

## **Part III**

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# **Changing Beliefs, Attitudes, Intentions and Behaviors**

# Chapter 9

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## Principles of Change

Of all the issues studied by investigators in the attitude area, the question of *attitude change* has undoubtedly received the most widespread attention. The usual assumption is that by means of changing the attitudes of individuals it is possible to influence their behavior, to improve social relations, or to produce social change. Thus, if it is possible to influence attitudes toward products, politicians, or minority groups, changes in consumer behavior, voting decisions, or interracial relations may follow. Reflecting the great interest in this issue, most previous books and reviews of the attitude area have dealt almost exclusively with processes of attitude change (e.g., Kiesler, Collins, and Miller, 1969; Insko, 1967; McGuire, 1969; Rosnow and Robinson, 1967; Greenwald, Brock, and Ostrom, 1968; Zimbardo and Ebbesen, 1969; Abelson *et al.*, 1968; Himmelfarb and Eagly, 1974a).

This book has devoted more than the usual amount of space to processes underlying the formation of beliefs, attitudes, and intentions, as well as to the prediction of behavior. Part III demonstrates the relevance of these processes for an understanding of the problems associated with attempts to bring about change. Chapter 9 develops some fundamental principles of change. We shall see that attempts to bring about change invariably involve exposure to new information about some object, behavior, issue, or event. Changes in beliefs resulting from such exposure to new information provide the foundation on which rests the ultimate effectiveness of any influence attempt. We will try to show that attempts to induce change in a given belief, attitude, intention, or behavior must take into account the relation between the variable that is to be changed and the beliefs that are affected most immediately by the influence attempt. Studies attempting to produce change in a given variable can only lead to inconsistent findings if the beliefs underlying that variable are not well understood. In Chapter 10 we shall discuss active participation on the part of the subject as a strategy for providing

him with new information by means of direct observation. Chapter 11 will take up persuasive communication as the second major strategy of change; this strategy uses an outside source to provide the subject with new information.

Most investigations of attitude change have dealt with the effects of some experimental manipulation on a given dependent variable. Studies on the effects of a persuasive communication are not usually concerned with the amount of change produced by the communication itself; instead, they may examine the relative effectiveness of, say, attributing the message to a high as opposed to a low prestige communicator. Similarly, studies dealing with the effects of active participation are usually not concerned with the amount of change produced by the participation experience, but rather with the relative effectiveness of, for example, paying the person different amounts of money for his participation. Over the years, a large number of such variables have been manipulated in attempts to identify the most effective means of producing change. Almost without exception, these variables have not been found to have a systematic effect on the amount of change produced. In the following discussion we shall outline some basic principles of change that may help to explain these inconsistent findings.

### THE ROLE OF BELIEFS IN THE INFLUENCE PROCESS

Throughout this book we have made it clear that the notion of *belief* occupies a central role in our conceptual structure. A person's belief about an object was described as the perceived probabilistic relation between that object and some attribute.<sup>1</sup> We showed that the formation of one belief may lead to the development of other inferential beliefs; that a person's attitude is determined by his salient beliefs about the attitude object; and that beliefs about a given behavior and about the expectations of relevant others vis-à-vis that behavior determine a person's intention to perform the behavior and thus also influence the overt behavior itself.

This conceptualization makes it clear that an influence attempt, in the final analysis, must always be directed at one or more of the individual's beliefs. Our discussion in Chapter 5 suggested two ways in which a belief can be *directly* influenced. First, a person can be placed in a situation where he can personally observe that an object has a given attribute; and second, the person may be told by an outside source that the object has the attribute in question. These two alternative ways of directly influencing beliefs correspond to the two basic strategies used in attempts to produce change, namely, active participation and persuasive communication. Since a person rarely questions information received through his own sense organs, the major problem in active participation is to ensure that the

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1. The terms "object" and "attribute" are used in the generic sense to refer to any discriminable aspects of the individual's world. Thus a physical object, a person, an institution, a behavior, a policy, an outcome, a trait, etc., may all constitute either the "object" of a belief or its attribute.

participant perceives the desired object-attribute association. In contrast, with persuasive communications, the major problem is to ensure that the receiver accepts (i.e., believes) the communication which attempts to link the object and the attribute.

Every object-attribute association to which an individual is exposed may be viewed as an "informational item." The individual's belief directly corresponding to an informational item will be termed a *proximal belief*. For example, the receiver of a persuasive communication may be exposed to such a statement as "The United States Constitution guarantees freedom of speech." This informational item links the object "United States Constitution" to the attribute "guarantees freedom of speech." The corresponding proximal belief is the receiver's initial (preexposure) subjective probability concerning this object-attribute link. In the case of active participation, the actor may observe a link between an object (such as a person) and an attribute (such as the person's hair color). The proximal belief corresponding to the observation that the person has black hair is the prior subjective probability concerning this object-attribute link.

In many instances, the proximal belief that is directly attacked by an informational item does not serve as the dependent variable of interest. Instead, some other belief, an attitude, an intention, or a behavior is the dependent variable that is to be changed. In fact, inferential beliefs, attitudes, intentions, and behaviors can be influenced only indirectly by changing one or more beliefs that serve as the primary determinants of these variables. One of the fundamental problems in any influence attempt, therefore, is the identification of those beliefs that need to be changed in order to influence the dependent variable under investigation. Such beliefs, which serve as the fundamental determinants of the dependent variable, will be termed *primary beliefs*. When the dependent variable is the attitude toward an institution, for example, beliefs about that institution's attributes or characteristics are some of the primary beliefs at which the influence attempt can be directed. When the dependent variable is attitude toward a behavior, primary beliefs associate the behavior with attributes such as costs or consequences. Much of the present chapter is devoted to an examination of the different kinds of primary beliefs that are appropriate for influence attempts designed to change inferential beliefs, attitudes, intentions, or behaviors.

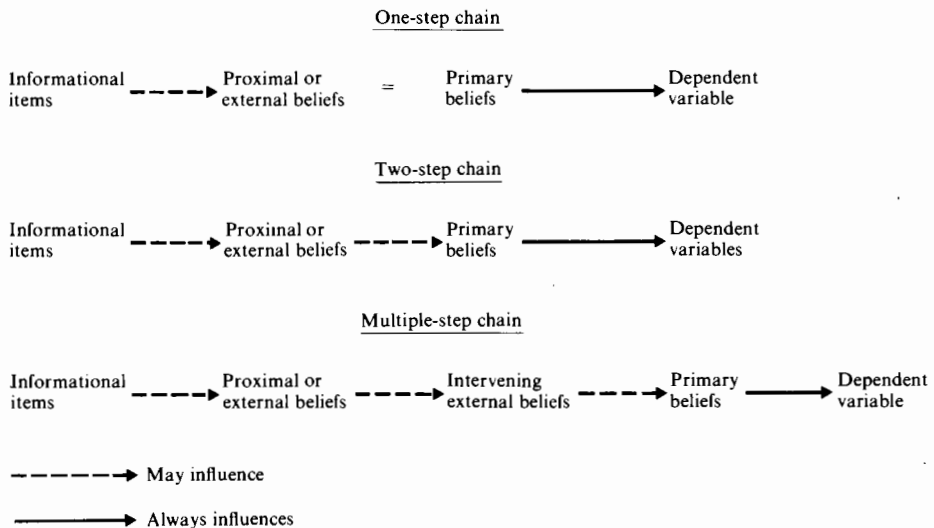
Knowingly or unknowingly, an investigator makes the assumption that if certain beliefs are changed, a change in the dependent variable will follow. The beliefs which the investigator is attempting to change will be called *target beliefs*. Clearly, if the influence attempt is designed to change target beliefs that are unrelated to the dependent variable's primary beliefs, the influence attempt cannot be very effective. That is, a change in target beliefs will have little effect on the dependent variable unless the target beliefs selected by the investigator are themselves primary beliefs or are related to the primary beliefs.

