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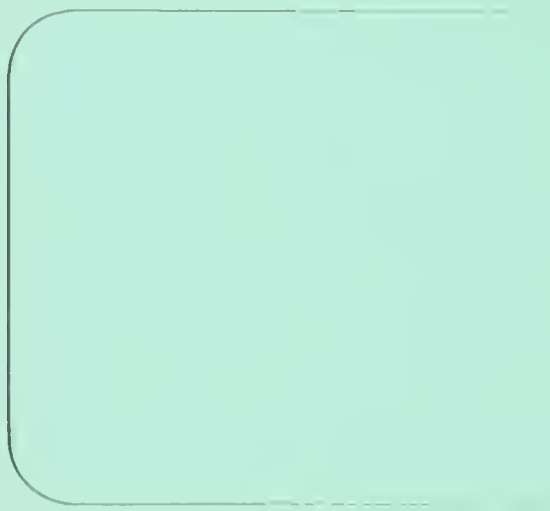
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The Attitude-Behavior Relationship

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#10

Attitude-Behavior Relationship

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Abstract


The purpose of this review is to establish the current status of research relating attitudes and behavior. It is argued that special attention must be given to theoretical conceptualizations of attitude and behavior. When a representative sample of studies from a number of areas are drawn together, it is possible to specify conditions under which attitudes and behavior are related. Explanations for failures to demonstrate this relationship are emphasized in order to direct future research.

The Attitude-Behavior Relationship

May 1, 1973

The failure to demonstrate an unequivocal relationship between attitudes and behavior has been one of the more persistent problems in the social sciences. Since LaPiere (1934) reported an inconsistency between an indicant of racial attitude and behavior toward Chinese, numerous investigators have concluded that attitudes seem to be unrelated to behavior (cf. Deutscher, 1969; Wicker, 1969). At the same time, attitude, to use Allport's oft-cited phrase, has been "the primary building stone in the edifice of social psychology," and has served as a major tool in formulating social and business policy. Unless the relationship between attitudes and behavior can be established, however, it is not at all clear that this reliance on the concept of attitude has been justified. In fact, the negative findings in this area have contributed to the rejection by some of the entire concept of attitude. Bem (1965, 1967, 1972), for example, has theorized that people do not have attitudes but rather infer them from their behavior. Similar thinking by Mischel (1968) with regard to personality traits raises the entire question of the need for postulating covert internal states. Such views have gained increased currency with the publication of Skinner's Beyond Freedom and Dignity. The policy implications of this debate are enormous: Should social programs attempt to change people or should they concentrate on the environment in which people live (cf. Etzionni, 1972)?

It is not yet certain that the pessimism concerning attitude is justified. Although there have been a few excellent reviews of



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attitude-behavior studies (e.g., Festinger, 1964; Wicker, 1969), they have generally addressed rather specific interests or have been expository in nature. There has been little effort to review and draw together all of the disparate findings relevant to the attitude-behavior relationship. Not even textbook accounts such as the one by Keisler, Collins and Miller (1968), though valuable, make any pretense of being integrative. The purpose of this paper is to review a truly representative sample of studies and to delineate the current status of this research in specifying the relationship between attitudes and behavior.

We will begin by discussing briefly the conceptual nature of both attitude and behavior. Much of the attitude literature has been able to bypass such considerations because of its focus on attitude change, since any change in a measure of attitude may be assumed to reflect some change in the unspecified concept of attitude. In contrast, the conceptual underpinnings of attitude cannot be so easily ignored if attitudes are to be related to behavior.

Theoretical Conceptualization

Attitude

As McGuire (1968) has noted, conceptions of attitude vary along a continuum from positivistic to latent process. Positivistic researchers equate attitudes with the operations designed to measure them (e.g., DeFleur and Westie, 1963). Attitude may thus be defined entirely in terms of a person's responses to an attitude questionnaire just as I.Q. may be equated with a score on an I.Q. test.

Despite its appealing simplicity, the positivistic approach is problematic. If a theoretical explanatory structure approaches the complexity of natural events, then we can no more understand our theory than we can the real world we seek to explain. Investigators at the other end of the continuum view attitude as a latent process. Some propose that this latent process is an inference based on response consistency (e.g., Campbell, 1959) while others assume that it is literally an affective or drive-like state within the organism (Doob, 1947; Thurstone, 1931). Attitude is probably best conceived, however, as a theoretical abstraction useful for explanation and prediction. This conception of attitude does not imply any necessary behavioral or phenomenological referent.

At the level of measurement, behavior in the form of self-reports, physiological reactions, and other overt responses serve as indicants of attitude. If a behavior is to be accepted as an indicant of attitude, it must constitute an appropriate operationalization of the concept. That is, there must exist some theoretical rationale for inferring an attitude from that behavior. There can be no inconsistency between an attitude and its behavioral indicant, otherwise we would have no knowledge of the attitude. This does not imply, as is sometimes concluded (e.g., Sechrest, 1969, p. 147), that attitude-behavior inconsistency cannot exist by definition-- an attitude may be inconsistent with other behaviors that are not direct operationalizations of the attitude.

No doubt much of the confusion centering around this point lies in the difficulty of operationalizing attitude. Though several

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classes of attitude measures may be distinguished (Cook and Selltiz, 1964), only the traditional attitude scaling techniques are satisfactory as operationalizations. The implicit, and in fact ill-acknowledged, rationale for attitude scaling is that attitudes are derived from the informational beliefs one has about an issue (cf. Ostrom, 1968; Calder, Insko, and Yandell, in press). Unfortunately, the other classes of measures have little rationale at all. Observational techniques (e.g., Webb, Campbell, Schwartz and Sechrest, 1965) while often intriguing seem particularly weak in this respect. For example, in one study, investigators chose seating aggregation as an index of attitude (Campbell, Kruskal and Wallace, 1966). Observers noted the extent to which black and white students tended to sit apart in lecture halls at two universities. Racial separation was found to be greater at one of the schools. As a result the authors suggested that the white students at this school were more prejudiced than the white students at the other school. Is seating aggregation, however, operationalization of attitude, or is it more appropriately viewed as a behavior that under some circumstances might be under the control of (or predicted from) attitudes? In short, there is often no theoretical rationale for taking an observation of overt behavior as an operationalization of an attitude. In terms of the general attitude-behavior relationship, attitude must first be adequately operationalized and measured if it is to be related to overt behaviors.

