

Chapter 11

Strategies of Change: Persuasive Communication

The preceding chapter has considered active participation as one major strategy to bring about change in beliefs, attitudes, intentions, and behaviors. The present chapter deals with the second major strategy of change, namely, persuasive communication. In contrast to active participation, where the individual may gain information by observing objects, people, and events in a given situation, when the person receives a persuasive communication, he is provided with items of information by some outside source. Every day of their lives people are exposed to persuasive communications designed to influence their beliefs, attitudes, intentions, or behaviors: The boy is told to wash his hands; the potential consumer reads the description of a product; the senator is handed a petition; the potential voter attends a political rally; the person reads a textbook; the student attends a lecture; etc. Since persuasive communication has always been viewed as the major strategy of influencing people, it has held the interest of scholars and practitioners alike. Much of the impetus to controlled research on communication and persuasion, however, has come from the Yale Communication Research Program under the direction of Carl I. Hovland (cf. Hovland, Janis, and Kelley, 1953; Hovland, 1957; Hovland and Janis, 1959; Hovland and Rosenberg, 1960; Sherif and Hovland, 1961).

YALE COMMUNICATION RESEARCH PROGRAM

In their extended research program, Hovland and his associates attempted to investigate factors influencing the effectiveness of persuasive communication. Defining communication as “the process by which an individual (the communicator) transmits stimuli (usually verbal) to modify the behavior of other individuals (the audience),” they viewed their research task as the investigation of *who says what*

to *whom* with *what effect*. To study the effects of the *source* of a communication (the “who”), the investigators manipulate various characteristics of the communicator, such as his trustworthiness, expertise, status, likability, etc. An identical message may thus be attributed to two different sources, one with high credibility and one with low credibility. *Message* characteristics (the “what”) have been manipulated in attempts to study effects of different types of communications. For example, one-sided messages have been compared with two-sided messages, messages with explicit conclusions have been contrasted with messages in which the conclusion is left implicit, emotional messages have been compared with logical messages, high-fear appeals with low-fear appeals, and the order of arguments in the message has been varied. Another line of research has dealt with *audience* variables or individual differences (the “whom”) in terms of general persuasibility, initial opinions, intelligence, self-esteem, cognitive complexity, and various personality traits. In attempts to assess the effects of source, message, and audience variables, several types of responses have been obtained, including judgments of the degree to which the communicator was fair in presenting the facts, the degree to which the information presented justified the conclusion, recall of the communication’s content, and changes in beliefs, attitudes, intentions, or behavior.

One basic assumption underlying this research is that the effect of a given communication depends on the extent to which it is *attended to*, *comprehended*, and *accepted*. Figure 11.1 summarizes the major factors identified by Hovland and his associates in their analysis of the communication and persuasion process. Note that primary concern is with “attitude change,” but many different variables are subsumed under this label. The effects of source, message, and audience factors on attitude change are assumed to be mediated by attention, comprehension, and acceptance. One implication of this conceptualization is that a given manipulation may both facilitate and inhibit attitude change. A two-sided message, for example, may increase attention but reduce comprehension. Similarly, a high-fear appeal may reduce attention but increase acceptance.

McGuire’s two-factor model. According to the Yale approach, “attention and comprehension determine what the recipient will *learn* concerning the content of the communicator’s message; other processes, involving changes in motivation, are assumed to determine whether or not he will accept or adopt what he learns” (Hovland and Janis, 1959, p. 5). The effects of a communication, then, depend on two factors: learning of message content and acceptance of what is learned. Consistent with this approach, McGuire (1968) developed a two-factor model of persuasion which combines attention and comprehension into a single factor of reception. According to McGuire’s model, the process of persuasion involves two basic steps: “reception of the message content and yielding to what is comprehended.” In its simplest form, McGuire’s model can be written symbolically as in Eq. 11.1,

$$p(O) = p(R)p(Y), \quad (11.1)$$

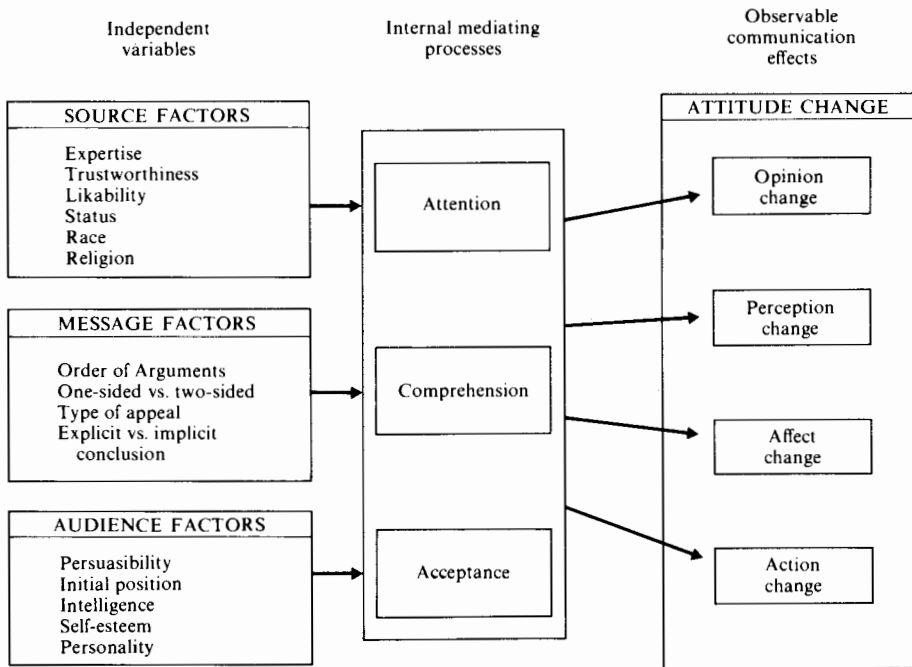


Fig. 11.1 Yale approach to communication and persuasion. (Based on Janis and Hovland, 1959.)

where $p(O)$ is the probability of opinion change; $p(R)$ is the probability of effective reception; and $p(Y)$ is the probability of yielding to what is received. McGuire suggested that the reception mediator can be measured directly, as can opinion change. According to McGuire, the yielding mediator is not measured directly; it is estimated on the basis of the degree to which the message was received and the amount of opinion change it produced. Consider, for example, a message that was well received but produced little opinion change. According to McGuire's model, lack of persuasion must then have been due to a low degree of yielding.

McGuire (1968) used this model to account for inconsistent findings concerning the effects of various individual difference variables on persuasion. We saw earlier that a given variable may have different effects on reception and yielding. McGuire suggested, for example, that reception may increase, but yielding decrease, with the receiver's intelligence. Since opinion change is assumed to be a positive function of both reception and yielding, there will be no simple relation between intelligence and opinion change. Specifically, according to the reception mediator, opinion change should increase with intelligence whereas, according to the yielding mediator, it should decrease with intelligence. McGuire's model (see Eq. 11.1) posits a multiplicative effect of reception and yielding on opinion

change; the predicted nonmonotonic relation between intelligence and opinion change is given in Fig. 11.2. The greatest amount of opinion change will be predicted for recipients of medium intelligence, whereas subjects of high or low intelligence will change less. The observed relation between intelligence and opinion change will thus depend on the range of intelligence under consideration. A study using subjects with low to moderate intelligence would find a positive relation, and a study using moderately to highly intelligent subjects would find a negative relation. McGuire (1968) presented similar analyses for other individual difference variables, such as self-esteem, sex, and anxiety.

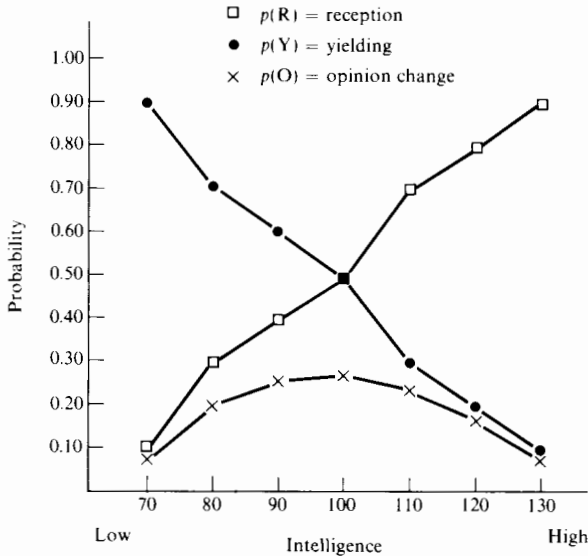


Fig. 11.2 Probability of reception, yielding, and opinion change as a function of intelligence.

More important, McGuire showed how additional factors might influence the relation between a given individual difference variable and opinion change. To return to our example, consider what would happen if an investigator used a very easy message that could be comprehended (i.e., received) by virtually every recipient. The predicted relation between intelligence and opinion change is given in Fig. 11.3. In this case, reception has relatively little effect, and opinion change varies directly with yielding. Thus, in contrast to Fig. 11.2, where intelligence had a curvilinear relation to opinion change, an easy message would result in a fairly linear negative relation.

Although concentrating on reception (attention and comprehension) and yielding, McGuire (1968, 1969) suggested two additional steps in the persuasion process: *retention* of the position agreed with and *action* in accordance with the retained agreement. Persuasion is thus regarded as a process involving five steps:

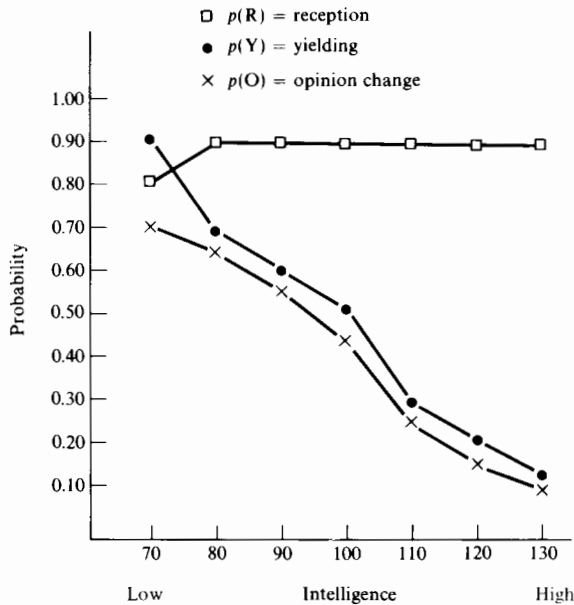


Fig. 11.3 Reception, yielding, and opinion change as a function of intelligence, using an easy message.

attention, comprehension, yielding, retention, and action. “The receiver must go through each of these steps if communication is to have an ultimate persuasive impact, and each depends on the occurrence of the preceding step.” (McGuire, 1969, p. 173) Each step is viewed as a possible dependent measure of “attitude change” in a communication and persuasion study. These *destination* variables constitute one component of the communication process. The remaining components in McGuire’s analysis are *source, message, channel, and receiver*. Thus, following Laswell (1948) and using a method similar to the earlier Yale analysis, he conceptualized the communication process in terms of who (source) says what (message) to whom (receiver) how (channel) and with what effect (destination). This approach is summarized in a matrix of persuasive communication (Fig. 11.4).

Most research on communication and persuasion has examined the effects of variations in source, message, or receiver on one or more destination variables. The major dependent variable in most studies is some measure of “attitude change,” that is, change in a given belief, attitude, or intention. Relatively little attention has been paid to changes in actual behavior or to the retention of persuasive effects. Those studies that have dealt with retention have examined immediate effects versus delayed effects of a given manipulation or resistance to subsequent persuasive communications. All these persuasive effects are assumed to be mediated by reception and acceptance or yielding. Many studies have obtained some measure of reception, usually in the form of a multiple-choice or

Who? Source	What? Message	How? Channel	To whom? Receiver	With what effect? Destination
				Attention Comprehension } Reception
				Acceptance or yielding
				(Attitude change)
				Retention
				Action

Fig. 11.4 Matrix of persuasive communication. (Adapted from McGuire, 1969.)

recall test dealing with the content of the message. The second mediating factor, acceptance or yielding, has not been directly measured. Instead, the usual argument is that in the absence of differences in reception, the effect of a given manipulation on persuasion is due to its effect on acceptance.

Social judgment theory. Sherif and his associates (Sherif and Hovland, 1961; Sherif, Sherif, and Nebergall, 1965) have attempted to study the two mediators in greater detail. Their social judgment theory deals with an ordered series of positions along any dimension. As we saw in Chapter 3, a person's own position and all other positions acceptable to him constitute his *latitude of acceptance*; all positions to which he objects define his *latitude of rejection*; the remaining positions constitute his *latitude of noncommitment*. Generally speaking, the more discrepant a given position from the person's own stand, the less likely it is to fall within his latitude of acceptance. With respect to acceptance or rejection of a given persuasive communication, the recipient's perception of the position advocated in the message becomes a crucial factor. If he perceives it to fall within his latitude of acceptance (or perhaps within his latitude of noncommitment), he will accept the communication. If the communication's perceived position falls within his latitude of rejection, acceptance should not occur. It follows that acceptance should be inversely related to the discrepancy between a person's own position and that advocated by a communicator.

In social judgment theory, a persuasive communication is assumed to put pressure on the recipient to change his position; the greater its perceived discrepancy from his own position, the more pressure it should exert. These considerations lead to the prediction that amount of change in position should *increase* with discrepancy so long as the advocated position is not perceived to fall within the latitude of rejection. When it does fall within the latitude of rejection, change in position should *decrease* with discrepancy.

Social judgment theory attempts to identify the factors that influence reception (by displacing perception of the advocated position) and that affect *acceptance* (by modifying the latitudes of acceptance, noncommitment, and rejection). Drawing an analogy to psychophysical judgments, Sherif and Hovland suggested that

the person's position serves as an "anchor" or point of reference in his perception of the advocated position. It is expected that the recipient will *assimilate* positions close to his own stand (i.e., he will perceive positions falling within his latitude of acceptance as more similar to his own position than they really are), and that he will *contrast* positions discrepant from his own stand (i.e., he will perceive positions falling within his latitude of rejection as more dissimilar than they really are). It is not quite clear how positions falling within his latitude of noncommitment will be perceived.

According to social judgment theory, the more *ego-involved* the person is with the issue, the more his own position serves as an anchor for his judgments. Involvement should therefore affect reception by increasing assimilation and contrast effects. Further, involvement was originally expected to influence acceptance by narrowing the latitude of acceptance and by widening the latitude of rejection. Empirical research suggested, however, that involvement served primarily to widen the latitude of rejection (by narrowing the latitude of noncommitment).

The expected effects of involvement on amount of change in position are illustrated in Fig. 11.5. The amount of change is expected to be a curvilinear function of perceived discrepancy; the inflection point of this curve approaches the person's own position as involvement increases. Note that change is plotted against *perceived* discrepancy. Since the receiver may displace the position advocated by a persuasive communication, it is difficult, if not impossible, to specify the relation between *actual* discrepancy and amount of change. For example, two receivers with identical initial positions and latitudes who are given a message representing a position within the latitude of noncommitment may displace in different ways. If the advocated position is assimilated into the latitude of acceptance, change should occur, whereas little change should result if it is contrasted into the latitude of rejection.

In sum, Sherif and Hovland assumed that certain positions along an attitudinal dimension are acceptable and others are not. The closer the advocated position is perceived to be to the receiver's own stand, the more likely it is to fall within his latitude of acceptance. Involvement is expected to influence reception by displacing the advocated position and to influence acceptance by widening the latitude of rejection. Factors other than involvement have also been assumed to influence reception or acceptance. For example, it has been suggested that a highly credible communicator may increase change via the reception mediator by increasing the pressure to assimilate the advocated position into the latitude of acceptance (Sherif, Sherif, and Nebergall, 1965) or via the acceptance mediator by widening the latitude of acceptance (Himmelfarb and Eagly, 1974b).

