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The effects of amount of prior information, source expertise, and source discrepancy on belief change.

William H. Holmes
University of Massachusetts Amherst

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THE EFFECTS OF AMOUNT OF PRIOR INFORMATION,
SOURCE EXPERTISE, AND SOURCE DISCREPANCY ON
BELIEF CHANGE

A Dissertation Presented

By

WILLIAM H. HOLMES

Submitted to the Graduate School of the
University of Massachusetts in partial fulfillment
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

September 1976

Psychology



William H. Holmes 1976

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Approved as to style and content by:

Icek Ajzen
Icek Ajzen, Chairperson of Committee

Alice H. Eagly
Alice H. Eagly, Member

Richard A. Damon, Jr.
Richard A. Damon, Jr., Outside Member

Bonnie R. Strickland
Bonnie R. Strickland, Head
Department of Psychology

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ABSTRACT

The Effects of Amount of Prior Information,
Source Expertise, and Source Discrepancy On
Belief Change

(September, 1976)

William H. Holmes, B.S., University of Massachusetts,
M.S., University of Massachusetts, Ph.D., University of Massachusetts

Directed by: Dr. Icek Ajzen

In a test of Fishbein and Ajzen's (1975) model of probability of acceptance and belief change, subjects formed initial beliefs on the basis of varying amounts of information in one of two situations. In the student situation, subjects estimated the chances that each of a set of high school Seniors would be accepted into a mid-western state university. In the film situation, subjects estimated the chances that each of a set of French films would be shown in the United States. In either situation, initial opinions were based upon two, four, or six pieces of information. Following exposure to variously discrepant opinions of variously expert sources, subjects indicated their final opinions.

Belief change was measured by taking the algebraic difference between initial and final opinions. Following Fishbein and Ajzen (1975), probability of acceptance was estimated by dividing the amount of change obtained by the amount of change advocated, i.e. relative change. As expected, in the student situation, a main effect of discrepancy and its interactions with prior information and perceived source expertise were obtained. However, in the film situation, the discrepancy main effect and its interaction with information were significantly weaker while expertise had no effect. These latter results were attributed to the

greater perceived informational value of the cues upon which initial film beliefs were based. Finally, disconfirming Fishbein and Ajzen's conceptualization, relative change scores proved to be only a rough index of probability of acceptance. Implications are discussed.

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C H A P T E R I

INTRODUCTION

Social psychologists have long been interested in isolating and interrelating variables determining the effectiveness of persuasive communications. Message discrepancy and source credibility are two variables which have been considered important determinants. Unfortunately, research on these factors has produced largely inconsistent results (cf. Fishbein and Ajzen, 1972, 1975; Ostrom, Steel and Smilansky, 1974; Sears and Abeles, 1969). For example, early investigations of discrepancy found that its relationship to persuasion was sometimes positive (Fisher and Lubin, 1958; Goldberg, 1954; Harvey, 1962; Hovland and Pritzker, 1957; Zimbardo, 1960) and sometimes negative (Hovland, Harvey, and Sherif, 1957) while initial research on credibility discovered that increases in credibility enhanced persuasion for some topics but not for others (Hovland and Weiss, 1951).

Explanations of these apparent contradictions were later chiefly explained in terms of either social judgment theory (Sherif and Hovland, 1961; Sherif, Sherif, and Nebergall, 1965) or dissonance theory (Aronson, Turner, and Carlsmith, 1963; Festinger, 1957). Although for different reasons, both theories maintain that, up to some optional level, increases in discrepancy produce increases in persuasion; as discrepancy is further increased, however, persuasion decreases. Both theories also maintain that the effects of credibility depend upon the discrepancy of the communicator's position. At low levels of discrepancy, little difference between the persuasive effectiveness of high and low credible communicators is expected. As discrepancy is increased to

moderate levels, highly credible communicators are expected to become increasingly more persuasive relative to sources of low credibility. Eventually, however, further increases in discrepancy reduce the persuasive appeal of even highly credible sources. Thus, at extreme discrepancy levels, relatively small differences in the persuasive effectiveness of high and low credible sources are again expected.

The line of reasoning developed by social judgment and dissonance theories offered an intuitively compelling explanation of the inconsistent effects of both discrepancy and credibility. Specifically, these theories suggested that studies finding a positive relation between discrepancy and persuasion may have manipulated discrepancy at levels ranging from low to moderate. Studies obtaining a negative relationship on the other hand may have manipulated discrepancy at levels ranging from moderate to extreme. Moreover, studies obtaining insignificant effects of credibility may have placed the position of the communicator at either very low or very extreme levels of discrepancy. Unfortunately, although some research has obtained the expected quadratic relationship between discrepancy and persuasion (Insko, Murashima, and Saiyadain, 1966; Johnson, 1966; Koslin, Stoop, and Loh, 1967) and the interactive relationship between discrepancy and credibility (Aronson, Turner, and Carlsmith, 1963; Bochner and Insko, 1966; Harvey, 1962), these predicted results either have not been consistently produced or when found, are often not easily explainable in terms of social judgment or dissonance constructs (Aronson, Turner, and Carlsmith, 1963; Bergin, 1962; Brewer and Crano, 1968; Eagly, 1974; Koslin, Stoop, and Loh, 1967; Rhine and Severance, 1970).

Research in this area tends to employ different dimensions along which to manipulate discrepancy and to measure persuasion. Further, studies vary in the degree to which they use supportive arguments to buttress the position of the communicator. For example, in some studies (e.g. Bochner and Insko, 1966) subjects are first asked to estimate the number of hours of sleep that are required by the average young adult. Discrepancy is manipulated by then exposing subjects to a communicator arguing a number of hours of sleep variously different from that initially indicated by the subject. In these studies, supportive arguments are employed to support the source's position. Persuasion is measured in terms of post-communication changes in subjects' estimates of the number of hours of sleep. On the other hand, other studies (e.g. Fisher, Rubinstein, and Freman, 1956) first ask subjects to estimate the number of dots depicted in a series of slides. Discrepancy in these studies is manipulated by exposing subjects to numerosity judgments of confederates which are variously divergent from their own and for which no supportive evidence is given. Here persuasion is measured in terms of post-communication changes in judgments of dot numerosity.

The use of different dimensions seems to assume that factors affecting change along one dimension equally affect change along any other. The use of different kinds of persuasive messages seems to assume that the effects of independent variables on any given dimension do not vary with the content of the communication. The validity of these assumptions, however, has seldom been tested. In contrast, Fishbein and Ajzen (1975) have recently put forth an analysis of the

persuasive communication situation which centers on one dimension, that of subjective probability or belief, and which places greater emphasis on the content of the message.

According to this approach, a typical persuasive communication consists of a series of informational items or belief statements linking with some probability an object to an attribute. Generally, one of these statements or source beliefs represents the major position or the conclusion of the message. Corresponding to this belief is the initial opinion or subjective probability of the receiver which may change following exposure to the message. For example, a communicator might argue that the average young adult requires only four hours of sleep each night. That is, a communicator might argue that the chances are 100% that the average young adult requires only four hours of sleep. Here the object, "the average young adult", is associated with the attribute "requires only four hours of sleep" with a subjective probability of 1.00. Corresponding to this belief is the receiver's initial opinion that the average young adult requires four hours of sleep. The receiver, however, may believe that the chances are 70% that the average young adult requires four hours of sleep. Depending on the degree to which the receiver finds the conclusion of the communicator acceptable, changes in his corresponding opinion in the direction of the message may follow. Thus, in the above example, belief change would be said to have occurred if the receiver came to believe that the chances are 85% that the average young adult requires four hours of sleep.

It is important to note here that Fishbein and Ajzen draw a sharp

distinction between acceptance of a source belief and change in the receiver's corresponding belief. Congruent with traditional analyses, especially that of Hovland, Janis, and Kelley (1953) and McGuire (1968), Fishbein and Ajzen view acceptance as necessary for change. However, acceptance is not viewed by Fishbein and Ajzen as a sufficient condition for change, as no change is expected when the source and receiver hold equally strong beliefs. For example, consider a source who argues that the chances are 100% that the average young adult requires only four hours of sleep. A receiver who also believes the chances are 100% will find this conclusion highly acceptable. However, there will be no change in the receiver's opinion. Thus, unlike traditional approaches, Fishbein and Ajzen treat acceptance and change as distinctly separate constructs where change is seen as a function of both acceptance and the initial discrepancy between the source and receiver beliefs.

The remaining statements in the message are usually included to support the conclusion of the message. Thus, for example, a communicator might support his position that the average young adult requires only four hours of sleep by arguing that eight hours is more sleep than is physiologically or psychologically necessary. As with all source beliefs, each supportive argument associates an object with an attribute with some probability. In this example, the source implies that the chances are 100% that eight hours is more sleep than is physiologically or psychologically necessary. For each supportive argument there exists a corresponding belief of the receiver. However, the receiver may agree with the source or hold a discrepant opinion; that is, he may also believe the chances are 100% or feel that the chances are only 60%

that eight hours is too much sleep.

Typically, supportive arguments are assumed to form a logical foundation upon which the conclusion can be based. This line of reasoning has led researchers to conclude that receivers who accept supportive arguments will necessarily come to more strongly believe in the conclusion. Thus, since highly acceptable supportive arguments are assumed to facilitate persuasion, they are often included in the message. This assumption, however, confuses acceptance with change by presupposing a one-to-one relationship between acceptance of supportive arguments and increased belief in them. As with source beliefs in general, strong acceptance of a supportive argument will not produce large increases in the receiver's corresponding opinion when the initial discrepancy between the source and receiver's opinions is small. For example, consider a source who argues that the chances are 100% that people sleep too much. If prior to the receipt of this message the receiver believes the chances are 95%, exposure to this argument can produce only little change in the receiver's opinion. However, the receiver will probably find this argument highly acceptable.

In sum, then, Fishbein and Ajzen have suggested an analysis of the persuasive communication situation which focuses on changes in the receiver's belief in the conclusion of a message along a dimension of subjective probability. This change is thought to be affected by the acceptability of the conclusion although acceptance is not seen as sufficient for the prediction of change. Change may be facilitated through exposure to supportive arguments but only to the degree to which supportive arguments are acceptable and produce changes in the

corresponding beliefs of the receiver and the extent to which they are related to the conclusion.

If the Fishbein-Ajzen analysis is correct, one must first understand the process by which belief statements are accepted and how such acceptance produces changes in the receiver's corresponding beliefs. Unfortunately, research on factors that influence acceptance of items of information contained in a message is often complicated by the fact that the persuasive communication consists of many different belief statements. Acceptance of one statement (and subsequent change in the receiver's own belief) may affect acceptance of other statements, and the message may have a multitude of effects which cannot be easily isolated. Thus, in contrast to much of the past research in this area, this study considers a persuasive communication which consists of a single belief statement and examines its effects on the corresponding belief of the receiver.

According to Fishbein and Ajzen, the probability that a source belief will be accepted is a function of the discrepancy between the opinion of the source (termed the source probability) and the belief of the receiver (termed the initial proximal belief). The greater the discrepancy, the lower the probability of acceptance. This negative relationship between discrepancy and probability of acceptance is termed the acceptance gradient. However, factors other than discrepancy may also influence probability of acceptance. For example, forming initial proximal probabilities on the basis of too little information or associating belief statements with highly expert sources should facilitate acceptance even at high levels of discrepancy. Variables

such as the amount of prior information upon which initial beliefs are based and source expertise are termed facilitating factors, and the letter \underline{f} is used to denote the overall facilitation present in the situation.