As the above discussion points up, behavior serves a dual role in psychology. First it represents what most psychologists wish to understand or predict. Behavior is the object of psychological

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theory. In order to understand behavior, concepts such as attitude are developed. Yet, in deriving these concepts, behavior must serve a second role. Behavior must function as the evidence by which these concepts are inferred and quantified. Behavior in some form is the only source of data about psychological processes. We are thus faced with the problem of using behavior to develop concepts which will aid in understanding behavior. All of this has fundamental implications for the attitude-behavior relationship. Behavior must serve as the evidence for attitudes. At the same time, to be of any value an attitude must aid in understanding and predicting behavior that is not a direct operationalization of that attitude.

Behavior

What is it that attitudes should be behaviorally related to? Much confusion concerning the attitude-behavior relationship has centered around this question. Most investigators have not treated behavior as an abstract concept but have attempted instead to relate attitudes to quite specific acts. For example, LaPiere's study investigated whether an attractive Chinese couple was refused service at hotels and restaurants. There is a need for a broader theoretical treatment of behavior. Attitudes should be related to rather general behavioral syndromes or tendencies to perform a class of actions rather than to single acts. Any one instance of an act is necessarily too overdetermined to test the attitude-behavior relationship. Although most studies have followed LaPiere in using a single act as a measure of behavior, Fishbein (in press) has recently approached

this problem by viewing behavioral observations as criterion scores. He argues that ideally such behavior scores should be based on repeated observations of multiple acts. While studies employing one-observation-single-act behavior scores may be quite interesting, they are inconclusive, for there is no way of knowing whether attitude would have more adequately predicted a related act or the same act on a different occasion. Attitudes towards blacks, for instance, should be related to a behavioral pattern manifested in a set of prejudicial actions.

Finally, in order to examine the relation between attitudes and overt behaviors it is necessary to specify what we mean by "overt behavior." Certainly it is common to distinguish between pencil and paper measures and overt behaviors. However, as Aronson and Carlsmith (1968) note, "it is possible to conceive of a continuum ranging from behaviors of great importance and consequence for the subject down to the most trivial paper and pencil measures about which the subject couldn't care less (p. 54)." In practice, researchers have employed three distinct forms of behavioral measures: (1) retrospective self-reports of behavior (e.g., Tittle and Hill, 1967), (2) behavioroid measures which indicate how a person intends to behave at some point in the future (e.g., DeFleur and Westie, 1958), and (3) actual instances of overt behavior (e.g., LaPiere, 1934).

Clearly forms (1) and (2) are acceptable measures of behavior only to the extent that they are congruent with form (3), actual behavior. (This is not to say, of course, that behavioral intentions may not be of interest in their own right.) Yet in some circumstances retrospective reports may be distorted and intentions unfulfilled.

As an example of distortions in memory Bem and McConnel (1971) and Ross and Shulman (in press) found that subjects who had undergone considerable attitude change tended to greatly underestimate the amount of attitude change that had taken place. Also, Oskamp (1972) notes a tendency for people to report that they voted for the winning candidate in an election. In 1964, 66% of a group of respondents indicated that they had voted for Kennedy in 1970, though only 50% actually had done so. With regard to intentions, Linn (1965) found that 18% of a group of subjects who agreed to pose for a photograph with a Negro failed later to keep their appointments. Likewise, Fishbein (1966) obtained a correlation of only .39 between males' intentions to engage in premarital sex during a school semester and their subsequent retrospective reports, suggesting that males were not always able to convert their intentions into behavior. Thus studies employing retrospective or behavioroid measures may introduce additional sources of variance. The strongest evidence about behavioral prediction is derived from research in which samples of actual behavior are obtained or where special attention is given to the adequacy of surrogate variables such as self-reports or intentions.

Testing and Observational Research

One approach to studying the attitude-behavior relationship is to construct tests for both attitude and behavior and then to correlate the results. While such covariation clearly does not imply causality, it may provide evidence that the two concepts are related. Several studies have compared attitude scales on the basis of how

well they predict behavior. These studies have yielded mixed results, probably due to variation in the quality of the attitude scales evaluated (e.g., Kamenetsky, Burgess, and Rowan, 1956; Poppleton and Pilkington, 1963; Carr and Roberts, 1965). One study, however, is of particular interest, and illustrates the potential of this approach. Tittle and Hill (1967) obtained attitude measures toward participation in student political activities using Thurstone, Likert, Guttman, and semantic differential scaling techniques. Moreover, they used scaling techniques to construct behavior scores from self-reports of participation in various types of student political activity. The results were encouraging: "it is clear that attitude measurement alone ... is not totally adequate as a predictor of behavior. However, when it is possible to obtain an average association of 0.543 [the gamma statistic] using a Likert scale in its crude form, it seems entirely possible that technical refinements and additional methodological considerations could increase predictive efficiency (1967, p. 210-211)." This would certainly seem a fruitful avenue for further research.

Most of the research in this area has concentrated not on measures of attitudes but on the actual observation of a specific behavior. While this observational research is often socially relevant, it is weak methodologically, with single acts being studied far more often than patterns of behavior. It is this research that has most frequently failed to obtain a relationship between attitudes and behavior.