AN ALTERNATIVE MODEL OF PERSUASIVE COMMUNICATION

Our emphasis on the mediating role of proximal beliefs in the influence process suggests a model that differs considerably from the traditional approach to persuasive communication. We have argued that in order to be successful, an influ-

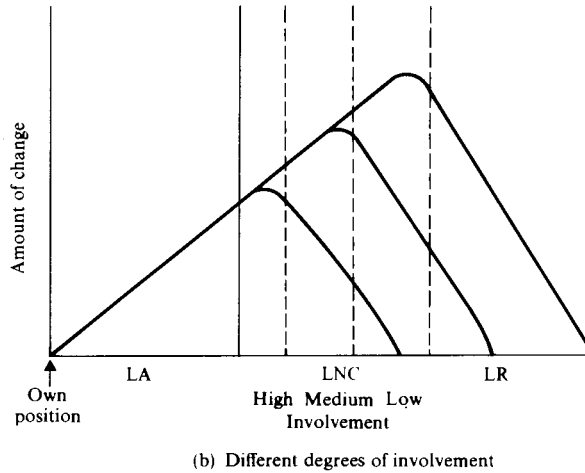
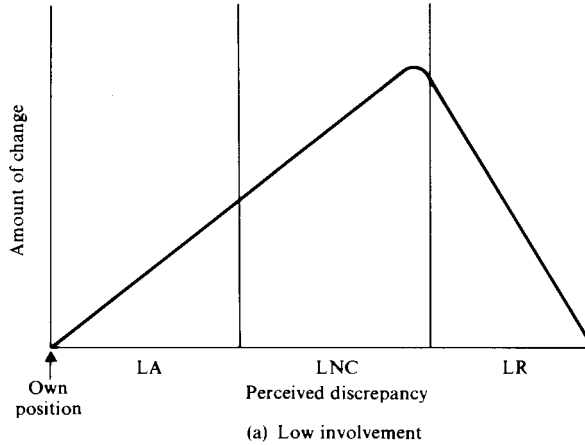


Fig. 11.5 Change as a function of perceived discrepancy, involvement, and latitudes of acceptance (LA), noncommitment (LNC), and rejection (LR).

ence attempt must at the very least produce changes in proximal or external beliefs. In the preceding two chapters we have seen that attempts to produce change in a dependent variable involve exposing the subject to information that is designed to produce the desired change. Under the strategy of persuasive communication, this information is provided in the form of a written or oral message.

The persuasive communication. A message can be described as consisting primarily of a series of belief statements, each linking some object to an attribute, such as another object, a concept, an event, or a goal. The following example of

a persuasive communication is an excerpt from one of the messages used by McGuire (1964) in his research program on resistance to persuasion. This particular message attacks the widely held belief that one should visit his physician annually for thorough medical checkups even in the absence of any particular symptoms.

One bad effect of visiting a doctor's office at a regular interval even when one is in the best of health comes from the effect such visits have on the patient's peace of mind. In general, most people are already too preoccupied with worries about their health. . . . Routine visits to the physician's office could only serve to increase the person's preoccupation with the sickness since they would keep him thinking about illness and bring him into contact with hospitals and doctor's office and other anxiety provoking stimuli even when he is in the best of health.

Medical authorities have argued against routine physical checkups once each year also because of the great expense involved and the likelihood that the money spent might be diverted more usefully to other activities promoting health. . . . Therefore, although medical authorities are unanimous in advising the person to see his physician at the first signs of any ailment, they advise against routine checkups at fixed periods, which practice they view as giving only very questionable benefits and doing some unquestionable harm.

A persuasive communication of this kind consists of a number of statements provided by a source, each corresponding to one or more beliefs. In the present example, 12 belief statements can be identified.

1. Visiting a doctor's office at a regular interval . . . has a bad effect on the patient's peace of mind.
2. Most people are already too preoccupied with worries about their health.
3. Routine visits to the physician's office increase a person's preoccupation with his sickness.
4. Routine visits to the physician's office keep a person thinking about illness.
5. Routine visits to the physician's office bring a person in contact with hospitals, doctor's office, and other anxiety provoking stimuli.¹
6. Medical authorities have argued against routine physical checkups once each year.
7. Medical authorities have argued that routine physical checkups involve great expense.
8. Medical authorities have argued that it is likely that the money spent on routine medical checkups might be diverted more usefully to other activities promoting health.

1. This belief statement could be further broken down into three separate beliefs linking routine visits to the physician's office to (1) contact with hospitals, (2) doctor's office, and (3) other anxiety provoking stimuli.

9. Medical authorities are unanimous in advising the person to see his physician at the first signs of any ailment.
10. Medical authorities advise against routine general checkups at fixed periods.
11. Medical authorities view routine general checkups . . . as giving only very questionable benefits.
12. Medical authorities view routine general checkups as doing some unquestionable harm.

From our point of view, each of these 12 belief statements links an object to some attribute with a probability of 1.0. The second statement, for example, establishes a link between "most people" and "already too preoccupied with worries about their health." In terms of belief strength, this statement implies a probability of 1.0 that "most people" are "already too preoccupied. . . ."

Each of the 12 statements above is thus an informational item that represents a *source belief* or *source probability*. Corresponding to each source belief is the receiver's proximal belief or subjective probability that the object has the attribute specified in the message (the *proximal belief* or *proximal probability*). For example, a receiver might initially hold a .30 probability that "most people are already too preoccupied with worries about their health."

McGuire's message could have been designed to increase the receiver's subjective probability that annual checkups are unnecessary, to lower his attitude toward annual checkups, to reduce his intention to obtain annual checkups, or to persuade him to cancel a forthcoming appointment for an annual checkup. Implicitly or explicitly, the investigator views certain beliefs as targets since he assumes that changes in those beliefs will produce a change in the dependent variable.² For example, in order to raise the subjective probability that annual checkups are unnecessary (the dependent variable), he may attempt to change the belief that "medical authorities advise against routine general checkups at fixed periods" by including this informational item in his communication (belief 10 above). In order to increase the likelihood of obtaining a change in this target belief, he may provide supportive evidence. The source belief that "medical authorities view routine general checkups . . . as doing some unquestionable harm" may serve as a *supportive belief* for the target belief.

In sum, a persuasive communication comprises for the most part a set of belief statements. Each statement corresponds to a proximal belief held by the receiver. Some of these proximal beliefs may serve as dependent beliefs, others as target beliefs, and still others as beliefs that are assumed to support the target beliefs. Associated with each belief statement in the message are two probabilities, one representing the strength of the source's belief (source probability) and the other the strength of the receiver's initial belief (proximal probability).

In Chapter 9 we saw that various processes may intervene between changes

2. These beliefs may or may not be the primary beliefs for the dependent variable in question.

in proximal beliefs and change in the dependent variable. Whatever these intervening processes, however, in order to be effective, a message must first produce changes in proximal beliefs. The question of crucial importance, therefore, is how the message produces changes in the proximal beliefs. Unfortunately, since a message comprises many different belief statements, and since change in one proximal belief may produce change in another, the message may have a multitude of effects which cannot be easily isolated. To study effects of a persuasive communication on proximal beliefs, it may therefore be instructive to consider a message that consists of a single statement. Consider, for example, the persuasive communication comprising such a statement as "There is an 80 percent chance that the President is seriously ill." The source probability in this case is .80. Following a person's exposure to this message, two questions may be asked. The first concerns the degree to which the person is likely to *accept* the source belief. Complete acceptance of a source belief occurs when the receiver's postexposure probability corresponds exactly to the source probability. In the example above, complete acceptance occurs when the person indicates a subjective probability of .80 that "the President is seriously ill." Alternatively, acceptance may be measured in terms of the receiver's subjective probability that "there is an 80 percent chance that the President is seriously ill." With this measure, complete acceptance is indicated by a probability of 1.0.

The second question concerns the amount of *change* in proximal belief that is to be expected. A change in belief involves a revision in the proximal probability following exposure to the source probability. In the example above, if the person shifted his subjective probability from .70 to .80, a change of .10 would be recorded. It should be clear that acceptance of source belief and change in proximal belief are not the same. A person may exhibit complete acceptance of the source belief. Nevertheless, if prior to exposure he already held the same belief, no change would be expected. Although this may appear to be a trivial point, we noted in Chapter 5 that investigators frequently measure only posterior probabilities and ignore the prior probabilities. Such a procedure does not always allow the investigator to determine whether any change has taken place.

Acceptance of Source Beliefs

One factor that should clearly influence the probability that a source belief will be accepted is the *discrepancy* between the probability implied by the source belief, i.e., the source probability (p_s), and the receiver's proximal probability, (p_r). The greater this discrepancy, the lower should be the probability of acceptance. Although the exact nature of the relation between acceptance and discrepancy is unknown, for the sake of simplicity let us tentatively assume an inverse linear relation, as expressed in Eq. 11.2,

$$p(a) = 1 - D, \quad (11.2)$$

where $p(a)$ is the probability of acceptance and D is the absolute discrepancy between source and proximal probabilities. This negative relation between $p(a)$ and

D is shown graphically in Fig. 11.6, where the line, called the *acceptance gradient*, represents probability of acceptance as a function of discrepancy.

To take a numerical example, consider a person whose subjective probability is .70 that "heavy drinkers have serious marital problems." The probability that he would accept a source belief of .75 that "heavy drinkers have serious marital problems" can be computed as follows: Since $D = |p_s - p_r|$, $p(a) = 1 - |p_s - p_r| = 1 - .05 = .95$. In comparison, for a receiver with an initial proximal belief of .40, the probability of acceptance would be $1 - .35 = .65$.

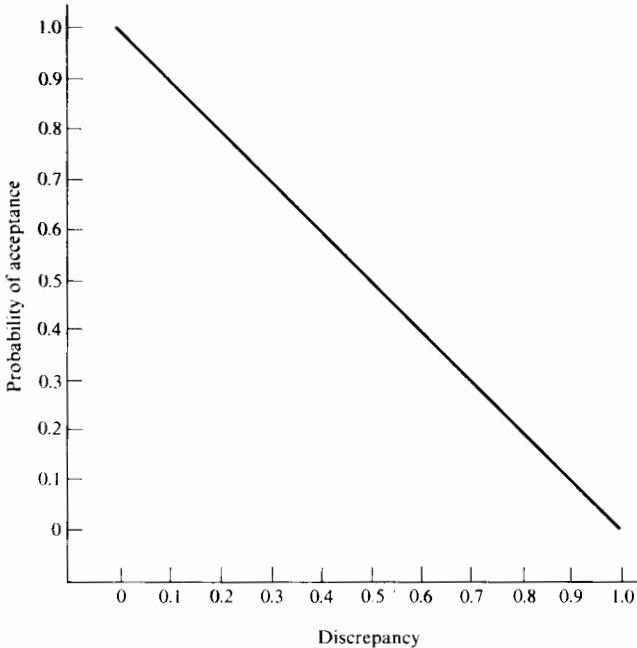


Fig. 11.6 Acceptance gradient: $p(a) = 1 - D$.

Facilitating Factors

Clearly, many factors other than discrepancy may influence probability of acceptance. Generally speaking, these factors can have one or both of two effects. They can influence the person's confidence in his own belief, that is, in his proximal probability and they can influence the person's judgment that the source probability is correct. These facilitating (or inhibiting) factors have traditionally been classified as source, message, and receiver variables.³

Source variables are characteristics associated with the communicator, such as his credibility, expertise, trustworthiness, attractiveness, sincerity, status, etc. It

3. Channel factors have received relatively little attention.

has usually been assumed that factors of this kind influence the receiver's confidence in the source belief and thus affect probability of acceptance.

In contrast, receiver variables have typically been viewed as influencing the person's confidence in his own belief. Receiver variables include relatively stable individual difference variables, such as general persuasibility, chronic anxiety, self-esteem, sex, intelligence, etc., as well as situational and topic-related factors, such as acute anxiety, involvement, extremity of own position, uncertainty, and the receiver's information about or knowledge of the topic.

Finally, message factors have been viewed as influencing the receiver's confidence associated either with his own belief or with the source belief. For example, order of presentation, validity of supportive arguments, and emotional versus rational appeals have often been assumed to affect confidence in the source belief. In contrast, high- versus low-fear appeals are assumed to influence acute anxiety (a receiver variable) and thus to affect confidence in the receiver's own belief.

For our purposes, this classification is not particularly useful. First, manipulation of a given facilitating factor will often influence both types of confidence. It seems reasonable to assume that as confidence in a proximal belief increases, confidence in the source belief will decline. More important, many of the factors listed above tend to have different facilitating effects at different levels of discrepancy (i.e., these factors may interact with discrepancy). For example, the perceived characteristics of a communicator often depend on discrepancy; a person advocating a discrepant position will tend to be judged as less of an expert, as less trustworthy, and perhaps as less attractive. Similarly, the perceived validity of an argument in support of a source belief may depend on the proximal probability corresponding to that source belief: The greater the discrepancy between source and proximal probabilities, the less valid an argument supporting the source belief may appear to be.⁴ In addition, the various facilitating factors may interact with each other. Thus presentation of an emotional argument may lower the communicator's perceived credibility. It is apparent that it will usually be impossible to study the effects of these variables in an uncontaminated fashion. This may be one reason for the inconsistent findings obtained in studies of persuasive communication.

To summarize briefly, several factors may influence probability of acceptance of a given source belief. Generally speaking, it has been assumed that probability of acceptance will be high when the receiver has low self-esteem and high general persuasibility, when he receives a source belief from a highly credible communicator on an unimportant, noninvolving topic, and when the receiver is uncertain with respect to his initial (proximal) belief. Although it is true that this set of conditions could be viewed as maximizing the receiver's confidence in the source belief and minimizing his confidence in his own proximal belief, we prefer a somewhat different approach.

4. Obviously, when the same argument is used in support of different source probabilities, its perceived validity is likely to vary.

Although we are not committed to any specific formulation, it seems reasonable to assume that the different types of facilitating factors combine in some fashion to produce an overall level of general facilitation. The letter f will be used to denote this overall facilitation present in the situation.

We noted earlier that probability of acceptance will tend to be inversely related to discrepancy (see Fig. 11.6). It seems reasonable to assume that facilitating factors will influence this acceptance gradient. Specifically, when overall facilitation is low, probability of acceptance should decline rapidly as a function of discrepancy. Thus, if a receiver is extremely confident in his belief and the communicator is not particularly credible, the source belief is unlikely to be accepted even at very low discrepancy levels. Conversely, when the receiver has extremely low confidence and the communicator is highly credible (high overall facilitation), probability of acceptance should be high even at very great discrepancies. Thus overall facilitation may serve to moderate the relation between discrepancy and probability of acceptance. Consistent with the approach taken in other areas of psychological research (e.g., psychophysical judgment), probability of acceptance may be tentatively viewed as an exponential function of discrepancy, as expressed in Eq. 11.3.

$$p(a) = (1 - D)^{1/f} ; f > 0. \quad (11.3)$$

This equation generates the family of acceptance gradients shown in Fig. 11.7.

Equation 11.2, presented earlier, is a special case of Eq. 11.3, namely, the case when $f = 1$. The acceptance gradient for $f = 1$ in Fig. 11.7 is identical to the acceptance gradient in Fig. 11.6. As overall facilitation declines, probability of acceptance decreases rapidly with discrepancy. Conversely, as f exceeds 1, probability of acceptance remains relatively high even at large discrepancy levels.

Figure 11.7 also shows that the manipulation of any facilitating factor cannot be expected to have consistent effects on probability of acceptance. Clearly, if overall facilitation is at a high level to begin with, a manipulation designed to increase facilitation will not have much effect on the acceptance gradient. For example, when the receivers are not involved with the issue and when they are highly uncertain with respect to their own beliefs, the initial level of overall facilitation will be very high. The acceptance gradient will therefore remain relatively unchanged, whether the communicator has high or low credibility. To take a numerical example, if the f levels in the low and high credibility conditions are 50 and 100, respectively, little change in the acceptance gradient will result (see Fig. 11.7).

Further, even when initial level of overall facilitation is low, the effect of a manipulation such as communicator credibility will depend on the degree of discrepancy. Assume, for example, that attributing a source belief to a highly credible communicator raises f to 10, whereas attributing it to a source of low credibility results in a .50 level of overall facilitation. Table 11.1 shows the effects of the communicator credibility manipulation on probability of acceptance at three discrepancy levels. Variations in communicator credibility may have a large or small effect on probability of acceptance, depending on the discrepancy level.

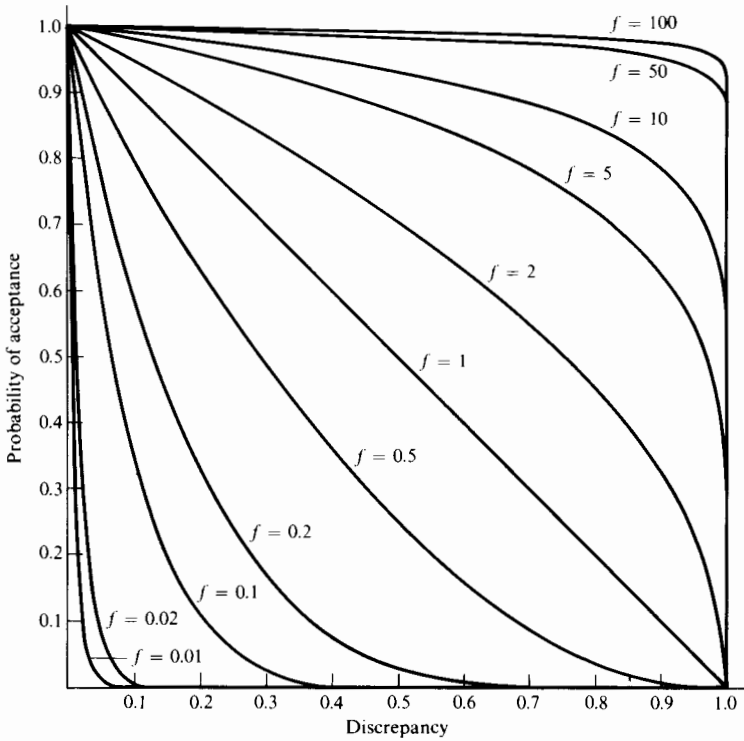


Fig. 11.7 Family of acceptance gradients for different degrees of facilitation: $p(a) = (1 - D)^{1/f}$.

