors thought they should use the pill intended to

Table 2.1. Theory of reasoned action – sample of research findings

Criterion	Correlation	Multiple correlation	Correlations		Regression coefficients		Correlations	
	I-B		I-A _B	I-SN	I-A _B	I-SN	A _B - $\sum b_i e_i$	SN- $\sum b_j m_j$
Cooperation in prisoner's dilemma game ^a (Ajzen, 1971)	0.82	0.82	0.75	0.69	0.53	0.40	—	—
Having another child ^b (Vinokur-Kaplan, 1978)	0.55	0.85	0.65	0.83	0.19	0.70	—	—
Choice of career orientation ^c (Ajzen & Fishbein, 1980)	—	0.86	0.83	0.64	0.67	0.29	0.81	0.83
Use of birth control pills (Ajzen & Fishbein, 1980)	0.85	0.89	0.81	0.68	0.64	0.41	0.79	0.60
Voting choice in 1976 presidential election (Ajzen & Fishbein, 1980)	0.80	0.83	0.81	0.71	0.61	0.27	0.79	0.73
Having an abortion ^d (Smetana & Adler, 1980)	0.96	0.76	0.50	0.69	0.21	0.46	0.58	—
Infant feeding ^b (Manstead, Proffitt, & Smart, 1983)	0.82	0.78	0.73	0.60	0.61	0.22	—	—
Smoking marijuana ^a (Ajzen, Timko, & White, 1982)	0.72	0.80	0.79	0.45	0.74	0.13	—	—
Reenlisting in the military (Shtilerman, 1982)	0.87	0.77	0.77	0.43	0.73	0.08*	0.64	0.41

^a No beliefs were elicited or assessed in these studies.

^b Only indirect (belief-based) measures of A_B and SN were obtained in these studies.

^c Behavior was not assessed in this study.

^d Only a belief-based measure of SN was obtained in this study.

* Not significant; all other coefficients $p < 0.05$.

do so. By the same token, women who believed that these two referents opposed their use of birth control pills formed intentions to not use them" (p. 142).

To summarize briefly, many behaviors of interest to social psychologists appear to be under volitional control and can be predicted with a high degree of accuracy from intentions to perform the behaviors in question. These intentions, in turn, appear to be based on personal attitudes toward the behaviors and perceived social norms. Attitudes are influenced by beliefs concerning a behavior's likely outcomes and evaluations of those outcomes, while subjective norms derive from normative beliefs regarding expectations of specific referent individuals or groups and motivations to comply with these referents. By examining differences in behavioral and normative beliefs (and in associated outcome evaluations and motivations to comply) we can go beyond prediction to provide a detailed explanation of volitional behavior.

The Intention-Behavior Relation

In light of the success achieved by the theory of reasoned action, it is important to keep its boundary conditions clearly in mind. For the most part, the theory's limitations have to do with the transition from verbal responses to actual behavior. The relations of beliefs, attitudes, and subjective norms to intentions are more clearly delineated than are the factors that determine whether or not the behavioral intention will be carried out. According to the theory of reasoned action, intention is the immediate antecedent of behavior. Strictly speaking, however, intentions can be expected to predict behavior only when two conditions are met. First, the measure of intention available to the investigator must reflect respondents' intentions as they exist just prior to performance of the behavior; and, second, the behavior must be under volitional control. As mentioned earlier, intentions may change over time, and any measure of intention obtained before the change took place cannot be expected accurately to predict behavior. This is largely a technical problem, however, since low predictive validity under such conditions merely reflects the reduced accuracy of the available measure of intention; it poses no challenge to the assumption that (current) intentions determine behavior. By way of contrast, the stipulation that behavior must be under volitional control imposes strict limitations on the theory's range of application; its ability to predict and explain human behavior will be greatly impaired whenever nonvolitional factors exert a strong influence on the behavior in question.

Changes in Intention

Many factors have been found to influence the stability of behavioral intentions. Examination of these factors sheds light on the ways and means by which it may be possible to prevent changes in intentions or modify predictions to take anticipated readjustments into account.

Effects in Time

Intentions change as time goes by. Some changes arguably occur simply as a function of time while others depend on the emergence of new information.

Salience of Beliefs. A goal's attractions and repulsions tend to be inversely proportional to psychological distance from the goal, and the avoidance gradient tends to be steeper than the approach gradient (Brown, 1948; Lewin, 1946, 1951; Miller, 1944). In a similar fashion, beliefs regarding a behavior's negative features, more so than its positive features, may become increasingly salient as the time of the behavior draws near. Thus, a person who is about to invest his hard-earned money in stocks may become increasingly concerned about the possibility that stock prices will decline in the future. If these shifts in evaluation reach the point at which the behavior's perceived disadvantages outweigh its perceived advantages, the individual is likely to reverse his intention and refrain from performing the behavior.

A different possibility was suggested by Semmer (personal communication): The conflicting behavioral tendencies produced by a goal's attractive and repulsive features may be resolved in favor of the more routinized responses. As the time for action approaches, people may fall back on familiar response patterns, that is, the probability of routine responses may increase, and the probability of novel responses may decline with the passage of time. Changes of this kind could help explain the difficulty of carrying out a decision to refrain from such habitual behaviors as drinking or smoking.

New Information. Many changes in intentions, however, are the result of factors other than the mere passage of time. In fact, changes that appear at first glance to occur automatically may actually be mediated by internal processes (see Beckmann & Kuhl, 1984) or external factors. A multitude of unanticipated, and sometimes unforeseeable, events can disrupt the intention-behavior relation. A person's behavioral and normative beliefs are subject to change as events unfold and new information becomes available. Such changes may influence the person's attitude toward the behavior or his subjective norm and, as a result, produce a revised intention. To illustrate, consider a woman who intends to vote for the Democratic candidate in the forthcoming senate race. After her intention is assessed, she learns – by watching a television interview with the candidate a few days before the election – that he opposes abortion and equal rights for women. As a result, she "changes her mind": she forms new beliefs concerning the consequences of voting for the Democratic candidate, modifies her attitude toward this behavior, decides to vote for the Republican candidate instead, and actually does so in the election. Her voting choice corresponds to her most recent intention, but it could not have been predicted from the measure of intention obtained at an earlier point in time.