In the original statement, Fishbein and Ajzen suggested that overall facilitation serves to moderate the relationship between discrepancy and probability of acceptance, i.e. the acceptance gradient. Specifically, probability of acceptance, p_a , was tentatively viewed as an exponential function of discrepancy as expressed in Equation 1. In this formulation, \underline{D} is the absolute difference between source and receiver beliefs and \underline{f}

$$p_a = (1 - \underline{D})^{1/\underline{f}} \quad (1)$$

is overall facilitation. As can be seen in Figure 1, probability of acceptance decreases rapidly with discrepancy as overall facilitation falls below 1. Conversely, as \underline{f} exceeds 1, probability of acceptance remains relatively high even at large discrepancy levels. Whatever the magnitude of \underline{f} , however, p_a approaches 0 whenever \underline{D} approaches its maximal value of 1.

This last characteristic of Equation 1 appeared to be unnecessarily restrictive and Equation 2 was therefore proposed by Ajzen and Sejwacz (1975) as an alternative model. Again, the acceptance gradient increases

$$p_a = e^{-\underline{D}/\underline{f}} \quad (2)$$

with \underline{f} , but p_a can remain at relatively high levels even when discrepancy is large.

To test these alternative models, Ajzen and Sejwacz conducted the

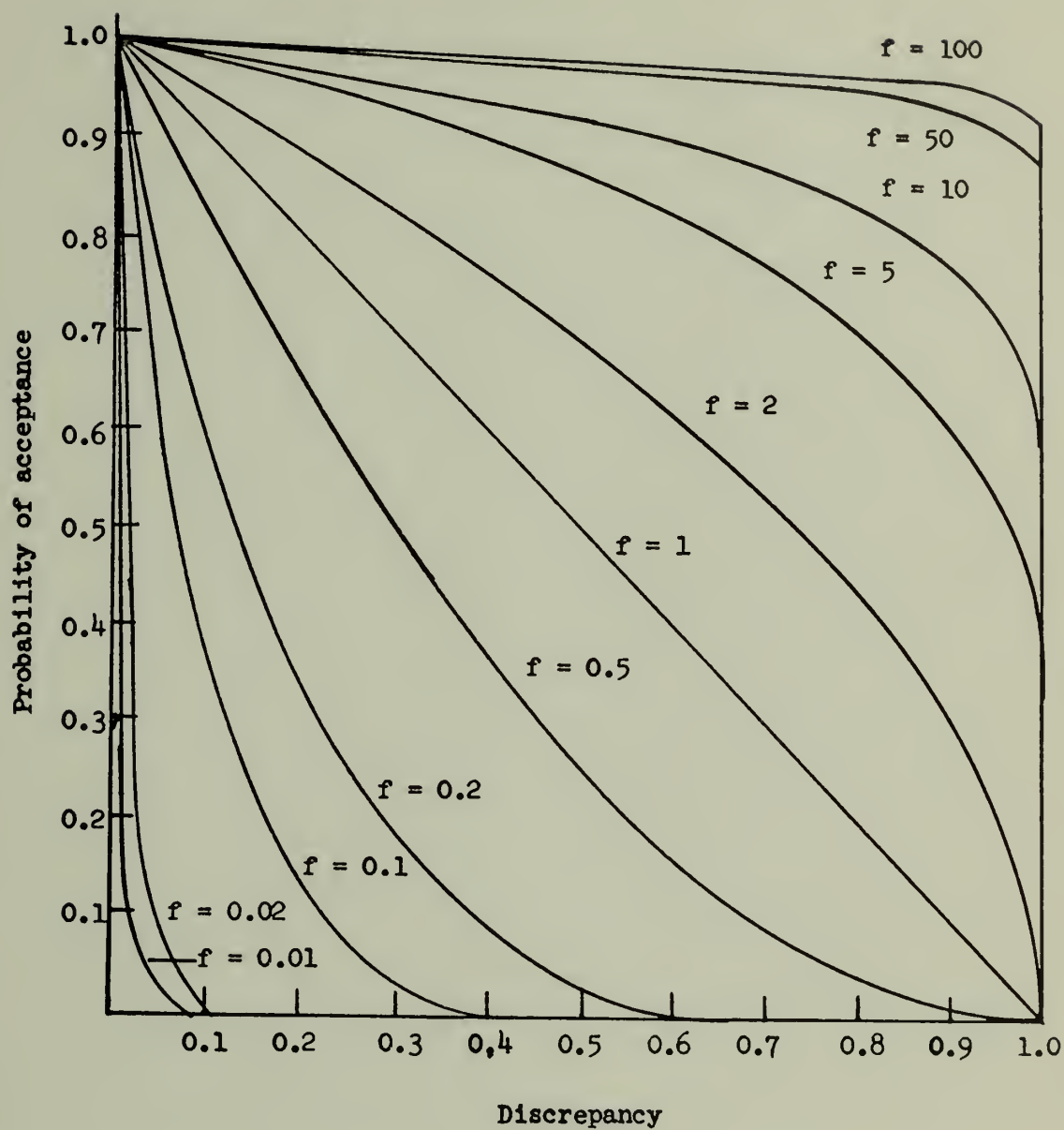


Figure 1. Family of acceptance gradients for different degrees of facilitation.

following study. Under the guise of an information processing experiment, subjects first provided percentage estimates of their initial beliefs on three topics: the likelihood that life exists on Jupiter; the likelihood that violence on TV increases the nation's crime rate; and the likelihood that the Atomic Energy Commission is misleading the public about the danger of nuclear power plants. For each topic, subjects were then exposed to a series of systematically discrepant single-belief messages attributed to sources of low, medium, and high credibility. For example, with respect to life on Jupiter, subjects were exposed to the opinions of a NASA scientist, a science fiction writer, and a New York bartender, respectively. Subjects indicated their acceptance of each source opinion on three 7-place bipolar scales having the following endpoints: acceptable-unacceptable; unreasonable-reasonable; and agreeable-disagreeable. Responses to these scales were scored from 0 to 6, summed, and divided by 18 (the maximal score) to yield a measure of probability of acceptance. Consistent with both models, p_a was found to be inversely related to discrepancy. Moreover, the acceptance gradient was significantly affected by source credibility. That is, 1) increases in source credibility produced increases in overall facilitation; and 2) credibility had its greatest facilitative effects at higher levels of discrepancy. Finally, predicted values of p_a based upon either model highly correlated with those directly obtained, although Equation 2 provided a superior fit.

Having developed a model which seems to successfully predict probability of acceptance, the next step is to determine the relationship between the acceptance of source opinions, p_a , and subsequent changes in proximal belief. According to Fishbein and Ajzen, the amount of change in

a proximal belief depends upon its discrepancy from the source belief and the probability that the source belief will be accepted. Specifically, actual change was hypothesized to be a direct function of advocated change, weighted by its probability of acceptance. That is,

$$C = p_a \underline{D}. \quad (3)$$

As can be seen in Figure 2, which plots change against discrepancy for different levels of overall facilitation, the hypothesized relationship between change and discrepancy is moderated by \underline{f} . For example, at high levels of \underline{f} (e.g. when the amount of information upon which initial beliefs are based is low; when sources are highly expert), change is a positive monotonic function of discrepancy. At lower levels of \underline{f} (e.g. when the amount of prior information is increased; when sources are low in expertise), the slope of the relationship between discrepancy and change decreases. At still lower levels of \underline{f} , the relationship becomes quadratic with change increasing and then decreasing with increases in discrepancy. Moreover, increases in overall facilitation tend to produce relatively large belief change when discrepancy is large but have little persuasive effects when the amount of advocated change is small.

The major purpose of this study is to determine the joint effects of discrepancy and facilitation on changes in beliefs within a persuasive communications situation. Two potential facilitating factors are employed: amount of prior information and source expertise. Having formed initial proximal beliefs on the basis of varying amounts of information, subjects are exposed to systematically discrepant belief statements associated with sources of varying expertise. While increases in source discrepancy

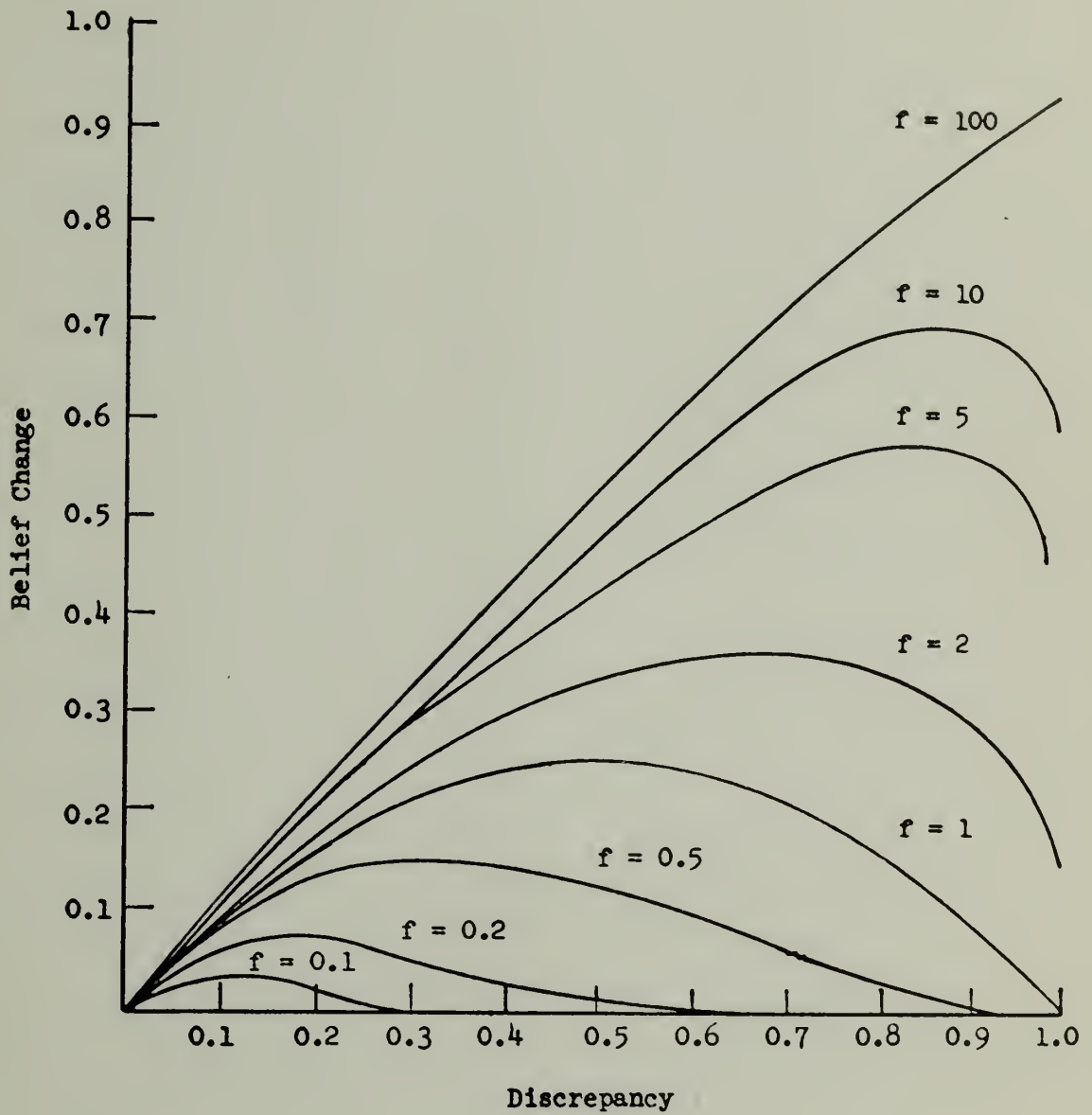


Figure 2. Change in the advocated direction as a function of discrepancy and acceptance gradients with varying f values.

are predicted to produce increases in belief change, the slope of this relationship is expected to vary with overall facilitation. That is, decreases in prior information and increases in perceived source expertise are predicted to produce increases in slope. Put differently, decreasing amount of prior information and increasing source expertise are expected to have greatest persuasive impact at more extreme levels of discrepancy. In short, a main effect of discrepancy and its interactions with amount of prior information and perceived source expertise are predicted.