To summarize our discussion thus far, an influence attempt is designed to change some dependent variable, whether it is a belief, an attitude, an intention, or a behavior. Closer examination reveals that the influence attempt is directed at

certain target beliefs that are assumed to be the primary determinants of the dependent variable in question. Clearly, changing target beliefs will influence the dependent variable only when this assumption is met, that is, when the investigator's target beliefs are themselves primary or are related to the primary beliefs underlying his dependent variable. To produce the desired changes in his target beliefs, the investigator somehow exposes his subjects to a set of informational items. Resulting changes in the receiver's proximal beliefs may initiate a chain of effects, ultimately leading to a change in the dependent variable.

However, an influence attempt may also have an effect on *external beliefs*, that is, on beliefs that do not correspond to any of the informational items provided. Changes in external beliefs resulting from an influence attempt will be termed *impact effects*. Like direct effects on proximal beliefs, these indirect impact effects will influence the dependent variable only if the external beliefs affected serve as primary beliefs or if they are related to the primary beliefs.

Figure 9.1 illustrates some possible links between informational items and a dependent variable. We can see that primary beliefs serve as the fundamental determinant of the dependent variable. Informational items included in an influence attempt may produce changes in the receiver's proximal beliefs corresponding to the informational items or in some external beliefs. These proximal or external beliefs may themselves be primary beliefs (one-step chain), they may be directly related to the primary beliefs (two-step chain), or they may influence intervening external beliefs that are related to the primary beliefs (multiple-step chain). Some, all, or none of the beliefs in Fig. 9.1 may serve as target beliefs for the investigator. An influence attempt may fail to affect the dependent variable for at least three reasons. First, it may not produce the desired change in proximal be-



**Fig. 9.1** Chain of effects involved in an influence attempt.

liefs. Second, even when changes in proximal beliefs occur, these changes may have no effect on the primary beliefs. Third, the influence attempt may have unexpected and undesirable impact effects on external beliefs, which can also influence the primary beliefs.

In Part II of this book we discussed the formation of inferential beliefs, attitudes, intentions, and behaviors, and we saw that these variables are influenced by (i.e., are functionally related to) different types of primary beliefs. We can now build on our previous analyses to provide some general principles of change.

### **Changing Inferential Beliefs**

We have repeatedly noted that a person may form a belief directly by observing an object-attribute relation or accepting information to the effect that the object has the attribute, or he may form a belief indirectly by means of some inference process. Inferential beliefs are formed on the basis of other beliefs that the individual holds. Change in an inferential belief can therefore be brought about by changing some or all of the relevant (or primary) beliefs that provide the basis for the inference process.

We saw in Chapter 5 that an individual may arrive at a given belief in various ways. As an example, consider the belief "John is honest." Since honesty cannot be directly observed, the only way a person can acquire this belief directly is by accepting information from some outside source indicating that John is honest. However, there are numerous inference processes whereby he may arrive at the same belief. For example, the person may first form the belief that John returned a lost wallet, either by directly observing the event or by accepting information that the event occurred. In an attempt to find a causal explanation for John's behavior, he may make the attribution that John is honest. Alternatively, he may reach this inference on the basis of syllogistic reasoning. If we assume that he held the prior belief that people who return lost objects are honest, he might reason as follows: John returned a lost wallet; people who return lost wallets are honest; therefore John is honest. A different way of arriving at this inferential belief involves activation of an implicative structure of trait relations. Thus, if the person formed the belief that John was trustworthy, he might also infer that he was honest.

The ultimate purpose of an influence attempt, then, may be to change an inferential belief of this kind. To do so, one must induce changes in primary beliefs that are probabilistically related to and thus relevant for the inferential belief. In fact, the dependent inferential belief may be the end product of a chain of prior inferences (see Fig. 9.1). The investigator's choice of informational items and target beliefs should be guided by considerations of the underlying inference process. That is to say, he should be able to specify the probabilistic relations assumed to link the informational items to the dependent inferential belief. Such considerations should also permit the investigator to specify at least some of the relevant external beliefs.

Some evidence for these arguments can be found in several studies based on McGuire's (1960a, b, c) model of logical consistency (see Chapter 5). Recall that according to McGuire's model, acceptance of the conclusion in a logical syllogism is a function of the degree to which major and minor premises are accepted. McGuire (1960c) first attempted to show that by increasing a person's subjective probability that the minor premise (a primary belief) is true, one can increase the person's subjective probability that the related conclusion (the dependent inferential belief) is true. To test this hypothesis, McGuire constructed persuasive communications designed to increase beliefs in the minor premises of eight syllogisms. The minor premises thus served as his target beliefs. The messages were found to be quite effective; subjective probabilities associated with the eight minor premises increased, on the average, by 19.01 points on a 100-point probability scale. In addition, although conclusions were not mentioned in the persuasive messages, subjective probabilities for them also increased significantly. The average change for conclusions was 6.42 points. Similar results have been obtained in several other investigations (e.g., Holt and Watts, 1969; Dillehay, Insko, and Smith, 1966; Holt, 1970). Clearly, then, change in a target belief can produce change in a logically related belief, even though the inferential belief is never explicitly mentioned in the persuasive communication.

However, closer examination of these studies shows that the amount of change in the inferential belief (the conclusion) is *not* predictable from the amount of change in the target belief (the minor premise). Table 9.1 presents obtained changes in the eight minor premises, as well as changes in the eight conclusions, as reported by McGuire (1960c). Note that there is no systematic relation between amount of change in target belief and amount of change in the inferential belief. In one case, increased acceptance of the minor premise actually led to a significant *decrease* in the subjective probability associated with the con-

**Table 9.1** Change in an Unmentioned Conclusion Produced by Change in a Minor Premise (Adapted from McGuire, 1960c)

Syllogism	Mean change in minor premise (target belief)	Mean change in conclusion (inferential belief)
3	7.14	12.14
2	11.07	4.29
5	18.56	9.64
1	18.56	14.63
4	20.71	13.56
8	22.85	-15.35
7	26.06	0.35
6	27.13	12.14

clusion, and in other cases, large increases in the minor premises were followed by small changes in the conclusions.