Several studies have demonstrated the disruptive effects of unforeseen events. For example, Songer-Nocks (1976a, 1976b) assessed intentions to choose the noncompetitive alternative at the beginning of a 20-trial, two-person experimen-

tal game. Half of the pairs of players were given feedback after each trial which informed them about the choices made by their partners and of the payoffs to each player. The other pairs were given no such information. Feedback concerning the partner's competitive or noncompetitive behavior may, of course, influence a player's own intentions regarding future moves. Consistent with this argument, Songer-Nocks reported that providing feedback significantly reduced the accuracy with which initial intentions predicted actual game behavior.

Somewhat more indirect evidence regarding the disruptive potential of unanticipated events is available from studies that have varied the amount of time between assessment of intention and observation of behavior. Since the probability of unforeseen events will tend to increase as time passes, we would expect to find stronger intention-behavior relations with short rather than long periods of delay. Seiwacz, Ajzen, and Fishbein (1980) obtained support for this prediction in a study of weight loss. A subsample of 24 college women indicated their intentions to perform eight weight-reducing behaviors (avoid snacking between meals, participate in sports on a regular basis, etc.) at the beginning of a two-month period, and again one month later. Correlations were computed between initial intentions and actual behavior over the two-month period, and between subsequent intentions and actual behavior during the final month. As expected, the intention-behavior correlations were stronger for the one-month period than for the two-month period. For example, the correlation between intention to avoid long periods of inactivity and actual performance of this behavior (as recorded by the women) was higher when the time period was one month ($r=0.72$) than when it was two months ($r=0.47$). Considering all eight behaviors, the average correlation increased from 0.51 for the two-month period to 0.67 for the one-month period.

Temporal delay between assessment of intention and observation of behavior thus tends to have a detrimental effect on behavioral prediction (see Hornik, 1970 and Fishbein & Coombs, 1974 for additional evidence in support of this conclusion). As time passes, there is an increase in the likelihood of unanticipated events and of concomitant changes in intentions. The result is a decline in the correlation between observed behavior and intentions assessed before the changes took place.

Confidence and Commitment

The discussion up to this point has dealt with rather drastic changes in intentions that lead to a reversal of behavioral plans. Intentions, however, vary in strength as well as direction, and changes can occur that would not be reflected in behavior. Consider, for example, a voter who assigns a probability of 0.85 to his intention to vote for the Republican candidate, and a probability of 0.15 to his intention to cast his vote for the Democratic candidate. Exposure to new information during the election campaign might reduce the perceived advantage of the Republican candidate, changing the strength of these intentions to 0.65 and 0.35, respectively; even so, the person would still be expected to vote for the Republican candidate.

As a general rule, when an intention is held with great confidence (i.e., when the intention is highly polarized), changes produced by new information will often be insufficient to reverse the planned course of action. In contrast, weak intentions to perform (or not to perform) a behavior carry less of a commitment; unanticipated events of relatively minor importance may influence such intentions enough to bring about a change of mind. It follows that intention-behavior correlations will usually be stronger when intentions are held with great, rather than little, confidence.

Sample and Warland (1973, Warland & Sample, 1973) as well as Fazio and Zanna (1978) have shown that attitudes held with high confidence are better predictors of behavior than are attitudes held with low confidence. Ajzen, White, and Timko (1982) examined more directly the effect of confidence on the intention-behavior relation. College students expressed their intentions to become members of a psychology subject pool (on a 7-point "likely-unlikely" scale), and indicated their confidence in their intentions on a 7-point scale that ranged from "extremely certain" to "not at all certain." At a later point in the experiment, they were given an opportunity to actually sign up for the subject pool. Using the median score on the certainty scale as a dividing point, respondents were partitioned into low and high confidence groups. As expected, the intention-behavior correlation was significantly stronger among respondents who had high confidence in their intentions ($r=0.73$) than among respondents with low confidence ($r=0.47$).³

It is interesting to note that the very act of stating an intention may induce heightened commitment to the behavior. In a series of experiments conducted by Sherman (1980), respondents who, in response to a question, predicted that they would act in a socially desirable manner were more likely to do so on a later occasion than were respondents who were not asked to predict their own behavior. Note, however, that the behaviors in question were of relatively little consequence: writing a counter-attitudinal essay, singing the national anthem over the telephone, and volunteering 3 hours to collect money for the American Cancer Society. Merely stating an intention may have much less of an effect on such personally significant behaviors as having an abortion or reenlisting in the military (see Table 2.1).

³ In addition to greater stability, confident intentions (being more extreme) will tend to exhibit greater variance than intentions held with less confidence. Greater variability would also tend to increase the predictive validity of confident intentions. The standard deviation of intentions was, in fact, found to be significantly greater in the high ($SD=2.24$) than in the low ($SD=1.36$) confidence group. It is thus not clear whether improved prediction in the high confidence group was due to greater stability of intentions or whether it was simply a statistical artifact produced by a restriction of range in the low confidence condition.

Individual Differences

Some people change their intentions more readily than others. According to Snyder (1974, 1982), individuals differ in the extent to which their behavior is susceptible to situational cues as opposed to inner states or dispositions. He developed the "self-monitoring scale" to assess the tendency for a person's behavior to be guided by principle or inner disposition (low self-monitoring) on the one extreme, and by situational contingencies or pragmatism (high self-monitoring) on the other extreme. It stands to reason that the intentions of high self-monitoring individuals, who are sensitive to external cues, will readily be influenced by unanticipated events. The intentions of low self-monitors, however, should be less affected by external events, and should thus be relatively stable, since these individuals are sensitive primarily to internal states. We would thus expect stronger intention-behavior correlations among low as compared to high self-monitoring individuals.⁴

Data collected by Ajzen, Timko, and White (1982) support this prediction. The study was conducted at the time of the 1980 presidential election in the United States. Shortly before the election, college students completed questionnaires that, among other questions, included Snyder's self-monitoring scale and measures of intention to vote in the election and intention to smoke marijuana in the next 3 or 4 weeks. About 2 weeks after the election, participants were contacted by telephone and asked to report their behavior. As expected, individuals who scored below the median on the self-monitoring scale exhibited significantly stronger intention-behavior correlations than did individuals who scored above the median on the scale. The intention to vote predicted actual voting with a correlation of 0.59 for high self-monitors, and with a correlation of 0.82 for low self-monitors. The corresponding correlations with respect to the number of occasions on which the respondents reported to have smoked marijuana were 0.42 and 0.70.

