BELIEF, ATTITUDE, INTENTION AND BEHAVIOR:

An Introduction to Theory and Research

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Once the attitude scale constructor has selected his set of opinion statements, he, like the behavioral observer, goes out and observes whether the individuals in his sample agree or disagree with his statements. The respondent may be asked to simply agree or disagree (i.e., be forced to make a dichotomous choice), or he may be asked to indicate the degree of his agreement (e.g., to respond on a five- or seven-place *agree–disagree* scale). At this stage, then, the attitude scale constructor, like the behavioral observer, has before him a set of numbers assumed to imply something about an individual's religiosity. Unfortunately, it is here that the similarity between these two types of investigators usually ends. Whereas the attitude scale constructor will test his assumptions by performing an item analysis, the behavioral observer will usually just accept his assumptions and decide on some arbitrary way of combining his numbers to arrive at a behavioral criterion score.[8] For example, he may first decide that people who have contributed more than $50 should be given a score of 5, that those who have contributed more than $25 but less than $50 should be given a score of 4, and so on. If he does this for each of his continuous variables, he can then simply sum his set of numbers and arrive at his multiple-act criterion.

In contrast, the attitude scale constructor first submits his items to a standard scaling procedure. As noted in Chapter 3, if using a Likert scale, he eliminates those items that fail to discriminate between subjects with favorable and unfavorable attitudes toward the church, or items that do not correlate with this attitude. In a sense, then, the investigator recognizes that some of the opinion items he selected do not serve as good indicants of the particular attitude he is measuring. Clearly, if the behavioral observer were to follow the same procedure, he too might find that some of the behaviors he has observed do not covary with the underlying dimension of religiosity. To put it a bit more bluntly, he might find that some of the behaviors he chose to observe have little to do with the degree of an individual's religiosity.

Two important conclusions can be drawn on the basis of these considerations. The first should be obvious: Not every behavior with respect to some object is related to the attitude toward that object. An investigator usually chooses to observe a given behavior because he assumes that it is relevant to the attitude under consideration. What we have tried to show is that an investigator's intuition can be wrong. Tests of the relation between attitude and a given behavior, therefore, can to a large extent be viewed as tests of the investigator's intuition. Given the assumption that attitude toward an object determines *all* responses to that object, an investigator is clearly free to choose any response to the object in testing the attitude-behavior relation. The considerations above indicate that this assumption is definitely invalid.

8. Frequently, the behavioral observer will not even try to construct a multiple-act criterion score but will merely treat each of his single-act observations as a different criterion. This procedure is as inappropriate as treating each item on a Likert scale or each bipolar adjective pair on a semantic differential as a separate dependent variable.

It would be possible to continue with these examples, but the point should be clear: the lower the correspondence between the intention's and the behavior's levels of specificity, the poorer the prediction will be.

Given that intention and behavior are measured at the same level of specificity, one expects a high relation between these variables. In other words, our conceptual framework suggests that a person's performance of some behavior at a given point in time is determined by his intention to perform the behavior at that point in time.

Stability of the intention. Clearly, a person's intention may change over time. It follows that a measure of intention taken some time prior to observation of the behavior may differ from the person's intention at the time that his behavior is observed. The longer the time interval between measurement of intention and observation of behavior, the greater the probability that the individual may obtain new information or that certain events will occur which will change his intention. Thus the longer the time interval, the lower the correlation between intention and behavior.

Very often, the behavior under consideration can occur only after some sequence of previous behaviors has been performed. For example, although a high school sophomore may intend to go to college, he will be able to carry out this intention only after he has performed other behaviors (graduated from high school, passed the college entrance exams, etc.). The greater the number of intervening steps, the lower the intention-behavior correlation will be. Here again, the problem is primarily one of the stability of the intention, rather than of its relation to behavior per se. The greater the number of intervening steps, the higher the probability that the completion of (or failure to complete) any single step will result in new information which may produce a change in the individual's intention.[16]

A somewhat similar problem concerns the degree to which carrying out the intention is dependent on other people or events. The higher the dependency, the lower the intention-behavior correlation is likely to be. If a person's intention is based on the expectation that another person will behave in a certain way, or on the expectation that some event will occur, and the expectation is not confirmed, this information may well lead to a change in intention.

It thus appears that in the interval between measurement of intention and observation of behavior, certain events can occur that may produce changes in an individual's intentions. To predict the behavior from the initial measure of intention, it may be necessary to consider other variables in addition to the intention. This will be particularly true when (a) there is a long time interval between the

16. It would be possible to consider the individual's intentions to perform each of the intervening behaviors, and the consideration of this set of intentions may lead to a better prediction of the ultimate behavior than the intention to perform that behavior per se.