To summarize briefly, we have suggested that probability of acceptance, $p(a)$, is an inverse function of discrepancy, D , and that the relation between $p(a)$ and D is influenced by facilitating factors, f . Generally speaking, as f increases, probability of acceptance should also increase. Although it seems reasonable to

Table 11.1 Hypothetical Probabilities of Acceptance as a Function of Communicator Credibility and Level of Discrepancy

Discrepancy	Communicator credibility		Effects due to communicator credibility
	High $f = 10$	Low $f = .50$	
High: $D = .90$.79	.01	.78
Medium: $D = .50$.93	.25	.68
Low: $D = .20$.98	.64	.34

assume that there are systematic relations between probability of acceptance on the one hand and D and f on the other, the exact form of these relationships is not known at the present time. We started with the simplifying assumption of an inverse linear relation between $p(a)$ and D , and by making certain additional assumptions about the effects of facilitating factors on this relation, we arrived at Eq. 11.3, which represents one possible specification of the relations involved. We must emphasize that the particular statement of the relationships described by Eq. 11.3 is based largely on speculation and should therefore be regarded as highly tentative.⁵ Future research may provide information leading to a more precise delineation of the ways in which facilitating factors influence the relationship between D and $p(a)$. For example, it may be necessary to replace the single f parameter with several parameters corresponding to different types of facilitating factors. Irrespective of the precise function, however, discrepancy and facilitation may reasonably be assumed to have the general effects on probability of acceptance shown in Fig. 11.7.

Our discussion suggests several important implications for the persuasion process. We have suggested that probability of acceptance is determined by two variables: discrepancy between source and proximal beliefs and various facilitating factors. If the exact function relating D and f to $p(a)$ were known, it would be possible to predict $p(a)$ on the basis of these determinants. Whether this function is the one specified in Eq. 11.3 or some other function, our analysis suggests that the effect of varying one of the two determinants will depend on the value of the other. An experimental manipulation can therefore not be expected to have a simple systematic effect on probability of acceptance. Most manipulations may be viewed as attempts to establish different levels of facilitation. A manipulation of communicator credibility, for example, may be designed to create high facilitation in one experimental condition and low facilitation in another. The precise values of f in the two conditions of credibility, however, may vary greatly, depending on the levels of other facilitating factors present in the situation. Even when successful, a manipulation of communicator credibility may have a strong effect in one study but little or no effect in another study. We saw, for example, that when the initial level of f is high, even large variations in f will leave the acceptance gradient relatively unchanged.

We also saw that the effect of a given manipulation on probability of acceptance will depend on the discrepancy level involved. This again implies that experimental manipulations will not be found to have very systematic effects on acceptance.

To further complicate matters, a belief statement by a given source may result in different source probabilities for different subjects. Consider the statement "Heavy drinkers have serious marital problems." So far we have assumed that this

5. In fact, it appears quite likely that the initial relation between $p(a)$ and D is not linear, but that it takes the form of an inverse ogive such that $p(a)$ declines slowly at first, more rapidly as D increases, and levels off as D becomes large.

statement implies a source probability of 1.0. However, if receivers were asked to estimate the source's probability that "heavy drinkers have serious marital problems," they might arrive at different estimates, such as .60, .70, or .80. It follows that the discrepancies between source and target beliefs may be affected by these differences in perceived source probabilities. This discussion implies that in order to obtain a value for the discrepancy variable, it may be necessary to measure not only the receiver's proximal belief but also his perception of the source belief. However, this problem may be of minor importance when the source probability is made explicit in a statement such as "There is an 80 percent chance that heavy drinkers have serious marital problems." Here the perceived source belief that "heavy drinkers have serious marital problems" should correspond closely to the objective source probability of .80. Nevertheless, the discrepancy (D) variable is best viewed in terms of two *subjective* probabilities—the proximal probability and the perceived source probability. Thus, just as a manipulation of communicator credibility may not always influence facilitation, a manipulation of source probability may have inconsistent effects on perceived discrepancy.

Even in the relatively simple case of a message consisting of a single source belief, attempts to find systematic relations between a manipulation of some independent variable and probability of acceptance are likely to produce only inconsistent results. Additional problems arise when change in a proximal belief, rather than the probability of accepting a source belief, is considered.

Change in Proximal Beliefs

As noted earlier, acceptance and change are not identical. To return to our previous example, assume a source belief of .75 that "heavy drinkers have serious marital problems" and two receivers who completely accept this source probability. Following exposure, the receivers will thus both have a .75 posterior probability. If one of these persons had an initial (proximal) probability of .30, he would have changed his belief more (.45) than the other person if the latter had a proximal probability of .70 (a change of .05). Thus, even though two receivers may accept a source belief to the same degree, they may show different amounts of change in their proximal beliefs.

Obviously, the *potential amount of change* in a proximal belief depends on its discrepancy from the source belief; the greater the absolute difference between source and proximal probabilities, the more room there is for change to occur. Actual change in the advocated direction, however, will depend not only on potential change but also on the probability of acceptance. Not only must there be room for change to occur, but the person exposed to the source belief must have at least some probability of accepting it. These ideas are expressed in Eq. 11.4,

$$C = p(a)D, \quad (11.4)$$

which specifies the effects of discrepancy, D , and probability of acceptance, $p(a)$, on actual change in the advocated direction, C . The amount of change to be ex-

pected is thus a function of potential for change weighted by the probability that the discrepant information is accepted.

Figure 11.8 shows the effects of discrepancy on probability of acceptance, on potential change, and on actual change in the advocated direction. For ease of presentation, the acceptance gradient is based on Eq. 11.2, in which facilitation, f , is set at 1. Given this acceptance gradient, most change in the advocated direction is expected when discrepancy is at an intermediate level. When discrepancy is very low, potential change is minimal; when discrepancy is very high, probability of acceptance is low.

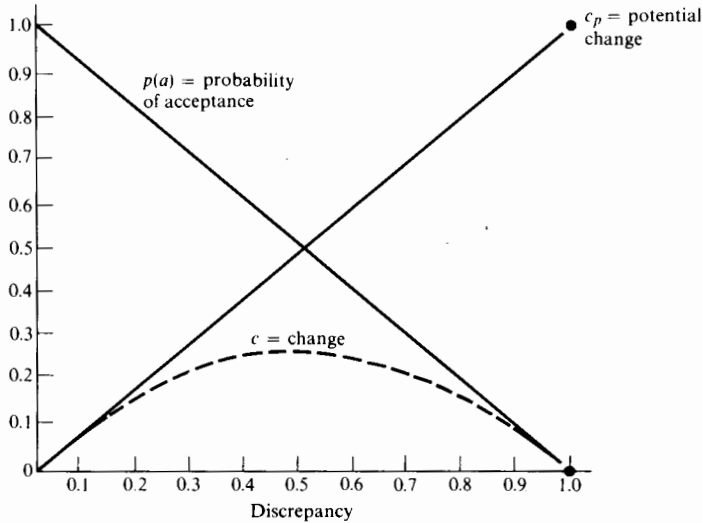


Fig. 11.8 Probability of acceptance, potential changes, and actual change as a function of absolute discrepancy.

Two points are worth noting. First, discrepancy is a necessary but not a sufficient condition for change. There can be no change in the advocated direction without some discrepancy between source and proximal beliefs. Second, since the amount of potential change is determined in advance by D , actual amount of change in the advocated direction is primarily determined by the acceptance gradient. We have seen earlier, however, that depending on the value of f , the acceptance gradient may take on very different forms. Figure 11.9 shows amount of change in the advocated direction as a function of discrepancy for some of the acceptance gradients depicted in Fig. 11.7. At a very high level of facilitation ($f \geq 100$) change always increases with discrepancy. When overall facilitation is very low ($f \leq .10$), little or no change is expected, irrespective of the discrepancy involved. At intermediate levels of f , the relation between D and C is curvilinear, such that change first increases and then decreases with discrepancy. We saw above that experimental manipulations cannot be expected to have simple systematic

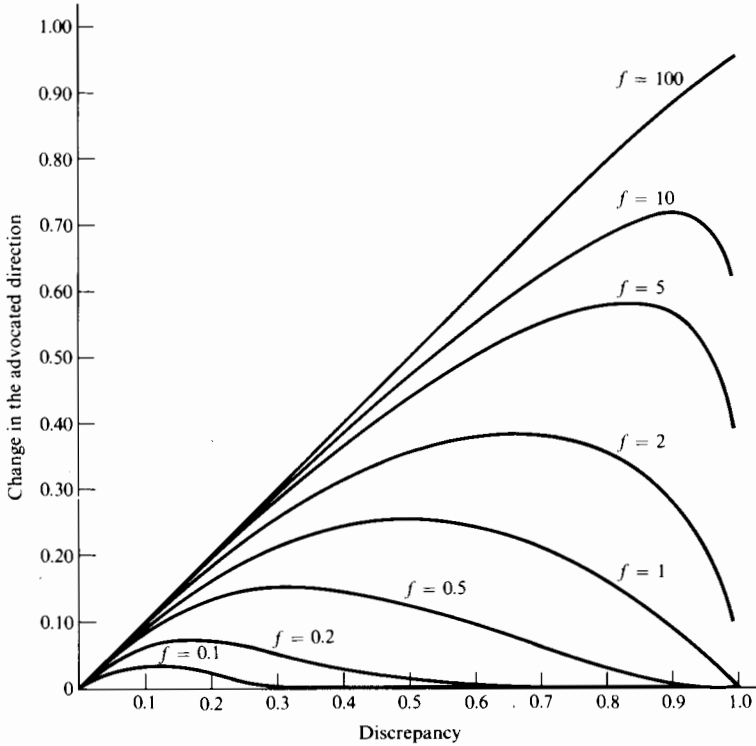


Fig. 11.9 Change in the advocated direction as a function of discrepancy and acceptance gradients with varying f values: $C = p(a)D$.

effects on probability of acceptance. We can now see that this is even more obvious in the case of change. Even if a manipulation does have a systematic effect on $p(a)$, it may or may not influence amount of change since change also depends on discrepancy.

Readers familiar with integration theory (discussed in Chapter 6) may detect the possibility of submitting the persuasion process to a treatment that differs from the approach taken here. It might be argued that the receiver's postexposure belief (P_{r1}) is a weighted linear function of his preexposure belief (P_{r0}) and of the source belief (P_s); that is, $P_{r1} = w_1P_{r0} + w_2P_s$. In this formulation, the weights could be interpreted as the levels of confidence with respect to the two beliefs. One way of investigating the effects of an experimental manipulation would be to assess the influence of the manipulation on the confidence levels, i.e., on the weights. To obtain estimates of the weights on the basis of the linear model, one has to assume that the weights and probabilities are independent. This assumption also implies a linear relation between discrepancy and change (i.e., between $|P_{r0} - P_s|$ and $|P_{r1} - P_{r0}|$). Our earlier discussion, however, indicated that con-

fidence in source and proximal beliefs is not independent of the probability levels of these beliefs. Further, we also argued that there should be a curvilinear relation between discrepancy and change at intermediate levels of facilitation. From our point of view, therefore, little is to be gained by use of a linear model in this area.⁶

Boomerang effects. One other problem related to change may be worth noting. So far we have discussed change only in the advocated direction. Some studies, however, have reported "boomerang effects," i.e., shifts in the opposite direction. Findings of this kind appear to be inconsistent with our model since a significant change in the direction opposite to that advocated would imply a negative probability of accepting the source belief. However, an apparent boomerang effect may be due to inappropriate assumptions about the receiver's perception of the source belief. For example, a source who claims that "some cigarette smokers suffer from emphysema" may be viewed as having a source probability of .70 that "some cigarette smokers suffer from emphysema." If the receiver's initial target belief is .90 that this is true, an apparent boomerang effect might be reported. This example again shows that it may often be necessary to measure the perceived source belief in order to know its discrepancy from the target belief. Indeed, if the message consisted of a single source belief and if the perceived source probability were known, we would not expect boomerang effects to occur. Evidence directly relevant to this question is not available at present.

When the situation becomes more complex, however, boomerang effects—as well as many other unexpected effects—may very well be obtained. First, if the dependent variable is a measure of anything other than a proximal belief, a change in the proximal belief (even if in the advocated direction) may have no effect on the dependent variable or may even change it in the direction opposite to that intended. The "boomerang effect" in this case may be the result of an unjustified assumption linking the proximal belief to the dependent variable. Of equal importance, a persuasive communication usually comprises more than a single source belief. Let us therefore examine the effects of including additional items of information in a message.

Manipulations of Message Content

When a message consists of more than one statement, it is often convenient to view one (or more) of the source beliefs as the communication's target(s). To increase the likelihood that a given (target) source belief will be accepted, a communicator usually includes in his message additional belief statements that

6. In our model, interactions between facilitating factors and probability levels may influence the value of the f parameter. This parameter can be estimated in different ways. For example Eq. 11.3 can be expressed in logarithmic form:

$$\log p(a) = 1/f \log (1 - D).$$

Here, $\log p(a)$ is a linear function of $\log (1 - D)$, and f can be estimated by using a least-squares procedure.

are designed to provide supportive evidence for the target belief. Adding supportive belief statements provides new information, and this new information may influence the target belief. Let us now examine how a given supportive belief statement may increase acceptance of the target belief.

Supportive belief statements are included in a message under the assumption that if the supportive beliefs are accepted, the target belief is likely to change. In Chapter 9 we discussed some evidence that *change* in one belief may produce change in another belief. However, *acceptance* of supportive beliefs may or may not produce changes in these supportive beliefs; and even when the supportive beliefs do change, there is no guarantee that the target belief will change. Change in target belief is expected only when presenting a supportive belief produces a *change* in that supportive belief, when there is a probabilistic relation between supportive and target beliefs, and when there are no unexpected impact effects on relevant external beliefs.⁷

One effect of introducing supportive beliefs, then, may be to change the receiver's target probability even prior to the presentation of the (target) source belief. Consider a person with an initial probability of .40 that "the President is seriously ill." In a persuasive communication directed at this belief, the communicator may provide supportive evidence by arguing that "the President has not attended any diplomatic receptions for the last three months." Even prior to presentation of the source belief that "the President is seriously ill," acceptance of this supportive belief may itself lead the receiver to infer that the President must be seriously ill, raising his (target) probability to .70, say.

Another possible effect of introducing a supportive belief statement may be to influence the perceived source belief. If exposed only to the statement "the President is seriously ill," the receiver may estimate the source probability to be .70. After presentation of the supportive belief, his estimate of the source probability may increase to .80. In order to understand the effects of presenting a supportive belief on acceptance of a target belief statement, one must take into consideration the influence of supportive evidence on the receiver's target belief, as well as on the receiver's perception of the source belief. Specifically, presenting a supportive belief may affect the discrepancy between the source's and the receiver's probabilities that exists at the time of exposure to the target belief statement. In the example above, the initial discrepancy was .30 ($D = |p_s - p_r| = .70 - .40$). After presentation of the supportive belief, the discrepancy was reduced to $|.80 - .70| = .10$.

In addition, by changing the receiver's target probability from .40 to .70, the supportive belief may also have influenced the overall level of facilitation. For example, the receiver may be more certain of his new probability than he was of his initial probability. The amount of additional change produced by presenting

7. Even without change in supportive beliefs, presenting the supportive evidence may change the target belief by strengthening the perceived relations between supportive and target beliefs.

the target belief statement following the supportive belief will depend on the new levels of discrepancy and facilitation. Since a given belief may be supportive of one target belief but not another, its effects on acceptance of different target beliefs will be inconsistent. Similarly, when different belief statements are used to support the same target belief, the perceived relations between supportive and target beliefs may differ, again leading to inconsistent effects on probability of acceptance.

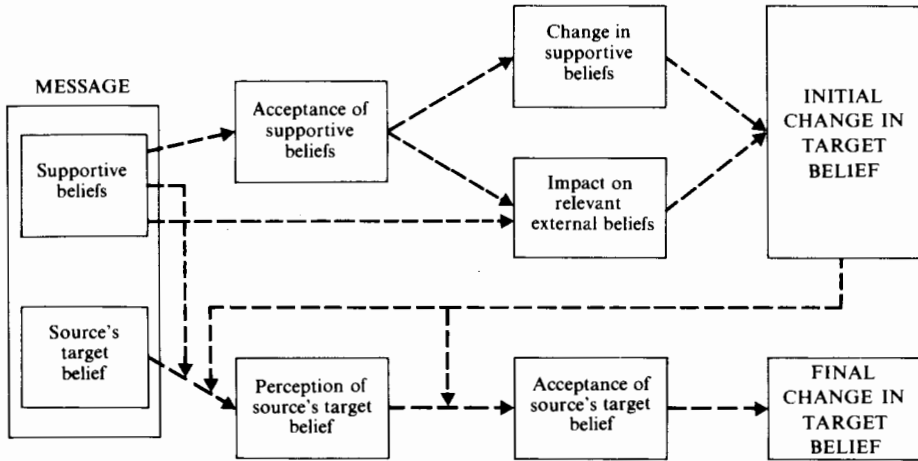


Fig. 11.10 Effects of supportive beliefs on change in a target belief.