Long-Range Prediction

It should be clear by now that many factors can influence the stability of intentions and hence the strength of the observed intention-behavior relation. One solution to this problem is to assess intentions immediately prior to observation of the behavior. Clearly, the shorter the delay, the less time and the fewer the opportunities for change. In practice, however, it may be neither feasible nor of much practical value to measure the intention in close temporal proximity of the behavior. Imagine, for example, that we are trying to predict behavior during such natural disasters as floods, tornados, earthquakes, or fires burning out of control.

⁴ Snyder and Swann (1976) and Zanna, Olson, and Fazio (1980) have reported stronger *attitude-behavior* correlations for low self-monitors as compared to high self-monitors; but Zuckerman and Reis (1978) failed to obtain similar results.

It would be very difficult indeed to approach individuals fighting to save their lives or their possessions and ask them to state their intentions.

Even when possible, however, short-range predictions are often of little interest. Manufacturers of various consumer goods, from video games to automobiles, need to be able to anticipate buying behavior months or even years in advance; and banks, airlines, television companies, and other service organizations must predict the reactions of consumers long before offering a new type of service. Fortunately, long-range predictions of this kind are usually not concerned with the behavior of any given individual but rather with behavioral trends in relatively large segments of the population: how many people will buy a certain type of automobile in the course of a model year, the number of individuals who will volunteer for the various branches of the military by a certain target date, or the number of air travelers to be expected between two cities during a given time period. Aggregate intentions of this kind are apt to be much more stable than individual intentions. As we saw earlier, a multitude of unanticipated events can produce changes in the intentions of individuals: sudden illness or injury, a death in the family, a fortuitous win in the lottery, loss of one's job, an unexpected visit by a friend, and so forth. Of course, these are more or less random events that affect only some individuals at any given time. Their effects on intentions of different people are therefore likely to balance out, leaving the aggregate intention relatively unchanged. A young man who intends to enlist in the Navy may have a serious accident and make different plans for the future, but another man who had not considered joining the Navy may now intend to do so after applying unsuccessfully for a job in the civilian sector. On balance, the number of men intending to enlist in the Navy would remain unchanged.

Given that accuracy of behavioral prediction is influenced by the stability of intentions, the above discussion implies closer intention-behavior correspondence at the aggregate than at the individual level, especially in the case of long-range predictions. A good example is provided by research on family planning. In a study by Bumpass and Westoff (1969), women with two children were asked how many children they intended to have in their completed families. Six to ten years later (near the end of their reproductive periods) they were reinterviewed to obtain information about the number of children they actually had. Only 41% of the women had exactly the number of children they had planned; the remainder had more or fewer children than intended. On the average, however, the women's actual family size (3.3 children) was found to correspond precisely to the intended family size (also 3.3 children). Clearly, then, predictions at the aggregate level can be highly accurate even when the behavior of many individuals fails to correspond to their intentions.⁵

⁵ The reason that Bumpass and Westoff (1969) found such close intention-behavior correspondence at the aggregate level is that the proportion of women who overproduced was almost exactly the same as the proportion of women who underproduced. Had there been a bias toward having more or fewer children than intended, the aggregate-level prediction would have been less accurate.

Plans, Goals, and Actions

The fact that intentions can change over time forces us to recognize their provisional nature. Strictly speaking, all an individual can say is that, *as of now*, he intends to perform a given behavior, and can assign a certain degree of confidence (subjective probability) to that intention. Assuming the behavior is under volitional control (and the person is prepared to exert maximum effort), failure to act in accordance with the intention would indicate that the person had a change of mind.

The Question of Volitional Control

Further complications enter the picture as we turn to behaviors that are not fully under volitional control. Failure to enact a behavior of this kind may occur either because of a change in intention or because performance of the behavior failed. A clear example is provided by the many smokers who intend to quit but either change their intentions or, when they do try, fail to achieve their goal. A number of investigators have in recent years turned their attention to the question of volitional control (e.g., Bandura, 1977, 1982; Kuhl, 1981, 1982; Semmer & Frese, 1979), and at least one attempt has been made to extend the theory of reasoned action to the prediction of partly nonvolitional behavior (Warshaw, Sheppard, & Hartwick, in press). The present discussion will draw on some of these analyses.

At first glance, the problem of volitional control may appear rather limited in scope. Its relevance is readily apparent whenever people try to overcome such powerful habits as smoking or drinking, or when they set their sights on such difficult to attain goals as marrying a millionaire or reducing weight. Closer scrutiny reveals, however, that even very mundane activities, which can usually be performed (or not performed) at will, are sometimes subject to the influence of factors beyond one's control. Consider, for example, a person who intends to spend the evening at home watching a movie on television. As she turns on the set, a puff of smoke indicates that its useful life is over, putting an end to her plans for the evening. Some behaviors are more likely to present problems of control than others, but we can never be absolutely certain that we will be in a position to carry our intentions. Viewed in this light it becomes clear that, strictly speaking, every intended behavior is a *goal* whose attainment is subject to some degree of uncertainty. We can thus speak of a behavior-goal unit; and the intention constitutes a plan of action in pursuit of the behavioral goal. We shall return to these issues. First, however, we must briefly consider some of the factors that influence volitional control over a behavioral goal.

Internal Factors

Many characteristics of an individual can influence successful performance of an intended behavior. Some of these internal factors are readily modified by training and experience while others are more resistant to change.