Viewed in terms of McGuire's logical consistency model, these results are not unexpected. Equation 9.1 is a formal statement of McGuire's model for the prediction of change in a conclusion,

$$\Delta p(c) = p(a) \Delta p(b) + \Delta p(a)p(b) + \Delta p(a) \Delta p(b) \quad (9.1)$$

where  $a$  and  $b$  are the major and minor premises,  $c$  is the conclusion,  $\Delta p$  represents a change in the subjective probability that a premise or a conclusion is true, and  $p$  stands for the initial (precommunication) probability. It is apparent that change in the dependent inferential belief (the conclusion) is determined not only by change in the target belief (the minor premise) but also by a possible impact effect on an external belief not mentioned in the communication (i.e., change in the major premise).

If one takes into account impact effects on the major premise, in addition to change in the minor premise, it should be possible to improve prediction of change in the conclusion. Consistent with this argument, McGuire (1960c) measured amount of change in the two premises and used Eq. 9.1 to predict change in the conclusion. As expected, predicted and obtained changes in subjective probabilities associated with the conclusions were highly related. On the average, however, the obtained change (6.42) was significantly smaller than the change predicted by the model (12.85). Further, accuracy of prediction varied considerably among syllogisms. In some cases, the obtained change was greater, in others smaller, than the predicted change. Although some investigators (e.g., Dillehay, Insko, and Smith, 1966) have found no significant differences between predicted and obtained changes, the most common finding is that, even though considerations of changes in external beliefs (major premises) as well as target beliefs (minor premises) increases accuracy of prediction, there are significant differences between predicted and obtained changes in the dependent inferential beliefs (the conclusions).

McGuire (1960a, b, c) has attributed these differences to "wishful thinking," and he has shown that obtained changes in the conclusions are *smaller* than predicted changes when the conclusions are undesirable, and they are *larger* than predicted changes when the conclusions are desirable. An alternative explanation is possible, however. Looking at Eq. 9.1, we can see that according to McGuire's model, change in the conclusion of a logical syllogism is *completely* determined by changes in the major and minor premises. That is, the two premises are assumed to constitute the complete set of primary beliefs underlying the dependent variable. In contrast, McGuire's basic model of logical consistency (see Chapter 5) recognized that other beliefs might also influence the probability that a given conclusion is true, and thus change in the conclusion may also be due to changes in these other (external) beliefs. Further, although Eq. 9.1 assumes a deterministic relation between premises and conclusion, there is no reason to



assume that subjects perceive such a strong relation between these variables; the degree of relationship between any two (or more) beliefs is an empirical question. If one takes the strength of this relationship into account, it should be possible to improve prediction of change in an inferential belief due to change in a target belief.

Considerable support for this argument comes from work based on Wyer's conditional consistency model (Wyer, 1970a, Wyer and Goldberg, 1970; see Chapter 5). According to this model, the amount of change in an inferential belief  $B$  is a function of the amount of change in some target belief  $A$ ; the conditional probability of  $B$ , given  $A$ ; and the conditional probability of  $B$ , given not- $A$ . The two conditional probabilities attempt to take into account the relation between target belief and inferential dependent belief; further, the conditional probability  $p(B|\bar{A})$  refers in part to relevant external beliefs that may also influence the inferential belief. Wyer's model is given in Eq. 9.2.

$$\Delta p(B) = \Delta [p(B|A)p(A) + p(B|\bar{A})p(\bar{A})]. \quad (9.2)$$

To test this model Wyer (1970a) first described nine hypothetical situations involving two central beliefs and the relation between these beliefs. The probability of the target belief,  $p(A)$ , was initially set at a low level. In one situation, for example, the probability that Governor Smith would be reelected was said to be low. The description also varied the relation of the target belief to an inferential belief ( $B$ ), the conclusion, by manipulating the conditional probability that  $B$  would occur if  $A$  occurred [ $p(B|A)$ ], as well as the conditional probability that  $B$  would occur if  $A$  did not occur [ $p(B|\bar{A})$ ]. For example, the probability that state aid to education would be increased, given that Governor Smith was (or was not) reelected, was set at a high, medium, or low level. Each of the nine situations represented a different combination of  $p(B|A)$  and  $p(B|\bar{A})$  in a  $3 \times 3$  design.

Each subject read all nine situations, and after each description, measures of  $p(A)$ ,  $p(B)$ ,  $p(B|A)$ , and  $p(B|\bar{A})$  were obtained; these measures demonstrated that the desired initial probability levels had been established. After providing probability judgments for a given situation, subjects read a message designed to increase  $p(A)$ , the probability of the target belief. A change in  $p(A)$  was expected to influence the inferential belief  $p(B)$  to the extent that beliefs  $A$  and  $B$  were related.

Consistent with expectations, the persuasive message produced considerable changes in the target belief as well as in the inferential belief; the amount of change in the inferential belief, however, varied from situation to situation. In some situations its probability increased, in others it remained about the same, and in some it decreased. On the average, Wyer found a change of .005 in the probability of the inferential beliefs. In comparison, the average amount of change in the probabilities of the target beliefs was found to be .417. Clearly, changes in the dependent variable could not be predicted from changes in the target belief. This is not unexpected since changes in the inferential belief depend not only on

the amount of change in the target belief but also on the degree of relation between target and inferential beliefs.

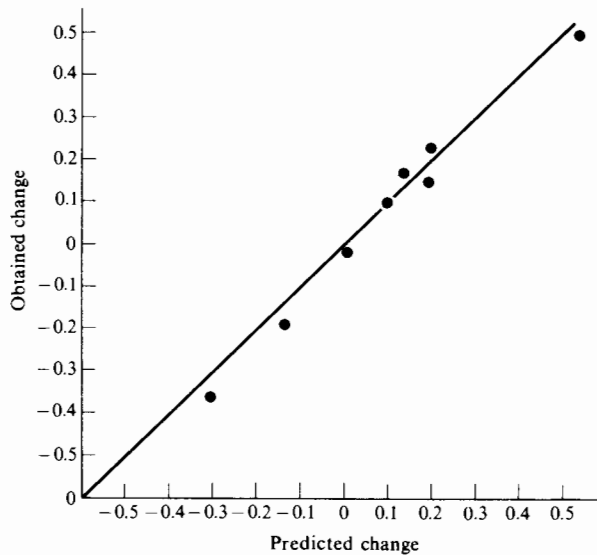
Results presented in Table 9.2 show that the amount and direction of change in the inferential belief depended largely on its relation to the target belief. When that relation was strong and positive [that is,  $p(B|A)$  was high and  $p(B|\bar{A})$  was low], the greatest increase in the inferential belief was observed. When the relationship was low (the two conditional probabilities were about equal), little change was found. Finally, when there was a strong negative relation [ $p(B|A)$  was low and  $p(B|\bar{A})$  was high], the greatest decrease in the inference was observed.

**Table 9.2** Change in Dependent Belief as a Function of Change in Target Belief and Relation between Target and Dependent Beliefs (Adapted from Wyer, 1970a)

	Low $p(B \bar{A})$	Medium $p(B \bar{A})$	High $p(B \bar{A})$
<b>High <math>p(B A)</math></b>			
Change in target belief	.459	.296	.469
Change in dependent belief	.488	.151	.102
<b>Medium <math>p(B A)</math></b>			
Change in target belief	.441	.284	.575
Change in dependent belief	.165	-.027	-.351
<b>Low <math>p(B A)</math></b>			
Change in target belief	.304	.427	.496
Change in dependent belief	.247	-.182	-.545

By taking both amount of change in target beliefs and conditional probabilities into account, Wyer was able to predict (using Eq. 9.2) obtained changes in the inferential beliefs with considerable accuracy. Figure 9.2 shows the relation between predicted and obtained changes in the inferential dependent belief for the nine hypothetical situations. The average discrepancy between predicted and obtained changes was only .003.