Given a high degree of correspondence between a person's intention and his actual behavior, one would expect the factors determining intentions also to be closely related to behavior. In Chapter 7 we discussed a theory for the prediction of intentions, and we showed that behavioral intentions are predictable from the attitudinal and normative components of the theory. It follows that whenever a high intention-behavior relation is observed, the behavior in question should also be predictable from attitude toward the behavior (A_n) and subjective norm (SN). Conversely, even when the two components accurately predict the intention, they will not predict the behavior if the intention measured is itself inappropriate for prediction of the behavior in question. We have already seen that A_B and SN can predict behavior with a high degree of accuracy. McArdle (1972) did not obtain a direct measure of intention but instead measured these two components. The multiple correlation of the two components with behavior was .77.

Additional evidence for these notions comes from several of the studies discussed earlier. We have discussed a number of studies that found a high correlation between intention and behavior, and in the preceding chapter we showed that many of the same intentions could be predicted with high accuracy from the attitudinal and normative components. As would be expected, these studies also showed that the two components were highly predictive of overt behavior. For example, in their study using two Prisoner's Dilemma games, Fishbein and Ajzen (1970) found multiple correlations of .732 and .793 between the two components of the model and strategy choices in the two games. In fact, owing to the high intention-behavior correlations, whatever factors were found to have significant effects on intentions were also found to have the same effects on the corresponding behaviors.

CONCLUSION

In this chapter we have discussed the prediction of overt behavior. We have seen that behavior can be measured at different levels of specificity and that it is important to distinguish between different types of behavioral criteria. Three major behavioral criteria were identified: single-act, repeated-observation, and multiple-act criteria. We showed that when properly constructed, repeated-observation criteria are essentially behavioral measures of attitudes toward behaviors, and multiple-act criteria are behavioral measures of attitudes toward objects.

We have argued that the best predictor of a person's behavior is his intention to perform the behavior, irrespective of the nature of the behavioral criterion. Intentions and behaviors were both shown to vary in terms of behavior, target, situation, and time. Whereas repeated-observation criteria represent behavioral measures across targets, situations, or time, multiple-act criteria represent measures across different behaviors. An appropriate measure of intention corresponds in its level of specificity to the behavior that is to be predicted. Thus, to predict such a single-act criterion as a person's attendance at the 7 A.M. Mass at St. Mary's Cathedral on the coming Sunday morning, the measure of intention has to

refer to exactly the same behavior. That is, the person's intention to attend the 7 A.M. Mass at St. Mary's Cathedral this coming Sunday has to be measured. Similarly, the repeated-observation criterion "number of worship services at St. Mary's Cathedral attended in the course of one year" requires a measure of intention such as "How many worship services at St. Mary's Cathedral do you intend to attend during the coming year?" To predict a multiple-act criterion, it is usually necessary to obtain an even more general measure of intention. A multiple-act criterion based, for example, on observation of several religious behaviors at St. Mary's Cathedral (e.g., number of worship services attended, amount of money contributed, singing in the church choir, and teaching Sunday school) could be predicted from the following measure of intention: "I intend/do not intend to act supportive toward St. Mary's Cathedral."

Within our conceptual framework, intentions are viewed as the immediate antecedents of corresponding overt behaviors. The apparent simplicity of this notion is somewhat deceptive, however. Since it is often impossible or impractical to measure a person's intention immediately prior to his performance of the behavior, the measure of intention obtained may not be representative of the person's intention at the time of the behavioral observation. Intervening events that may lead to changes in intentions will therefore also have to be taken into consideration. For example, if a person intends to buy a car three months hence, any change in his financial position, the price of the car, or the availability of gasoline may influence his intention and must therefore be taken into account if accurate behavioral prediction is to be achieved. Barring such changes in intentions, an appropriate measure of intention will usually allow accurate prediction of behavior.

Understanding a person's behavior, however, requires more than just knowledge of his intention. It is not very illuminating to discover that people usually do what they intend to do. If behavioral *prediction* is the primary objective, the simplest and probably most efficient way to accomplish this is to obtain an appropriate measure of the person's intention. If *understanding* his behavior is the primary objective, the factors determining his intention must be specified. Chapter 7 was devoted to a discussion of these factors. We presented a theoretical model which specifies two major determinants of intentions: attitudes toward the behavior and subjective norms. These two components must be measured at the same level of specificity as the intention. Given high correspondence between intention and behavior, one can also view the attitudinal and normative components as the determinants of the behavior. In fact, when intention and behavior are highly related, everything we have said about the factors influencing intentions can also be applied to an understanding of the determinants of behavior. Thus, it should not be surprising to find that attitude toward the behavior is often related to performance of the behavior.

In contrast, traditional measures of attitude toward an object can influence a given behavior only indirectly, and thus low and inconsistent relations between these attitudes and single-act or repeated-observation criteria are to be expected.