Individual Differences. At the most global level, we can conceive of differences among individuals in terms of their general ability to exercise control over their own actions. To assess such individual differences, one would have to collect information about the extent to which people manage to overcome difficulties of various kinds when attempting to perform different behaviors in a variety of settings. A person's volitional control over any given behavior may be related to this general control dimension.

To the best of my knowledge, no attempt has been made to define and assess actual behavioral control at a global level. The popular alternative is to consider people's *perceptions* of the extent to which they (as opposed to environmental factors) control events in their lives. Rotter (1966) has developed an internal-external locus of control scale designed to measure this generalized expectancy, and attempts have been made to relate scores on the scale to a variety of different behaviors (see, Lefcourt, 1982; Strickland, 1978).

Discussion of this research is beyond the scope of the present chapter but several related issues are worth considering. Generalized expectancies regarding locus of control are likely to influence behavior only to the extent that they have an impact on perceived control over the specific behavior in question. The general belief that external factors control most events in my life will have little effect on my decision to learn flying an airplane if I believe that I have control over success at this particular task.

Attribution of control (over the specific behavioral goal) to internal factors should, as a general rule, encourage attempts to perform the behavior. Whether such attempts actually succeed will, of course, depend on how realistic the person's attribution of control is. When people attribute control to internal factors, decide to perform the behavior, and proceed to implement their plans, they are likely to succeed only if they in fact have control over the behavior under consideration (see also Kuhl, 1982).

Beliefs in personal control, or lack of control, over behaviors and events should be related to perceived possession of various personal attributes and characteristics needed to perform the behaviors in question. We now turn to these more specific internal factors.

Information, Skills, and Abilities. A person who intends to perform a behavior may, upon trying to do so, discover that he lacks the needed information, skills, or abilities. Everyday life is replete with examples. We may intend to convert another person to our own political views, to help a child with his mathematics, or to repair a malfunctioning record player but fail in our attempts because we lack the required verbal and social skills, knowledge of mathematics, or mechanical aptitudes. To be sure, with experience we tend to acquire some appreciation of

our abilities; yet new situations arise frequently, and failure to achieve our goals due to lack of requisite skills is the order of the day.

The idea that behavioral achievement is a function not only of intention (or motivation) but also of ability is of course not very original. Heider (1958) made it a cornerstone of his "naive analysis of action," and Jones and Davis (1965) incorporated it into their theory of correspondent inferences. According to Heider, a person is viewed as responsible for his action (i. e., the action is attributed to the person) if he is believed to have tried *and* to have had the ability to produce the observed effects. Evidence for this analysis in the context of achievement-related attributions has been provided by Weiner (1974) and his associates (e. g., Weiner, Frieze, Kukla, Reed, Rest, & Rosenbaum, 1971), as well as by other investigators (e. g., Anderson, 1974).

It seems self-evident that successful performance of an intended behavior is contingent on the presence of required information, skills, and abilities; and perhaps it is for this reason that few investigators have bothered to demonstrate empirically the interactive effect of intention and ability on actual behavioral performance.

Power of Will. Attainment of some behavioral goals requires what is commonly known as "will power" or "strength of character". Maintaining reduced weight, abstaining from alcohol or tobacco, and resisting temptations, such as going to a party instead of studying for an exam, are all familiar examples. People are often motivated to attain goals of this kind; their personal attitudes and intentions, however, may be less important than the degree to which they have control over their actions in the form of will power.

Ajzen, Averill, and Tirrell⁶ collected some data of relevance in a preliminary study of temptation in several hypothetical situations. College students rated as particularly tempting the case of going to a party instead of studying. A brief paragraph outlined a scenario in which the respondents were studying on the night before an important exam and were invited to join a small party where they could get to know an attractive person they had wanted to meet for some time. Among other items, the questionnaire assessed (on a 7-point probability scale) the likelihood that the respondent would join the party (expected behavior), attitudes toward this behavior (on four evaluative semantic differential scales), and perceived control, that is, the perceived difficulty of declining the invitation (on a 7-point scale ranging from "very difficult" to "not at all difficult").

Perceived control was found to predict expected behavior significantly better ($r=0.69$) than was the attitude toward the behavior ($r=0.25$).⁷ Although this study used a hypothetical situation, its results suggest that people's ability to resist temptation (their willpower) may be an important determinant of certain types of behavior, over and above the influence of attitudes or intentions.

In his analysis of action control, Kuhl (1981, 1982) has introduced the some-

what related concept of state versus action orientation. A person's state or action orientation is viewed both as a relatively stable predisposition and as dependent on a variety of situational factors. Action-oriented individuals are assumed to focus their attention on action alternatives and to make use of their knowledge and abilities to control their performance. In contrast, state-oriented persons are likely to focus their attention on their thoughts and feelings (their present, past, or future state) rather than taking action consistent with their intentions. Kuhl (1982) has developed a scale to assess action orientation and, using this scale, has found higher intention-behavior correlations among action-oriented as opposed to state-oriented individuals. He has also investigated a variety of situational factors (e. g., a failure experience) that may result in state or action orientations, and thus influence execution of intended behavior (see also Mischel's, 1974, work on situational determinants of delay of gratification).

Emotions and Compulsions. Skills, abilities, and will power may present problems of control, but it is usually assumed that, at least in principle, these problems can be overcome. In contrast, some types of behavior are often viewed as controlled by forces that are largely beyond our control. People sometimes appear unable to cease thinking or dreaming about certain events, to stop stuttering, or to hold a tick in check. These compulsive behaviors are performed despite intentions and concerted efforts to the contrary.

Emotional behaviors seem to share some of the same characteristics. Individuals are often not held responsible for behaviors performed under stress or in the presence of strong emotions. We usually attribute little control to a person who is "overcome by emotion". Violent acts and poor performance are expected under such conditions, and there seems to be little a person can do about it. Some, however, have argued that emotional behaviors are not all that different from other types of behavior, and that their antecedents are very similar to those of nonemotional acts (e. g., Averill, 1980; Solomon, 1976). If this view is correct, then we should find relatively strong relations between intentions and emotional behavior, although problems of control may well prevail, especially in the case of intense emotional experiences.