This discussion is summarized in Fig. 11.10. Note that inclusion of supportive evidence in a message may have a variety of effects on acceptance of a target belief statement and on changes in the receiver's corresponding target belief. Attention has usually not been paid to the effects of presenting supportive arguments as such. Instead, investigators have often compared the effectiveness of different *types* of arguments by varying the nature of the supportive beliefs. However, we must recognize that message manipulations of this kind also affect the information to which receivers are exposed.⁸ A "logical" or "rational" message involves different kinds of arguments than does an "emotional" message; a communication designed to produce a high degree of anxiety differs in content from one designed to create a low degree of anxiety, etc.⁹

8. One kind of message manipulation which does not affect message content is the order in which different arguments appear in the message. We have discussed order effects in the context of attitude formation (see Chapter 6), and we shall therefore disregard this message factor here.

9. By way of comparison, the exact same message can usually be attributed to sources varying in credibility or other characteristics; receivers of high and low self-esteem or of high and low intelligence can be exposed to the same information; and subjects can read or listen to identical arguments. When comparisons are made between a visual and an auditory channel, however, different information may again be involved.

We can thus see that message manipulations, in addition to any other effects, may have a direct influence on the content of the persuasive communication itself. It follows that the effects of a given message factor on persuasion cannot be unambiguously attributed to that factor alone; instead, they may be due to differences in information given to the receivers. For example, if a high-fear appeal was found to produce more (or less) change in a dependent variable than a low-fear appeal, the difference could be due to differences in anxiety or to differences in message content. It should be clear that, even more than for other kinds of manipulations, variations in message content cannot be expected to have any systematic effects on acceptance of source beliefs or change in target beliefs.

Figure 11.11 summarizes our discussion of the persuasive communication process. The reader may note that this diagram is essentially the same as Figs. 9.5 and 10.1, except that the subject is now the persuasive communication strategy. The heavy arrow indicates that message manipulations directly influence the nature of the persuasive communication: Such manipulations may at the same time influence characteristics of the source, channel, or receiver, as indicated by the broken arrow. For example, a message that presents a logical sequence of arguments may enhance the perceived credibility of the source. Similarly, inclusion of visual material in a message not only adds new information but also involves a manipulation of channel characteristics. Moreover, it may affect receivers by increasing their anxiety, interest, or involvement. Since message manipulations have

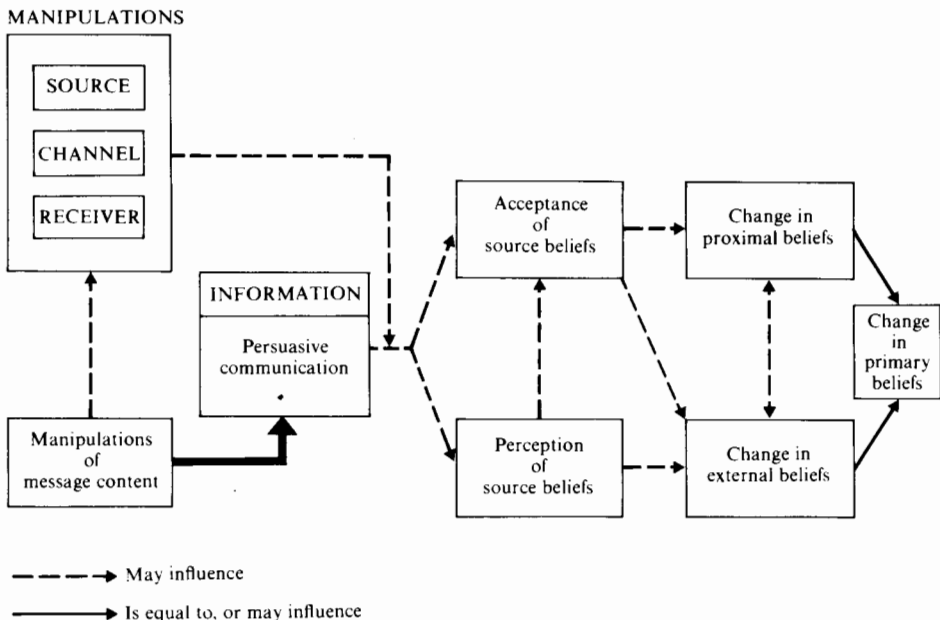


Fig. 11.11 Schematic presentation of persuasive communication process.

a direct effect on the information presented in the persuasive communication, they may influence the perception of source beliefs (see Fig. 11.10).

Noninformational manipulations of source, channel, and receiver variables can also influence perception of source beliefs as well as their acceptance. Perception and acceptance of the various source beliefs may produce changes in corresponding proximal beliefs and in relevant external beliefs. A proximal or external belief may itself constitute a primary belief, or it may be related to a primary belief. Change in proximal or relevant external beliefs may thus influence primary beliefs. Finally, in Chapter 9 we saw that different processes intervene between change in primary beliefs and change in different dependent variables.

In conclusion, our discussion indicates that many steps intervene between a given source, channel, audience, or message manipulation and change in a dependent variable. Without a consideration of these intervening processes it is impossible to understand the effects of such a manipulation on change in a belief, attitude, intention, or behavior. Further, given the complexity of the persuasion process, it is unlikely that any manipulation will have a consistent effect on change in a given dependent variable.

A COMPARISON OF THE TWO APPROACHES TO PERSUASION

It may be instructive to compare our model of the persuasion process with the traditional approach to communication and persuasion. According to the traditional approach, the effects of a persuasive communication on any dependent variable depend on reception of the message content and acceptance of (or yielding to) what is comprehended. Manipulations of source, message, channel, or receiver variables are expected to influence what is received and the extent to which this information is accepted. This approach suggests a research strategy in which some independent variable is manipulated, receivers are exposed to a persuasive communication, and change in some dependent variable is measured. Although most studies obtain a measure of reception, acceptance is not directly assessed. Instead, the assumption is that differences in the dependent variable that go beyond differences in reception must be due to differences in acceptance or yielding.

Our approach suggests that a persuasive communication is directed at one or more proximal beliefs, and via a series of intervening processes, changes in these proximal beliefs may produce change in the dependent variable. The crucial question concerns the factors that are responsible for change in the proximal beliefs. According to our approach, changes in proximal beliefs are determined primarily by the acceptance of source beliefs. Probability of acceptance is a function of two major factors: discrepancy between source and proximal beliefs and overall facilitation. Other things being equal, probability of acceptance decreases with discrepancy and increases with facilitation. For a number of reasons, no simple one-to-one relation between a manipulation and probability of acceptance (let alone any other dependent variable) is expected. First, the effect of the ma-

nipulation on overall facilitation will depend on the initial level of facilitation present in the situation. Second, the effect of variation in facilitation depends on the level of discrepancy, and vice versa. Our approach thus differs from the traditional analysis of persuasive communication in its treatment of acceptance, the role of reception, the expected effects of experimental manipulations, and concern with the nature of the dependent variable.

Acceptance. The term "acceptance" does not have the same significance in the two approaches. Within our model of the persuasion process, acceptance is viewed as equivalent to belief strength. That is, a person's acceptance of a belief is indicated by his subjective probability that the object-attribute relation in question is true. Thus, a person who has a subjective probability of .20 that "the President is ill" accepts this belief at a .20 level. This belief strength should not be confused with probability of acceptance. Depending on the perceived discrepancy and the presence of facilitating factors, the person may have a high, intermediate, or low probability of accepting a communicator's statement that "the President is ill." If probability of acceptance is high, after exposure to the message, the receiver may increase his subjective probability to .60, thus showing a new level of acceptance or belief strength.

A receiver may accept (i.e., believe) all, some, or none of the source beliefs contained in a persuasive communication. This is true whether or not the person is actually exposed to the source beliefs. Thus, even though a person may not have received the message stating that the President is ill, he may nevertheless hold this belief with a high probability and consequently accept it. Acceptance of any belief statement contained in a message can therefore be directly assessed by using some measure of belief strength. This measure of acceptance will remain the same, irrespective of the dependent variable under consideration. That is, acceptance of message content can be measured independently of assessing change in some dependent belief, attitude, intention, or behavior.

By way of contrast, we noted that acceptance is not directly assessed in the traditional approach. Instead, when reception remains constant, differences in the dependent variable are attributed to differences in acceptance or yielding. This implies that acceptance must refer to all processes involved in the persuasion process, with the exception of reception. From our point of view, then, acceptance in the traditional sense includes acceptance of target and supportive source beliefs, the relation between supportive and target beliefs, impact effects of the message, and the relation of all these effects to primary beliefs and the dependent variable.

Used in this way, the term "acceptance" does not contribute to our understanding of the persuasion process. For example, assume that the dependent variable does not correspond to a belief statement contained in the message but is instead some other belief, attitude, or intention. According to the traditional approach, change in any of these dependent variables is due to the degree to which the message was received and the degree to which the information received was accepted. Since we can assume that reception was the same, irrespective of the de-

pendent variable, we can see that acceptance will take on different values (and thus must mean different things) whenever different dependent variables show different amounts of change. If the dependent belief changes a great deal, the attitude changes slightly, and no change in intention is observed, the traditional approach must assume that there is considerable, moderate, or no acceptance of the message received, depending on the respective dependent variable. Given that the message was identical in all cases, this approach can produce only inconsistent and ambiguous conclusions. We will reserve the term *acceptance* to refer only to acceptance of belief statements contained in the message, and following McGuire (1968), the term *yielding* will be used to refer to "acceptance" in the traditional sense.

Reception. The traditional approach has expended considerable effort to determine whether the statements contained in a message were received while at the same time paying little attention to acceptance of these statements. Further, as mentioned in Chapter 5, it is often impossible to tell whether a given learning or reception test is a measure of reception or acceptance. Since many "reception" tests are given in a multiple-choice or true-false format, subjects may respond either in terms of their recall of statements contained in the message (reception) or in terms of their agreement with those statements (acceptance). This ambiguity may be in part responsible for the inconsistent findings concerning the relation between reception and change in the dependent variable.

From our point of view, reception may be related to change in the dependent variable if it influences acceptance or impact effects. Indeed, we have noted that it may often be necessary to measure the receiver's perception of the source beliefs.¹⁰ Thus reception may indeed influence the extent to which source beliefs are accepted, and a relation between reception and acceptance of source belief may often be found. However, there is no necessary relation between reception and acceptance. As noted above, a person may believe the informational items contained in a message (i.e., accept the message content) even without reception. Further, a person who receives a given belief statement may not accept it. A subject may believe that the communication said "Seventy-five percent of heavy drinkers have serious marital problems," but he may not believe that this statement is true. Since, according to our model, it is the *acceptance* of belief statements that may influence a dependent variable, not their reception, there seems to be little value in continuing to rely on measures of reception as the sole basis for understanding the persuasive effects of a communication.

The dependent variable. Although the traditional approach has, at best, made a gross distinction between "attitude change" on the one hand and "action change" on the other, we have repeatedly emphasized the necessity of distinguishing between beliefs, attitudes, intentions, and behaviors. Throughout this book we have

10. This measure should be an estimate of the source probability rather than a simple measure of recall or recognition.

tried to show that different processes underlie the formation of these variables and that they are determined by different antecedents.

The purpose of any persuasive communication is to produce change in some dependent variable, whether a belief, an attitude, an intention, or a behavior. Although the investigator usually does not make them explicit, he makes several assumptions linking the content of the message to the dependent variable in question. At the most general level, the assumption is that acceptance of the source belief statements contained in the message will lead to a change in the dependent variable. It may thus be argued that a message is *effective* to the extent that the receivers accept the source beliefs it contains. Change in the dependent variable requires that a number of additional assumptions be met. These assumptions link acceptance of source beliefs to change in the dependent variable. Failure to observe the predicted change in the dependent variable does not necessarily imply that the message was ineffective or that the manipulation employed had no effect. The source belief statements may have been accepted, and the manipulation may have influenced the degree of acceptance, as expected. The failure to produce the predicted changes in the dependent variable may be due to one or more fallacious assumptions linking acceptance of source beliefs to change in the dependent variable.

Effects of experimental manipulations. Perhaps the most important difference between the traditional approach and our approach concerns the effects of experimental manipulations on persuasion. The traditional approach has assumed that it will be possible to find simple systematic relations between a given variable and persuasion (i.e., *change* in a dependent variable). Thus in the research generated by this approach, investigators typically manipulated some source, message, channel, or audience variable and examined the effect of this manipulation on change in some dependent variable. Initially they assumed that manipulating a given variable would *always* have the same effect. For example, increasing the credibility of the source was expected always to increase persuasion. Indeed, if any manipulation was found to increase persuasion in one study, the assumption was that the same manipulation would increase persuasion in any other study. It soon became obvious that such systematic relations could not be obtained; McGuire's two-factor model was one attempt to account for some of these inconsistencies. More recent research in this tradition has therefore turned to investigation of interactions between independent variables. Nevertheless, the main purpose of such studies has been to discover consistent relations between independent variables and amount of "attitude" change.

In marked contrast, our approach suggests that such relations cannot be obtained and should not be expected. At the most basic level, we have tried to show that manipulations will not have simple systematic effects on probability of acceptance. Even when the manipulation does influence probability of acceptance, it may have no consistent effects on change in proximal beliefs, since such change is also dependent on discrepancy. Consequently, no systematic changes in the

dependent variable can be expected. To be sure, an investigator usually attempts to construct messages that suggest a conclusion, attitude, or behavior that he assumes (or knows) is discrepant from the receiver's position. The problem is that the attempt to create some discrepancy is commonly concerned with the dependent variable and not with the source beliefs contained in the message. Receivers may strongly disagree with a communication's recommended action, for example, but they may have little quarrel with the source belief statements. In this case no change in proximal beliefs is to be expected, and hence the manipulation is unlikely to affect change in intention or any other dependent variable.

At a more general level, even if the manipulation does have a consistent effect on proximal beliefs, changes in these beliefs may be unrelated to changes in primary beliefs or changes in the dependent variable. The greater the number of processes intervening between proximal beliefs and dependent variable, the more difficult it will be to obtain consistent relations between independent and dependent variables.

In support of this argument, the literature on communication and persuasion reveals virtually no consistent findings concerning the effects of any given manipulation on "attitude change." For example, communicator credibility has been found to increase persuasion in some studies but not in others. Studies on such message factors as fear appeals, order of presentation, and one-sided versus two-sided messages have yielded equally inconsistent results. As we saw in Chapter 6, variations in order of presentation sometimes produce recency effects, sometimes primacy effects, and sometimes no effects at all. A high-fear message is sometimes found to increase persuasion, sometimes to decrease persuasion, and sometimes to have the same effect as a low-fear message. The results are no more consistent when individual difference variables are considered. Chronic anxiety is sometimes found to have a positive relation, sometimes a negative relation, and sometimes no relation to the amount of persuasion. Other variables, such as distracting subjects or forewarning them that they will be exposed to a persuasive appeal, have also led to inconsistent and contradictory findings.

We have suggested that these inconsistent findings are unavoidable unless more attention is paid to the nature of the dependent variable being studied, to the assumptions that link the message with the dependent measure of persuasion, to acceptance of source beliefs and change in proximal belief, and to the impact effects of the persuasive communication on external beliefs. To clarify these problems, let us consider a few studies on communication and persuasion in some detail.

DISCREPANCY

Sherif and Hovland's (1961) social judgment theory, like our approach to persuasive communication, suggests that acceptance of a message is influenced by the discrepancy between the receiver's own position and the perceived position of the communicator. In one of the first systematic investigations of opinion

change as a function of discrepancy, Hovland and Pritzker (1957) used 12 different belief statements, such as "All things considered, Washington was a greater president than Lincoln." Other statements concerned the likelihood of a cancer cure within five years, the adequacy of five hours' sleep per night, etc.

In a pretest, subjects indicated their degree of agreement with each statement on the following seven-point scale.

- _____ Agree strongly
- _____ Agree moderately
- _____ Agree slightly
- _____ Undecided
- _____ Disagree slightly
- _____ Disagree moderately
- _____ Disagree strongly

After indicating their beliefs, subjects were asked, "Of the following authorities, which group's opinion would you respect most in reference to this question?" The names of three or four possible authority groups relevant to the particular item were then listed. For the item concerning Washington and Lincoln, for example, teachers, historians, and parents were listed as possible referents.