An additional implication of Equation 3 merits further discussion. If $C = p_a D$, then it should be possible to estimate probability of acceptance by dividing the amount of change observed by the amount of change advocated. That is, at non-zero levels of discrepancy, p_a should be estimatable by Equation 4, i.e. relative change. To determine the validity of Equation 4, individual p_a scores are estimated at each non-

$$p_a = C/D \quad (4)$$

zero level of discrepancy by dividing the amount of change observed by the amount of change advocated. These p_a estimates are used to plot acceptance gradients and to compute for each subject and for each model a least squares estimate of \underline{f} . To the extent that Equation 4 holds, increases in the facilitating factors of this study are expected to produce increases in these estimates of acceptance gradients and \underline{f} levels.

Finally, as a goodness of fit test, the appropriate \underline{f} value of each subject are entered back into Equations 1 and 2 to generate, for each model, a second set of acceptance scores. The correlation between these ad hoc scores and the original acceptance data is then computed to determine the

goodness of fit of each model. To the extent that the relative change scores to which the models are fitted are valid estimates of p_a , the correlation between the predicted and original acceptance values are expected to be highly positive.

C H A P T E R I I

METHOD

Design

Five levels of discrepancy for two different situations were crossed with three amounts of prior information and three levels of source expertise in a pretest, posttest experiment. On the basis of pilot work, sources within each situation were selected so as to represent strong differences in perceived expertise. Situation (a high school Senior applying for admission into a mid-western state university and a French film recently released abroad), amount of prior information (low, medium, and high), and source expertise (low, medium, and high) served as between-subjects variables while discrepancy (0, .15, .30, .45, and .60) served as a within-subjects factor.

Subjects

180 male and female participants drawn from the University of Massachusetts-Amherst and the State University of New York-Oswego were randomly assigned to one of 18 experimental conditions formed by crossing situation with amount of prior information and source expertise. Subjects were run individually. Participation was purely voluntary in all cases although some received academic credit ($n = 4$) while others money ($n = 64$).

Materials

Situations. Prior and posterior proximal beliefs were obtained in two different situations. For the student situation, subjects estimated the chances that each of a set of high school Seniors would be accepted into a mid-western state university. In the film situation, subjects estimated the chances that each of a set of French films would be shown

in the United States. On the first page of a two-page booklet, each student or film was profiled in terms of his or its relative position on a set of descriptive dimensions or cues. The level of each cue ranged on an eleven-point scale, from very low to very high. For example, students profiled in terms of the cue, "His grade point average", ranged from very low (scale position 1-3), to average (position 6), to very high (positions 9-11) grade point averages. Similarly, films described in terms of their production costs ranged from very low, to average, to very high production costs. On the basis of pilot work, the specific level of each cue used to describe each student or film was selected so that within each situation low, medium, and high initial probabilities were produced. The number of cues used to describe each set of students or films varied, however, with the amount of prior information manipulated.

Prior information manipulation. The amount of prior information upon which subjects based their initial opinions was manipulated by varying the number of cues used to describe each set of students or films. Thus, in the low, medium, and high information conditions, each profile consisted of two, four, or six cues, respectively. In order to maximize the information manipulation, however, the specific cues used in each information condition were intuitively selected on the basis of their apparent relevance to the judgment under consideration. Thus, in the low information condition of the student situation, subjects estimated the chances the student would be accepted based only upon the educational level of the student's mother and his economic status. In the medium information condition, the student's grade point average and the academic quality of his high school were added to the profile. Finally, in the

high information condition, the six cues used to describe each student consisted of those of the four cue condition plus the number of extra-curricular activities engaged in by the student and his SAT scores. Similarly, in the film condition, subjects estimated the chances that the film would be shown in the United States based only upon the film's production costs and the star's acting ability. In the medium information condition, information regarding the amount of violence in the film and the director's skill were added to the cues of the low information condition. Lastly, in the high information condition, the star's popularity and the number of favorable reviews of the film were added to the information used in the medium information profile. Thus, the amount of prior information functionally available within each situation was expected to increase with increases in both cue number and relevance.

Source expertise manipulation. On the basis of pilot work, three sources varying significantly in their perceived expertise were selected for each situation. Sources of low, medium, and high expertise were, for the student situation, a high school friend of the student, a Freshman at the university to which the student applied, and a dean of admissions at a university similar to the one to which the student applied, respectively. An usher at a local movie house, a film major at the University of Massachusetts-Amherst, and a film critic for the New York Times served as low, medium, and high expertise sources for the film situation.

Measurement of proximal beliefs. In order to measure receiver beliefs, a response sheet was attached to each profile. In the initial phase of the experiment (see Procedure), subjects indicated their initial

proximal beliefs along a 100-point probability scale found on the second page. That is, following each student profile, subjects indicated on the second page of the booklet the chances the student would be accepted along a 100-point scale ranging from 0% ("definitely will not be accepted"), 50% ("may or may not be accepted"), to 100% ("definitely will be accepted"). Similarly, subjects exposed to film profiles responded on a 100-point probability scale ranging from "definitely will not be shown in the United States", "may or may not be shown in the United States", to "definitely will be shown in the United States." In the communication phase (see Procedure), the second page contained two similarly constructed 100-point probability scales, the first indicating the source belief associated with each profile while the second serving as a measure of posterior proximal probability.

Post-experimental questionnaire. At the end of the experiment, a questionnaire was administered in which subjects rated the perceived expertise of the source on the following bi-polar, nine-place scales adopted from Applbaum and Anatol (1973): Informed-Uninformed; and Inexperienced-Experienced. As these scales highly correlated ($r = .469$ and $.506$ for the student and film situations, respectively, $p < .001$), responses were summed and used in the assessment of post-communication changes in perceived expertise.

The remainder of the questionnaire attempted to assess awareness of the hypotheses. Two questions asked the respondents to describe what they thought was the true purpose of the experiment and to discuss the nature of their suspicions. Subjects ($n = 9$) who indicated an awareness of the pretest-posttest design or guessed that either expertise and/or cue

number and/or discrepancy had been systematically manipulated were discarded from the analysis. Since the manipulation of discrepancy involved the repetition of five of the profiles (see Procedure), a third question asked subjects to indicate the degree of similarity perceived among all the profiles used, while the last question blatantly requested subjects to indicate the number of profiles (if any) repeated throughout the experiment. Analyses of these data indicate that, in general, regardless of the number of cues, subjects were unable to correctly guess the number of repeated profiles, although student two-cue subjects tended to guess a somewhat greater number (2-3 profiles being the modal response) than did those exposed to six student cues (0 profiles being the modal response).

Procedure

Initial phase. In the initial phase of an experiment ostensibly dealing with information processing, subjects first responded to a set of 15 "practice" profiles supposedly designed to familiarize the subject with the nature of the task. In actuality, a subset of five critical profiles were included to produce judgments representing five initial proximal beliefs. For the student situation, these beliefs were equal to or less than .40 while for the film situation, the critical judgments were equal to or greater than .60. Prior beliefs were established at these levels in order to allow for the presentation of highly discrepant source beliefs above or below the receiver's initial opinion.

Each subject was seated behind a visual barrier and asked to open to the first practice profile. The experimenter then read the following.

This is a study of how people process information. In order to familiarize you with the task you will be asked to perform later in the experiment, you will first be given a

practice series of profiles of high school Seniors applying for admission into a mid-western state university (French films recently released abroad). Note that along the left-hand margin of the top page are listed the characteristics we will use in constructing the descriptions of the students (films). Listed horizontally are the different degrees to which each characteristic may be possessed by the students (films). For each of the students (films), I will tell you to what degree the student (film) possesses each of these characteristics. As we go over each trait you should circle the corresponding position on the profile. After you have filled out each profile, you will be asked to make a judgment on the attached page. Before making your judgment, however, be sure to review the information given to you in the profile.

You will be asked to make the following judgment: Based upon the information given in this summary, do you think this student will be accepted by the university (film will be shown in the United States)? You are to indicate what you think the chances are the student will be accepted (film will be shown) on the 100 point scale provided. For example, if you think the student definitely will not be accepted (film definitely will not be shown), you should circle 0%. If you think the student may or may not be accepted (film may or may not be shown), circle 50%. And if you think the student definitely will be accepted (film definitely will be shown), circle 100%. Thus, the greater the percentage circled, the greater you think the chances are the student will be accepted by the university (film will be shown in the United States). Of course, you can circle any point along the scale, not just 0, 50, or 100%. Thus, you may wish to circle 45%, 68%, 90%--whichever of the 100 points on the scale best represents what you think the chances are the student will be accepted (film will be shown), given the information contained in the profile. Remember, base your judgments only on the information given in each profile and make your judgments independently of judgments made on past profiles.

In order to immediately obtain initial proximal probabilities, subjects were then told:

Once you are satisfied with your judgment and have indicated it on the scale, please tell me what your judgment was. You should also indicate in terms of a yes/no response whether or not the student will be accepted (film will be shown). For example, you might respond: "Yes, I think the student will be accepted (film will be shown). His (Its) chances are 85%;" or "No, I don't think the student will be accepted (film will be shown). His (Its) chances are only 24%". These verbal responses will not only indicate to me that you are ready to continue on to the next profile, but will also show me that you understand how the scale works.

These instructions not only allowed for the immediate assessment of prior

proximal beliefs but also insured that subjects were correctly interpreting the scale.

To allay any suspicion concerning the visual barrier, the experimenter concluded with:

Finally, in order that your judgments are made in privacy and are not biased by the experimenter, a visual barrier has been placed between you and the experimenter. Any questions? (Questions were answered by rereading the appropriate instructions.)

For each of the initial set of 15 profiles, the experimenter read to the subject the degree to which the students or films possessed each of the characteristics listed in the profiles. The subjects, in turn, circled the corresponding positions on their profiles and verbally announced their judgments. As the initial phase progressed, the experimenter recorded all responses, including the five critical judgments which served as measures of initial proximal beliefs.

Distraction task. The manipulation of discrepancy involved including the five critical profiles of the initial phase within a second set of profiles presented in the communication phase (see below). In order that these repeated communication profiles not be recognized, a distraction task was interjected between the initial and communication phases. Subjects were told that one way to study information processing systems is to force subjects to make sense out of seemingly senseless data. Subjects were then required to solve, within sixty seconds, each of 10 anagrams. To further increase the distractive impact of the task, the experimenter openly recorded the time required to solve each anagram, the total number of correct solutions, and the verbal comments made regarding the difficulty of each anagram.