In conclusion, the studies by McGuire (1960a, b, c), Wyer (1970a), Wyer and Goldberg (1970) and others have shown that an inferential belief can be influenced by changing a target belief. However, change in the target belief does not always influence the inferential belief. The amount of change in an inferential belief depends on many factors. First, it depends on the strength of the relationship between target and inferential beliefs. That is, the target belief selected by the investigator must itself be a primary belief or be related to one or more primary beliefs. Given some degree of relationship, amount of change in inferential belief is a function of the amount of change in target belief. Second, impact effects on external primary beliefs (i.e., primary beliefs not serving as target beliefs) have to be taken into consideration. Again, the effect on the inferential belief should increase with the amount of change in the external primary beliefs and with the



**Fig. 9.2** Predicted and obtained changes in dependent beliefs. (From Wyer, 1970a.)

strength of the relationship between these primary beliefs and the dependent variable.

### Changing Attitudes

We saw in Chapter 6 that attitude toward an object is determined by a person's salient beliefs that the object possesses certain attributes and by his evaluations of those attributes. Thus attitudes can be changed by changing one or more of the existing salient beliefs, by introducing new salient beliefs, or by changing the person's evaluations of the attributes. Beliefs about the object and attribute evaluations can therefore be viewed as two different determinants of attitude at which an influence attempt can be directed.

*Changing beliefs about an object.* The problems involved in changing beliefs were discussed in the preceding section. Inferential beliefs that were treated as dependent variables in the discussion of belief change may now be viewed as target beliefs in an attitude-change situation. An investigator typically assumes that if he can change certain beliefs that the subject holds, there will follow a change in the subject's attitude toward an object, person, concept, or behavior.

The first major problem consists in identifying the primary beliefs for a given attitude. Within our conceptual framework this problem is quite easily resolved. Any belief that associates the attitude object with some other object, concept, or property and that is part of the person's *salient* belief hierarchy constitutes a primary belief. It is important to note that the object of the primary beliefs is exactly the same as the object of the attitude which is to be changed. Consider,

for example, an influence attempt designed to change attitudes toward communism. Salient beliefs linking *communism* to such attributes as totalitarian government, socialism, lack of freedom, etc., are primary beliefs and would therefore constitute appropriate target beliefs. If these same attributes were associated with a particular communist country, say Russia, we would obtain beliefs about *Russia*, such as "Russia has a totalitarian government" or "Russia practices socialism." Although these associations may constitute appropriate target beliefs for changing attitudes toward Russia, they do not serve as primary beliefs with respect to attitudes toward communism. In fact, they may be completely unrelated to the primary beliefs about communism. Similarly, if the cited attributes of totalitarian government, socialism, etc., were said to be consequences of a behavior such as *trading with communist countries*, we would be dealing with beliefs about this particular behavior, which may also be completely irrelevant for attitude toward communism.

It is unfortunate that these kinds of considerations have usually not guided selection of target beliefs, with the result that inappropriate target beliefs have often been attacked in attempts to influence attitudes. For example, attempts have been made to change attitudes toward minority groups by attacking beliefs about particular members of those groups or by attacking beliefs about the consequences of performing one or more behaviors with respect to certain group members.

Attitude change is expected only if the target beliefs are initially part of the subject's *salient* belief hierarchy, or if they become salient as a result of the influence attempt. Evidence indicating that an influence attempt can introduce new beliefs into the salient belief hierarchy was presented by Thomas and Tuck (in press). In this study, a sample of subjects were first asked to elicit their beliefs about Sweden. Three weeks later they were given a persuasive communication containing several (target) belief statements about Sweden that were not part of the initial set of salient beliefs. Immediately following exposure to this message, subjects were again asked to elicit their beliefs about Sweden. Some of the initially salient beliefs were no longer listed whereas a few of the target beliefs had entered the salient belief hierarchy. These effects were found to persist one week later when subjects were again asked to elicit their beliefs about Sweden. In comparison, control subjects who received no persuasive communication retained the same set of salient beliefs throughout the experiment.

Note that even appropriate target beliefs may represent only part of the primary beliefs determining a given attitude. The influence attempt may have an effect not only on target beliefs but also on other primary beliefs about the attitude object, and these impact effects may be responsible in part for the obtained attitude change. Similarly, the influence attempt may have impact effects on the evaluation of attributes associated with the primary beliefs, which may also influence the amount of attitude change obtained.

Some of the issues raised by directing an influence attempt at beliefs about the attitude object are illustrated in a study by Lutz (1973), who examined the effects of manipulating different kinds of target beliefs on attitude toward using a

hypothetical laundry detergent. First, Lutz obtained a list of modal salient or primary beliefs by means of a free-elicitation procedure. Employing four experimental conditions, he then attempted to increase or decrease one of these primary beliefs that linked using the detergent with either a positive or negative outcome. Depending on their initial beliefs, subjects were told either that the detergent could or that it could not be used at all temperatures (positive outcome); in the remaining two conditions, subjects were told that using the detergent was or was not costly (negative outcome).

In addition to assessing the influence attempt's effect on the target belief, Lutz also measured its impact on nine other (primary) external beliefs about using the detergent. He found that attitude change could be predicted by considering changes in target and external beliefs. In all four conditions, the influence attempt produced the desired change in target belief. This change in target belief, taking into account attribute evaluation, showed a correlation of .415 with change in attitude toward using the detergent. However, the influence attempt was also found to have a significant impact effect on some of the primary external beliefs or on their attribute evaluations. When this impact effect was considered in addition to the change in target belief, the correlation with attitude change was raised to .572. As expected, the direction of attitude change was a function of both the direction of belief change and of attribute evaluation. Increasing a person's belief that the detergent can be used at all temperatures or decreasing his belief that using the detergent was costly led to a more favorable attitude whereas changing those beliefs in the opposite direction produced less favorable attitudes.

*Changing attribute evaluations.* Instead of attacking a person's beliefs that an object has certain attributes, the investigator may attempt to change the evaluations of some of those attributes. Recall that a person's evaluation of an attribute represents his attitude toward that attribute. It follows that changing his evaluation of a given attribute requires changing his primary beliefs about that attribute's characteristics or his evaluations of those characteristics. Since the latter evaluations again represent attitudes, this line of reasoning can be continued indefinitely. The main point is that, in the final analysis, attitude change involves changing a person's beliefs, whether they are beliefs about the object or beliefs about its attributes.

A full understanding of an influence attempt directed at attribute evaluations, therefore, requires consideration of the beliefs about the attribute that were changed by the influence attempt. However, in order to understand its effects on the dependent measure of attitude, it will often be sufficient to assess the influence attempt's effects on the attribute evaluations. In addition, it will be necessary to examine possible impact effects on evaluations of other attributes or on primary beliefs about the attitude object.