Much of the observational research has attempted to relate attitudes as expressed on simple questionnaires to overt behaviors toward minority groups. LaPiere's work was an early example of inconsistency

between such verbal measures and overt behavior, and other similar findings have been reported (Kutner, Wilkins, and Yarrow, 1952; Saeger and Gilbert, 1950). A well known study by DeFleur and Westie (1958) revealed a greater degree of attitude-behavior consistency. A Likert-type measure of attitudes toward blacks was administered to 250 college students. Subjects in the upper and lower quartiles of the attitude distribution were then compared in terms of a simulated racial interaction. Each subject was asked if he would pose at some time in the future for a photograph with a black of the opposite sex. If a subject agreed, he was requested to permit one of several possible uses of the photograph, ranging from limited laboratory exposure to use in a nationwide integration campaign. DeFleur and Westie found that subjects who had reported prejudicial attitudes tended to be less willing to have their picture taken and widely distributed. Yet over 25% of the subjects behaved inconsistently with their attitudes, a very high proportion given that only subjects with extremely positive or negative attitudes were tested.

Linn (1965) reasoned that a more specific measure of attitude would increase the consistency between attitudes and behavior in the DeFleur and Westie situation. Accordingly, Linn conducted a study in which the attitude questionnaire items were the same as the behavioral alternatives. The difference between the attitude items and the behavioral scale administered four weeks later was that the attitude statements were presented as hypothetical commitments as opposed to actual commitments for the behavioral scale. Despite the similarity of the two measures, subjects' responses on the two scales

were not significantly related. Although there are several possible explanations for this negative result, not the least of which is the possible transparency of the procedure, it is clear that the study is more relevant to the relationship between verbally expressed prior intentions and behavior rather than the relationship between attitudes and behavior. A more descriptive overview of much of this research on racial attitudes and behavior is given by Katz (1970, p. 80-90).

Turning briefly to other content areas, we find striking examples of the possible failure of attitudes to predict behavior. Corey (1937) related attitudes toward honesty in the classroom with frequency of cheating on tests. A Likert-type measure of attitudes failed to predict cheating though the students' performance on the tests did. In organizational psychology, an area of very active interest has been the relationship between job attitudes (usually operationalized as reported job satisfaction) and job performance. Vroom (1964) reviewed twenty studies relating job attitudes to job performance and found the correlations to be disappointingly small and often nonsignificant.

Although these observational studies would in general lead to pessimism about a strong attitude-behavior relationship, their methodologies are typically too weak to allow a definitive answer to the problem. Nevertheless, there is reason to believe that even if the studies were better designed high attitude-behavior correlations would not necessarily have been obtained. For this reason, we will concentrate on the general theoretical issues involved rather than a study-by-study critique. These issues have taken the form of attempts to explain why the attitude-behavior link may not occur.

The specificity of behavior explanation

In many instances, the behavior observed may be so specific as to have had little relation to the more general attitude measured. Fishbein (Ajzen and Fishbein, in press; Fishbein, 1967a) has contended that attitudes toward the particular act to be engaged in, rather than general attitudes, should be related to behavior. For example, you should ask a person specifically about his attitude toward posing for a photograph with a black if you wish to predict this behavior. Favorable or unfavorable attitudes toward blacks in general, as assessed by DeFleur and Westie (1958), should be far less predictive of the behavior. Wicker and Pomazal (1971) conducted an experiment to test this reasoning. Students were asked to volunteer to participate in a psychology experiment after their attitudes towards scientific research (general), psychological research (less general), and participating as a subject in a psychology experiment (specific) were assessed. While all of the correlations were weak, the only significant association was between volunteering and the specific attitude ($r = .17$).

One problem in comparing attitudes toward the act to be engaged in with more general attitudes toward an object or issue is that the two are frequently highly correlated. A dominant action may be more or less inherently associated with an object so that the two are difficult to separate. Ajzen and Fishbein (1969), for instance, obtained extremely high correlations between attitudes toward certain activities and attitudes toward objects corresponding to those activities. Schwartz and Tessler (1972), in a study described more fully later,

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used an issue of sufficient complexity as to suggest many behaviors, obtaining an average correlation of only .20 between the two attitudes. Accordingly, their study provides an interesting test of the specificity argument. The results indicated that attitudes toward acts were much better predictors of behavioral intentions than attitudes toward general issues. Intriguingly, however, in this study attitudes toward general issues were also significantly correlated with intentions and this association was not washed out by partialing out the effects of attitudes toward acts. It would thus appear that both specific and general attitudes may predict behavior, though the relationship with specific attitudes toward acts may be stronger.

The behavioral threshold explanation

In an attempt to reconcile any apparent inconsistency between various behavioral manifestations of an attitude, Campbell (1963) pointed out that different behaviors have different thresholds of appearance. Low threshold indicants of attitudes will occur even with a weak attitude whereas high threshold indicants may require a strong attitude before they will occur. Campbell noted that LaPiere assessed two behaviors with different thresholds: refusing service by letter is easier (low threshold) than refusing service in person (high threshold). Thus, Campbell concluded that LaPiere's results were not inconsistent. By their willingness to perform only low threshold behavior, the hotel clerks indicated that they were somewhat, but not strongly, anti-Chinese. Rosen and Komorita (1971), moreover, have demonstrated that a conventional attitude assessment predicted a

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behavioroid measure significantly less well than an index based in part on subjects' intentions to perform a series of acts varying in behavioral thresholds.

Campbell's formulation has received direct support from a study of attitudes toward organ transplantation (Goodmonson and Glaudin, 1971). The behaviors involved ranged from participating in a telephone interview (low threshold) to actually signing a legal form authorizing posthumous donation of organs (high threshold). The results indicated a significant correlation ($r = .58$) between the strength of previously assessed attitudes toward organ transplantation and the extremity of the behavior engaged in. Higher threshold behaviors tended to be elicited only when the respondents possessed extremely positive attitudes.