Communication phase. Following the anagrams task, subjects responded to

a second set of 15 profiles. In addition to the cues used in the initial set of "practice" profiles, these profiles included the opinions of an individual of low, medium, or high expertise (see above). The experimenter explained.

We will now ask you to make the kinds of judgments with which you became familiar in the practice session, using, however, a different set of students (films). Of course, in real life, people often consult others before making judgments of this kind. Therefore, to make things more realistic, I will not only describe to you a set of new students (films), but will also include the opinions of another individual. Once again, you will be asked to indicate the chances that the student will be accepted by the university (film will be shown in the United States).

Five of the fifteen profiles were identical to the five critical profiles used in the initial phase. Belief discrepancy was manipulated by randomly assigning, for each subject, each of the five levels of discrepancy (0, .15, .30, .45, and .60) to each of these repeated profiles. Source beliefs for the student profiles were always equal to or greater than the corresponding initial judgments. Conversely, source beliefs associated with the film profiles were always equal to or less than the corresponding initial proximal beliefs.

For example, imagine that, for a particular subject, the profile of student number 2 was randomly assigned to a discrepancy level of .15. If, in the initial phase, the proximal belief produced by this profile was .30, then the corresponding source belief in the communication phase was $.30 + .15$ or .45. That is, a receiver who initially believed that the chances were 30% that student number 2 will be accepted by the university was exposed to a source who believed the chances were 45%. Conversely, the source belief associated with a critical film profile randomly assigned to a discrepancy level of .60 was always 60% less than that

indicated by the subject in the initial phase.

Following exposure to the source opinion, subjects then indicated their own belief. Receiver opinions associated with the five critical profiles represented the posterior proximal beliefs formed at different levels of discrepancy.

In order to maximize the privacy with which posterior judgments were made, the experimenter concluded with the following:

Since in the practice session you seemed to show an understanding of how the scale works, it will not be necessary for you to verbally respond. However, please be sure that your circles are neat and sufficiently small so that your exact judgments are quite clear. That is, please circle only a single point, not a group of points.

Finally, remember to review all the information given to you before making each of your judgments. Any questions?

The experimenter then read to the subjects the information contained in each profile as well as the opinions of the source. Subjects, in turn, recorded the information, indicated the source beliefs on the response sheets, and then recorded their own judgments.

After completing the last profile, subjects responded to the post-experimental questionnaire. Subjects were then fully debriefed and sworn to secrecy.

C H A P T E R I I I

RESULTS

Manipulation checks

Amount of prior information. The amount of information in each situation was manipulated, in part, by selecting on the basis of intuition, cues which varied in their apparent relevance. If this manipulation was successful, the cues given in the two cue condition should have been perceived as having little informational value as compared with that of the four and six cue conditions. Put differently, when all six pieces of information were made available, little weight should have been given to the low information cues during the judgment-making process. This line of reasoning suggests that the relative perceived informational value of each cue can be estimated by determining the proportion of variance accounted for by each cue for judgments made in the six cue condition.

Accordingly, for each situation, judgments made in the six cue condition during the initial phase of the experiment were submitted to a forward or stepwise inclusion multiple regression analysis. Initial proximal probabilities served as the criterion variable, predicted on the basis of the six cues. As the six cue condition consisted of 30 subjects each producing 15 judgments, a total of 450 criterion scores were available. Levels of each cue, of course, varied across the fifteen profiles used in the initial phase of the experiment.

Table 1 summarizes the results of this analysis. In general, a linear model does a good job in accounting for the variability in initial proximal probabilities. The multiple correlation coefficients for the

Table 1

Proportion of Total Variance in Initial Proximal Probabilities
Accounted for by Each cue in the Six-cue Condition of Each Situation

Student Situation

Cues	Proportion Of Variance	Sum of Squares	<u>F</u>	Cues Employed		
				2	4	6
1. Scholastic Aptitude Test Scores	24.02%	7.345	251.82**			X
2. Mother's Educational Level	18.56%	5.675	195.33**	X	X	X
3. Grade Point Average	11.90%	3.640	125.29**		X	X
4. Academic Quality of High School	2.88%	.881	30.33**		X	X
5. Number of Extracurricular Activities	.50%	.154	5.29*			X
6. Economic Status	.06%	.081	.63	X	X	X

Film Situation

Cues	Proportion Of Variance	Sum of Squares	<u>F</u>	Cues Employed		
				2	4	6
1. Production Costs	28.39%	10.142	517.23**	X	X	X
2. Star's Popularity	23.15%	8.271	421.81**			X
3. Number of Favorable Reviews	15.41%	5.503	280.66**			X
4. Star's Acting Ability	7.58%	2.707	138.04**	X	X	X
5. Amount of Violence	1.01%	.360	18.37**		X	X
6. Director's Skill	.13%	.047	2.40		X	X

**Variance added to regression model significant beyond the .0001 level.

*Variance added to regression model significant beyond the .05 level.

student and film situations were .761 and .870, respectively. Consistent with research findings in the area of cue utilization (cf. Dawes and Corrigan, 1974; Slovic and Lichtenstein, 1971), these coefficients indicate that the information of the type used in this study was combined in a basically linear fashion. These results also indicate that measuring the subjective impact of each cue in terms of a linear model is highly reasonable.

In the student situation, three cues account for a relatively high proportion of the variance: SAT scores, mother's educational level, and grade point average. It is concluded therefore that these three cues were perceived as having the highest informational value, while the remaining three cues, academic quality of high school, number of extracurricular activities, and economic status, were perceived as being relatively unimportant. Of the three important cues, only grade point average and mother's educational level were included in the four cue or medium information condition, the other cues being academic quality of high school and economic status. In the two cue or low information condition, only mother's educational level was included, being paired with economic status, a cue which seems to have had no impact whatsoever. Thus it appears that the manipulation of cue number in the student situation successfully manipulated the amount of prior information.

This overall pattern also occurs in the film situation as well. Here, however, four cues were relatively important: production costs, starring actor's popularity, number of favorable reviews, and starring actor's acting ability. Only a subset of these cues however appeared in the two cue condition while the four cue condition included those of the

two cue group, one unimportant cue, and one cue which accounts for a small but highly significant amount of variance. It seems clear, however, that the difference in the amount of information between the two and four cue conditions was not as great as that found in the student situation. Moreover, the informational value of the cues given in the two cue film condition seems to have been much greater than that of the student situation: while two important cues were employed in the film situation, only one such cue, paired with a totally unimportant piece of information, was used in the corresponding student condition. Despite these differences, however, the results of this analysis strongly suggest that increase in cue number were associated with increases in the amount of prior information upon which initial proximal beliefs were based.

Perceived source expertise. Post-experimental ratings of source expertise for each situation were submitted to a two-way analysis of variance with cue number and source as fixed factors. The results of this analysis indicate that the source manipulation did not successfully maintain large differences in expertise over the course of the experiment. As can be seen in Table 2, only the student sources varied significantly in their post-experimental ratings, the mean expertise of the dean of admissions being greater than the average of the other two sources. Unfortunately, the absolute difference among the student sources is relatively small. For both situations neither the main effect of cue number nor its interaction with source were significant.

As Table 2 indicates, ratings obtained from control subjects in pilot work clearly demonstrate that the sources used in either situation varied strongly and significantly in their initial expertise. To determine the

Table 2

Mean Control and Post-experimental Ratings of, and Changes In,
Source Expertise for Each Situation as a Function of Source

Situation		Source			<u>F</u>
		Friend	Freshman	Dean	
Student	Control Group	6.300 ^a	9.900	15.500	24.107 ^{b,c}
	Experimental Group	8.533	7.300	11.700	14.196 ^{c,d}
	Change	+2.230 ^e	-2.600 ^e	-3.800 ^e	27.578 ^{c,d}
		Usher	Film Major	Critic	<u>F</u>
Film	Control Group	8.300	12.150	16.450	
	Experimental Group	10.067	10.900	11.833	1.897 ^c
	Change	+1.767 ^f	-1.250 ^f	-4.617 ^e	24.810 ^{c,d}

^aThe greater the mean, the greater the source expertise.

^bMain effect of source tested against 2 and 38 df.

^cMain effect of source tested against 2 and 81 df.

^dSignificant beyond the .001 level.

^eSignificantly different from zero beyond the .001 level by t-test.

^fSignificantly different from zero beyond the .05 level by t-test.

magnitude of changes in perceived expertise over the course of the experiment, the appropriate mean control ratings were subtracted from each experimental subject's post-experimental rating. These changes in perceived expertise scores were then submitted for each situation to a cue number by source analysis of variance. As would be expected, a main effect for source was obtained. Indeed, the data suggest that highly expert sources lost and low expert sources gained in expertise. However, since the expertise scales are probably less than perfectly reliable, the apparent gain in the expertise of the low expert sources may be artificial, extreme scores becoming, upon retest, less extreme. It is doubtful, however, that, given its magnitude, the loss in expertise suffered by the high expert sources is totally due to this regression effect. It is therefore concluded that, over the course of the experiment, moderate and high expert sources suffered a genuine loss in perceived expertise.

Belief change and relative change

Changes in proximal beliefs at each level of discrepancy were measured by taking the algebraic difference between judgments obtained in the initial and communication phases of the experiment for each of the five critical profiles. Relative change scores were computed by dividing the amount of change obtained by the amount of change advocated at each non-zero level of discrepancy. Since the effects of discrepancy and cue number on these measures often interacted with situation, the student and film data were separately submitted to a three-way analysis of variance in which cue number and source served as between-subjects variables and discrepancy as a within-subjects factor.

Discrepancy and cue number. As predicted, a main effect of

discrepancy on change in student-related beliefs was obtained ($F_{4,324} = 25.491, p < .001$). As can be seen in Figure 3, left-hand panel, this relationship was positive and primarily linear with the linear component accounting for 96% of the variance due to discrepancy. Moreover, the slope of this relationship was significantly affected by the amount of prior information ($F_{8,324} = 3.308, p < .001$). This discrepancy by cue number interaction is graphed in Figure 4 while the corresponding linear regression coefficients are displayed in Table 3. As expected, increases in amount of prior information produced significant decreases in slope although the linear coefficients of the four and six cue conditions did not significantly differ. Thus, while increases in discrepancy produced increases in change, the strength of this relationship was significantly weakened by increasing the amount of information upon which initial proximal beliefs were based. Viewed from a different perspective, this interaction indicates that the persuasive impact of decreases in cue number was strongest at more extreme levels of discrepancy.

In view of the above results, one would expect, for the student situation, a negative relationship between discrepancy and probability of acceptance, the slope of this relationship varying across number of cues. This expectation, of course, assumes that probability of acceptance and relative change are interchangeable. Unfortunately, while the main effect of discrepancy on C/D was significant ($F_{3,243} = 2.618, p < .05$), and as can be seen in Figure 5, in the predicted direction, estimates of p_a at low levels of discrepancy seem to be surprisingly low. Moreover, the discrepancy by cue number interaction was far from statistically reliable ($F_{6,243} = 1.225$).