The study by Lutz (1973) described earlier also attempted to change attitude by attacking attribute evaluations. As noted, attribute evaluation can be changed

only indirectly by influencing beliefs about the attribute. Lutz provided information about one outcome of using the hypothetical laundry detergent, namely, its suds production. One persuasive communication linked high suds production to three positive consequences (e.g., low wear and tear on the washing machine and clothing), and a second communication linked this attribute to three negative consequences (e.g., high wear and tear on the washing machine and clothing). These messages were found to influence the initial relatively neutral attribute evaluation as expected: subjects who received the first message now had a positive evaluation of sudsiness, and subjects who received the second message evaluated sudsiness negatively. In addition, the messages had significant impact effects. These changes in attribute evaluations and impact effects influenced attitude toward using the laundry detergent in the expected direction, although the change in attitude did not reach statistical significance. Subjects who believed that using the detergent produced a large amount of suds tended to increase their attitudes toward using the detergent when their evaluation of sudsiness was raised, whereas a decrease in attitudes was recorded when their evaluation of sudsiness was lowered. The two persuasive communications tended to have opposite effects for subjects who believed that using the detergent produced few suds.

In sum, attitudes can be changed by attacking beliefs that the object has certain attributes, or by influencing evaluations of those attributes. Irrespective of the strategy used, in order to understand the effects of an influence attempt on a dependent measure of attitude, one must know its effects on the person's salient belief hierarchy. Within our conceptual framework, attitude ( $A$ ) is viewed as determined by the sum of the person's salient beliefs about an object's attributes ( $b$ ) multiplied by his evaluations ( $e$ ) of these attributes, as shown in Eq. 9.3.

$$A = \sum b_i e_i. \quad (9.3)$$

It follows that attitude change will be obtained only when the influence attempt succeeds in changing the sum of the cross-products ( $\sum b_i e_i$ ). In other words, to produce attitude change requires first and foremost a change in the informational base underlying the attitude.

The most common strategy is to direct the influence attempt at target beliefs which are assumed to be primary determinants of the attitude. These target beliefs may correspond directly to the informational items used in the influence attempt, or they may be attacked indirectly through impact effects. Changes in target beliefs, however, even when they are primary, may not be sufficient to bring about change in attitude. For example, if the belief affected linked the attitude object to a neutrally evaluated attribute,  $\sum b_i e_i$  would remain unaltered and no change in attitude would result. Alternatively, if the influence attempt increased two of the individual's beliefs, one with a positive attribute and the other with a negative attribute, these effects would cancel each other, again leaving the attitude unchanged. Similarly, if the two attributes had the same evaluations, but one belief was increased and the other reduced, no change would be expected. Finally, if a

target belief entered the salient belief hierarchy at the expense of an old belief with equivalent strength and attribute evaluation,  $\Sigma b_i e_i$  would remain the same and no change in attitude would occur.

Similar considerations apply when attribute evaluations are to be changed. Even when the influence attempt produces a change in the evaluation of an attribute, this may have no effect on the attitude. Clearly, the attribute attacked must be associated with a salient belief about the attitude object; changing the evaluation of one attribute may have impact effects on the evaluations of other attributes, as well as on the strength of the primary beliefs about the object; changes in the evaluations of more than one attribute may cancel each other; and the amount and direction of attitude change will depend not only on the amount and direction of change in attribute evaluations but also on the strength of beliefs about the attitude object. In short, attitude change depends on the effects of the influence attempt on the total informational base underlying the attitude.

### Changing Intentions

It is usually assumed that changing certain beliefs or attitudes will have an effect on a person's intention to perform a given behavior. Thus investigators have sometimes attacked beliefs about performing the behavior, attitudes toward the object of the behavior, or attitudes toward the situation in which the behavior is to occur. The problem is to identify the attitudes and beliefs relevant for a given intention. Our conceptual framework also provides an answer to this problem.

In Chapter 7 we saw that a person's intention to perform a given behavior is determined by his attitude toward the behavior and his subjective norm with respect to the behavior. Our model for predicting intentions is presented in Eq. 9.4.

$$I = [A_B]w_1 + [SN]w_2. \quad (9.4)$$

Attitude toward the behavior and the subjective norm thus represent the two immediate determinants of intentions. The effects of an attempt to influence intentions depend on its effects on these attitudinal and normative components; the amount of change in intention produced by a change in one of the components is a function of the component's relative weight in determining the intention. An influence attempt directed at any other variable will be effective in changing an intention only to the extent that it influences one or the other of the two components that serve as the determinants of that intention.

Recall that an intention is composed of four elements—the behavior, its target, the situation, and time—and that the intention can vary in terms of its specificity with respect to each of these four elements. In an attempt to change intention, it is important to ensure that  $A_B$  and  $SN$  are attacked at precisely the same level of specificity as the intention under consideration.

*Changing attitude toward the behavior.* In the preceding section we discussed the problems involved in changing attitudes. We saw that attitude toward a behavior

can be influenced by changing salient beliefs about the behavior or by changing evaluations associated with these beliefs. A complete analysis of the influence attempt's effects on the attitudinal component, therefore, requires examination of its effects on the determinants of the attitude. However, when  $A_B$  is attacked in an attempt to produce change in intentions, it will often be sufficient to obtain a direct measure of the attitude toward the behavior.

*Changing subjective norms.* A person's subjective norm is his belief that important others think he should or should not perform a given behavior. A belief of this kind can be attacked either directly by providing information that most important others hold a given expectation or indirectly by changing some other beliefs. We noted that many different inference processes can lead to the formation of a given inferential belief. Thus a person may learn that most important others perform the behavior under consideration, and he may then infer that these important referents think he should perform the behavior.

Many different inference processes may be involved, but we considered one formulation in Chapter 7 that appears to be of particular importance. A person's subjective norm was viewed as a function of his normative beliefs that particular referents, relevant for the behavior in question, think he should or should not perform that behavior, weighted by his motivation to comply with each referent. This formulation implies that the subjective norm can be changed by attacking either the specific normative beliefs or the motivation to comply with a given referent. We saw in Chapter 7 that normative beliefs constitute inferences based on other beliefs about the referent individuals or groups. Earlier we discussed the principles involved in changing beliefs, and these principles can again be applied directly to normative beliefs. We noted in Chapter 7, however, that the processes underlying formation of motivation to comply are not well understood. It was suggested that motivation to comply may be related to beliefs about the referent's power or to intentions to comply with the referent. Thus, in order to change motivation to comply, in the final analysis it will again be necessary to change certain beliefs.

As in the case of the attitudinal component, it will usually be sufficient to assess the effectiveness of the influence attempt by obtaining a direct measure of the subjective norm, i.e., of the person's belief as to what important others think he should do. For a fuller understanding of the effects of an influence attempt on the normative component, however, normative beliefs and motivation to comply with respect to particular referents may have to be considered. As in the case of attitudes, a change with respect to one normative belief or a change in motivation to comply with a given referent may or may not influence subjective norms. Only when the weighted sum of normative beliefs times motivation to comply changes will a change in the subjective norm follow.