Unfortunately the behavioral threshold explanation has been associated with the view that attitude-behavior inconsistency can never be said to exist (e.g., Sechrest, 1969, p. 147): Inconsistency only appears to exist because of the varying thresholds of the behavioral indicants of attitude. As argued earlier, however, not all behaviors constitute evidence for a specific attitude. While there can be no inconsistency between an attitude and the behaviors that operationalize that attitude, other behaviors a person performs may be inconsistent with that behavioral operationalization. Thus the behavioral threshold approach confuses the two roles of behavior in psychology. It assumes that all behavior relevant to an attitude represents an operationalization of that attitude.

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The behavioral threshold perspective is valuable, however, in alerting researchers to the problems inherent in measuring two variables which may be differentially susceptible to situational cues. Attitudes may be frequently less situationally constrained than behavior. As pointed out by Hyman (1959), the typical testing setting does not involve the forces of everyday life. Fendrich (1967), for example, compared attitudes toward blacks as predictors of actual involvement in a campus chapter of the NAACP for two groups of subjects whose definition of the situation was varied experimentally. The results indicated that subjects encouraged to view the situation as one where their attitudes reflected true commitment displayed attitude-behavior consistency whereas those encouraged to define the situation as the typical "play-like" experiment did not.

Other variables explanation

An obvious and frequently proposed explanation of attitude-behavior inconsistency holds that while an attitude may affect behavior, it is not the sole determinant. Variables other than attitude must be taken into account if accurate behavioral prediction is to be achieved. For example, Wicker (1971) attempted to predict frequency of church attendance by measuring three variables in addition to attitude toward the church: perceived consequences of church attendance, evaluation of church attendance, and the judged influence of extraneous events on church attendance (e.g., the likelihood that the presence of weekend guests would affect attendance). The correlation found between attitude and frequency of church attendance (obtained from official

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church attendance records) was .31. The multiple correlation which combined the additional three measures with attitude was .50, indicating an improved behavioral prediction when the other variables were considered.

Several researchers have attempted more systematic formulations of the other variables explanation. Rokeach and Kliejunas (1972) have argued that a person's behavior is determined by two interacting attitudes-- his attitude toward the object and his attitude toward the situation. To test this hypothesis, Rokeach and Kliejunas assessed students' attitudes toward the professors teaching their courses (attitude toward the object) and their attitudes toward attending classes in general (attitude toward the situation). The average of the two attitude measures weighted for their perceived importance was found to be a significantly better predictor of self-reports of class attendance ($r = -.61$) than either attitude measure alone (attitude toward professor: $r = -.20$; attitude toward class attendance in general: $r = -.46$). Fishbein (1967a) has proposed a model in which behavior is a function of attitudes toward the behavior and normative beliefs regarding the behavior. Similarly Triandis (1971, p. 16) would add three other variables to attitude: social norms, habits, and expectancies about reinforcement. Sugar (reported in Triandis, 1971) demonstrated that accuracy of predicting the acceptance of a cigarette increased if norms and habits were considered in addition to attitudes toward smoking.

Warner and DeFleur (1969) have taken a somewhat different tack. They hypothesized that two situational factors, social constraints and

social distance, affect whether or not a person's behavior will reflect a pro- or anti-black attitude. A field experiment was conducted to test this hypothesis. After obtaining a measure of general attitudes toward blacks, the investigators sent letters to high and low prejudiced subjects asking them to engage in a specific behavior toward blacks. The behaviors requested varied in social distance from dating a black (low social distance) to contributing to a black charity (high social distance). Social constraint was manipulated by having the respondent either believe his reply would be kept anonymous (low social constraint) or be disclosed to others via the campus paper (high social constraint). Each person received one version of the request and was asked to return the letter indicating his agreement or disagreement. The results indicated that with high social constraint, low prejudiced subjects acted consistently with their attitudes (agreed with the request) when the behavior maintained social distance. On the other hand, high prejudiced subjects acted consistently (refused the request) if the behavior reduced social distance. As less than 25% of the subjects answered the letter, however, the results must be interpreted with caution.

Along the same lines, Acock and DeFleur (1972) have formulated a "pivotal hypothesis" arguing that "attitude(s) may provide a base-line factor for decision-making about action toward the relevant issue or object. Against this base-line the individual raises other considerations, such as the views held by his reference groups, considering in particular, possible sanctions for acting one way or another; then he makes his action decision (p. 725)." As preliminary support

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for the hypothesis Acock and DeFleur (1972) report a study of attitudes toward the legalization of marijuana. The best prediction of whether subjects would vote in an experimental situation to legalize marijuana was obtained only when their attitudes were combined with measures of the perceptions of their peers and family in a configurational approach.

A recent study by Weitz (1972) indicates just how complex the effects of other variables can be. White subjects' verbally expressed racial attitudes ("How friendly would you feel toward this person in a year's time?") were found to correlate negatively with such behaviors as task selection, where the tasks differed in the closeness of the interaction with a black and the amount of time required to work with the black. Thus subjects displaying more attitudinal tolerance tended to behave in a more prejudiced manner. One hypothesis explains such findings in terms of a basic psychological ambivalence in which positive feelings are channeled verbally (and are likely to be expressed as attitudes) while negative feelings are channeled into actual behavior (Katz, 1970). Another interpretation is, however, that attitudes may in fact be tolerant but other variables such as social norms still structure behavior along prejudicial lines. These norms essentially cause the positive attitudinal affect to be repressed, and can even produce a negative correlation between attitudes and behavior. As Weitz (1972) points out, on a societal level this system in which positive attitudes are not able to overcome discriminatory racial patterns has been called by Myrdal (1944) the "American dilemma."