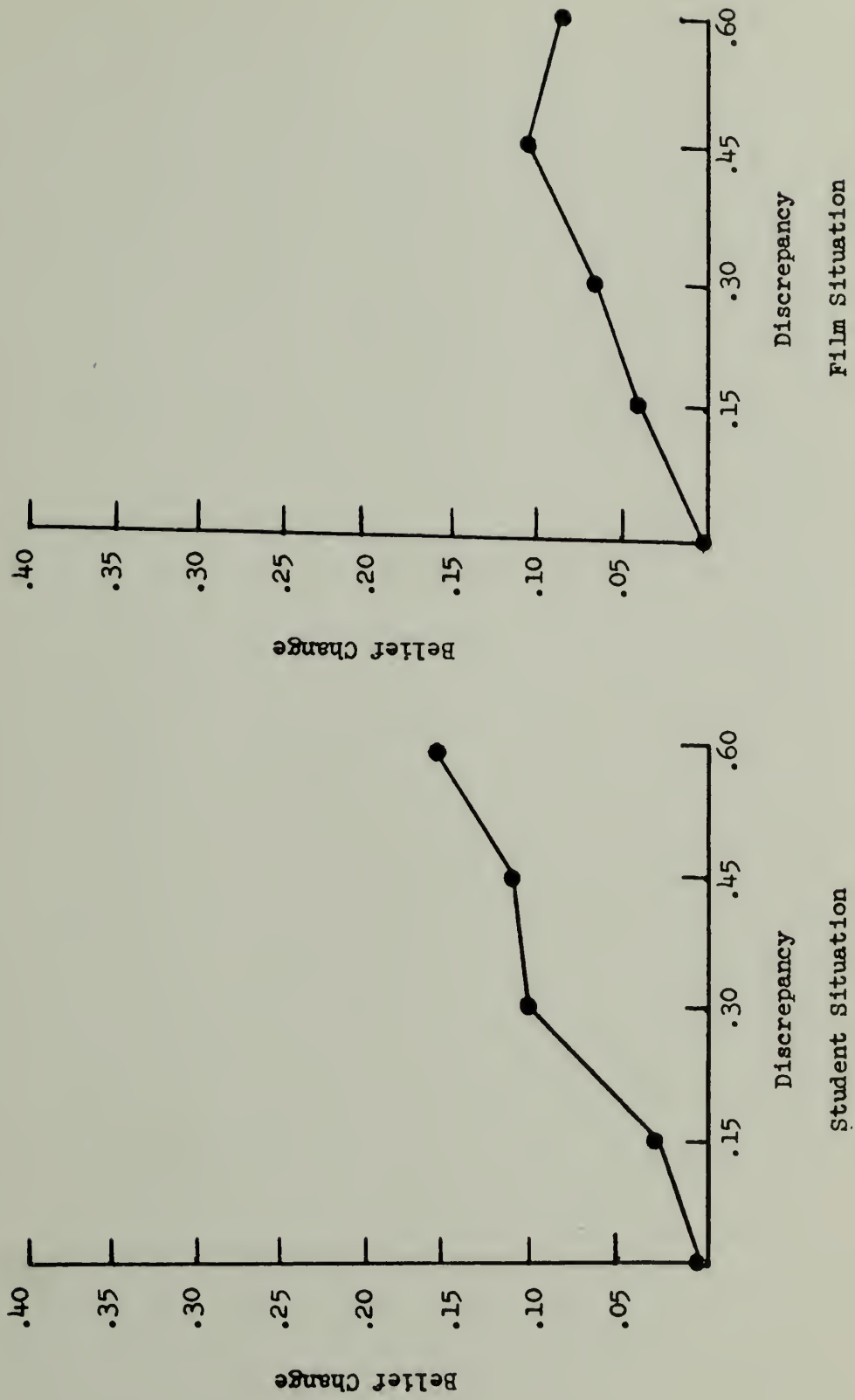


Figure 3. Belief change as a function of source discrepancy.

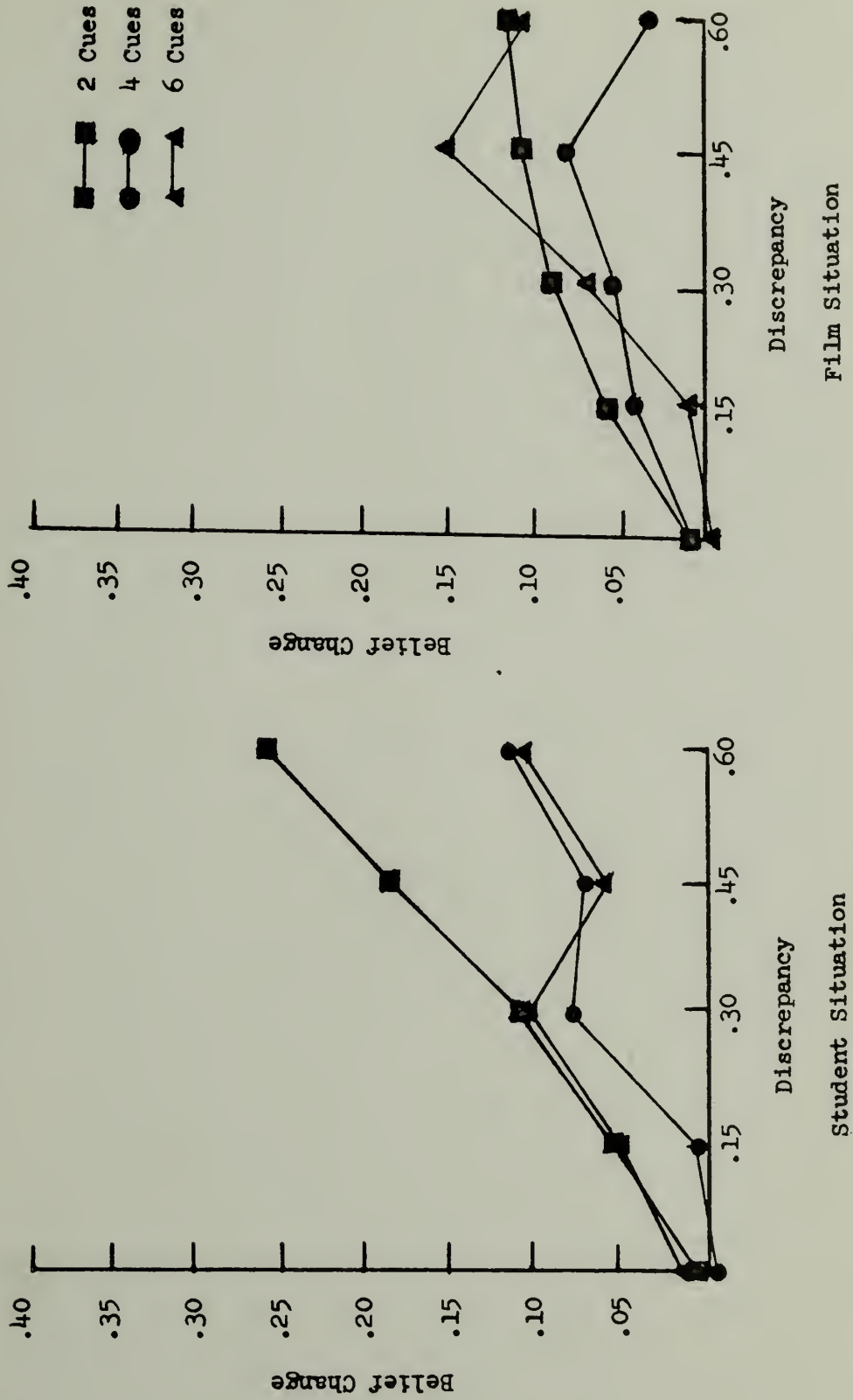


Figure 4. The relationship between discrepancy and belief change as mediated by cue number.

Table 3

Linear Regression Coefficients for Each Situation
as a function of Cue Number

Situation	Cue Number		
	2	4	6
Student	.064 ^a	.033 ^b	.020 ^c
Film	.025 ^b	.007	.036 ^a

^aSignificantly different from zero beyond the .001 level.

^bSignificantly different from zero beyond the .01 level.

^cSignificantly different from zero beyond the .05 level.

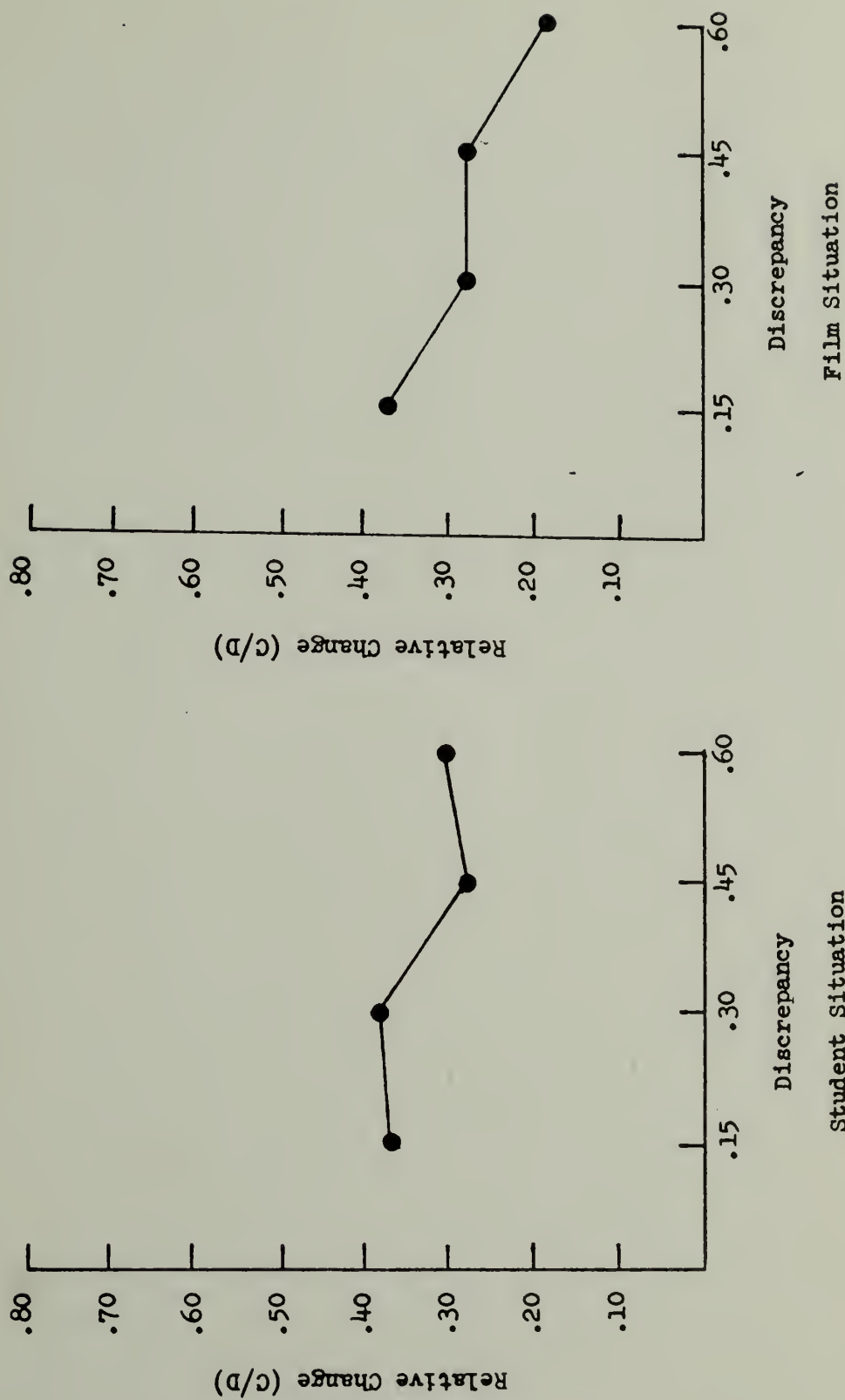


Figure 5. Relative change as a function of source discrepancy.