The conceptualization proposed by Hovland and his associates has a deceptive elegance. Since the yielding mediator is never directly assessed, it is always possible to account for any obtained result by making suitable post hoc assumptions about this mediator. The crucial test of this theory rests on the investigator's ability to demonstrate the consistency and validity of his assumptions concerning the yielding parameter. These problems are seen most clearly in McGuire's (1968) formal two-factor model:

$$p(O) = p(R)p(Y).$$

Probability of opinion change is viewed as a function of probability of reception and probability of yielding. If opinion change and reception are measured, it becomes possible to solve this equation and obtain a value for yielding. This procedure, however, adds little to our understanding of persuasion unless the estimated value is consistent with psychological theory.

Our discussion above concerning inconsistent results with respect to different dependent variables provides one example in which estimates of the yielding parameter would be incompatible with psychological theory. Specifically, such findings are inconsistent with the assumption that yielding is invariant with respect to the kind of dependent variable under consideration. A similar problem exists in relation to the effects of various independent variable manipulations. For example, to account for the inconsistent effects of high- and low-fear appeals, one would have to argue that fear arousal sometimes increases yielding and at other times reduces yielding. This argument is inconsistent with the assumption that a given manipulation, such as fear arousal, should have consistent effects on yielding.

These considerations apply whenever a theory is tested by estimating one or more of its major variables or parameters. Although such an approach is perfectly legitimate, it will contribute to a cumulative body of knowledge only if it is accompanied by a psychological theory that allows the investigator to derive testable hypotheses about the theory's parameters. The psychological assumptions linking independent variables to the parameters should not be changed arbitrarily from one study to another or changed to account post hoc for a given set of experimental findings. We have discussed some of these problems with respect to the application of Anderson's weighted averaging model to studies of information integration (see Chapters 5 and 6).

TOWARD A CUMULATIVE BODY OF KNOWLEDGE

We have adopted in this book an approach based on our conceptual framework which we hope will facilitate the accumulation of knowledge in the attitude area. This approach makes a clear distinction between beliefs, attitudes, intentions, and behaviors; it indicates how these variables can be measured; and it specifies the relations among them. This set of concepts and their specified interrelations provide a conceptual framework which can be used to analyze various phenomena

and lines of research in a systematic and consistent fashion. We have seen that this approach leads to the formulation of hypotheses that are consistent with a wide array of empirical findings. At the same time, it provides explanations for the apparently inconsistent findings in different areas of investigation.

Most important, our approach permits the investigator to test his hypotheses about theoretical processes directly by obtaining measures of his explanatory constructs. Most studies are designed to test a hypothesis about the effects of some manipulation on a dependent variable. According to our approach, the influence of the manipulation on the dependent variable is mediated by its effects on certain beliefs and the direct or indirect relations of these beliefs to the dependent variable. Hypotheses about the effects of the manipulation on a given set of beliefs and about the exact nature of the relation between these beliefs and the dependent variable can be directly tested. This is done by first measuring the beliefs in question and examining whether the manipulation had the hypothesized effects. The links intervening between these beliefs and the dependent variable can also be assessed, allowing a test of the hypothesized relations.

Stated somewhat differently, adoption of our conceptual framework forces the investigator to make explicit assumptions about the processes intervening between his manipulation and the dependent variable. Moreover, our conceptual framework specifies the intervening processes appropriate for a given dependent variable. On the basis of this approach, an investigator studying the effects of communicator credibility on behavioral change might make the following assumptions: (1) Communicator credibility will influence acceptance of the statements contained in the message. (2) Differential acceptance of source beliefs will produce different amounts of change in the corresponding proximal beliefs. (3) Differential changes in proximal beliefs will influence amount of change in beliefs about performance of the behavior. (4) These changes will produce corresponding changes in attitude toward the behavior. (5) As a result, communicator credibility will affect intentions to perform the behavior. (6) The corresponding behavior will also be affected. Each variable in this sequence can be directly measured, and the hypothesized effects of communicator credibility can be tested. When communicator credibility fails to influence behavioral change, it is possible to discover where in this chain of effects the investigator made inappropriate assumptions. For example, the assumption that changes in beliefs about the consequences of performing the behavior will lead to change in attitude toward that behavior may not have been supported in this particular study.

We have seen that many of the contradictory and inconclusive findings in the attitude area appear to be attributable to such inappropriate assumptions about the relations between different kinds of variables. One clear example of such a fallacious assumption is the hypothesis that attitude toward an object is related to specific behaviors with respect to that object. It is our hope that by distinguishing between beliefs, attitudes, intentions, and behaviors and by specifying the determinants of these variables, our conceptual framework will contribute to the development of a cumulative body of knowledge in the attitude area.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

May 26, 1987

MEMORANDUM FOR: John Milligan
Technassociates

FROM: Emile L. Julian, Acting Chief
Docketing and Service Branch

SUBJECT: SHOREHAM EXHIBITS

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