We have noted that attempts to change either the attitudinal or the normative component must, in the final analysis, be directed at certain primary beliefs. When attitude toward the behavior is to be changed, these beliefs are concerned with the kinds of outcomes produced by the behavior or with the characteristics of



those outcomes. In the case of subjective norm, the primary beliefs may be the norm itself, or they may be beliefs about the expectations of relevant referents, their attitudes, their behavior, or their power. A complete analysis of an attempt to influence intentions may thus have to assess its effects on these different kinds of primary beliefs.

*Impact effects on intentions.* Not only may an item of information to which a person is exposed during an influence attempt affect one of the determinants of the intention—say, the attitude toward the behavior—but it may also have an impact on the second determinant of intention, the subjective norm. Consider, for example, a person who observes that his best friend receives \$5 for tutoring a student. Formation of this descriptive belief may lead him to infer that tutoring a student is financially rewarding, and this belief may in turn increase his attitude toward tutoring a student. At the same time, the descriptive belief may also lead the person to infer that his best friend thinks he should tutor a student. This inferential belief may increase the subjective norm that most important others think he should tutor a student. Alternatively, once the person has changed his attitude in a favorable direction, he may infer that most important others also hold a favorable attitude toward tutoring a student and then make the further inference that these referents think he should perform this behavior. An influence attempt can thus have an impact effect even if it provides information that is directly relevant for only one determinant of intentions. The strength and direction of this kind of impact effect will depend on the extent to which the two components are related and the direction of the relationship.

*The role of relative weights in changing intentions.* Our discussion above indicated that intentions could be changed by attacking either attitudes toward the behavior or subjective norms. No consideration was given to the relative effectiveness of the two strategies. The model presented in Eq. 9.4 suggests that the two determinants may not be equally relevant for the intention under consideration. Even when successful in changing one of the determinants, an influence attempt may have little effect on intention if the component attacked does not carry a significant weight. The relative weights of the attitudinal and normative components may be influenced by variations in any one of the intention's four elements (behavior, object, situation, and time) and by individual-difference variables. Further, the influence attempt itself may affect the relative importance placed on the two components.

Two recent studies illustrate how intentions can be changed by influencing attitudes toward the behavior or subjective norms. They also demonstrate the importance of taking the relative weights of these two components into account. In the first study, Ajzen and Fishbein (1972) attempted to change behavioral intentions in a hypothetical decision situation involving some risk. The decision involved an investment of \$1000 in a building project (see Chapter 7 for a description of the situation). In a pretest, the subject's estimate of the project's chances of success was set at 70 percent. Furthermore, his close family and

friends with whom the subject was said to have discussed the issue also had a 70 percent subjective probability of success. The subject's intention to invest the money was measured, as were his attitude toward the behavior and his normative beliefs (i.e., the perceived expectations of his close family and friends). Computing the multiple correlation of attitude toward the behavior and normative beliefs on behavioral intentions showed that the attitudinal component was highly related to intention ( $r = .841$ ) and that it carried most of the weight in the prediction ( $w_1 = .833$ ). The regression coefficient of the normative component was nonsignificant ( $w_2 = .019$ ). The investigators therefore predicted that change in the attitudinal component would be reflected in corresponding change of intentions, whereas intentions would be relatively unaffected by change in the normative component.

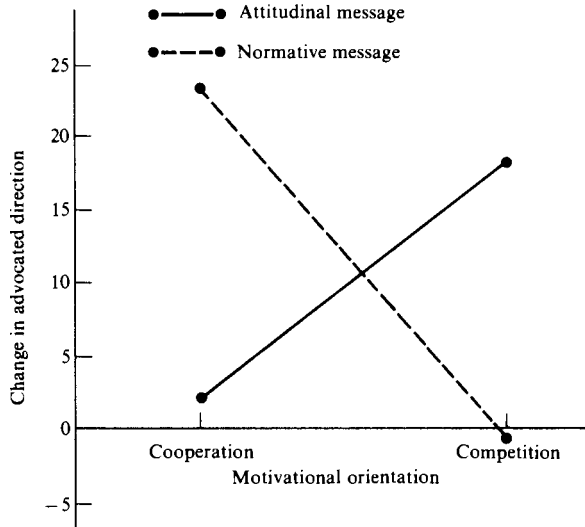
Following an unrelated intervening activity, subjects received a message designed to influence one of two target beliefs. In one condition, the subject was told that he had obtained new information which had lowered his own subjective probability of success to 30 percent (*attitudinal message*). In a second condition, he was told that his close family and friends had obtained new information which had lowered their subjective probability of the project's success to 30 percent (*normative message*).

Immediately following this communication, the subject's intention to invest the money, his attitude toward that behavior, and his normative beliefs were again measured. The persuasive communication had the expected effects on the components: The attitudinal message lowered the subject's attitude toward investing the money, and the normative message lowered his normative belief that his close family and friends thought he should invest the money. Intentions, however, were affected very little by the shift in normative beliefs, whereas the reduction in attitude toward the behavior was accompanied by a strong decrease in behavioral intentions.

This study demonstrates that changes in subjective norms will not produce changes in behavioral intentions when the normative component has little predictive power. The second study by Ajzen (1971b) supported the same principle with respect to changes both in attitude toward the behavior and in normative beliefs. The experiment involved a Prisoner's Dilemma game played under a cooperative or a competitive motivational orientation. As mentioned in Chapter 7, in the prediction of intentions the normative component is of greater importance than the attitudinal component in the cooperative condition, but the reverse is true for the competitive condition. Shifts in intentions resulting from changes in the subjective norm should thus be more pronounced in the cooperative condition than in the competitive condition. Conversely, changes in attitude toward the behavior should influence intentions more under competition than under cooperation.

To effect changes in the two components, half of the subjects in each motivational condition were given an attitudinal message, and the other half were given a normative message. The attitudinal message was designed to make the attitude

toward cooperation either more favorable or less favorable by changing the subject's beliefs about the consequences of cooperating or competing. The normative message stressed that the other player expected the subject to cooperate or compete. As Fig. 9.3 shows, the results strongly supported the prediction. A highly significant motivational orientation by message-type interaction was found: The attitudinal message changed intentions under competition, and the normative message was most effective under cooperation.



**Fig. 9.3** Effects of attitudinal and normative messages on intentions in a Prisoner's Dilemma game. (Adapted from Ajzen, 1971b.)

These studies show that intention can be influenced by changing either the attitudinal or the normative component. The effectiveness of an influence attempt designed to change intention depends on the component that is attacked. Messages directed at the attitudinal component are effective only if that component carries a significant weight in the prediction of intentions. The same holds true for a message directed at the normative component. If one of the components is of little importance in the prediction of intentions, then any attempt to change it, even if successful, cannot be expected to have a strong effect on intentions.

Another problem is that an influence attempt directed at one component may have an unanticipated impact effect on the second component. This impact effect may produce undesirable changes in intentions. Further, the influence attempt may also have an effect on the relative weights of the two components. For example, if the subject's attention is called to normative considerations, the normative component may take on added weight. These effects may again produce unexpected changes in intentions. These considerations suggest that change in

intentions can be expected only when the weighted sum of the two components [that is,  $(A_B)w_1 + (SN)w_2$ ] is affected by the influence attempt.