In conclusion, as we move beyond intentions, various internal factors influence successful performance of an intended behavior. It may be fairly easy to gain control over some of these factors, as when we acquire the information or skills needed to perform a behavior. Other factors, such as intense emotions, stress, or compulsions, are more difficult to neutralize. Whatever the nature of the internal factor, however, it will tend to influence our control over the behavioral goal.

External Factors

Also impinging on a person's control over behavioral goals are external or situational factors. These factors will be discussed under two headings: (1) time and opportunity and (2) dependence on other people.

⁶ Unpublished study, University of Massachusetts, 1982.

⁷ The correlation of expected behavior with a measure of subjective norm ($r=0.24$) was also significantly lower than its correlation with perceived control.

Time and Opportunity. It takes little imagination to appreciate the importance of circumstantial factors or opportunity. An intention to see a movie on a particular night, for example, cannot be carried through if tickets are sold out or the person is involved in a serious accident on the way to the theater. At first glance, lack of opportunity may appear equivalent to occurrence of unanticipated events that bring about changes in intentions, as discussed in an earlier section. While it is true that in the absence of appropriate circumstances people may come to change their intentions, there is an important difference between the two cases. When new information becomes available after a person has stated his intention, the new information may affect his salient beliefs about the behavior and thus lead to changes in attitudes, subjective norms, and intentions; at the end of this process the person is no longer interested in carrying out his original intention. By way of contrast, lack of opportunity disrupts an attempted behavior. Here, the person tries to carry out his intention but fails because circumstances prevent performance of the behavior. Although the immediate intention will be affected, the basic underlying determinants need not have changed.

Consider again the intention to see a particular movie on a given night. Reading a negative review or being told by a friend that the movie is not worth seeing may influence the person's beliefs such as to produce a more negative attitude toward the intended behavior and perhaps also a more negative subjective norm. As a result, the person may no longer intend to see the movie on the night in question or on any other night unless and until other events again cause him to change his mind.

Contrast this with the person who intends to see the movie, drives to the theater, but is told that there are no more tickets available. The environmental obstacle to performance of the behavior will force a change of plan; but it need not change the person's attitude toward seeing the movie or his subjective norm. Instead, it may merely cause the person to try again on a different night.

The question of time involves very similar considerations. A person who, on a given occasion, is unable to find the time required to plan and perform a behavior need not change his attitude, subjective norm, or intention; he can simply decide to perform the behavior on another occasion.

Dependence on Others. Whenever performance of a behavior depends on the actions of other people, there exists the potential for incomplete control over behavioral goals. A good example of behavioral interdependence is the case of cooperation. One can cooperate with another person only if that person is also willing to cooperate. Experimental studies of cooperation and competition in two-person games have provided ample evidence for this interdependence (see Rapoport & Chamah, 1965). For example, Ajzen and Fishbein (1970) reported correlations of 0.92 and 0.89 between cooperative strategy choices of the players in two prisoner's dilemma games. These high correlations suggest that a person's tendency to make cooperative choices depends on reciprocation by the other player.

A different example is provided by Fishbein's (1966) study of premarital sexual intercourse among undergraduate students. In this study it was found that in-

tentions were significantly better predictors of behavior for females ($r=0.68$) than for males ($r=0.39$). Clearly, females in our society find it relatively easy to obtain the cooperation of males when they attempt to execute their intentions to engage in premarital sexual intercourse. By comparison, males often have greater difficulties in finding willing partners.

As in the case of time and opportunity, inability to carry out an intention because of dependence on others may have little effect on the underlying motivation. Often a person who encounters difficulties related to interpersonal dependence may be able to perform the desired behavior in cooperation with a different individual. Sometimes, however, this may not be possible as in the case of dependence on one's spouse. A wife's adamant refusal to have more children, for example, will usually cause the husband eventually to abandon his plan to enlarge the family, rather than shift his efforts to a different partner.

I have tried to show that time, opportunity, and dependence on others often lead only to temporary changes in intentions. When time is the constraining factor, the behavior may simply be delayed; when circumstances prevent performance of a behavior, the person may wait for a better opportunity; and when another person fails to cooperate, a more compliant partner may be sought. However, when repeated efforts to perform the behavior fail, more fundamental changes in intentions can be expected.

A Theory of Planned Behavior

The above discussion makes clear that many factors can obstruct the intention-behavior relation. Although volitional control is more likely to present a problem for some behaviors than for others, personal deficiencies and external obstacles can interfere with the performance of any behavior. Given the problem's ubiquity, a behavioral intention can best be interpreted as an intention to *try* performing a certain behavior. A father's plan to take his children fishing on the forthcoming weekend, for example, is best viewed as an intention to try to make time for this activity, to prepare the required equipment, secure a fishing license, and so forth. Successful performance of the intended behavior is contingent on the person's control over the various factors that may prevent it. Of course, the conscious realization that we can only try to perform a given behavior will arise primarily when questions of control over the behavior are salient. Thus, people say that they will try to quit smoking or lose weight, but that they intend to go to church on Sunday. Nevertheless, even the intention to attend Sunday worship services must be viewed as an intention to try since factors beyond the individual's control can prevent its successful execution.