Turning to the film situation, a main effect of discrepancy on change was again obtained ($F_{4,324} = 14.682, p < .001$). This relationship is graphed in the right-hand panel of Figure 3. As in the student situation, the linear component was significant ($F_{1,81} = 28.285, p < .001$), accounting for 76% of the variance due to discrepancy. However, further analyses revealed that beliefs formed on the basis of the information given in the film situation were more resistant to change. Specifically, treating situation as an additional between-subjects variable, it was found that the slope of the film situation was significantly lower than that of its student counterpart ($F_{1,162} = 5.937, p < .05$). Moreover, analyzing the film data separately revealed that the relationship between discrepancy and change was significantly quadratic as well ($F_{1,181} = 9.330, p < .01$) such that extreme levels of discrepancy produced decreases in change.

As in the student situation, the discrepancy by cue number interaction was significant ($F_{8,325} = 2.236, p < .05$). This interaction is depicted in the right-hand panel of Figure 4 while the corresponding linear coefficients are displayed in Table 3. As visual inspection indicates, however, the form of this interaction varied from that obtained in the student situation in three important ways. First, the slopes did not decrease monotonically with increases in cue number. Rather, the relationship between cue number and slope approximates a U-shaped function. Secondly, as depicted in Figure 6, the effects of discrepancy on change in the two cue condition was significantly greater in the student situation ($F_{1,162} = 11.684, p < .001$). Thirdly, decreases in cue number produced relatively small increments in slope. Thus, the facilitative

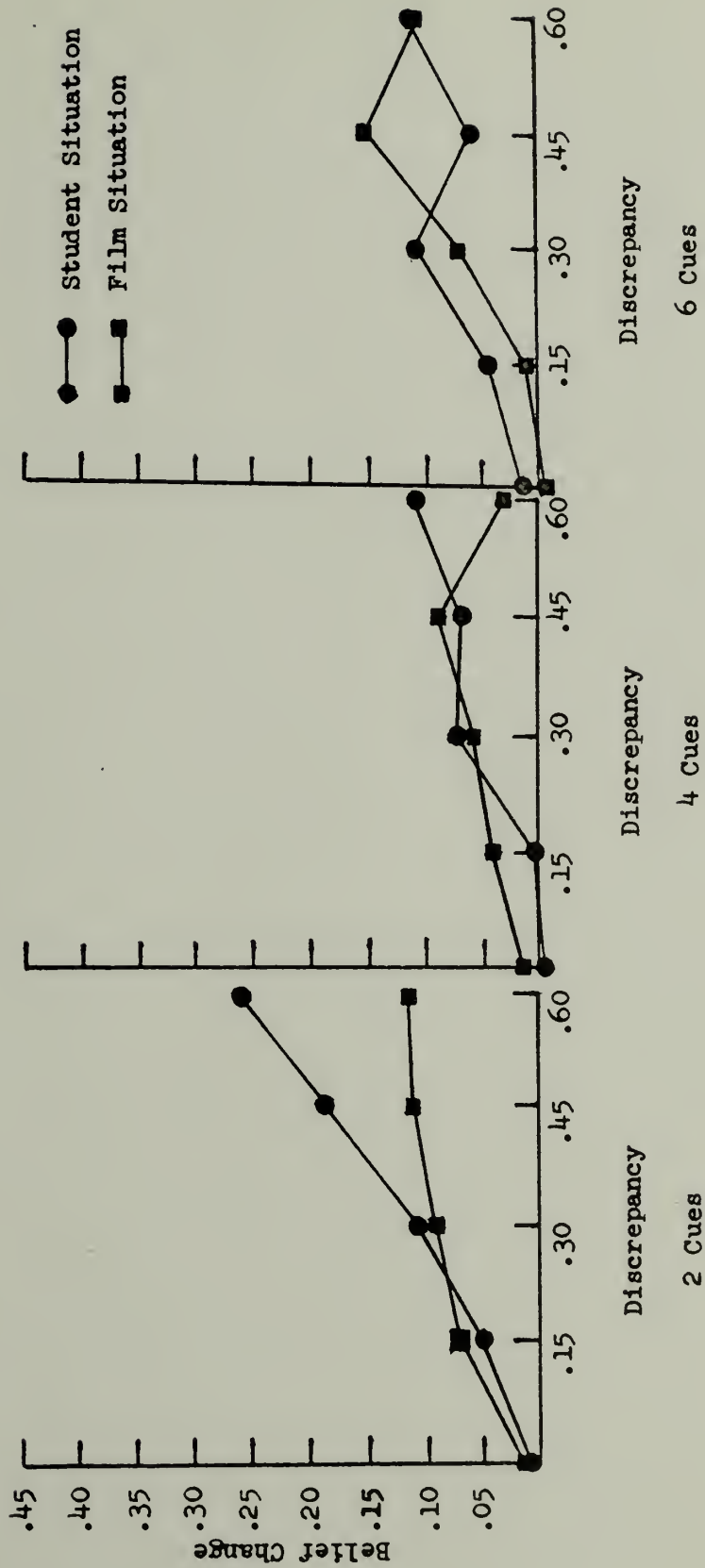


Figure 6. Relationship between discrepancy and belief change as mediated by cue number and situation.

effects of prior amount of information were greatly diminished in the film situation, again indicating that the film-related beliefs were more resistant to change.

As for the estimate of p_a , a strong main effect of discrepancy in the expected direction was obtained ($F_{3,243} = 9.032, p < .001$). That is, increases in discrepancy produced significant decreases in relative change. However, as seen in the right-hand panel of Figure 5, estimates of p_a are again surprisingly low even at low levels of discrepancy. Moreover, the discrepancy by cue number interaction, graphed in Figure 7, was significant only at the .10 level ($F_{6,243} = 1.912$).

Perceived expertise. No significant source effects on either absolute or relative change were found in either situation. This result, however, may be due to the inability of the source manipulation to maintain differences in perceived expertise large enough to produce statistically reliable effects. Consequently, an internal analysis was conducted in which subjects in each situation were classified according to their post-experimental ratings of perceived expertise (low, medium, and high). As Table 4 indicates, this classification successfully produced, in both situations, strong differences in perceived expertise. For each situation, a three-way analysis of variance, formed by crossing perceived expertise with cue number and discrepancy, was then performed.

For both situations, change was significantly influenced by discrepancy in the expected direction ($F_{4,216} = 17.596, p < .001$, student situation; $F_{4,180} = 8.386, p < .001$, film situation). In both situations, the discrepancy by cue number interaction closely paralleled those discussed earlier although the student interaction was significant only at

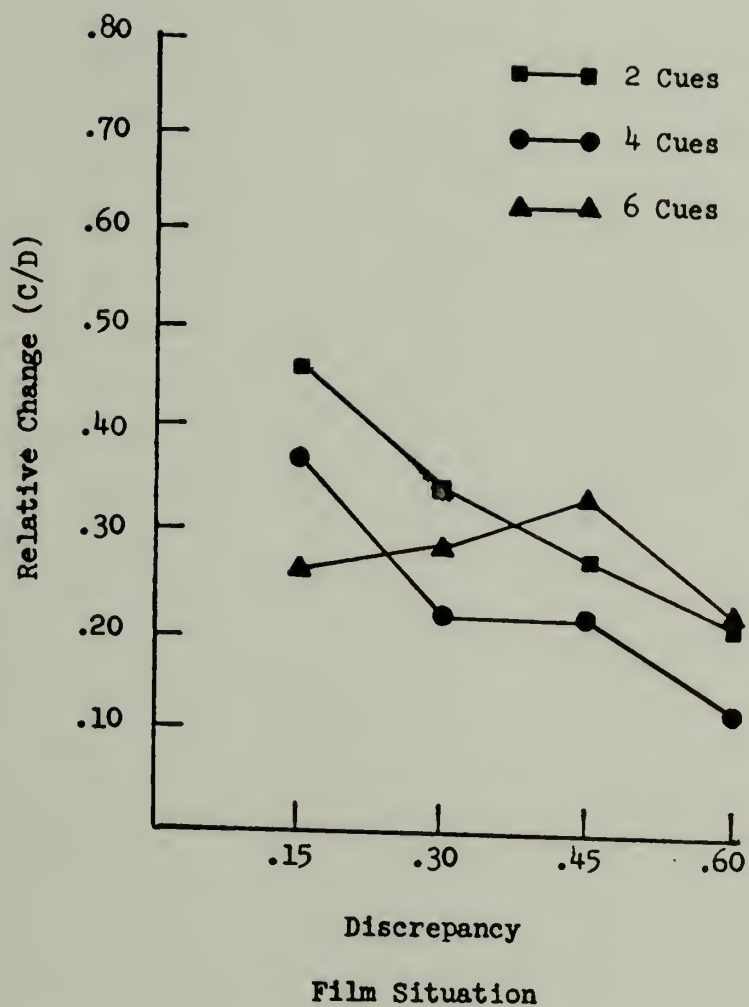


Figure 7. Relationship between discrepancy and relative change as mediated by cue number for film situation.

Table 4

Mean Perceived Expertise Scores

Situation	Perceived Expertise			<u>F</u>
	Low	Medium	High	
Student	4.810 ^a	8.286	13.524	235.731 ^{b,d}
Film	6.333	10.222	14.278	284.056 ^{c,d}

^aThe greater the mean, the greater the perceived expertise.

^bPerceived expertise main effect tested against 2 and 54 df.

^cPerceived expertise main effect tested against 2 and 45 df.

^dSignificant beyond the .001 level.

the .10 level ($F_{8,216} = 1.88$, student situation; $F_{8,180} = 3.019$, $p < .01$, film situation). More interesting, however, are the differential effects exhibited by perceived expertise in each situation.

As can be seen in Table 5, the discrepancy by perceived expertise interaction for the student situation was significant beyond the .05 level ($F_{8,216} = 2.120$). This interaction is depicted in Figure 8. Further analysis revealed that 95% of the variance associated with this interaction was due to significant variation in the linear component across the three levels of expertise ($F_{4,45} = 4.555$, $p < .05$). That is, increases in expertise were associated with increases in slope (linear coefficients of .015, .053, and .052, respectively). The slope of the medium and high expertise sources, however, did not significantly differ. On the other hand, the corresponding interaction in the film situation was far from statistically reliable ($F_{8,180} = 1.276$). As indicated in Table 5, this failure to reach significance is due to a relatively small interaction mean square rather than to an inordinately high error term. Thus, while facilitating changes in student-related beliefs, perceived expertise had little persuasive impact in the film situation. Once again the data suggest that beliefs formed on the basis of information in the film situation were less susceptible to change.

Given the effects reported in the preceeding analysis, a discrepancy main effect for both situations, a discrepancy by cue number interaction in at least the film situation and a student discrepancy by perceived expertise interaction on relative change would be expected. However, most of these effects were either not significant or did not follow the expected pattern. Specifically, in the student situation, the main effect

Table 5

Partial Analysis of Variance Summary Table
for Cue Number by Perceived Expertise Analysis
On Belief Change

Source of Variance	Student			Situation			F	MS _S /MS _F ^a
	df	MS	F	df	MS	F		
Discrepancy	3	.26275	17.596 ^b	3	.07811	8.386 ^c	3.364	
Discrepancy X Expertise	8	.03165	2.120 ^c	8	.01189	1.276	2.266	
Error	216	.01493		180	.00931		1.603	

^aRatio of student to film mean square.