Approximately one month later, subjects were again shown the 12 belief statements, this time accompanied by an indication of what was said to be the belief of the reference group selected by the subject as most authoritative for the item. In reality, these source beliefs were varied according to the subject's proximal belief. On each item, one-third of the subjects were given a source belief with an average difference of about 1.3 scale intervals from their own beliefs; for another third of the subjects, source and proximal beliefs had an average difference of about 2.6 scale intervals; and for the final third of the subjects, the discrepancy was about 3.9 intervals. For example, a subject in the largest discrepancy condition who initially indicated strong agreement with a given item was told that his most authoritative reference group disagreed slightly. After receiving this information, subjects were asked to restate their beliefs, using the same seven-point scale as on the pretest.

The results of the study are presented in Fig. 11.12, which shows the relation between discrepancy and the amount of change from pretest to posttest in the direction of the belief attributed to the reference group. Note that belief change increased directly with the amount of discrepancy. Other studies, however, have not always found increased "attitude" change with increases in discrepancy. In fact, we saw that according to social judgment theory, amount of change should *decrease* with discrepancy when the communicator's position is perceived to fall within the latitude of rejection.

To test this hypothesis, Hovland, Harvey, and Sherif (1957) conducted a study in Oklahoma in which they attempted to influence attitudes toward prohibi-

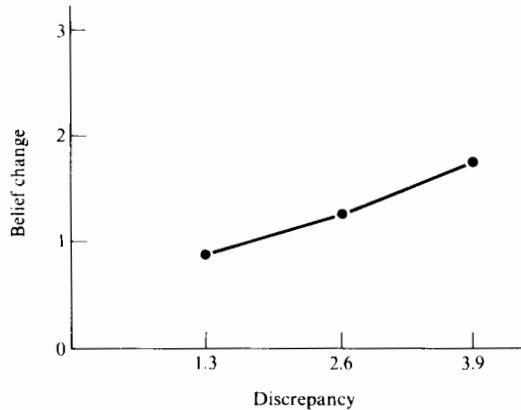


Fig. 11.12 Effect of discrepancy on belief change.
(Adapted from Hovland and Pritzker, 1957.)

tion of alcohol. This issue was selected because a local referendum to eliminate prohibition had just failed by a narrow margin. Subjects were chosen to represent an extreme dry position (members of Women's Christian Temperance Union groups, the Salvation Army, and students of strict denominational colleges), an extreme wet position (25 persons with known antiprohibition positions), and a moderate position (a sample of college students).

The attitudinal dimension varied from pro- to antiprohibition, identified by the following nine positions.

1. Since alcohol is the curse of mankind, the sale and use of alcohol, including light beer, should be completely abolished.
2. Since alcohol is the main cause of corruption in public life, lawlessness, and immoral acts, its sale and use should be prohibited.
3. Since it is hard to stop at a reasonable moderation point in the use of alcohol, it is safer to discourage its use.
4. Alcohol should not be sold or used except as a remedy for snake bites, cramps, colds, fainting, and other aches and pains.
5. The arguments in favor of and against the sale and use of alcohol are nearly equal.
6. The sale of alcohol should be so regulated that it is available in limited quantities for special occasions.
7. The sale and use of alcohol should be permitted with proper state controls, so that the revenue from taxation may be used for the betterment of schools, highways, and other state institutions.

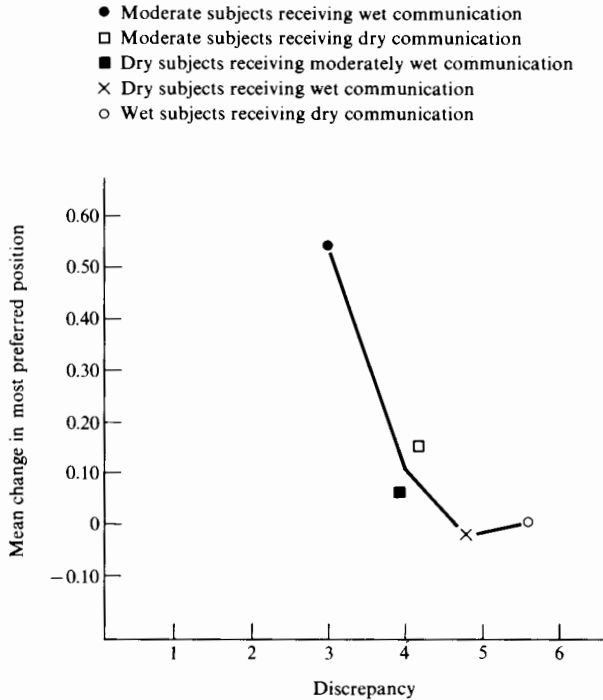
8. Since prohibition is a major cause of corruption in public life, lawlessness, immoral acts, and juvenile delinquency, the sale and use of alcohol should be legalized.
9. It has become evident that man cannot get along without alcohol; therefore there should be no restriction whatsoever on its sale and use.

On a pretest, all subjects were asked to indicate the one statement that came closest to their own point of view on the topic (i.e., their most preferred positions).¹¹ From one to three weeks later, subjects were exposed to one of three communications from an unidentified communicator. The three messages were of equal length, each requiring approximately 15 minutes for delivery. One communication supported an extremely dry position (represented by statement 2), the second a moderately wet position (statement 6), and the third an extremely wet position (statement 8). Following the communications, the questionnaire used on the pretest was again administered. Change in the most preferred position served as a measure of persuasion.

Changes in attitude as a function of discrepancy are presented in Fig. 11.13. Consistent with expectations, moderately discrepant messages produced more change than highly discrepant messages. Note, however, that in only one condition (moderate subjects receiving the wet communication) was the change significant, and even here it was quite small (.55 units out of the possible 2.9 units). The other four conditions showed no significant change, and they did not differ significantly from one another.

Although these results are consistent with the predictions derived from social judgment theory, the authors noted that the earlier study by Hovland and Pritzker (1957) reported findings that appeared to contradict the theory since in that study, attitude change increased even at maximal levels of discrepancy (see Fig. 11.12). They suggested two factors that might account for these conflicting findings: communicator credibility and involvement with the issue. Hovland and Pritzker attributed the message to reference groups selected by the subjects themselves as most authoritative on the issue. In other words, the source was highly credible. In contrast, the communicator in the Hovland, Harvey, and Sherif study was "an anonymous individual whose acceptability might be determined by the stand taken by him . . . if he differed greatly he would be regarded as incompetent and biased and fail to influence the subject's opinion" (Hovland, Harvey, and Sherif, 1957, p. 251). Thus, although a highly credible communicator may produce a great amount of change at a high discrepancy level, such a result is assumed to be unlikely when communicator credibility is low. In addition, subjects in the Hovland and Pritzker study were assumed to have been less involved in the issues than subjects in the prohibition study. According to social judgment the-

11. Latitudes of acceptance and rejection were also assessed.



Note: Discrepancy is the absolute difference between average initial positions of receivers and position advocated by message.

Fig. 11.13 Change in most preferred position as a function of discrepancy in Hovland, Harvey, and Sherif (1957) study.

ory, a highly discrepant position is likely to fall within the latitude of rejection for involved subjects, but that need not be so for uninvolved receivers.

These considerations suggest that the effect of discrepancy on opinion change should interact with involvement and communicator credibility. The difference in opinion change under high and low involvement should be greater when discrepancy is high than when it is low. Similarly, a credibility manipulation should have a stronger effect on amount of change at high than at low discrepancy levels. A number of studies have attempted to test these predicted interaction effects. Generally speaking, the research findings have been highly inconsistent. With respect to involvement, for example, Rhine and Severance (1970) obtained the predicted interaction with discrepancy, whereas Rule and Renner (1968) failed to find a significant interaction. (For a discussion of the effects of involvement, see Kiesler, Collins and Miller, 1969, pp. 278–292.)

Studying the effects of communicator credibility, Aronson, Turner, and Carlsmith (1963) and Bochner and Insko (1966) found the expected interaction with discrepancy. In contrast, Rhine and Severance (1970) and Eagly (1974) reported no significant interactions between discrepancy and communicator credibility. To illustrate these conflicting findings, consider first the study by Bochner and Insko (1966). These investigators prepared a three-page essay "arguing, on the grounds of health and efficiency, for a reduction in the number of hours spent in sleep per night. . . . Discrepancy was manipulated by inserting the recommended hours of sleep (0, 1, 2, 3, 4, 5, 6, 7, or 8) into the persuasive communication. The communication was identical at all discrepancy levels except for the hours recommendation." (pp. 615–616) Since an independent sample of subjects had indicated that approximately 8 hours of sleep were required, the experimental manipulation was viewed as creating discrepancies ranging from 0 to 8 hours. In addition to this discrepancy manipulation, source credibility was varied by attributing the communication to either "Sir John Eccles, Nobel prize winning physiologist" or to "Mr. Harry J. Olsen, director of the Fort Worth Y.M.C.A." Following the communication, subjects were asked to indicate the number of hours of sleep per night the average young adult should get for "maximum health and well being."

Figure 11.14 shows the mean reduction (from 8 hours) in the number of required hours of sleep produced by high and low credibility communicators at different levels of discrepancy. As might be expected on the basis of social judgment

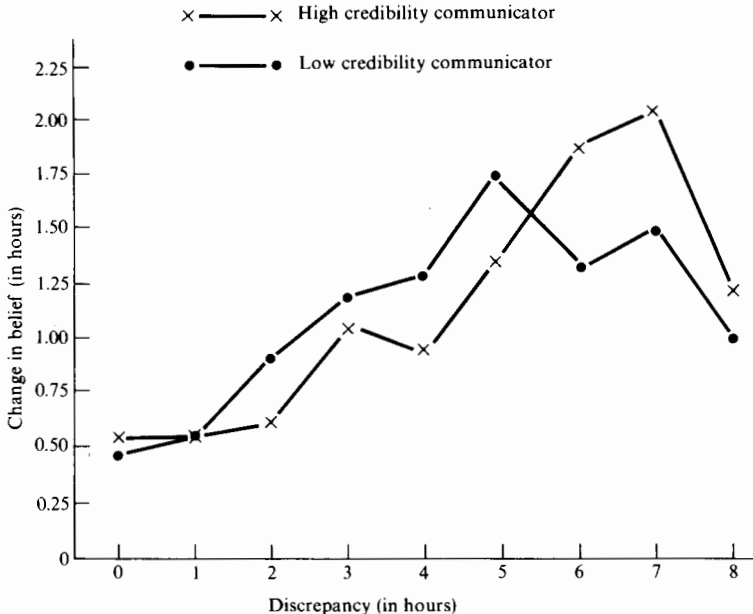


Fig. 11.14 Reduction in number of required hours of sleep as a function of discrepancy. (Adapted from Bochner and Insko, 1966.)

theory, amount of change tended to increase up to a certain level of discrepancy, and to decrease after that level. More important, the point of maximal change occurred at a lower discrepancy level for the low- than for the high-credibility communicator. Since the differences between communicators were significant only at 6- and 7-hour discrepancies, Bochner and Insko concluded that the low- and high-credibility sources did not differ at low or moderate discrepancy levels, but that the high-credibility source was superior at extreme discrepancies.¹²

Unfortunately, Eagly (1974) was unable to replicate these findings in a series of three experiments primarily concerned with the effects of message comprehensibility. Like Bochner and Insko, she constructed a message designed to lower estimates of the required hours of sleep from 8 to 6, 4, or 2. In one experiment, the persuasive communication was attributed to a physiological psychologist doing research on sleep. Following exposure to the persuasive message, subjects indicated how many hours of sleep they "believed desirable for the average adult for maximum happiness, well being, and success in life." Although the message lowered the estimates significantly, the amount of change was unaffected by discrepancy. In another study, Eagly varied communicator credibility in addition to discrepancy. The persuasive communication advocated either 6 hours (low discrepancy) or 1 hour (high discrepancy) of sleep. In one condition it was attributed to the same source as in the previous study (high credibility), whereas in a second condition, it was attributed to a freshman psychology student who had researched the topic and written the lecture as part of a project for his introductory psychology class. The dependent measure in this study was an estimate of the number of hours of sleep the receiver thought *he* (rather than the average adult) should get. This measure was again found to be unaffected by discrepancy size. Further, credibility also had no significant effect on amount of change, nor did it interact with discrepancy.

Analysis of Discrepancy Research

According to our approach, the relation between discrepancy and change depends on probability of acceptance. For any given level of overall facilitation, there is one—and only one—acceptance gradient describing the relation between discrepancy and probability of acceptance (see Fig. 11.9). Generally speaking, unless facilitation is either very high or very low, probability of acceptance will tend to decrease with discrepancy. Whenever facilitation differs from one discrepancy level to another, different acceptance gradients may be operative at different levels of discrepancy.

As an example, consider the Hovland and Pritzker (1957) study described

12. At intermediate levels of discrepancy, the low-credibility source tended to be more effective than the highly credible source. These results were not predicted, and they appear to contradict the widely accepted notion that a high-credibility communicator should always be more effective than a communicator with medium or low credibility.

above. From our point of view this study is quite easy to interpret. The persuasive communication consisted of a single source belief, and the dependent variable was change in the corresponding proximal belief. The investigators attempted to establish a high degree of facilitation by attributing the source belief to a highly credible authority group. It may thus be expected that the acceptance gradient in this study would have tended to decrease only slightly with increasing discrepancy.

However, two difficulties related to facilitation are worth noting. First, involvement and confidence may have differed somewhat for the 12 beliefs employed in the study. Second, subjects varied in their initial target probabilities on each issue; discrepancy was manipulated by attributing varying probabilities to the appropriate reference group. Although this manipulation did create different discrepancy levels, the confidence associated with the proximal belief may have varied for different subjects at a given discrepancy level. For example, it is possible that at any given level of discrepancy, subjects who held initially moderate positions were less confident (and thus may have had a higher level of facilitation) than subjects whose initial positions were extreme. Fortunately, the investigators were careful to avoid confounding discrepancy with these potential differences in facilitation by essentially randomizing items and initial positions across the three discrepancy levels.

In sum, facilitation should have been high at all levels of discrepancy. It follows that probability of acceptance [$p(a)$] should have been relatively high irrespective of discrepancy level (D) and should have decreased only gradually with discrepancy. Since change in the advocated direction (C) is a function of $p(a)$ and D [that is, $C = p(a)D$], probability of acceptance can be estimated as follows:

$$p(a) = C/D. \quad (11.8)$$

Using Eq. 11.8 and the data supplied by Hovland and Pritzker, one obtains estimates for $p(a)$ of .68, .50, and .46 at low, medium, and high discrepancies, respectively. These levels of $p(a)$ are consistent with our discussion above.

Although the other studies concerning effects of discrepancy discussed earlier appear on the surface to be quite similar to the Hovland and Pritzker study, there are in fact a number of important differences. Perhaps of greatest importance is the question of correspondence between target belief and dependent variable. Consider, for example, the experiment reported by Bochner and Insko (1966), who attempted to persuade subjects that the average young adult needs a certain number of hours of sleep. In one condition the target source belief (which was part of the message) was that "the average young adult needs 5 hours of sleep"; in another condition it was that "the average young adult needs 2 hours of sleep." From our point of view, acceptance of these source beliefs may produce changes in the corresponding proximal beliefs. The most directly relevant dependent variable would be a measure of the receiver's probability that "the average young adult needs 5 (or 2) hours of sleep." Instead, the investigators asked subjects to indicate the number of hours of sleep they thought the average young adult should get (on a scale ranging from 0 to 10 hours).

In Chapter 3 we distinguished between belief position and belief strength. We noted that a subjective probability (belief strength) is associated with every position on a given content dimension. In terms of this distinction, the measure used by Bochner and Insko assesses the subject's *position* on the content dimension, rather than his belief strength with respect to that position (or any other position on the dimension). We must now note that change in the subjective probability associated with a given position (i.e., change in a proximal belief) may or may not influence the receiver's position on the content dimension. For example, a persuasive communication advocating 5 hours of sleep may in fact increase the subject's proximal probability that "the average young adult needs 5 hours of sleep" from, say, .20 to .40. This change may also result in a reduction from .90 to .70 in the subjective probability associated with the receiver's own position that the average young adult needs 8 hours of sleep. The receiver's position on the content dimension is nonetheless likely to remain the same despite the change in proximal probability. Indeed, the simplest way of viewing this issue is to treat each position on the content dimension as a different belief. As we saw in Chapter 9, change in one belief may or may not produce change in another belief, depending on the probabilistic relation between the beliefs. It follows that changes in the dependent variable measured by Bochner and Insko (as well as in the studies by Hovland, Harvey, and Sherif, 1957, and by Eagly, 1974) do not represent changes in proximal beliefs but rather are the result of impact effects produced by changes in the proximal beliefs.