### Changing Behavior

We saw in Chapter 8 that many different variables have been proposed as possible determinants of overt behavior, and attempts to change behavior have been directed at one or more of these variables. Within our conceptual framework, however, the immediate determinant of a given behavior is the intention to perform that behavior. To change a person's behavior, it is therefore necessary to change his intention to perform the behavior, a process which was discussed in the preceding section. If an influence attempt fails to produce a change in intention, no change in behavior can be expected. A complete understanding of an influence attempt's effects on behavior, however, would require not only examination of its effects on intention but also its effects on all determinants of that intention.

That a change in intentions can produce behavioral change was shown by Ajzen (1971b) in the study using the Prisoner's Dilemma game. As noted, the persuasive communications led to the desired changes in intentions. Immediately following reception of the persuasive messages and assessment of intentions, subjects played the game for a total of 20 trials. Changes in intentions were found to produce corresponding changes in behavior.

An influence attempt that succeeds in changing intentions may not always lead to behavioral change, however. Recall that the specificity of behavioral criteria can vary with respect to behavior, target, situation, and time (see Chapter 8). Selection of a behavioral criterion determines the level of specificity for each of these four elements. Clearly, to be maximally effective in changing a behavior (or behavioral index), an influence attempt must be directed at the intention to perform that very behavior or behavioral pattern. That is, the intention and the behavioral criterion should correspond exactly in terms of their levels of specificity. For example, if the change in behavior is to be observed in a given situation at some point in the future, the intention at which the influence attempt is directed should be the person's intention to perform the behavior in question in that situation and at the specified point in time. The lower the correspondence, the less a change in intention can be expected to affect overt behavior.

A second consideration refers to events that may intervene between the change in intention brought about by the influence attempt (at time 1) and actual performance of the behavior (at time 2). These intervening events may produce additional unexpected changes in intention which may prevent the desired behavioral change. To increase the likelihood of the influence attempt's success, the investigator has three options. First, he can select a behavioral criterion which is likely to be associated with a stable intention. For example, there may be fewer events interfering with a general intention to "help other people" than with the more specific intention to "stop at the scene of a traffic accident." On the assump-

tion that this is true, the attempt to change a multiple-act criterion based on several helping behaviors is more likely to succeed than the attempt to change a single-act criterion, such as stopping at the scene of a traffic accident. Second, the investigator can try to prevent the occurrence of intervening events. One way of accomplishing this is to change the actor's intention immediately prior to the time at which the behavior will be observed. The less time that elapses between the influence attempt and the behavior, the fewer events are likely to intervene. The third possibility is for the investigator to try to counteract the intervening event when it cannot be prevented. Imagine a television salesman who has succeeded in raising a person's intention to buy a color television set within the next two weeks and who knows that the prices for such sets will go down in about a month. Since the potential buyer may hear about the forthcoming price reduction, the salesman may try to counteract the possible interference by telling the buyer that although prices may go down in the future, the reduction in price will be accompanied by a reduction in the set's warranty and thus an increase in the cost of repairs.

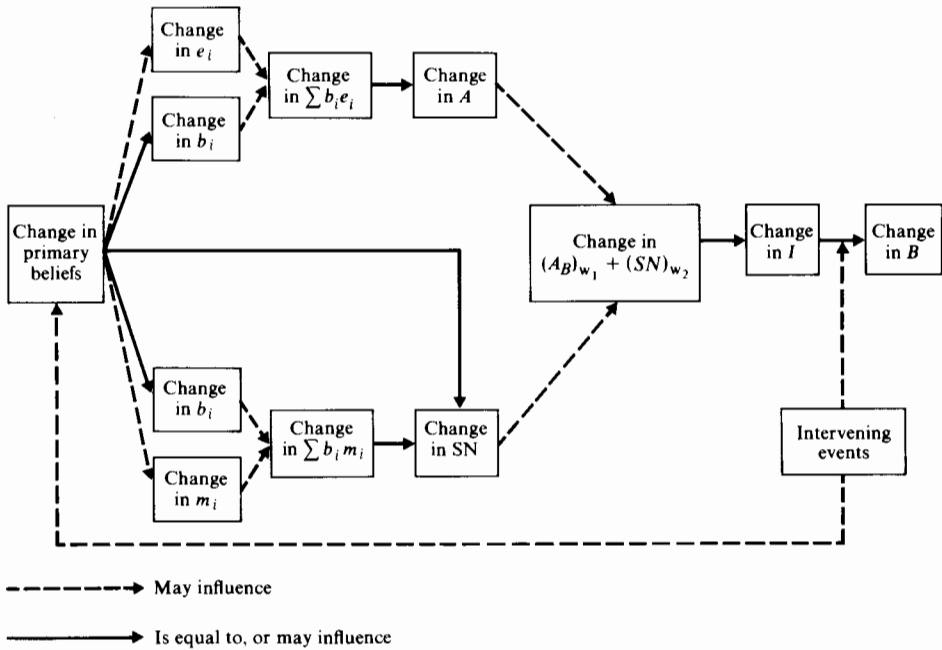
### **BASIC GUIDELINES FOR CHANGE**

Our discussion up to this point has made it clear that the distinction between belief, attitude, intention, and behavior is essential for an analysis of the influence process. This distinction is necessary since different factors serve as the immediate determinants of these variables. Moreover, what serves as a determinant in one situation may represent the dependent variable in another, resulting in a chain of influence effects that ranges from beliefs to behavior. Thus, in order to change behavior, an influence attempt should be directed at the intention to perform that behavior. To change that intention, however, it will be necessary to focus on attitude toward the behavior or subjective norms. Attitude toward the behavior, or any other attitude, can be changed by influencing primary beliefs about the attitude object or the evaluations of its attributes. The latter variable, however, is also determined by beliefs, namely, primary beliefs about the attributes. Similarly, if subjective norms were to be changed, the determinants would be primary normative beliefs and motivation to comply. Changing the latter variable again requires that certain primary beliefs be attacked. This chain of effects is illustrated in Fig. 9.4.

It is apparent that, irrespective of the dependent variable under consideration, to be effective an influence attempt must first produce changes in primary beliefs. These considerations lead us to the formulation of our first principle of change.

1. *The effects of an influence attempt on change in a dependent variable depend on its effects on the primary beliefs underlying that variable.*

This principle emphasizes the need for careful selection of informational items and target beliefs. By selecting target beliefs that constitute primary beliefs or that are related to the primary beliefs, the investigator increases the likelihood that a



**Fig. 9.4** Relations between change in primary beliefs and change in different dependent variables.

change in target beliefs will have the desired effects on the immediate determinants of the dependent variable and hence on the dependent variable itself.

To produce the desired changes in primary belief, the influencing agent provides informational items which may lead to changes in the receiver's corresponding proximal beliefs. Changes in these proximal beliefs are expected to influence certain target beliefs that are assumed to be directly or indirectly related to the dependent variable. In addition, the influence attempt may also have impact effects on external beliefs. For the influence attempt to be successful, the changes in proximal and external beliefs must lead to changes in primary beliefs. The changes in proximal and external beliefs, therefore, are ultimately responsible for any changes in the dependent variable (see Fig. 9.1).

This discussion suggests an additional principle of change.