These observations have important implications for the prediction of behavior from intentions. Strictly speaking, intentions can only be expected to predict a person's *attempt* to perform a behavior, not necessarily its actual performance. If our measure of intention fails to predict attempted behavior, it is possible that the intention changed after it was assessed (see the earlier discussion of the prediction of volitional behavior). However, if the intention does predict whether or

not a person attempts to perform the behavior, but fails to predict attainment of the behavioral goal, it is likely that factors beyond the person's control prevented the person from carrying out his intention.⁸

Consider, for example, the study of weight reduction mentioned earlier (Sejwacz, Ajzen, & Fishbein, 1980). The college women in this study expressed their intentions to lose weight over a two-month period, and reported on their performance of various dietary behaviors and physical activities during that same period. The intention to lose weight was found to have a nonsignificant correlation of 0.16 with actual weight lost, but a significant correlation of 0.49 with an aggregate measure of behavior. It seems reasonable to argue that engaging in dietary behaviors and physical activities constitute attempts to reduce weight. Intentions were thus better predictors of attempts to reduce weight, than of actual changes in body weight. Clearly, losing weight depends not only on one's intention to do so, but also on other factors, such as will power and physiological variables that are only partly under volitional control. That the correlation between intentions and attempted behavior was no higher than 0.49 can perhaps be attributed to changes in intentions that may have occurred over the two-month period. Alternatively, it may have been due to a lack of will power, or to a state (as opposed to action) orientation (Kuhl, 1982).

Additional support for the present argument can be found in a study by Pomazal and Jaccard (1976). The intentions of college students to "donate blood at the upcoming blood drive" had a correlation of 0.46 with actual blood donations. However, it was noted that several participants in the study who came to donate blood were rejected for medical reasons or because of overcrowding. As expected, when showing up to donate blood (i.e., attempted behavior) was used as the behavioral criterion, the correlation with intentions increased to 0.59.

In short, behavioral intentions will often be better predictors of attempted than actual behavior. To insure accurate prediction in such instances, we would not only have to assess intentions but also obtain some estimate of the extent to which individuals are apt to exercise control over the behavior in question.

We are now ready to consider a possible expansion of the theory of reasoned action that will allow us to include consideration of nonvolitional factors as determinants of behavior. Equation 4 shows how the strength of a person's attempt to perform a behavior (B_i) interacts with the degree of his control (C) to deter-

$$B \propto B_i \cdot C \quad (4)$$

mine the likelihood of actual performance of the behavior (B). The harder the person tries, and the greater his control over personal and external factors that may interfere, the greater the likelihood that he will attain his behavioral goal.⁹ For some behaviors, a low level of effort (B_i) is sufficient, and successful perfor-

mance of the behavior depends largely on the level of control. Good examples are highly skilled activities such as typing or driving a race car. Increased effort on such tasks is less important than a high level of skill. For other behaviors, a minimal level of control is enough, and successful performance of the behavior varies with degree of effort. For instance, jogging 10 or 15 minutes every day requires only low levels of control; for most people, achievement of this behavioral goal depends largely on their willingness to try.

The question of control is often tied up with development of an adequate plan that will enable performance of the behavior. A plan usually consists of a set of intentions which, if carried out, are expected to result in the desired behavioral goal. It may also contain contingency plans; that is, alternative plans of action in case the intended sequence of behaviors is blocked. Often, plans are developed only in general outline: The initial behaviors may be clearly specified and later parts of the plan are to be developed, depending in part on the success of earlier actions (see Miller, Galanter, & Pribram, 1960). The behavioral attempt (B_i) constitutes the initiation of the plan; it is designed to overcome a perceived discrepancy between the present state and the desired goal. Successful execution depends on the adequacy of the plan itself, and on the various personal and external factors discussed earlier that may influence control over the behavior.

Consistent with the theory of reasoned action, the immediate determinant of a person's attempt to perform a behavior is his intention to try doing so (I_i); and this intention is in turn a function of attitude toward trying (A_i) and subjective norm with regard to trying (SN_i). These relations are expressed symbolically in Equation 5.

$$B_i \sim I_i \propto [w_1 A_i + w_2 SN_i] \quad (5)$$

Here, as in Equation 1, the wavy line between B_i and I_i indicates that expressed intentions to try performing a behavior can change before the behavioral attempt is observed, and w_1 and w_2 are empirically determined weights for the two predictors of I_i . Thus, the more favorable a person's attitude toward trying to perform a behavior, and the more he believes that important others think he should try, the stronger his intention to try.

We must go beyond the theory of reasoned action, however, when we consider the determinants of A_i , the attitude toward trying to perform a behavior. Clearly, the attitude toward trying and succeeding (i.e., the attitude toward the behavior) will usually differ from the attitude toward trying and failing. Whenever the possibility of failure is contemplated, therefore, the attitude toward trying will be determined not only by the attitude toward (successful) performance of the behavior (A_s) but also by the attitude toward a failed attempt (A_f). This idea is expressed in Equation 6, where the attitudes toward behavioral success and

$$A_i \propto [p_s A_s + p_f A_f]; p_s + p_f = 1.0 \quad (6)$$

failure are weighted by the respective subjective probabilities of these events (p_s and p_f). The subjective probabilities of success and failure should be related to beliefs about the presence or absence of personal and external factors discussed earlier that may facilitate or inhibit behavioral performance. This formulation is

⁸ Another possibility which cannot be discounted is that the person changed his intention while trying to perform the behavior.

⁹ The notion of control is used here quite similar to Triandis's (1977) concept of "facilitative conditions" (F) in his model of interpersonal behavior. However, in Triandis's model, F interacts with intentions and habits to determine the likelihood of a behavior.

structurally similar to Lewin's treatment of level of aspiration (Lewin, Dembo, Festinger, & Sears, 1944). According to Lewin's analysis, a goal's valence is equal to the product of the valence of achieving success times the subjective probability of success, minus the product of the valence of failure times the subjective probability of failure. If we substitute "behavioral attempt" for "goal" and "attitude" for "valence," then Equation 6 is equivalent to Lewin's formulation.¹⁰

Inspection of Equation 6 shows that the attitude toward trying to perform a behavior is equal to the attitude toward the behavior (A_s) when success is certain ($p_s = 1$ and $p_f = 0$); that is, when the possibility of failure does not enter a person's considerations.

As was true of attitude toward a behavior, attitudes toward successful and unsuccessful behavioral attempts can be viewed as determined by underlying beliefs. Thus, A_s should be a function of salient beliefs concerning the likely consequences of successfully performing the behavior; these beliefs will be much the same as the beliefs about performing a volitional behavior where success is implicitly assumed. In contrast, A_f should be determined by salient beliefs concerning the likely outcomes of a failed behavioral attempt; these beliefs would normally not enter a person's considerations in the case of a behavior viewed as volitional.