To be sure, changes in subjective probabilities associated with a given position on a content dimension may sometimes be related to shifts in positions along that dimension.¹³ This is particularly likely to be so whenever the content positions are to some extent mutually exclusive and when they form a unidimensional scale. Although such quantitative dimensions as number of hours of sleep or weight of an object appear to meet these conditions, the unidimensionality of a set of non-quantitative positions, such as those used by Hovland, Harvey, and Sherif (1957), must be established on the basis of one of the standard scaling techniques (see Chapter 3). However, even when the positions can be assumed (or are known) to form a unidimensional scale, the relation between changes in subjective probabilities at a given position and shifts from one position to another may be low. Further, if the proximal belief and the dependent variable represent markedly different content dimensions, the relation is likely to break down completely. For example, in one of Eagly's studies the proximal belief was that "the average adult needs 6 (or 1) hours of sleep," whereas the dependent variable was the receiver's estimate of the number of hours of sleep *he* should get. A dependent variable even further removed from the proximal belief might be a question such as "How many hours of sleep do you intend to get tonight?"

13. Wyer (1973) has shown that a subject's position on a content dimension is related to the expected value of his subjective probability distribution across the different positions on the content dimension.

We can now see that whereas Hovland and Pritzker manipulated discrepancy by varying the source probabilities associated with a *given* position, the investigators in the remaining studies manipulated discrepancy by varying the *position* of the source belief. From our point of view, whenever positions are varied, different proximal probabilities are involved, and change can be directly measured only in terms of these proximal probabilities. Thus the message might advocate 2, 4, or 6 hours of sleep, and its direct effects would be reflected by changes in the subjective probabilities associated with 2, 4, or 6 hours of sleep, respectively. Note, however, that in such a research paradigm, discrepancy would be confounded with facilitation. As noted earlier, receivers with different proximal beliefs may differ in terms of their confidence, and thus differences in facilitation may be involved. For example, a person who receives a message advocating 2 hours of sleep may have an initial proximal probability of .10, whereas a person exposed to the 6-hours message may have an initial proximal probability of .60. The first person may be more certain of his proximal probability than the second.

This example also demonstrates that the first person, who can move from .10 to 1.00 (complete acceptance), can change potentially more than the second person, who can change only by .40 units in the advocated direction from (.60 to 1.00).¹⁴ Note that varying discrepancy in terms of positions is not the same as varying it in terms of the distance between source and proximal probabilities. Although in our hypothetical example, the larger discrepancy in positions was associated with the larger discrepancy between source and proximal beliefs, this need not be so. For example, the proximal beliefs of receivers with respect to 3, 2, and 1 hours of sleep might all be zero. In this case, although position discrepancy increases for messages advocating these different quantities of sleep, discrepancy between source and proximal beliefs remains the same.

In sum, discrepancy defined in terms of positions confounds discrepancy size with facilitation. Further, position discrepancy may be unrelated to discrepancy between source and proximal beliefs. Since a systematic relation between discrepancy and probability of acceptance (or change) is expected only when discrepancy is defined in terms of the distance between source and proximal probabilities and when facilitation is constant across these discrepancy levels, results with respect to position discrepancy are likely to be inconsistent. These problems may be responsible for some of the apparently contradictory findings in this area of research.

One way of avoiding these problems is to focus on a given position on the content dimension and to measure source and proximal beliefs with respect to that

14. Eagly (1974) essentially obtained a measure of initial proximal probabilities with respect to 1 and 6 hours of sleep. Consistent with the arguments above, these measures indicated that potential amount of change was .51 and .35, respectively. Computation of probability of acceptance shows the expected decrease with (estimated) discrepancy. In the 6-hours condition, $p(a) = .24$, and in the 1-hour condition, $p(a) = .08$.

position. This procedure was followed by Hovland and Pritzker. When the message is advocating different positions in different conditions, as in the hours of sleep experiments, the following procedure may be adopted. Subjects are first asked to indicate their probabilities with respect to a given position, such as 8 hours of sleep. They are then exposed to a source of belief advocating 7, 6, 5, 4, 3, 2, or 1 hours of sleep, and their probabilities with respect to 8 hours of sleep are again assessed. In addition, subjects in each condition are asked to estimate the communicator's probability that the average adult needs 8 hours of sleep. Thus proximal and perceived source probabilities correspond to the same position, and discrepancy can be determined. If one assumes a given level of overall facilitation, probability of acceptance and amount of change in proximal probabilities should be systematically related to this discrepancy.

So far we have considered only the problems concerning the relations between source beliefs, proximal beliefs, and dependent variable. Another complicating factor in the studies manipulating position discrepancy is that, unlike Hovland and Pritzker, the investigators introduced beliefs in support of the advocated position. In the Hovland, Harvey, and Sherif study, different source beliefs were used to support different positions on the pro-antiprohibition dimension, and the same source beliefs served as evidence for each of the different numbers of hours of sleep advocated in the remaining two studies. We have seen earlier how the introduction of supportive beliefs can lead to inconsistent findings concerning acceptance of a target source belief and change in the corresponding target belief. The conflicting findings reported by Bochner and Insko (1966) and by Eagly (1974) could be due to the fact that different sets of supportive arguments were used in these studies. Even when the same set of supportive arguments are used, however, these statements may be more supportive of one position than another. It follows that different amounts of change may occur at different positions, irrespective of the discrepancy involved, and thus no systematic relation between discrepancy and change can be expected.

In conclusion, despite their apparent similarities, studies investigating effects of discrepancy differ in a number of important respects. These differences in factors such as correspondence between source, proximal, and target beliefs and the dependent variable, use of different supportive arguments, the manipulation of discrepancy, etc., reduce the comparability of the studies and make apparently inconsistent findings unavoidable.

FACILITATING FACTORS

Most research on communication and persuasion has been concerned with the effects of various manipulations in source, message, or receiver on the amount of change produced by a persuasive message. In our terminology, these studies attempt to manipulate potential facilitating factors. In the following pages we shall examine a few representative studies in order to see why these attempts have been largely unsuccessful in finding manipulations that will *consistently* facilitate change

in the dependent variable. Let us first examine some data on the effects of communicator credibility, a potential facilitating factor which is usually credited with producing the most consistent results of any manipulation designed to affect persuasion.

Communicator Credibility

In one of the first systematic studies on communication and persuasion, Hovland and Weiss (1951) examined the effects of communicator credibility on various responses of the audience. Opinions of college students concerning a variety of issues, as well as their judgments as to the trustworthiness of a long list of sources, were assessed in a pretest. Among the opinion items were the following four questions:

1. *Antihistamine drugs.* Should the antihistamine drugs continue to be sold without a doctor's prescription?
2. *Atomic submarines.* Can a practicable atomic-powered submarine be built at the present time?
3. *Steel shortage.* Is the steel industry to blame for the current shortage of steel?
4. *Future of movie theaters.* As the result of TV, will there be a decrease in the number of movie theaters in operation by 1955?

Subjects in the experiment read four different communications, one for each topic; the communications, represented as excerpts from magazine articles, took either an affirmative or a negative position. Each message was attributed to a high-credibility source for half of the subjects and to a low-credibility source for the other half. For example, the messages concerning the practicability of atomic submarines were attributed either to Robert Oppenheimer (high credibility) or to Pravda (low credibility). After reading the four articles, subjects were asked to indicate whether they considered each author fair in his presentation, to indicate whether they considered his conclusion justified by the facts he presented, and to restate their opinions on the four issues. In addition, subjects were given a "fact-quiz" consisting of 16 multiple-choice questions, four on each content area.

The results for these four dependent variables are presented in Table 11.2. Opinion change for high- and low-credibility communicators is shown in the first column. The investigators obtained a "net change" index by computing the percentage of subjects changing their opinions in the direction advocated in the communication minus the percentage of subjects changing their opinions in the opposite direction. On the average, the high-credibility communicator produced a greater net opinion change (23.0 percent) than did the low-credibility communicator (6.6 percent).

According to the traditional approach, this difference must be due to differences in reception or yielding. The multiple-choice "fact-quiz" was included in order to test whether there were any differences in reception. The results for the

Table 11.2 Effects of Communicator Credibility (Adapted from Hovland and Weiss, 1951)

Topic	Dependent variables							
	Net opinion change, %		Number of correct items on fact-quiz		"Fair" judgments, %		"Conclusion justified" judgments, %	
	High credibility	Low credibility	High credibility	Low credibility	High credibility	Low credibility	High credibility	Low credibility
Antihistamines	22.6	13.3	3.42	3.17	64.5	59.3	67.7	51.8
Atomic submarines	36.0*	0.0	3.48	3.72	96.0*	69.4	80.0*	44.4
Steel shortage	22.9*	-3.8	3.34	2.73	24.3	19.2	32.4	26.9
Future of movies	12.9	16.7	3.23	3.27	93.1*	63.7	58.6	42.4
Mean	23.0*	6.6	3.36	3.26	65.6	54.9	58.2*	41.8

* Significant difference between high and low credibility sources

multiple-choice test are shown in the second column of Table 11.2. On the average, the difference in reception was found to be nonsignificant (3.36 versus 3.26 items correctly received), and thus Hovland and Weiss concluded that the difference in opinion change was the result of greater yielding to the high- than to the low-credibility communicator.

Although yielding was not directly measured, results for the remaining two items were taken as providing some support for this argument. Columns 3 and 4 of Table 11.2 show that in comparison with the low-credibility source, the high-credibility source tended to be judged as more fair in his presentation of the facts, and his conclusion was seen as more justified by the facts he presented. These differences emerged despite the fact that the same messages were attributed to high- and low-credibility sources. Unfortunately, tests of significance were not reported.

This study has usually been taken as evidence that a message attributed to a high-credibility communicator produces more "attitude change" than does a message attributed to a low-credibility communicator. Further, the study has been taken as evidence that this effect is due to differences in yielding rather than reception. Closer examination of the data presented in Table 11.2, however, makes it clear that these conclusions are not warranted. First, the effect of communicator credibility on opinion change was not the same for the four different topics. A reanalysis of the data shows that although the high-credibility communicator produced greater opinion change than the low-credibility communicator on three topics, only two of the differences were significant. Further, for the fourth topic (the future of movie theaters), a nonsignificant difference in the opposite direction was observed, such that the low-credibility source tended to produce more change than did the high-credibility source.

A second problem related to the Hovland and Weiss (1951) study concerns the measure of reception. According to the authors, that test was designed to assess differences "in the amount of factual information acquired by the subjects" (p. 641). As in many other studies, it is not clear whether this measure reflects recognition of four belief statements contained in each message or acceptance of the belief statements. Assuming that this multiple-choice test represents a measure of reception, it is clear that reception is unrelated to opinion change. If this test is interpreted as a measure of acceptance, the results constitute evidence that there may be little relation between acceptance of beliefs contained in the message and opinion change. The finding reported by Hovland and Weiss can therefore be interpreted as demonstrating that communicator credibility has no effect on acceptance of belief statements, rather than as demonstrating that communicator credibility does not influence reception of the statements.

The data presented in Table 11.2 also show that the indirect measures of yielding (columns 3 and 4) cannot account for the differences in opinion change. Note that one of the largest differences in perceived fairness (29.4 percent) was found with respect to the future of movie theaters, the topic for which opinion change was in the opposite direction. Similarly, the smallest difference in perceived

justification of the conclusion (5.5 percent) was associated with one of the largest differences in opinion change (steel shortage). Moreover, a reanalysis of the data shows that only a few of the differences in columns 3 and 4 of Table 11.2 are statistically significant.

Clearly, then, the findings of the Hovland and Weiss study are far from consistent, and they provide only limited support for the conclusion that a high-credibility source produces more opinion change, or that the effect of credibility is due to increased yielding. A subsequent study by Hovland and Mandell (1952) also failed to provide support for this argument. In that study, subjects were given a communication in favor of devaluing American currency. The message was attributed either to an importer who would profit from devaluation (nontrustworthy source) or to an economist from a leading American university (trustworthy source). Although the trustworthy source was perceived to have done a better job of giving the facts on devaluation of currency and to have given a more fair and honest picture, he was not found to produce greater opinion change than the nontrustworthy source. Thus, not only were the indirect measures of yielding unrelated to opinion change, but the variation in source credibility was found to have no significant effect on opinion change.

Whereas the studies by Hovland and Weiss (1951) and Hovland and Mandell (1952) had *belief* change as their dependent variable, other experiments have examined the effect of communicator credibility on changes in *attitudes* and *intentions*. The results of these experiments have also been quite inconsistent. For example, Kelman and Hovland (1953) found that a highly credible and neutral source produced more change in attitude toward lenient treatment of juvenile delinquents than did a source of very low credibility. In contrast, Aronson and Golden (1962) found that attitudes toward arithmetic were influenced to the same extent by a message attributed to a white engineer or a white dishwasher. When the sources were black, however, the engineer produced significantly more change than did the dishwasher.

Analysis of Credibility Research

From the point of view of our analysis of the persuasive communication process, these conflicting findings are hardly surprising. According to our analysis, if a manipulation of such a factor as communicator credibility is effective, it influences facilitation; that is, it produces variations in the f parameter. Even when it is effective, however, a credibility manipulation may or may not influence probability of acceptance. Its effect on probability of acceptance depends on the initial level of overall facilitation, as well as on discrepancy size.

We have argued that a manipulation can be viewed as effective if it influences the degree to which the source beliefs are accepted. As we have also seen, however, a message which is effective in this basic sense may still have little effect on change in the dependent variable. In the case of a communicator credibility manipulation, receivers may be more willing to accept source beliefs coming from

a highly credible communicator than beliefs originating from a low credibility source. However, if the discrepancy between source and target beliefs is small, little *change* in proximal beliefs can be expected in either condition. Even when the manipulation does produce differential change in proximal beliefs, it may have no effect on the primary beliefs or the dependent variable.

Of greater interest is the situation where proximal beliefs *are* related to the dependent variable. In this situation, if the credibility manipulation influences overall facilitation, it should also influence the dependent variable unless (1) the initial level of overall facilitation is high, (2) there is a small discrepancy between source and proximal beliefs, or (3) the message includes highly convincing supportive arguments that themselves produce changes in other proximal beliefs.

Some indirect support for the latter argument can be found in a study by McCroskey (1970), who attempted to change attitudes toward federal control of education. In one condition McCroskey provided strong supportive evidence for the target belief statements, and in another condition the target beliefs were stated with minimal supportive evidence. Variations in source credibility had a significant effect on attitude change only when minimal supportive evidence was presented. When the message contained strong supportive belief statements, equal amounts of attitude change were observed. It may be argued that in this condition subjects changed their target beliefs on the basis of the supportive evidence, irrespective of the source's credibility.

One way of testing this notion would be to assess the change in target beliefs produced by the supportive evidence, prior to actual presentation of the target belief statements. Another possibility would be to treat presentation of supportive evidence as a manipulation that may increase overall facilitation. Supportive evidence would thus function as any other facilitating factor in determining probability of acceptance and corresponding change.

Another interpretation of McCroskey's results is also possible. Even in the condition where minimal supportive evidence was provided, communicator credibility—although influencing *f*—may have had little effect on probability of acceptance. Instead, the observed effect of source credibility on attitudes may have been due to differential impact on external beliefs about the attitude object. Since McCroskey did not measure either acceptance of source beliefs, change in proximal beliefs, or impact effects, both interpretations are feasible. Like most investigators, McCroskey merely assessed changes in his dependent measure of attitude.

Some evidence for differential impact effects of high- and low-credibility sources was reported by Gorn and Tuck (1968). Subjects received a message designed to produce unfavorable attitudes toward abandoning nuclear overflights. The message was directed at six target beliefs that linked abandoning nuclear overflights with negative consequences. For example, one statement argued that "abandoning nuclear overflights is abandoning preparedness." The message was presented as an excerpt from a magazine article and was attributed to a high-credibility source (John F. Kennedy) or a low-credibility source (Barry Goldwater). A control group did not receive the message. The subjects' accep-

tance of these beliefs and their attitudes toward abandoning nuclear overflights were measured before and after the persuasive communication. At the same time, measures were also obtained of five salient external beliefs about abandoning nuclear overflights which did not appear in the message.

The results of this study are presented in Table 11.3. Note that the high-credibility source had a greater effect on attitude change than did the low-credibility source. Further, in comparison with the results for the control group, the message attributed to either communicator produced significant increases in acceptance of the belief statements it contained. However, changes in these target beliefs were no greater for the high- than for the low-credibility source. On the other hand, the message's impact on external beliefs was much greater for the high-credibility source. It thus appears that in this study the effect of communicator credibility on attitude change was due not to increased acceptance of a message coming from a high-credibility source but rather to its greater impact effect on relevant external beliefs.

Table 11.3 Effects of Source Credibility (From Gorn and Tuck, 1968)

Source	Attitude change	Change in target beliefs	Impact on external beliefs
High credibility	4.29	5.22	3.28
Low credibility	2.43	5.29	.39
Control	.93	2.22	1.29

Referent influence. Many of the problems above are lacking when a conclusion, recommendation, or attitude is simply attributed to a high- or low-credibility source without providing any supportive information. Even at this basic level, however, the results have been inconsistent. Although some of the conflicting findings may be due to the fact that, as before, many different dependent variables have been studied, two other problems appear to be primarily responsible. First, subjects may or may not accept the information that the particular source in question holds the belief or attitude attributed to him. Second, even if this information is accepted, the particular sources used may or may not be considered to be relevant referents for the topic under consideration. It follows that the credibility manipulation will not have any systematic effects on facilitation.