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Research Based on Models of Attitudinal Organization

Traditionally, attitudes are thought of as unidimensional, as a favorable or unfavorable evaluation or affect. Yet a number of investigators have treated attitudes as possessing an underlying organization or structure. Two versions of this putative organization have been closely related to the attitude-behavior question, the cognitive-affective-conative model and the expectancy-value model. The cognitive-affective-conative model (Roseberg and Hovland, 1960) structures attitudes in terms of three components: the cognitive component is the rational, informational basis of attitude; the affective component is the feeling of liking or disliking for the attitude object, and the conative component is the strength of a person's behavioral tendencies toward the attitude object. The major alternative to this model has been the expectancy-value model which structures attitudes in terms of the beliefs which make up the attitude. These beliefs may be treated in different ways but they always refer to the attributes of the attitude object which the person considers. Typically each belief is associated with two numerical indices, one gives the probability of its occurrence (expectancy) and the other an evaluation of its worth (value). Expectancy-value models generally focus on how these two indices combine with each other and across various beliefs in order to determine attitude.

The cognitive-affective-conative approach

Proponents of a three component model of attitude must first demonstrate that there are, in fact, distinct components. If a

separate conative component of attitude could be identified, we might expect it to predict behavior more accurately than the overall attitude. On the other hand, the three components may only appear to differ because they are measured in different ways. Woodmansee and Cook (1967) factor analyzed responses to a pool of opinion statements concerning racial attitudes. The factors which emerged concerned specific content areas such as private rights and could not be labeled cognitive, affective, or conative. However, the opinion statements used in this study were probably too homogeneous to afford an adequate test of the three component model.

Two studies have employed Campbell and Fiske's (1959) multitrait-multimethod matrix technique to determine whether there are separate components of attitude. Ostrom (1969) constructed four independent verbal measures of the cognitive, affective and conative components of students' attitudes toward the church. The four methods used were Thurstone's equal appearing intervals, Likert's summated ratings, Guttman's scalogram analysis, and a simple rating scale. Kothandapani (1971a, 1971b) employed the same four methodologies to measure the cognitive, affective, and conative components of attitudes toward birth control. The multitrait-multimethod analysis in both studies indicated that the three hypothetical components of attitude are distinct relative to method variance. These two studies also investigated the accuracy with which the three components predicted behavior. Ostrom found that the conative component was generally a better predictor of church related behaviors (self report and behavioroid measures) than the cognitive and affective components, but that the

magnitude of this difference was extremely small. Using a stepwise discriminant analysis, Kothandapani showed that the conative component was the most accurate predictor of contraceptive behavior (as determined from self-reports) and that prediction was not improved by adding either the affective or cognitive component, or both, to the prediction equation.

In view of this research, it appears that the conative component of attitude should be further explored. Some earlier research by Triandis (1964) is especially relevant. This work investigated the factor analytic structure underlying semantic differential type ratings of statements regarding various behaviors. Triandis argued that by using specific factors underlying the conative component, more accurate prediction of behavior may be obtained.

Although research on the conative component seems promising, it is possible to raise a theoretical objection. Perhaps the conative component is not really a measure of attitude. That is, the conative component may well be different from cognitive and affective components as measured by various methods, but there is no theoretical basis for concluding that it is a separate component of attitude. Rather the conative component may provide evidence about general behavioral tendencies or intentions. The conative component may thus predict overt acts because both the acts and the conative component are indicants of the same concept, behavior. This argument implies that some theoretical rationale must be developed for postulating and measuring conation as a component of attitude. Until such a perspective is developed, the most parsimonious explanation of the conative component is not as a

basis of attitude but as a measure of behavior. This problem is similar to the issues raised in connection with using observations of behaviors to infer attitudes.

Insko and Schopler (1967) have proposed a cognitive-affective-conative model in which conation is not employed as a component of attitude. In this model, attitudes are defined strictly in terms of positive or negative affect; cognitions are beliefs about the relationship between objects of affective significance; conation is identified as goal directed activity which may be positively or negatively evaluated. Insko and Schopler hypothesized that people try to maintain consistency between attitudes, cognitions and behavior. Thus inconsistency between attitudes and behavior should be resolved by either a change in attitudes or a change in behavior. Although this prediction has not been adequately tested in the context of their theory, Insko and Schopler's work does provide an example of how affect, cognition, and conation can be related by a specific psychological mechanism.

The expectancy-value approach

While several investigators have developed expectancy-value models of attitude organization (e.g., Peak, 1955, 1958; Rosenberg, 1956, 1960a, 1960b), the work of Fishbein (1963, 1965, 1967a, 1967b, in press) is the most relevant to the attitude-behavior relationship. Fishbein's expectancy-value model is given by the equation

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The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This ensures transparency and allows for easy verification of the data.

Furthermore, it is noted that the records should be kept in a secure and accessible format. Regular backups are recommended to prevent data loss in the event of a system failure or disaster. The document also mentions the need for periodic audits to ensure the integrity and accuracy of the information stored.

In addition, the text highlights the role of technology in streamlining record-keeping processes. Modern accounting software can automate many tasks, reducing the risk of human error and saving valuable time. However, it is stressed that users must be properly trained and that the software is regularly updated to address any security vulnerabilities.

Overall, the document serves as a comprehensive guide for anyone responsible for financial record-keeping. It provides clear instructions and best practices to ensure that all records are accurate, secure, and easy to manage.

where A is the attitude toward some action or object, B is the strength of the belief i about the object or action, and a is the evaluative aspect of belief i . This basic model of attitude organization has been extended to the prediction of behavior as follows. Fishbein believes that behavioral prediction can be increased by employing specific attitudes and other variables in addition to attitude. The extended model is written as

$$B \approx BI = [A_{act}]w_0 + \left[\sum_{j=1}^m (NB_j)(M_{cj}) \right] w_1, \quad [2]$$

where B is some overt behavior, BI is the intention to perform that behavior, A_{act} is the attitude toward performing the behavior, NB is the strength of the normative belief j about what other people think the individual should do, M_c is the individual's motivation to comply with normative belief j , and w_0 and w_1 are empirically derived regression weights. Note that Equation [1] can be substituted into Equation [2]. An interesting feature of the model is that overt behavior and behavioral intentions are seen as being approximately the same. Fishbein (in press) argues that most behavior is under volitional control and that intentions will be very closely reflected in behavior if they are measured properly, i.e., temporally close to the behavior, etc. Equation [2] then predicts these behavioral intentions from the additive combination of an individual's attitude toward the action and his perception of and susceptibility to normative pressures regarding the behavior. Behavioral prediction thus rests on an expectancy-value model of both attitude and normative influence.