It is possible to extend a similar analysis to the determinants of subjective norms. Thus, a person's belief that most important referents would approve or disapprove of his attempting to perform a given behavior might be viewed as a function of two prior subjective norms: one applying to a successful attempt, the other to an unsuccessful attempt. However, this distinction appears less relevant in the case of subjective norms than in the case of attitudes toward trying. When a person believes that important referents think he should try to perform a behavior, this subjective norm will in most cases be independent of success or failure; it has to do more with the social desirability of trying than with the likelihood of success. To be sure, the person may believe that, after the fact, his important others will react very differently to success and failure, but these are *behavioral* beliefs regarding the consequences of a successful or unsuccessful attempt, not normative beliefs. They should thus influence the attitude toward trying, but not the subjective norm with respect to a behavioral attempt.

In the case of subjective norm, a simpler model is proposed. The subjective norm for trying to perform a behavior (SN_t) is viewed as a function of the subjective norm concerning (successful) performance of the behavior (SN), multiplied by the subjective probability of success attributed to the referents (p_r), as shown in Equation 7.

$$SN_t \propto p_r SN \tag{7}$$

¹⁰ Warshaw, Sheppard, and Hartwick (in press) have also proposed a similar formulation. In their analysis, attitude toward pursuing a goal is determined by attitude toward pursuit with success and attitude toward pursuit with failure, each weighted by the expectancy (probability) of success or failure, respectively. In addition, they proposed that attitudes toward actions involved in pursuit of the goal also be considered. The present analysis assumes that these latter attitudes are reflected in attitudes toward successful and unsuccessful behavioral attempts.

In other words, important referents are viewed as recommending an attempt when they approve of the behavior and believe the attempt is likely to succeed. For example, a woman may believe that her husband, children, and best friends think she should get a job. If she also believes that, according to these important referents she has a good chance of finding a job, she will come to form the belief that her important others think she should try to get a job.

As to the beliefs that underlie subjective norms toward trying to perform a behavior, two possible approaches can be suggested. One is to consider the perceived normative expectations of specific referents with respect to a behavioral attempt. A second approach would be to follow Equations 7 and 3. That is, one would assess subjective norm regarding the behavior (SN), and multiply this variable by the referents' perceived probability of success (p_r), as suggested in Equation 7. To understand the determinants of SN , one would elicit salient normative beliefs regarding specific referents, multiply each by the corresponding motivation to comply, and sum the products. This analysis was described earlier and is summarized in Equation 3.

The discussion of the theory of planned behavior up to this point is presented schematically in Fig. 2.1. The one new feature in Fig. 2.1 is the introduction of BE , behavioral expectation. In their extension of the theory of reasoned action, Warshaw, Sheppard, and Hartwick (in press) stressed the distinction between what a person *intends* to do (I) and what he expects he actually *will* do (BE). Behavioral expectation thus refers to a person's estimate of the likelihood that he actually will perform a certain behavior. Generally speaking, people will expect to perform a behavior if they intend to try it (I_t) and if they believe (have a high subjective probability) that they can control it (b_c), as shown in Equation 8.

$$BE \propto b_c I_t \tag{8}$$

Behavioral intentions and expectations will tend to differ whenever respondents anticipate that their intentions might change or when they believe that attainment of their behavioral goal is not completely under their volitional control. According to Warshaw, Sheppard, and Hartwick (in press), behavioral expectations are therefore likely to predict actual behavior more accurately than are behavioral intentions.

Inspection of Fig. 2.1 shows that, according to the present analysis, BE would be expected to correlate with *attempted* behavior (B_t) since these two variables

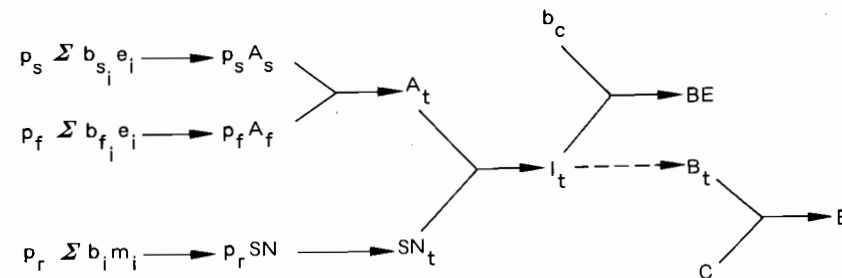


Fig. 2.1. Schematic presentation of the theory of planned behavior

are influenced by some of the same factors. The correlation between behavioral expectation and *actual* behavior (B), however, will depend on correspondence between the person's belief in his control over the behavior (b_c) and the degree of his actual control (C). To the extent that the person's assessment of his skills, will-power, and other requisite personal factors, and of the presence of favorable or unfavorable external factors is realistic, his behavioral expectation will predict his actual behavior. However, when his assessment fails to accurately reflect reality, prediction of behavior from behavioral expectation will suffer. In any case, it must be kept in mind that unlike behavioral intentions, behavioral expectations may have no *causal* effect on actual behavior.

From a practical point of view, it will be very important to identify factors that correlate with realistic perception of behavioral control. In addition to past experience, these factors may include confidence in one's subjective judgment of control, availability of a detailed plan of action, and general self-knowledge. To the extent that perceived control is likely to be realistic, it can serve as an estimate of actual control and, together with intention to try, it can be used to predict the probability of a successful behavioral attempt.

Subjective perceptions of control may, of course, influence attempts to perform behavior regardless of their accuracy. A person who has a pessimistic view of his control over the behavior may never try and may thus fail to find out that he was wrong. As a result, perceived control will usually correlate with behavioral performance. Again, however, this correlation will tend to be strong only when perceived control corresponds reasonably well to actual control.