^bSignificant beyond the .001 level.

^cSignificant beyond the .05 level.

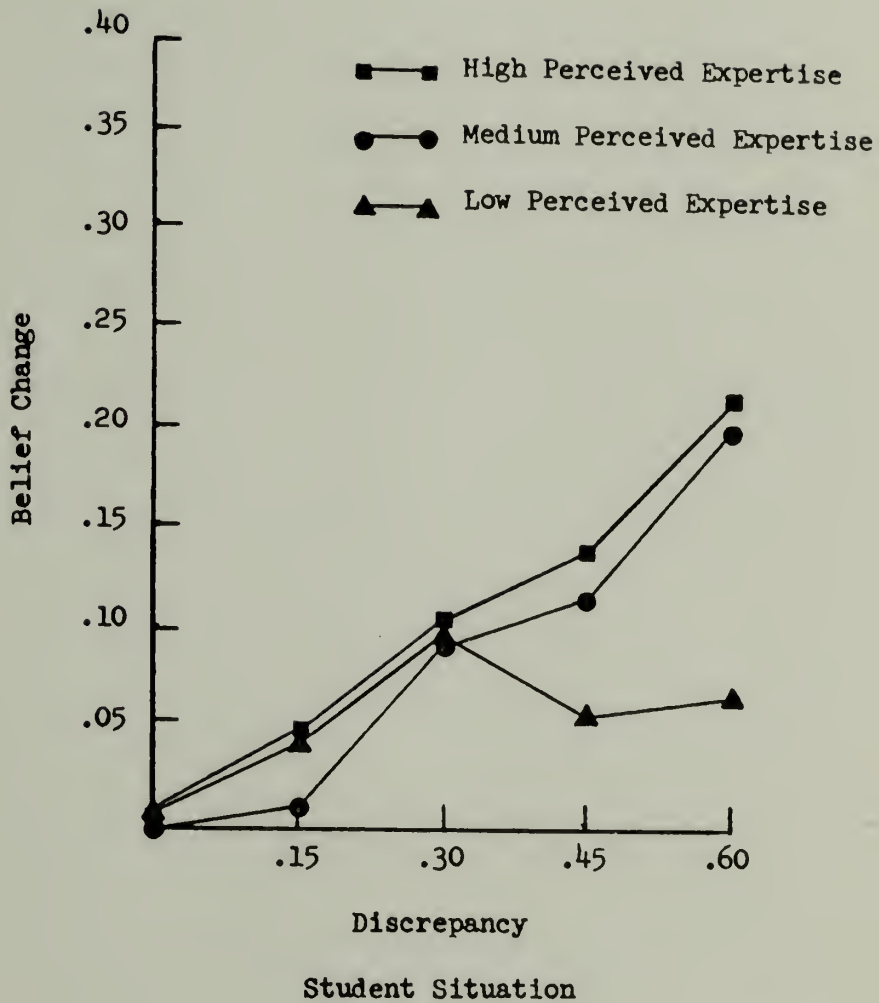


Figure 8. Relationship between discrepancy and belief change as mediated by perceived source expertise in student situation.

of discrepancy and its interaction with expertise were significant only at the .10 level. Moreover, neither of these effects compare favorably with those obtained by Ajzen and Sejwacz (1975). As Figure 9 clearly shows, relative change underestimates theoretical expectations of probability of acceptance at low levels of discrepancy.

As for the film situation, the discrepancy main effect was significant ($F_{3,135} = 3.227, p < .05$), as was its interaction with cue number ($F_{6,135} = 2.748, p < .05$). However, as Figure 10 demonstrates, low levels of discrepancy are associated with low levels of probability of acceptance.

Overall facilitation

The change data demonstrate that cue number and perceived expertise can serve as facilitating factors. An alternative approach is to examine the effects of amount of prior information and perceived expertise on the facilitation parameter, \underline{f} . Following Ajzen and Sejwacz, Equations 5 and 6 were used to compute least-squares estimates of \underline{f} for both the original Fishbein-Ajzen model (Equation 1) and the modified version suggested by Ajzen and Sejwacz (Equation 2). However, as the results of analyses of

$$\underline{f} = \frac{\sum [\ln(1-\underline{D})]^2}{\sum [\ln(1-\underline{D}) \cdot \ln p_a]} \quad (5)$$

$$\underline{f} = \frac{\sum \underline{D}^2}{\sum (\ln p_a \cdot \underline{D})} \quad (6)$$

these alternative \underline{f} levels were comparable, no further distinction between them will be made.



Ajzen and Seiwacz (1975)

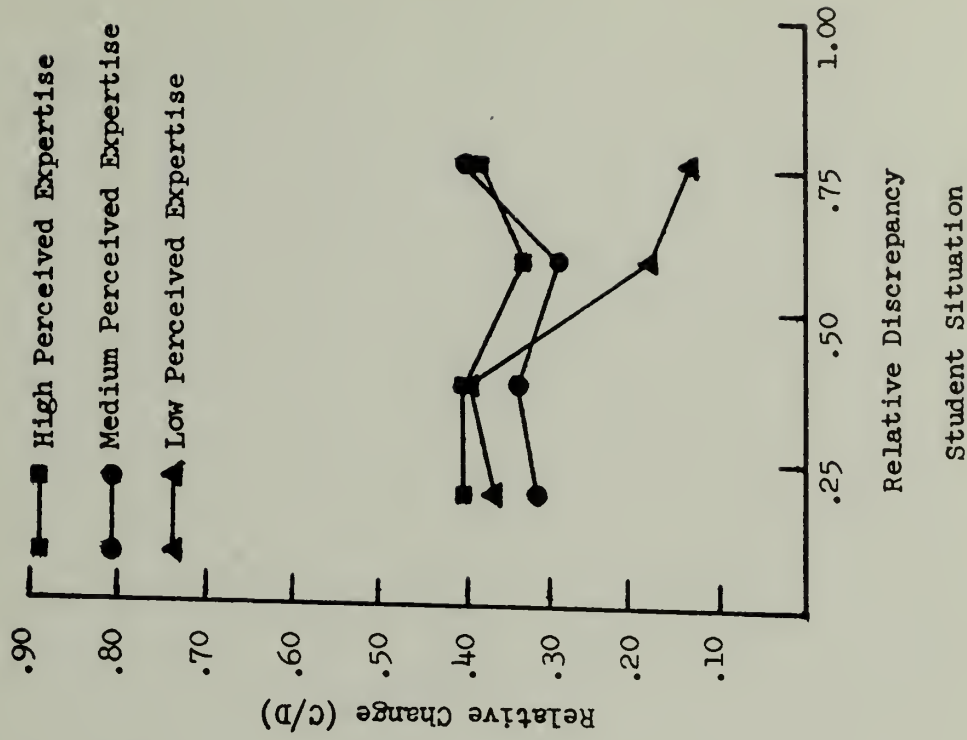
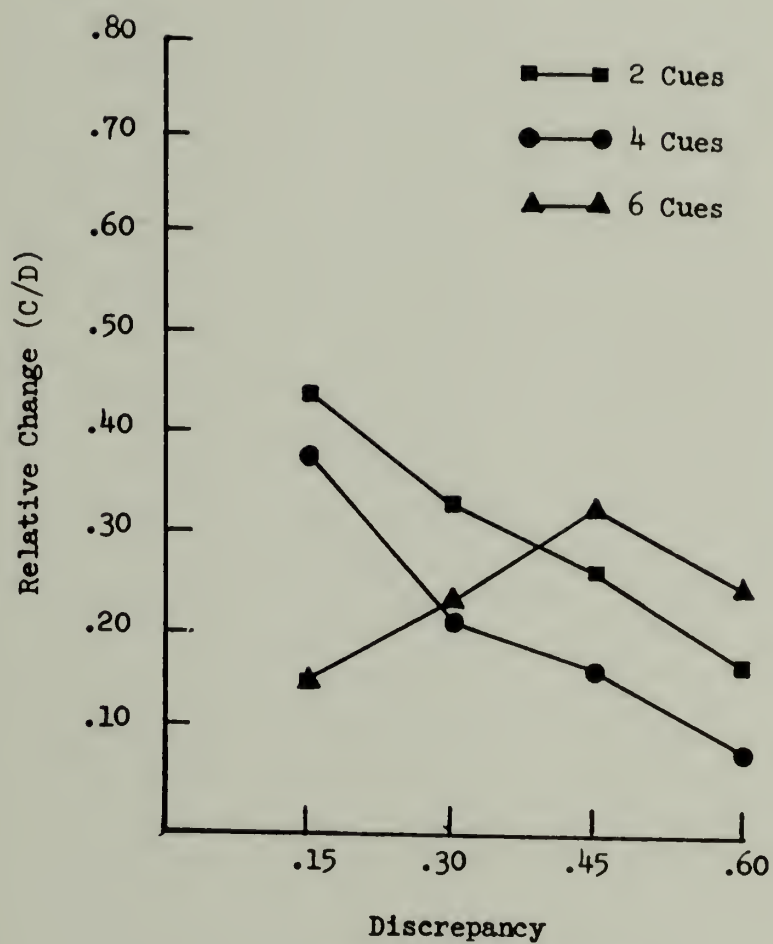


Figure 9. Relationship between relative discrepancy and probability of acceptance when Pa is independently obtained (Ajzen and Seiwacz, 1975) or estimated from change scores (student situation).



Film Situation Data

Figure 10. Relationship between discrepancy and relative change as mediated by cue number.

For each of the 90 subjects in each situation, estimates of \underline{f} were computed. It is important to note that in this study, relative change was used as an estimate of probability of acceptance. A two-way analysis of variance was then performed on these estimates for each situation, cue number and source serving as fixed factors.

Table 6 summarizes the results of these analyses. Recall that cue number significantly affected change in both situations. However, the corresponding main effect of cue number of \underline{f} was significant in the student situation only ($p < .01$), although the mean \underline{f} levels for the film situation were in the expected direction. It should be noted, however, that a film cue number effect may be more difficult to obtain since the facilitation effects of cue number were diminished. In neither situation was source or its interaction with cue number significant. This is not surprising since the source manipulation had no effect on change.

To determine the effects of perceived source expertise on \underline{f} , the cue number by perceived expertise analysis discussed above was again conducted, with \underline{f} as the dependent variable. Since perceived expertise facilitated change in the student situation only, a main effect of expertise on \underline{f} in the film situation was not expected and not found. However, as can be seen in Table 7, the student expertise main effect was also insignificant although the means are in the expected direction. The effects of cue number closely corresponded to those obtained in the cue number by source analysis with amount of prior information significantly affecting student estimates of \underline{f} only ($p < .05$); the cue number main effect

Table 6
Mean \bar{f} Levels as a Function of
Cue Number and Situation

Situation	Model	2	4	6	F
Student	Equation 1 (4 levels) ^a	.845	.369	.444	7.445 ^c
	Equation 2 (4 levels)	.556	.247	.299	7.041 ^c
	Equation 2 (3 levels) ^b	.717	.293	.326	8.813 ^d
Film	Equation 1 (4 levels)	.496	.325	.481	1.663
	Equation 2 (4 levels)	.327	.223	.315	1.381
	Equation 2 (3 levels)	.380	.239	.398	1.596

^a \bar{f} levels computed on the basis of all non-zero levels of discrepancy.