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Several studies have tested Fishbein's attitude-behavior model. One of these provides a useful illustration. Fishbein (1966) attempted to predict the occurrence of premarital sexual intercourse for male and female subjects. Behavioral intentions were correlated with actual behavior though the association was higher for females than for males ($r = .69$ versus $r = .39$). The multiple correlations between behavior and the attitudinal and the normative components of the model were quite high for both males and females ($r = .89$ and $r = .94$ respectively). The regression weights, however, differed for males and females. For females, the attitudinal component received the most weight in the regression equation while, for males, the normative component contributed more. This finding is also reflected in a higher correlation between attitudes and sexual behavior for females ($r = .92$) than males ($r = .52$). Again we see the complicated interaction of attitudinal and situational factors.

Ajzen and Fishbein (in press) review nine studies that support the model. All of these studies obtained relatively high correlations between specific attitude measures (A_{act}) and behaviors such as intentions to engage in recreational activities (Ajzen and Fishbein, 1969) or cooperative intentions and choices in a Prisoner's Dilemma game (Ajzen and Fishbein, 1970). Schwartz and Tessler (1972) report an excellent study exploring the adequacy of Fishbein's model in predicting intentions about six kinds of medical transplant donations. The tested version of Fishbein's model consisted of three components, attitude toward the act, social normative beliefs, and personal normative beliefs in the sense of moral obligation. Although previous work (Ajzen, 1971; Ajzen and Fishbein, 1969, 1970, in press) has suggested

omitting personal normative beliefs and the motivation to comply from the model, Schwartz and Tessler argue that the former may prove valuable if operationalized as moral obligation. The results of the study revealed significant correlations between all three components and behavioral intentions for all six transplant donations. An average of more than 50% of the variance in intentions was explained. This proportion was not even reduced very much for a crossvalidation sample using the original regression weights. A step-wise regression analysis indicated that all three components contributed significantly to the explained variance.

Schwartz and Tessler also examined whether Fishbein's model mediated the influence of six exogenous variables. The relationship of four variables, attitude toward the object, age, religiosity, and occupational prestige, with intentions was not eliminated by controlling for the effects of the model's components. This result along with similar findings by Ajzen and Fishbein (1969, 1970) casts doubt on the sufficiency of Fishbein's model. Finally, Schwartz and Tessler obtained measures of volunteering behavior too, but found that only personal normative beliefs predicted actual behavior. The authors conclude that Fishbein's model may be a better predictor of intentions than behavior. While this is probably true, these results really serve to highlight the myriad of other variables besides attitude which affect behavior and to a lesser extent intentions.

Expectancy-value models have also been popular in the area of organizational behavior. Vroom (1964) has devised an expectancy-value model for job performance. Empirical studies, however, have generated only weak support for these models (e.g., Galbraith and

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Comings, 1967; Hackman and Porter, 1968; Lawler, 1968; Lawler and Porter, 1967). Graen (1969) has provided some possible limitations and extensions of Vroom's model.

Attitude Change-Behavior Change Research

Most of the studies of attitudes over the past two decades have focused on measuring attitude change as a result of a specific experimental manipulation. Very few of these studies have also included a measure of behavior change. In an early review of this area, Festinger (1964) was able to find only three studies that incorporated measures of both attitude and behavior (Fleishman, Harris and Burtt, 1955; Janis and Feshback, 1963; MacCoby, Romney, Adams, and MacCoby, 1962). While all three studies successfully modified attitudes, corresponding shifts in behavior were not obtained.

A number of more recent investigations have been specifically designed to test whether behavior change accompanies attitude change. In two studies, Greenwald (1965, 1966) found that a communication changed both children's attitudes toward a task and their performance on the task. Freedman (1965) failed to produce the expected attitude change, yet behavior change was obtained. Hendryk and Seyfried (1972) developed a novel paradigm for studying the consequence of attitude change. Experimental and control subjects were yoked on the bases of initial attitude responses. Experimental subjects were then exposed to a persuasive communication and their attitudes were reassessed (post-test). The next stage of the experiment capitalized on Byrne's research on interpersonal attraction which establishes a link between attitude similarity and liking. Hendryk and Seyfried showed subjects

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in both conditions the attitude responses of two strangers. The attitude responses of one stranger were similar to the subjects' pre-test attitudes. The attitude responses of the second stranger were identical to the experimental subjects' post-test attitudes. Rating of attraction showed that the experimental subjects preferred the post-test attitude stranger while control subjects preferred the pre-test attitude stranger. Though measures of overt behavior were not obtained, Hendryk and Seyfried demonstrated that effects of attitude change spread to a conceptually related response, liking for an anonymous stranger. Further extensions of this type of paradigm could provide important evidence linking attitude change and behavior change.

Other research which has simultaneously included measures of attitude and behavior has yielded inconsistent results (e.g., Weick, 1964; Leventhal, 1970). Leventhal reported five studies on fear arousing communications that successfully produced attitude change, but only two of these studies also yielded changes in behavior. In summary, changes in attitude do not always appear to produce changes in behavior. A number of factors are likely to affect whether or not attitudes and behavior will covary and some of the most important of these are discussed below.