Bandura's (1977, 1982) work on "self-efficacy" provides support for the relation between perceived control and behavioral performance, usually in the form of overcoming certain phobias or strong habits. For example, in one study (Bandura, Adams, & Beyer, 1977), adult snake phobics following a period of treatment rated the strength of their expectations that they could perform various behaviors in relation to snakes. Correlations between these estimates of self-efficacy (behavioral control) and subsequent behavior toward a snake were 0.83 and 0.84 for two groups of participants who had received performance-based as opposed to vicarious treatment, respectively. Experiences during treatment (and perhaps prior to treatment) seemed to have created quite accurate perceptions of self-efficacy. Since all participants were there to try to overcome their phobias, attainment of the behavioral goal was dependent primarily on their (perceived) control over the behavior involved.

Another issue worth considering at this point is the influence of past behavior on present performance. Some investigators have suggested that past performance of a behavior exerts an influence on present behavior that is independent of behavioral intentions, attitudes, or subjective norms. For example, Bentler and Speckart (1979) reported a study in which college students' use of alcohol, marijuana, and hard drugs at one point in time made a significant contribution independent of intentions to the prediction of the performance of these behaviors two weeks later. According to the present analysis, past performance of a behavior may be correlated with control over the behavior (C). In the case of addictive behaviors, such as drinking alcohol or using drugs, frequent past behavior is

likely to be associated with lack of control. A person who is addicted may intend not to take hard drugs or drink excessively, but lacks the control to achieve his behavioral goal. As a result of its correlation with control, past behavior would in fact be expected to influence present behavior over and above the effect of intention (see Equation 4). According to the theory of planned behavior, past performance should have no independent effect on present behavior only when a person has complete control, that is, when dealing with a volitional behavior. Drinking and use of drugs clearly do not qualify.

Examination of Equations 4 through 8 and Fig. 2.1 shows that the theory of reasoned action discussed at the beginning of this chapter is a special case of the theory of planned behavior. The special case occurs when the subjective probability of success or perceived control (p_s or b_c) and actual degree of control over the behavioral goal (C) are at their maxima. This can be seen clearly if both are scaled from 0 to 1. When p_s and C equal 1, the likelihood of a behavioral attempt is equivalent to the likelihood of performing the behavior (see Equation 4), attitude toward trying reduces to attitude toward the behavior (Equation 6), and subjective norm with respect to trying is the same as subjective norm regarding performance of the behavior (Equation 7). In addition, when b_c equals 1, behavioral expectation becomes equivalent to behavioral intention (Equation 8). Of course, when p_s or b_c are equal to 1 (failure is not even considered as a possibility) and when actual control (C) is perfect, the behavior is under complete volitional control and the theory of reasoned action applies. However, when the possibility of failure is salient and actual control is limited, then it becomes necessary to go beyond the theory of reasoned action. It is here that the theory of planned behavior will prove most useful.

Summary and Conclusions

Successful performance of social behavior was shown to depend on the degree of control a person has over internal and external factors that may interfere with the execution of an intended action. The extent to which attainment of a behavioral goal depends on skills, abilities, will power, or opportunity varies, however, from behavior to behavior. When factors of this kind exert a negligible influence on successful performance of a behavior and the possibility of failure is not a salient consideration, the behavior may be said to be under volitional control; the immediate and only determinant of such a behavior is the intention to perform it. A measure of intention is thus expected to permit accurate prediction of volitional behavior, unless the intention changes after it is assessed but before the behavior is observed. Evidence for strong intention-behavior relations has been obtained in numerous applications of Fishbein and Ajzen's (1975; Ajzen & Fishbein, 1980) theory of reasoned action. In addition, this research has shown that it is possible to explain differences in intentions and behavior in terms of attitudes toward the behavior and subjective norms, and then to trace the determinants of these variables to the underlying behavioral and normative beliefs.

The theory of reasoned action applies to behaviors that are under volitional

control. Its predictive accuracy diminishes when the behavior is influenced by factor over which at least some people have only limited control. A theory of planned behavior was proposed which expands the theory of reasoned action and permits it to deal with behaviors of this kind. According to the proposed theory, social behavior follows more or less well developed plans. The success of an attempt to execute the behavioral plan depends not only on the effort invested (the strength of the attempt) but also on the person's control over other factors, such as requisite information, skills, and abilities, including possession of a workable plan, willpower, presence of mind, time, opportunity, and so forth.

Whether or not an attempt is made to perform a given behavior and the strength of that attempt are determined in an immediate sense by the intention to try performing the behavior. This intention is in turn a function of two factors: the attitude toward trying and the subjective norm with regard to trying. The attitude toward trying is based on two separate attitudes, one toward a successful behavioral attempt and one toward an unsuccessful attempt, each weighted by the subjective probability of the event in question. Finally, these two attitudes are determined by salient beliefs regarding the consequences of a successful or unsuccessful behavioral attempt and by evaluations of these consequences.

In a somewhat similar manner, the subjective norm with respect to a behavioral attempt is viewed as based on the subjective norm regarding (successful) performance of the behavior, weighted by judgments of the likelihood of success as attributed to important social referents.

According to the theory of planned behavior, therefore, the considerations that, in the final analyses, enter into the determination of a behavioral attempt include beliefs about the likely consequences of success and failure, the perceived probabilities of success and failure, normative beliefs regarding important referents, and motivations to comply with these referents. Generally speaking, a person will attempt to perform a behavior if he believes that the advantages of success (weighted by the likelihood of success) outweigh the disadvantages of failure (weighted by the likelihood of failure), and if he believes that referents with whom he is motivated to comply think he should try to perform the behavior. He will be successful in his attempt if he has sufficient control over internal and external factors which, in addition to effort, also influence attainment of the behavioral goal.

The theory of reasoned action was shown to represent a special case of the proposed theory of planned behavior. The two theories are identical when the subjective probability of success and the degree of control over internal and external factors reach their maximal values. When this is the case, we are dealing with purely volitional behavior to which the theory of reasoned action can be directly applied. When subjective probabilities of success and actual control are less than perfect, however, we enter the domain of the theory of planned behavior.

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