For example, in one of the first studies on referent influence, Lewis (1941) gave subjects a list of 10 political slogans, such as "Give me liberty or give me death!" and "Workers of the world, unite!" which were ranked in terms of their "authors' intelligence." The ranking was attributed to one of three sources: Roosevelt, Hoover, or Browder (at that time General Secretary of the Communist Party of the USA). For Roosevelt and Hoover, two conditions were created by reversing the rank order of the slogans. Subjects were asked to rank the slogans

along four dimensions: compellingness to action, social significance, personal inspiration, and their own agreement or acceptance. A control group responded in the same fashion without receiving any referent information. The results showed no evidence of referent influence. Subjects' responses were influenced neither by the source of the referent information nor by the ranking attributed to him.

It appears that many subjects in this study rejected the claim that the source made the ranking attributed to him. In a postexperimental interview, one subject said indignantly, "Do you really expect me to believe that these are Browder's rankings?" Another said, "If Mr. Browder said that, he must have been misquoted by the newspapermen who reported him." Other subjects felt that the source was an irrelevant referent for the responses in question. In the words of one subject, "Mr. Hoover could influence the American Manufacturers Association, and I'm not a member."

The research on referent influence illustrates some of the problems related to manipulation of communicator characteristics. Even in this simple situation, it has been impossible to demonstrate a consistent effect of communicator credibility on amount of change. In this section we have discussed some of the reasons for the inconsistent findings. Let us now turn to a consideration of potential facilitating factors related to the message which have also received considerable attention in persuasion research.

Type of Appeal

We have seen that a persuasive communication may be quite effective in changing proximal beliefs, and that the amount of change in those beliefs may be influenced by the experimental manipulation, even though the effects may not be reflected in the dependent variable. The failure to separate acceptance of message content from change in the dependent variable and the failure to recognize that the relation between the two is largely an empirical question are perhaps the most basic problems in communication and persuasion research. These problems can be exemplified by considering some of the research that has dealt with the effects of varying the type of persuasive appeal.

Over the years investigators have examined the relative effectiveness of various types of persuasive appeals. The question that has frequently been raised is whether it is more effective to appeal to man's reason or to his emotions. Innumerable studies comparing "emotional" and "rational" messages have been conducted, and they have led to completely inconsistent results. Furthermore, Reuchelle (1958) found that experts in the area of speech and persuasive communication could not even agree among themselves whether a given appeal should be considered emotional or rational. It appears that rational and emotional appeals do not constitute opposite ends of a single continuum; rather, they are two relatively independent dimensions. Consequently, it is possible to construct messages that appear to be both rational and emotional.

There is some evidence to suggest that a message will be perceived as rational

if it contains belief statements which the subject can accept; that is, if the subject agrees with the statements, he will tend to judge the message as rational or logical. If he does not accept the belief statements it contains, he will tend to judge the message as illogical or irrational. Fishbein, Platt, and Paluch¹⁵ found a correlation of .775 between acceptance of belief statements in a message and judgments that the message was logical. In the same study, subjects were asked to evaluate the attribute associated with the objects of the belief statements, as well as to rate the communication's emotionality. Judgments of emotionality were found to correlate .683 with the polarity of attribute evaluations. Thus a message tends to be perceived as emotional if it contains belief statements that link objects to highly positive or highly negative attributes.

In research somewhat related to the comparison between emotional and rational appeals, a large number of studies have investigated the relative persuasive effects of messages designed to produce different levels of fear on the part of the receiver. Other studies have attempted to see whether it is more effective to present only one or both sides of an issue (the two-sided message contains not only all the arguments of the one-sided message but also presents and refutes the opposite point of view), or whether stating the conclusion is more effective than leaving it unstated. Finally, the effectiveness of messages varying in order of presentation has been compared. Order of presentation has been varied in two ways: by varying the order of arguments within a message or by switching the order in which two messages are presented. For example, the conclusion may be presented before or after the supportive belief statements, information may be presented in ascending ("climax") or descending ("anticlimax") orders of evaluation (see Chapter 6), or a pro message may precede or follow a con message.

We noted earlier that, except for order of presentation, all message variations directly influence the kind or amount of information to which subjects are exposed. Consider, for example, two messages designed to create different levels of fear concerning improper dental care. One message argues that improper dental care leads to cavities and discolored teeth, and the other claims that improper dental care leads to having teeth pulled, having cavities drilled, and getting mouth infections. Not only does the second message contain more belief statements than the first, but it also provides different information about improper dental care by linking this concept to different attributes or consequences. Clearly, these attributes differ not only in their denotative meaning but also in their evaluation. Thus any manipulation that varies the nature of a message involves variations in number or kind of belief statements presented, as well as in the evaluations of associated attributes.

It follows that variations in type of appeal, with the exception of order of presentation, are confounded with differences in the amount and kind of information provided. Thus, if a high-fear appeal is found to produce more change than a low-fear appeal, this effect may be due not to differential fear arousal but rather

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to the difference in information contained in the high- and low-fear messages. In fact, by carefully selecting belief statements, one should be able to construct a high-fear message that will be either more effective or less effective than a low-fear message. The same considerations apply to logical versus emotional appeals and one-sided versus two-sided messages. Clearly, then, comparing the relative persuasive effects of different types of appeal is rather meaningless, and only inconsistent findings can be expected. On the following pages we shall try to clarify these issues by discussing some studies of fear appeals.

Fear Appeals

In their now classic study, Janis and Feshbach (1953) conducted an experiment designed to investigate the consequences of using fear appeals in persuasive communication. According to these authors, "implicit in the use of fear appeals is the assumption that when emotional tension is aroused, the audience will become more highly motivated to accept the reassuring beliefs or recommendations advocated by the communicator" (p. 78). They also pointed out, however, that fear arousal may actually reduce the persuasive impact of a communication for at least three reasons. First, subjects may be motivated to avoid or not pay attention to a message that arouses fear and may thus fail to *receive* it. Second, if the communicator is perceived as being responsible for producing the fear, his statements may be rejected (i.e., the subject may fail to *yield* to the message). Finally, high fear may impair both reception and yielding if the receiver's "emotional tension is not readily reduced either by the reassurances contained in the communication or by self-delivered reassurance" (p. 78).

High school students were exposed to one of three illustrated lectures on dental hygiene designed to produce high, medium, and low levels of fear arousal. A fourth group, not exposed to a lecture on dental hygiene, served as a control group. All lectures contained information about causes of tooth decay, the "proper" type of toothbrush recommended by dental authorities, and five specific recommendations concerning oral hygiene practices. The five recommendations follow.

1. The teeth should be brushed with an up-and-down (vertical) stroke.
2. The inner surface of the teeth should be brushed as well as the outer surface.
3. The teeth should be brushed gently, using only a slight amount of force.
4. In order to cleanse the teeth adequately, one should spend about three minutes on each brushing.
5. In the morning, the teeth should be brushed after breakfast (rather than before).

The three lectures also presented information concerning the consequences of improper dental care. The three levels of fear arousal were created by varying the severity of the consequences associated with improper dental care, as well as

by presenting slides varying in the degree to which they vividly portrayed tooth decay. The differences in the nonvisual information presented by the high-, medium-, and low-fear appeals are summarized in Table 11.4. The high-fear appeal not only linked improper dental care with a greater number of negative consequences, but also indicated that the consequences were more "severe" (i.e., evaluated more negatively).

Table 11.4 Information Contained in High-, Medium-, and Low-Fear Messages (Adapted from Janis and Feshbach, 1953)

Source beliefs: Consequences of improper dental care	Number of source beliefs		
	High fear	Medium fear	Low fear
Pain from toothaches	11	1	—
Cancer, paralysis, blindness	6	—	—
Having teeth pulled, cavities drilled	9	1	—
Having cavities filled, visit dentist	—	5	1
Mouth infections: sore, swollen, inflamed gums	18	16	2
Ugly or discolored teeth	4	2	—
"Decayed" teeth	14	12	6
"Cavities"	9	12	9
Total	71	49	18

One week prior to the lectures, all subjects completed a questionnaire represented as a general health survey. Subjects were asked, among other questions, to indicate how concerned or worried they felt about the possibility of developing diseased gums and decayed teeth, to indicate their beliefs about four characteristics of a "proper" toothbrush (e.g., "the brush should have three rows of bristles"), and to report their own oral hygiene practices. The latter questions were related to the five recommendations listed above, which were included in the subsequent communication. More specifically subjects were asked to "describe the way they were currently brushing their teeth: the type of stroke used, the amount of surface area cleansed, the amount of force applied, the length of time spent on brushing the teeth, and the time of day that the teeth were brushed" (Janis and Feshbach, 1953, p. 84).

Immediately after the lecture, subjects completed a second questionnaire designed to assess their reactions to the communication. This questionnaire again measured subjects' general concern about the possibility of developing diseased gums and decayed teeth, as well as their feelings of worry or concern evoked during the exposure to the communication. The subjects were also asked to evaluate the lecture in terms of its interest value, the degree to which it held their attention, and its overall quality. Finally, subjects responded to a 23-item "information test . . . based on the factual assertions common to all three forms of the com-

munication, including topics such as the anatomical structure of the teeth, the causes of cavities and of gum disease, the 'correct' technique of toothbrushing, and the type of toothbrush recommended by dental authorities" (Janis and Feshbach, 1953, p. 82).

Responses to this questionnaire revealed that the fear manipulation had been successful. Subjects in the high-fear condition showed a greater increase in their general concern about the possibility of developing diseased gums and decayed teeth than did subjects in the medium- and low-fear conditions. Further, reported feelings of worry or concern evoked during the lecture were greatest in the high-fear condition, somewhat lower in the moderate-fear condition, and least in the low-fear condition. Despite the fact that the high-fear appeal led to greater arousal, it was judged of better quality, more interesting, and holding more attention than the medium- or low-fear appeals.

These reactions to the communications however were *not* reflected in the "information test." Although the three experimental groups had significantly higher scores on this test than the control group, they did not differ significantly from one another. These results were interpreted as indicating that different degrees of fear arousal did not interfere with *reception* of the message since subjects in all three experimental groups had acquired an equal amount of "factual information."

This questionnaire assessed affective reactions to and reception of the communication, but it did not assess the message's persuasive effects. One week after the lectures, therefore, a third questionnaire was administered. Subjects were again asked, among other items, to report their own oral hygiene practices by responding to the same five questions given on the pretest. Each student was given a score ranging from 0 to 5, representing the number of recommended practices to which he conformed. The pretest responses were scored in the same fashion, and the percentages of subjects showing increased, decreased, or unchanged conformity to recommended practices were computed. The major dependent variable in the study was the net change in self-reported behavior.

The effects of fear arousal on changes in self-reported behaviors are shown in Table 11.5. Note that the greatest net change in behavior was produced by the

Table 11.5 Effects of Fear Appeals on Reported Changes in Dental Hygiene Practices (Adapted from Janis and Feshbach, 1953)

	Fear appeal			
	High	Medium	Low	Control
Increased conformity, %	28	44	50	22
Decreased conformity, %	20	22	14	22
No change, %	52	34	36	56
Net change in conformity	+8	+22	+36 *	0

* Significantly greater than high-fear condition and control group ($N = 50$ per group, $p < .05$). No other differences between net changes are significant.

low-fear appeal; the medium- and high-fear appeals did not produce significantly greater behavior change than that which occurred without exposure to any message. Thus Janis and Feshbach (1953) concluded that "inclusion of fear-arousing material not only failed to increase the effectiveness of the communication, but actually interfered with its overall success" (p. 87). Since they found that the high-fear message did not interfere with reception, they argued that it must have produced less yielding than the low-fear message. Specifically, they reasoned that the strong emotions aroused by the high-fear appeal were not fully relieved by the recommendations contained in the message and that the subjects therefore became motivated to ignore or minimize the importance of the threat.

On the basis of these notions, Leventhal and Singer (1966) argued that if one were to provide recommendations that reduce fear more effectively, high-fear appeals should be more persuasive than low-fear appeals. To test this hypothesis, they exposed subjects to either a high- or low-fear appeal message linking improper dental care to severe or mild consequences, respectively. In one condition, no recommendations were given. In three other conditions, the message not only provided recommendations but included explicit statements designed to show how implementation of each recommended practice would reduce or prevent the kinds of consequences described in the message. On the assumption that the locations of the recommendations within the message might influence the degree to which they reduced fear, Leventhal and Singer placed the recommendations before, after, or between two parts of the message. In addition, one group of subjects was exposed only to the recommendations without a fear appeal, and a control group received no information at all.

Immediately after exposure to the messages, measures of fear arousal and intentions to follow each of the five recommended dental practices were obtained. Consistent with expectations, and in contrast to the Janis and Feshbach findings, the high-fear message resulted in significantly more acceptance of the recommended practices than did the low-fear message.

The greater effectiveness of the high-fear appeal, however, could not be attributed to the nature of the recommendations used in this study, since even in the condition in which no recommendations were provided, the high-fear appeal was more persuasive than the low-fear appeal. Clearly, the degree to which the recommendations permit fear reduction cannot be used to account for the conflicting findings of the two studies. Further, results concerning self-reports of arousal indicated that there was little relation between level of fear arousal and acceptance of recommended practices. Although placing the recommendations at the end of the high-fear appeal significantly reduced the amount of arousal reported, this manipulation had no significant effect on the degree to which the recommendations were accepted. Finally, the utility of using fear appeals is itself called into question by this study, since exposing subjects only to the recommendations produced as much acceptance as exposing them to the low- or high-fear appeals in addition to the recommendations.

These conflicting and inconclusive findings are typical of research on fear appeals. Some studies have reported a positive relation between fear arousal and persuasion, some a negative relation, and others no relation at all. In a review of 27 studies conducted between 1953 and 1968 in which fear levels were experimentally manipulated, Higbee (1969) concluded that this research "has yielded conflicting findings concerning the relative effectiveness of high versus low threat in persuasion. This research has also yielded some inconsistencies in attempting to determine what variable may interact with fear level to cause low fear to be more effective in some situations and high fear to be more effective in other situations." (p. 441) Although various attempts have been made to reconcile these conflicting findings (e.g., Janis, 1967; McGuire, 1968; Leventhal, 1970), no satisfactory explanation has yet emerged.

We have already discussed one of these explanations, namely McGuire's (1968) two-factor model, according to which anxiety or fear arousal reduces reception but increases yielding. A curvilinear relation between arousal and persuasion is predicted such that maximal persuasion should occur at moderate levels of arousal. By speculating about the amount of fear created by a given message and about the degree to which subjects received the message and yielded to it, one can provide a post hoc explanation for any given finding. One attempt to directly test this model (Millman, 1968) failed to provide any support for it, however. Indeed, from the perspective of our analysis of the persuasion process, explanations that rely on the traditional approach to communication and persuasion are unlikely to advance our understanding of the phenomena under consideration. Let us therefore consider the research on fear arousal from the perspective of our model of the persuasion process.

Analysis of research on fear appeals

Studies such as those described above attempt to manipulate an audience variable (anxiety) by varying message content. From our point of view the major purpose of a fear manipulation is to influence facilitation. The usual assumption is that high fear will facilitate acceptance of the message. We have noted earlier, however, that varying the content of a message may also affect overall facilitation. That is, some types of arguments may be more supportive of the target beliefs than others. It follows that differential persuasion may be attributable to differences in the information provided, rather than to different levels of fear arousal. Message content is thus confounded with level of fear, and even if increased change is obtained, it cannot be unambiguously attributed to a higher level of fear. Since little attention is usually paid to the differences in the information provided, inconsistent findings are to be expected. Moreover, the dependent variables in these studies have varied considerably, and manipulations of fear level have frequently been found to have different effects on beliefs, attitudes, intentions, and behaviors (e.g., Rogers and Thistlethwaite, 1970; Evans *et al.*, 1970). Perhaps most impor-

tant, little attention has been paid to the relations between the belief statements constituting a message and a given dependent variable.

Consider, for example, the Janis and Feshbach (1953) study. These investigators manipulated fear by linking "improper dental care" to severe, moderate, or mild consequences. From our point of view, even if it can be assumed that these source beliefs were accepted, their relation to the dependent variable (i.e., behavior change) is open to question. Changing a person's beliefs about the consequences of improper dental care may result in a change of his attitude toward improper dental care. Although the study does not provide direct evidence concerning these attitudes, the high-fear appeal should have resulted in more negative attitudes toward "improper dental care" than either the medium- or the low-fear appeals. A change in attitude toward "improper dental care," however, may have had little to do with the five behaviors that were investigated.

We have seen that in order to change a person's behavior (e.g., from brushing his teeth before breakfast to brushing his teeth after breakfast), it is necessary to increase his intention to perform that behavior (i.e., his intention to brush his teeth after breakfast). Changing this intention requires either increasing his attitude toward the behavior (i.e., his attitude toward brushing his teeth after breakfast) or his subjective norm concerning this behavior (i.e., his belief that important others think he should brush his teeth after breakfast). Clearly, changing this person's attitude toward *improper dental care* may have no effect on the determinants of this behavior.