The functional nature of the attitude-behavior relationship

Even if behavior is functionally related to attitudes, it is not necessary that any change in attitude result in a change in behavior. The precise nature of this relationship might take a number of forms as illustrated in Figure 1. For the first curve (1), large changes in attitude (ac) produce only small changes in behavior (bc). If

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attitudes were related to behavior by this function, it would not be surprising if research successfully obtained attitude change but was not able to detect the resulting small amount of behavior change. The second curve (2) depicts a more complicated functional relationship. Here the slope changes with the region of the curve examined. Different portions of the attitude scale yield substantial differences in the amount of behavior change. A moderately religious person, for example, who becomes less religious may change his behavior far less than an extremely religious person who loses his former zeal.

 Insert Figure 1 about here

Attitude change may be unstable

Festinger (1964) offered a further explanation for the frequent lack of correspondence between attitude change and behavior change. Attitude change may be transitory and unstable unless it is supported by accompanying environmental changes. Such a hypothesis is illustrated by Newcomb's (1943, 1963, 1967) finding that girls at Bennington College who came into the more liberal academic community tended to adopt more liberal attitudes. Newcomb relates the subsequent persistence of these attitudes over a twenty-five year period to the environmental support provided by the girls' husbands who also possessed liberal views. In the absence of a supportive informational environment, attitudes may not persist long enough to affect behavior.

Commitment

Greenwald (1966), in a study referred to earlier, found that commitment to a behavior made it more resistant to change. Whereas both the behavior and attitudes of noncommitted subjects were influenced by a communication, subjects committed to a conflicting behavior changed their attitudes toward a task but not their performance. These results suggest that a prior commitment may lock a person into a behavior and decrease its susceptibility to any change in attitude. For example, once a couple formally announces their engagement, it may become much more difficult for any subsequent negative attitude change to affect their behavior.

Behavior is situationally constrained

While attitude change is generally covert, behavior change is often public. As a result, changes in behavior are more likely than changes in attitude to result in negative or positive consequences. The reformed bigot may find it very costly to change his behavior in a society, such as South Africa, where racial prejudice is the norm. A man may become a model prisoner to gain parole, though his attitudes toward crime remain unaltered.

Behavior-Attitude Research

It is necessary to distinguish between attitudes as causes (determinants) of behavior and attitudes as predictors of behavior. Few researchers have explicitly addressed this problem. The implicit assumption in the literature is that attitudes should predict behavior because they are a cause of behavior. This assumption may be false.

It is possible to argue that attitudes may serve as convenient surrogates for predicting behavior in advance, but though they are associated with behavior they are not major determiners of behavior. It is incumbent on such an argument, of course, to provide some explanation for how such a non-causal association could arise. The most viable explanation simply reverses the assumed causal direction. Attitudes may not cause behavior, rather behavior causes attitudes: attitudes predict behavior only because the two are related through previous performance. Past behavior molds our attitudes which will in turn predict future behavior if this behavior is related to prior performance.

Bem (1968) has indeed suggested that there is more evidence in support of the counterintuitive notion that behavior affects attitudes than there is for the common sense assumption that attitudes determine behavior. The bulk of this evidence comes from research on cognitive dissonance theory (Festinger, 1957) and Bem's own theory of self-perception (1965, 1967, 1972). However, just as it is now becoming clear that attitudes do not always influence behavior, similarly neither dissonance nor self-perception theory postulate that behavior always affects attitudes. Behavior that is clearly perceived to be under the control of extrinsic factors such as reward or punishment is not hypothesized to influence attitudes, and only behavior that the individual perceives himself to be enacting of his own free will determines attitudes.

There have probably been almost as many failures to obtain the expected dissonance results of a behavior-attitude link (e.g., Collins, Ashmore, Hornbeck, & Whitney, 1970; Melson, Calder, & Insko, 1969) as

there have been failures to demonstrate the attitude-behavior connection. In recent years research in both areas has attempted to delineate the crucial parameters, to determine when the attitude-behavior or behavior-attitude association is likely to occur. With regard to the behavior-attitude association, Cooper and Worchel (1970) found that counter-attitudinal behavior resulted in attitude change only when the behavior was enacted for low inducement and it resulted in negative consequences for another person. Collins and Hoyt (1972) extended this finding by demonstrating that the individual must feel personally responsible for the behavior if attitude change is to result. Finally Calder, Ross, and Insko (1972) demonstrated the importance of choice: Negative consequences and low financial inducement led to attitude change only when subjects volunteered to perform the counterattitudinal behavior (choice condition). When subjects were forced to perform a behavior resulting in negative consequences, high inducement produced more attitude change than low inducement. (It is likely that choice as manipulated by Calder et al. and personal responsibility for consequences as manipulated by Collins and Hoyt, while operationally distinct, are closely related conceptually. High choice should induce perceptions of high personal responsibility and low choice perceptions of minimal personal responsibility).

It should also be noted that the behavior-attitude link has been observed for behaviors that were not originally counterattitudinal (e.g., Valins, 1966; Kiesler, Nisbett, and Zanna, 1969; Ross, Insko, and Ross, 1971). Again the effects of behavior appear to interact with other variables though. Kiesler and Sakumura (1966), for

example, demonstrated that subjects who were paid \$5.00 for stating a position agreeing with their own point of view were subsequently more vulnerable to countercommunications than subjects who had been paid only \$1.00. The greater the external reward for a behavior, the less it seems to affect one's private attitude.

In summary, the behavior-attitude association is complicated by various interacting factors that determine the precise nature of the relationship. A number of recent studies have attempted to systematically identify the most important of these factors. In this sense attitude-behavior research and behavior-attitude research are proceeding along similar lines. However, there is a great need to examine the behavior-attitude link as a possible alternative explanation in studies relating attitudes to behavior. To provide evidence for a causal relation, such studies must control for the effects of previous performance which might have produced an attitude which predicts future behavior (if it is similar to the prior behavior) but does not actually cause that behavior. Since it seems likely that both causal processes are at work, it may prove most difficult to disentangle them.