2. *The effects of an influence attempt on change in a dependent variable are ultimately the result of changes in proximal beliefs and of impact effects.*

Even though an investigator may make inappropriate assumptions about the determinants of his dependent variable, his influence attempt may produce changes in proximal or external beliefs that are related to primary beliefs. For example, in order to change a person's intention to perform a given behavior, the investigator

may attempt to change the attitude toward the object of the behavior. The informational items contained in the influence attempt, however, might correspond to beliefs about the consequences of performing the behavior with respect to the object. Although a change in these proximal beliefs about the behavior may have no effect on attitude toward the object, it may influence attitude toward the behavior and may thus have the desired effect on intention.

Our discussion has made it clear that many different processes intervene between an influence attempt and change in some dependent variable. The number of links involved varies from one dependent variable to another. Our third general principle of change deals with this chain of events.

3. *The effects of an influence attempt on change in beliefs, attitudes, intentions, and behaviors depend, in that order, on an increasing number of intervening processes.*

The smallest number of steps intervene between an influence attempt and change in proximal beliefs. The number of intervening steps increase when the dependent measure of change involves an inferential belief. As Fig. 9.4 shows, additional steps are necessary as one moves from belief change to changes in attitude and change in intention. The largest number of processes intervenes between an influence attempt and behavioral change.

### **EFFECTS OF EXPERIMENTAL MANIPULATIONS**

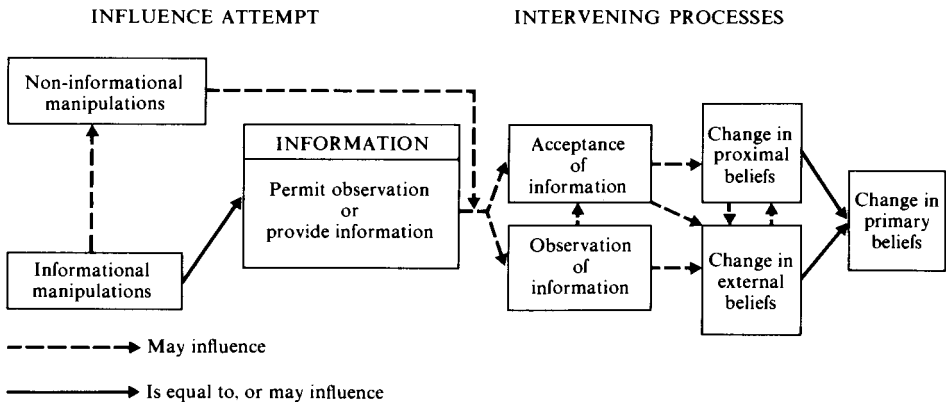
An influence attempt exposes subjects to information that may produce changes in their beliefs. So far we have been concerned only with the effects of the information itself. Most studies of change not only expose subjects to some information but also manipulate one or more independent variables and measure the effects of the manipulations on the amount of change in the dependent variable. For example, in a study of persuasive communication, subjects may receive a message that is ultimately designed to change their attitudes toward family planning. In one condition the message may be attributed to the National Institute of Mental Health (high-credibility source) whereas in a second condition the same message may be attributed to a prison inmate (low-credibility source). The purpose of the experiment is to show that with variation of communicator credibility, the same message will produce different amounts of attitude change.

We have seen that the effect of an influence attempt on a dependent variable is the result of its immediate influence on proximal and external beliefs. If an experimental manipulation influences the amount of change in a dependent variable, it must have produced differential amounts of change in that variable's immediate determinants, and such effects can be due only to differential change in primary beliefs. In terms of the example above, this means that the message attributed to the high-credibility source must have produced more change in beliefs about

family planning than did the message attributed to the low-credibility source. Changes in these primary beliefs must themselves be due to changes in proximal and external beliefs. Our final principle of change follows directly from these considerations.

4. *An experimental manipulation can affect amount of change in a dependent variable only to the extent that it influences amount of change in proximal and external beliefs.*

An influence attempt exposes subjects to a set of informational items. Experimental manipulations will influence amount of change in proximal and external beliefs to the extent that they affect observation of this information or its acceptance. Figure 9.5 illustrates the processes intervening between presentation of



**Fig. 9.5** Processes intervening between presentation of information and change in primary beliefs.

information and change in primary beliefs. Note that experimental manipulations may have direct effects on the kind and amount of information to which subjects are exposed. In addition, they may influence the degree to which these informational items are perceived and accepted, thereby affecting amount of change in proximal and external beliefs. Even when a manipulation does affect the amount of change in relevant proximal or external beliefs, there is no guarantee that this effect will be carried over to the dependent variable. Many links intervene between changes in proximal or external beliefs and changes in the dependent variable; the further removed the dependent variable from the proximal and external beliefs, the greater the number of possibilities of a breakdown in the effect (see Figs. 9.4 and 9.5). Manipulations designed to influence change in a dependent variable therefore cannot be expected to have any simple systematic effects on change in inferential beliefs, attitudes, intentions, or behaviors.



## CONCLUSION

In this chapter we have discussed some of the basic principles of change, which are summarized in Figs. 9.4 and 9.5. An influence attempt is designed to change a given dependent variable by providing informational items that correspond to and may affect certain proximal beliefs. Figure 9.5 shows that the influence attempt will produce change in these proximal beliefs if the informational items are perceived and accepted. Even if not accepted, the informational items may produce changes in external beliefs. Changes in proximal and external beliefs are expected to influence certain primary beliefs which constitute or are related to the immediate determinants of the dependent variable under consideration (see Fig. 9.4). To understand the effects of an influence attempt on some dependent variable, it may be sufficient to examine its effects on the immediate determinants of that variable. For example, to study change in intention, it will often be sufficient to assess the effects of the influence attempt on the weighted sum of attitude toward the behavior and subjective norm. A complete understanding of the influence process, however, would require an examination of the total sequence leading from the informational items presented to the dependent variable.

Similar considerations apply to an understanding of the effects of experimental manipulations on the dependent variable. To influence the amount of change in the dependent variable, the manipulation must first have an effect on the amount of change in proximal and external beliefs. The manipulation may itself introduce informational items into the situation, or it may influence the perception and acceptance of the information. Its ultimate effect on the dependent variable will again depend on the processes intervening between the presentation of information and the dependent variable.

As we shall see in the following chapters, little attention has been paid to problems of specifying proximal, external, and primary beliefs or to the processes mediating between these beliefs and the dependent variable. Most studies of "attitude change" have manipulated some independent variable and have simply measured some dependent variable. It is therefore hardly surprising that research in this area has led to a large body of inconsistent and inconclusive findings. Given this state of affairs, there is little to be gained from a detailed review of the literature.<sup>2</sup> Instead we shall try to analyze the two major research paradigms used in studies of change in terms of the concepts and orientation developed in this chapter. We shall see that application of our approach to persuasive communication is relatively straightforward. Analysis of active participation and its effects on beliefs, attitudes, intentions, and behaviors is more difficult since it is often impossible to specify either the target or the proximal beliefs attacked in this kind of influence attempt.

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2. Readers interested in a traditional and detailed review of research in this area are directed to McGuire's (1969) chapter in the *Handbook of Social Psychology*.