In light of these considerations, it is possible to provide an alternative explanation for the finding reported by Janis and Feshbach. First, note that the "information test" used by these investigators may best be viewed as a measure of acceptance of certain source beliefs, rather than as a measure of reception. It appears unlikely that this test measured recall or recognition of message content; the same questions were asked of subjects in the control condition who were not exposed to any communication. Since there were no differences among the three experimental groups, it seems reasonable to assume that there was equal acceptance of the belief statements contained in the three fear messages and that fear level did not serve to facilitate acceptance.

Now consider a subject exposed to the high-fear appeal. He would tend to believe that improper dental care leads to having teeth pulled, to cancer, paralysis, blindness, and sore, swollen, and inflamed gums (see Table 11.4). Since it is unlikely that his own oral hygiene practices have resulted in any of these consequences, he would probably infer that he has been taking proper care of his teeth and thus he has no need to change his tooth-brushing behavior. The high-fear message may thus have had unexpected impact effects. In contrast, after exposure to the low-fear appeal, subjects would believe that improper dental care leads to having cavities and having to go to the dentist. Since most subjects have experienced these kinds of consequences, they would be likely to infer that they have *not* taken proper care of their teeth and thus that they should change their tooth-brushing behavior. Obviously, subjects in the low-fear appeal condition

would be more likely to accept the specific recommendations concerning proper dental care presented in the lecture than would subjects in the high-fear appeal condition. Thus, although a subject may accept the message and believe that improper dental care leads to bad consequences, he may not believe that he is practicing improper dental care, or that his current method of dental hygiene will lead to those bad consequences. Further, even if he does believe that his current method of dental hygiene will lead to the bad consequences, he may not believe that abiding by the recommendations will prevent these undesirable consequences.

When it is made explicit that performance of the recommended practices will prevent the undesirable consequences (as was done in the Leventhal and Singer study), acceptance of this information may lead to a change in attitude toward the behavior in question. Since fear arousal is manipulated by varying the severity of the undesirable consequences, a high-fear appeal should produce a more positive attitude toward performing the recommended behaviors than a low-fear appeal. On the assumption that this attitude toward the behavior is related to intentions to perform the behavior, this would explain why, as in the Leventhal and Singer study, a high-fear appeal is sometimes more persuasive than a low-fear appeal.

The main point is that there are several assumptions underlying the expectation that acceptance of the belief statements contained in a persuasive message will lead to a change in a given dependent variable. These assumptions are usually not made explicit, they are seldom tested, and measures of acceptance of source beliefs, change in proximal beliefs, and impact effects are rarely obtained. A recent study demonstrates the importance of some of these assumptions. Rogers and Thistlethwaite (1970) found that smokers intended to smoke less only when they were led to believe that quitting or cutting down smoking reduces a smoker's susceptibility to lung cancer. When quitting or cutting down smoking was said to be an ineffective means for reducing the probability of lung cancer, smokers showed little change in intentions. Nonsmokers, whose behavior does not lead to the unpleasant consequences of lung cancer, were relatively unaffected by this belief manipulation.

A recent study by McArdle (1972) also illustrates some of these issues. Recall (see Chapter 8) that McArdle attempted to persuade alcoholics to sign up for the Alcoholic Treatment Unit (ATU) in a V.A. hospital. She first constructed a message representing a traditional *fear appeal*, which emphasized the short- and long-range negative consequences of continued drinking and then recommended that in order to avoid these consequences, subjects should sign up for the ATU. Specifically, the message contained 10 target beliefs linking "continued drinking" with 10 undesirable consequences, such as ruined physical and mental health, a poorer relationship with family and employer, less personal attention from the hospital staff, and less freedom to leave the hospital.

In contrast to this traditional approach, our model of the persuasion process suggests that in order to increase the likelihood that subjects will sign up for the ATU, their intentions to sign up must be increased. To accomplish this goal, an

investigator must direct the message either at the attitude toward this behavior or at the subjective norm. In a pilot study McArdle found that intention to sign up for the ATU was primarily determined by the attitudinal component. Consequently, she constructed two additional messages, one designed to make attitudes toward the behavior of signing up for the ATU more favorable (*positive message*), the other designed to make attitudes toward not signing up for the ATU more unfavorable (*negative message*).

The negative message contained 10 belief statements linking "not signing up for the ATU" with the same 10 undesirable consequences used for the fear appeal. The positive message contained 10 belief statements linking "signing up for the ATU" with 10 desirable consequences, constructed by reversing the undesirable consequences. For example, signing up for the ATU was said to provide for improved physical and mental health, a better relationship with family and employer, etc. Thus the positive and negative messages were mirror images of each other, whereas the negative and fear-appeal messages differed only with respect to their attitude object ("not signing up for the ATU" versus "continued drinking"). The final paragraph in all three messages recommended that in order to avoid the negative consequences (or attain the positive consequences), subjects should sign up for the ATU.

The positive and negative messages, which were constructed in accordance with our model of the persuasion process, were directed at target beliefs that should be related to the dependent variable in question. That is, according to the model of behavioral intentions discussed in Chapter 7, if these messages were successful in changing beliefs about the consequences of *signing up for the ATU*, they should have influenced attitudes toward this behavior. These attitudinal changes should have been accompanied by changes in intentions and the corresponding behavior. In contrast, the traditional fear appeal was directed at target beliefs which, if accepted, would have led to more unfavorable attitudes toward *continued drinking*. Clearly, the effectiveness of this message depended on its impact on the immediate determinants of intentions to sign up for the ATU (i.e., the attitudinal and normative components). Our discussion of levels of specificity in Chapter 7 suggests that there may have been little relation between attitudes toward continued drinking and intentions to sign up for the ATU.

One to four days prior to receiving the persuasive communication, subjects were asked to fill out a questionnaire including measures of their intentions to continue drinking and their intentions to sign up for the ATU. In addition, measures of their attitudes toward continued drinking, toward signing up for the ATU, and toward not signing up for the ATU were obtained, along with measures of the normative component. Finally, subjects were given the opportunity to sign up for the ATU as a preliminary indication of their interest in taking part in the treatment program.

Subjects were assigned at random to one of four groups, such that each group contained 40 subjects, 20 of whom had indicated interest in signing up for the ATU and 20 of whom had not. The first three groups were exposed to one of the persuasive communications, and the fourth group served as a no-message control.

Immediately after exposure to the communication, a final sign-up sheet for admission to the ATU was passed to each subject. Control subjects received the sheet after they were told that they were candidates for the ATU.

Figure 11.15 shows the proportions of subjects who signed up for the ATU before and after the persuasive communications in the four experimental conditions. Although there was little change in rate of sign-up behavior of the control subjects, the positive and negative messages produced an *increase* and the fear appeal a *decrease* in the proportion of subjects who signed up for the ATU.

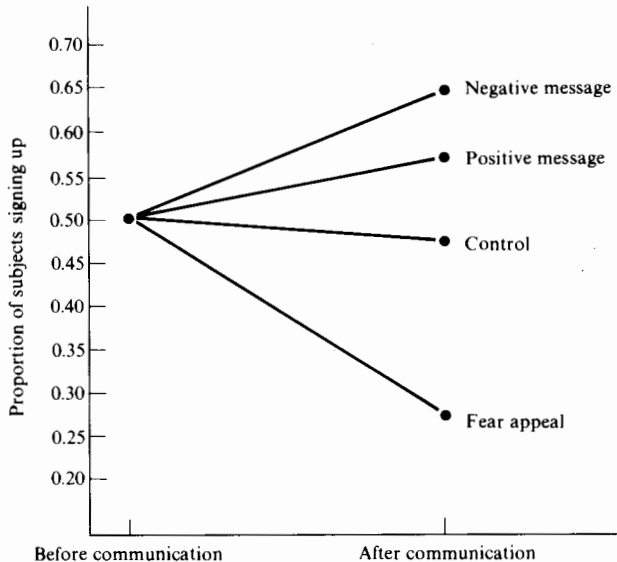


Fig. 11.15 Effects of various messages on sign-up behavior. (From McArdle, 1972.)

McArdle first showed that the traditional approach could not account for these results. After the communication, subjects reported the amount of arousal created by the message, and they were given a reception test in which they were asked whether the communication had contained each of 15 statements—the 10 that had actually been part of the communication they had received and five additional items. Greatest arousal was produced by the negative message, followed closely by the traditional fear appeal, and least arousal was produced by the positive message. The means were 3.98, 3.55, and 2.88, respectively, on a scale ranging from 0 to 9. Although the difference between the positive and negative messages was statistically significant, note that, in general, relatively low levels of arousal were created.

Message type also had a significant effect on reception, with the positive message producing most accurate reception (correct on 11.85 items out of the possible

15), followed by the fear appeal (11.10 correct) and the negative message (10.43 correct). Further, consistent with McGuire's (1968) two-factor model, there was a negative relation between arousal and reception ($r = -.26; p < .01$).

The differences in behavioral change, however, did not correspond to the differences in arousal or reception. Although the traditional fear appeal was intermediate in both arousal and reception, it had the least desirable persuasive effect. Since neither arousal nor reception can explain the obtained results, the traditional analysis must assume that the three messages had different effects on yielding. Specifically, it would have to be argued that the negative and positive messages produced more yielding than did the fear appeal. This explanation, however, contributes very little to our understanding of the processes underlying the effects of different types of appeals.

Explanation of the obtained results takes a completely different course following our model of persuasive communication. The first question concerns possible differences in acceptance of source beliefs and change in corresponding proximal beliefs addressed by the three messages. To answer this question, McArdle (1972) asked all subjects to indicate their agreement with each of the 30 belief statements contained in the three persuasive messages. Responses were made on five-point *strongly agree*–*strongly disagree* scales. Concerning *acceptance* of source beliefs, no significant differences were found for the 10 belief statements contained in the message to which a given subject was exposed. That is, subjects exposed to the positive message accepted the 10 belief statements in that message to the same extent that subjects exposed to the negative message or the fear appeal accepted the 10 belief statements in their respective messages.

Comparisons with the control group, however, revealed some interesting differences with respect to *change* in proximal beliefs. The positive and negative messages were quite effective in that they significantly increased agreement with the source beliefs. In contrast, subjects who were exposed to the traditional fear appeal dealing with the negative consequences of continued drinking were no more likely to accept belief statements arguing that continued drinking leads to unfavorable consequences than were subjects in the control group. Although belief statements in the fear appeal were accepted, this appeal produced little change in proximal beliefs.

The next question concerns the impact effects of the different messages. McArdle found that the three types of appeal had different impact effects on beliefs not contained in the message. Exposure to the positive message not only led to increased acceptance of the source belief statements contained in that message but also produced changes in external beliefs corresponding to the arguments contained in the negative message, and vice versa. For example, subjects who increased their belief (in comparison with the control group) that signing up for the ATU would improve physical and mental health also tended to increase their belief that not signing up for the ATU would ruin physical and mental health. The positive and negative messages had no impact effects on the 10 beliefs about the consequences of continued drinking contained in the fear appeal.

In marked contrast, the traditional fear-appeal message had large impact effects on beliefs about the consequences of signing up and not signing up for the ATU; subjects exposed to the fear appeal were *less* likely to believe that signing up leads to good consequences or that not signing up leads to bad consequences than were subjects in the control group.

These findings lead to the final and perhaps most important question in our analysis, namely, the extent to which changes in proximal and external beliefs may be expected to influence the dependent variable—in this study the behavior of signing up for the ATU. Since the positive and negative messages increased the perceived likelihood that signing up for the ATU leads to favorable consequences and that not signing up leads to unfavorable consequences, both of these messages should have increased attitudes toward signing behavior. The traditional fear appeal, however, had a negative impact effect, and this message should thus have reduced attitudes toward signing up for the ATU.

Direct measures of attitude toward signing up and not signing up for the ATU obtained after the persuasive communication provide evidence for these arguments. McArdle computed the difference between these two attitudes, and the results are shown in Fig. 11.16. Note that the positive and negative messages produced more favorable attitudes toward signing up, and the fear appeal reduced attitudes toward this behavior.

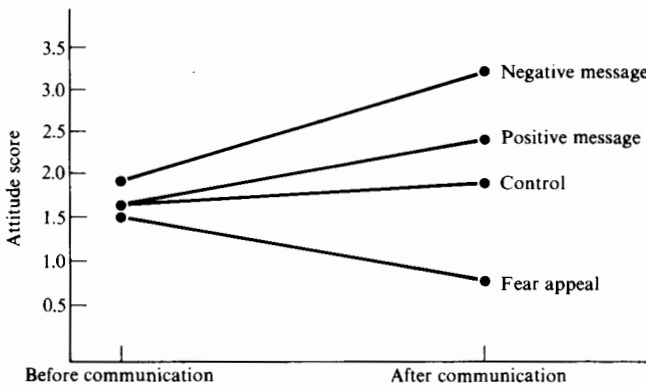


Fig. 11.16 Changes in attitude toward signing up for the ATU. (From McArdle, 1972.)

We reported in Chapter 8 that attitudes toward signing up for the ATU correlated highly with intentions to sign up ($r = .70$), which in turn were highly related ($r = .76$) to the overt act of signing up. Given these strong relations, it is to be expected that changes in behavior would have directly paralleled changes in attitude. Figure 11.15 supported this prediction.

Parenthetically, we note that intentions to continue drinking were unrelated ($r = .04$) to sign-up behavior, and thus, even if the traditional fear appeal had

changed attitudes toward continued drinking, this result would have had little effect on the behavior in question.

The study by McArdle (1972) emphasizes the importance of considering acceptance of source beliefs, changes in proximal beliefs, and impact effects on external beliefs. Only by measuring these effects and by taking into account the relations of proximal and external beliefs to the dependent variable was it possible to explain the observed differential persuasiveness of the three messages. We have also seen that the traditional approach to communication and persuasion, relying on reception and yielding, could not account for the obtained results. Although the messages were found to produce differences in reception, the differences were not reflected in acceptance or in the overall persuasiveness of the messages.

CONCLUSION

This chapter has dealt with the most frequently used strategy of change, namely, persuasive communication. We have developed a model of persuasive communication and analyzed several lines of research by using this model in the context of our general conceptual framework. We compared our approach to persuasive communication with the traditional approach in this area and noted a number of important differences. In fact, the present chapter perhaps best illustrates the fundamental differences between the approach adopted in this book and prior analyses of attitudinal phenomena.

The emphasis in the traditional approach is on the manipulation of various independent variables. We have seen that these attempts to influence amount of change produced by a persuasive communication have not led to the discovery of consistent relations between independent and dependent variables. In contrast, our approach emphasizes a detailed analysis of the processes intervening between the manipulation and change in the dependent variable. We have shown that such an analysis requires the distinction between beliefs, attitudes, intentions, and behaviors. This emphasis on the dependent rather than independent variables also distinguishes our analysis from the traditional approach.

Perhaps the most fundamental principle underlying our entire approach to persuasion is our general assumption that man is basically a rational information processor whose beliefs, attitudes, intentions, and behaviors are influenced by the information available to him. This principle implies that any analysis of a persuasive attempt must begin with the items of information made available to subjects in the persuasive communication. The subject's processing of this information determines the effect of the communication on the dependent variable. The effects of an experimental manipulation can be understood only in conjunction with an informational analysis. At one extreme, when the information provided in the persuasive message is completely irrelevant to the dependent variable, no manipulation of source, message, channel, or receiver factor will produce different amounts of change. At the other extreme, if the information in and of itself produces maximal change in the dependent variable, a manipulation will again have little effect

on amount of change. Between these extremes, the effects of an experimental manipulation on amount of change in a dependent variable are determined in part by the nature of the information contained in the message. It follows that attempts to find systematic relations between manipulations and change in dependent variables are meaningless without an accompanying informational analysis.

We saw that such an informational analysis involves specification of informational items or source beliefs, acceptance of these source beliefs, change in corresponding proximal beliefs, impact effects on external beliefs, and change in primary beliefs which provide the informational foundation for the dependent variable. Of course, it may not always be practical or necessary to examine each of these intervening processes. However, the investigator should always be able to specify his target source beliefs, other beliefs assumed to be primary, and the immediate determinants of his dependent variable. Effects of the manipulation on acceptance and change of target beliefs, impact on other primary beliefs, and changes in the immediate determinants of the dependent variable can be assessed. Such an analysis will often be sufficient for an understanding of the persuasion process. McArdle's (1972) study exemplifies how such an approach can be applied to research on the effects of fear appeals. We saw how this approach facilitated interpretation of the behavioral changes produced by the persuasive communications. It would have been impossible to understand these changes in behavior without the analysis of intervening processes. Indeed, we saw that a traditional analysis of these findings could not provide an explanation that would contribute to an understanding of the persuasion process.