Conclusions

Full consideration of research relevant to the attitude-behavior question has indicated that evidence for the proposition that attitudes are related to behavior is not as weak as many social scientists have contended. In general, the research indicates that attitudes will correlate with behavior when:

1. standard attitude scale techniques and multiple act behavior scores are employed (e.g., Tittle and Hill, 1967),
2. attitudes toward the act and attitudes toward the situation in which the act occurs are taken into account (e.g., Fishbein, 1967a; Rokeach and Kliejunas, 1972),
3. the conative component of attitude is used as a basis of prediction (e.g., Kothandapani, 1971a),
4. situational constraints do not produce behavior that is inconsistent with attitudes (e.g., Warner and DeFleur, 1969; Weitz, 1972).

Definitive statements concerning the relationship between attitude change and behavior change must be made with greater trepidation as only a few studies have been directly concerned with this problem. The proposition that attitudes affect behavior does not imply that the two are linearly related. It does follow, however, that attitude change must produce behavior change in some instances. More research is required to determine the conditions under which attitude change yields behavior change.

A considerable amount of research has focused on the behavior-attitude association. At the present time the research on counter-attitudinal role playing points to three important interacting variables: choice (or personal responsibility), financial inducement, and consequences (Calder, Ross & Insko, 1973; Collins & Hoyt, 1972). Identification of these factors has resolved much of the inconsistency in the literature dealing with attitude change following counter-attitudinal behavior. The behavior-attitude link, however, has not tested as a possible alternative explanation in attitude-behavior studies.

Allport (1935) noted that attitude has been an indispensable concept since the very beginnings of experimental psychology. While the present review is by no means conclusive, the data certainly suggest that the concept of attitude still has an important role to play. After nearly one hundred years it has not yet outlived its usefulness.

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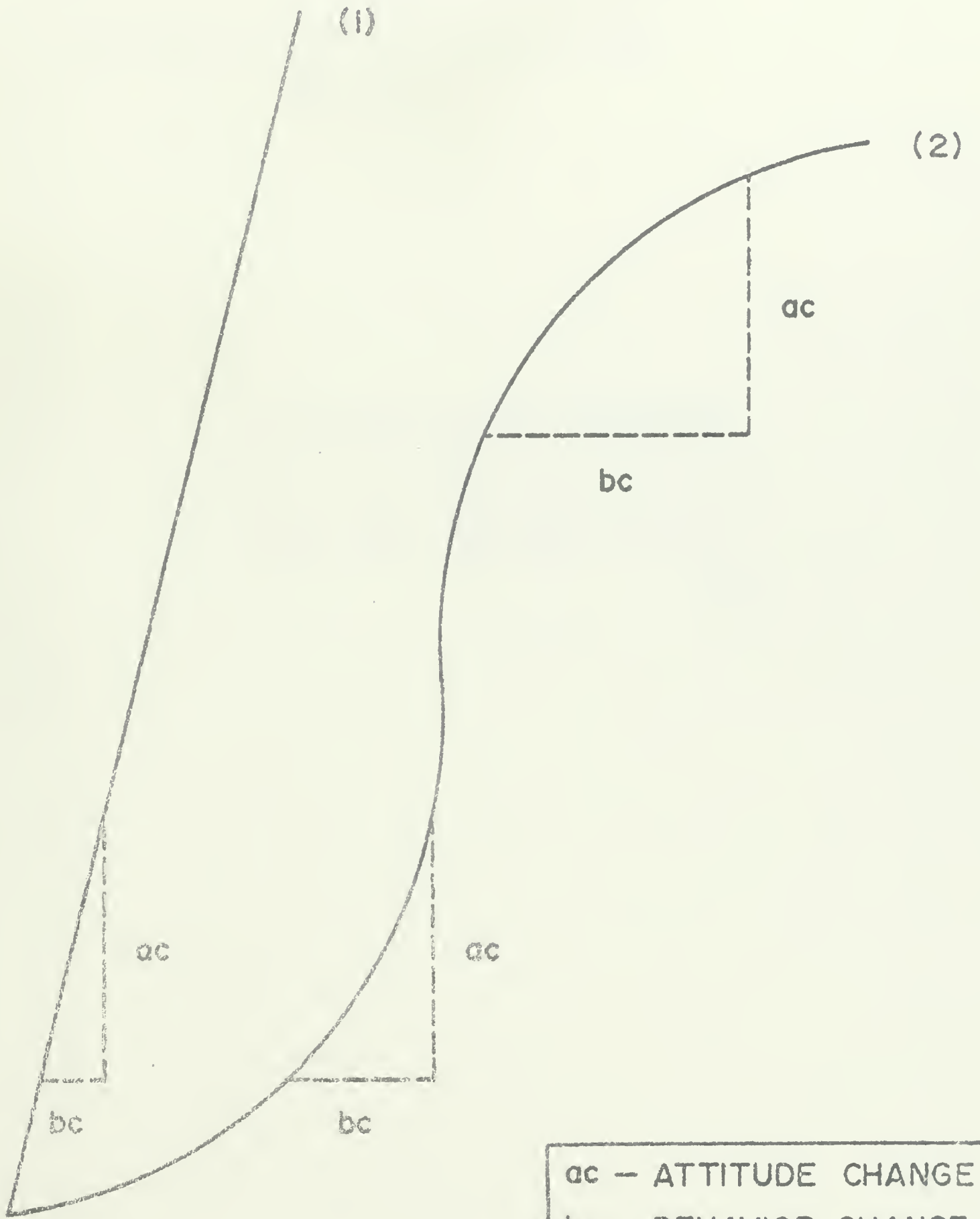
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Figure Caption

Fig. 1 Hypothetical functional relationships between attitude and behavior.

Note.--The dotted lines indicate changes in behavior as a function of changes in attitude. Notice that the three ac lines are of equal magnitude.

ATTITUDE



BEHAVIOR

FACULTY WORKING PAPERS

College of Commerce and Business Administration

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THE ATTITUDE-BEHAVIOR RELATIONSHIP

Bobby J. Calder, University of Illinois

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