^b \bar{f} levels computed on the basis of three most extreme levels of discrepancy.

^cSignificant beyond the .01 level, 2/81 df.

^dSignificant beyond the .001 level, 2/81 df.

Table 7
Mean \bar{f} Levels for Student Situation
as a Function of Perceived Source Expertise

Model	Perceived Source Expertise			F
	Low	Medium	High	
Equation 1 (4 levels) ^a	.348	.632	.701	2.360
Equation 2 (4 levels) ₁	.241	.416	.461	2.062
Equation 2 (3 levels) ^b	.262	.481	.554	3.268 ^c

^a \bar{f} levels computed on the basis of all non-zero levels of discrepancy.

^b \bar{f} levels computed on the basis of three most extreme levels of discrepancy

^cSignificant beyond the .05 level, 2/54 df.

in the film situation was only marginally significant ($p < .10$).

As probability of acceptance seems to be underestimated at low levels of discrepancy, \underline{f} levels were recomputed on the basis of relative change scores obtained at the three most extreme discrepancy levels. The cue number by source and cue number by perceived expertise analyses of variance discussed above were then conducted on these \underline{f} levels. Only the modified version employed by Ajzen and Sejwacz was used in these analyses.

If relative change estimates of p_a are more precise at more extreme levels of discrepancy, then the effects of cue number and perceived expertise should be heightened, at least in the student situation where these variables had their clearest facilitative effects. As can be seen in Table 6, a somewhat stronger student main effect of cue number was obtained in the cue number by source analysis. This result was replicated in the cue number by perceived expertise analysis as well. Moreover, a significant main effect for perceived expertise was also obtained ($F_{2,54} = 3.268, p < .05$). These \underline{f} levels are displayed in Table 7. Thus, for the student situation, deleting estimates of p_a at the .15 level of discrepancy produced the expected main effects of cue number and perceived expertise on the \underline{f} parameter.

Turning to the film situation, the expected main effect of cue number on these estimates of \underline{f} was not significant, although, as noted in Table 6, the means are in the expected direction. However, as with the original \underline{f} values, a main effect of cue number may be more difficult to achieve since the persuasive impact of amount of prior information was relatively small.

Goodness of fit

The preceeding analysis suggests that estimates of \underline{f} based upon relative change scores are somewhat insensitive to changes in facilitation. Another method by which to determine the utility of employing relative change scores as estimates of probability of acceptance is to determine the degree to which obtained values of p_a (i.e. C/D) match those predicted on the basis of the \underline{f} levels computed across the four non-zero levels of discrepancy. For each subject within each condition of each situation, predicted values of p_a were computed at each non-zero level of discrepancy using both Equations 5 and 6. For each equation, correlations between postdicted and obtained values were computed, resulting in ten correlations (one per subject) within each of the nine experimental groups of each situation. Table 8 summarizes the results of this analysis, averaged over subjects within each of the cue number-source subclasses. As can be seen, the mean correlations vary greatly across cells, both in the sign and magnitude. These results stand in sharp contrast to those obtained by Ajzen and Sejwacz whose correlations were consistently strongly positive.

Table 8

Average Intra-cell Correlations Between Predicted
and Obtained Values of Probability of Acceptance

Student Situation			
Cue Number			
Expertise	2	4	6
Low	.158	.459	-.558
Medium	.259	.018	.157
High	.540	.436	.016

Film Situation			
Cue Number			
Expertise	2	4	6
Low	.222	.402	.296
Medium	.232	.814	.444
High	-.104	-.067	.206

CHAPTER IV

DISCUSSION

Belief change

The effects of source discrepancy and amount of prior information generally conformed to expectations. A significant main effect of discrepancy and its interaction with amount of prior information were obtained. While discrepancy and change were positively related, variations in amount of prior information significantly affected the slope of this relationship. This interaction also indicated that decreases in amount of prior information had their greatest effects at more extreme levels of discrepancy. This underscores the importance of taking into account level of discrepancy in predicting the effects of facilitating factors on change.

The strength of the discrepancy main effect and the facilitative effect of prior information were significantly weakened in the film situation. Multiple regression analysis suggested that these weaker effects were primarily due to the greater informational value of the cues in the film two-cue condition. That is, the overall facilitation level associated with the initial proximal probabilities of the film two-cue condition was lower than that of the student situation. Consequently, film beliefs in this condition were more resistant to change.

The discrepancy by information interaction of the film situation differed from the student situation in another way as well. As predicted, increases in prior information produced, in the student situation, decreases in slope. However, in the film situation, the relationship between information and slope approximated a U-shaped function. The explanation of this latter result is open to speculation. One possibility,

however, is suggested by the results of the multiple regression analysis which indicated that subjects in the film six-cue condition focused upon four cues in making their probabilistic judgments. Subjects in the student six-cue condition primarily weighted only three. Perhaps, within the context of this experiment at least, processing more than three cues was relatively difficult. Indeed, researchers have found that the amount of information individuals can process is limited (e.g. Miller, 1956). If this line of reasoning is correct, the discrepancy by cue number interaction observed in the film situation may indicate that attempts to base initial beliefs on too much information can be as facilitative of change as attempting to form opinions when too little information is available.

The source manipulation failed to maintain large differences in perceived expertise over the course of the experiment, with moderately and highly expert sources suffering losses in perceived expertise. Although no data were directly available, it seems reasonable to attribute the loss of expertise to source discrepancy. That is, highly expert sources suffered losses in expertise following their offering opinions highly discrepant from those of the receivers. These changes in source evaluation again indicate the importance of taking into account the amount of advocated change when predicting actual change.

In order to partially compensate for the inadequacy of the source manipulation, subjects were categorized according to their post-experimental ratings of perceived expertise. Consistent with expectation, a discrepancy by perceived expertise interaction was obtained in the student situation. However, the high and medium expertise sources did not significantly differ in their persuasive impact. This may mean that increases

in perceived expertise do not necessarily imply increases in facilitation. More interestingly, this result may instead imply that, just as the difference between low and medium sources becomes clear only at extreme levels of discrepancy, the differential persuasive effectiveness between medium and high sources may become clear only at still more extreme discrepancy levels. It should be remembered that the discrepancy levels of this study were varied from 0 to .60 only. Future research manipulating discrepancy at more extreme levels may be able to determine which of these two hypotheses is correct.

Relative change and probability of acceptance

In general, relative change scores seem to be only a rough index of probability of acceptance. Although significantly affecting change, discrepancy, amount of prior information, and perceived expertise did not consistently affect C/D in the expected manner. Estimates of \bar{f} based upon relative change scores also failed to conform to expectation. Finally, average intracell correlations between ad hoc and obtained values of p_a were often low and sometimes negative.

On the other hand, computations of \bar{f} based upon relative change scores at the three most extreme levels of discrepancy proved to be more sensitive to changes in facilitation, at least in the student situation. Taken together, these results may suggest that the relationship between p_a and C specified in Equation 3 holds only at more extreme levels of discrepancy. Thus, although data obtained by Ajzen and Sejwacz support the model of probability of acceptance and this study confirms the hypothesized relationships between discrepancy, facilitation, and change, the relationship between p_a and C evidently requires further specification.

Implications for change along other dimensions

Overall, the change data confirm Fishbein and Ajzen's contention that changes in a receiver's corresponding belief depend upon the amount of change advocated and initial levels of facilitation. It is important to note however that change in the Fishbein-Ajzen model is conceptualized as movement across a dimension of subjective probability. The emphasis on belief change in the Fishbein-Ajzen model is understandable since these authors view belief change as the foundation of changes in attitude, intentions, and behavior. However, most research in the area of persuasive communications has not been limited to this dimension. Moreover, unlike the present study, most persuasive communication research employs arguments which the experimenter intuitively feels support the conclusion of the message. Unfortunately, as previously noted, no consistent effects involving discrepancy along these other dimensions has been obtained.

To the extent that change along the more typical dimensions employed by traditional researchers is analogous to change along the dimension of subjective probability (an assumption which has yet to be tested), the results of this study suggest that the inconsistent effects of discrepancy in past research may be due to possible differences in initial facilitation. These differences may be due to many factors. For example, discrepancy and credibility would be expected to have little effect on persuasion for issues about which subjects have much prior information. Conceptualizing initial facilitation as being affected by the characteristics of supportive arguments suggests that discrepancy and credibility will have varying effects as supportive arguments vary in the degree to which they produce changes in the corresponding beliefs of the receiver

or are perceived to be supportive of the communicator's position. Unfortunately, different studies tend to use different supportive arguments without assessing possible differences in their persuasiveness. Moreover, although a given study usually holds the content of the communication constant while varying the discrepancy of the communicator's position, several experiments (Bochner and Insko, 1966; Brock, 1967; Eagly, 1974; Rhine and Severance, 1970) have shown that the perceived supportiveness of a given set of arguments may decrease with increases in discrepancy. In these cases, increases in discrepancy may be associated with decreases in initial facilitation, thereby clouding the relationship between discrepancy per se and persuasion. It seems reasonable to suggest therefore that consistent discrepancy effects will be obtained across various dimensions only when it becomes possible to specify the initial levels of facilitation associated with each persuasive attempt and the degree to which these levels are affected by the use of different dimensions, variations in supportive arguments, and changes in the position of the communicator.

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Appendices

Appendix A "Practice" Profiles and Response Scale for Student Situation

Imagine that Student _____, a high school Senior applying for admission into a mid-western state university, is characterized as follows:

1. His mother's educational level is

: 1 :	2 :	3 :	4 :	5 :	6 :	7 :	8 :	9 :	10 :	11 :
					Avg.					
Very						Very				
Low						High				
2. His economic status is

: 1 :	2 :	3 :	4 :	5 :	6 :	7 :	8 :	9 :	10 :	11 :
					Avg.					
Very						Very				
Low						High				

Imagine that Student , a high school Senior applying for admission into a mid-western state university, is characterized as follows:

1. His mother's educational level is

: 1 :	2 :	3 :	4 :	5 :	6 :	7 :	8 :	9 :	10 :	11 :
<u>Very</u>					Avg.					<u>Very</u>
										High

2. His economic status is

: 1 :	2 :	3 :	4 :	5 :	6 :	7 :	8 :	9 :	10 :	11 :
<u>Very</u>					Avg.					<u>Very</u>
										High

3. The academic quality of his high school is

: 1 :	2 :	3 :	4 :	5 :	6 :	7 :	8 :	9 :	10 :	11 :
<u>Very</u>					Avg.					<u>Very</u>
										High

4. His grade point average is

: 1 :	2 :	3 :	4 :	5 :	6 :	7 :	8 :	9 :	10 :	11 :
<u>Very</u>					Avg.					<u>Very</u>
										High

Imagine that Student , a high school Senior applying for admission into a mid-western state university, is characterized as follows:

1. His scholastic aptitude test scores are

1	2	3	4	5	6	7	8	9	10	11
Avg.										11
										Very
										High
										Low
2. His mother's educational level is

1	2	3	4	5	6	7	8	9	10	11
Avg.										11
										Very
										High
										Low
3. His economic status is

1	2	3	4	5	6	7	8	9	10	11
Avg.										11
										Very
										High
										Low
4. The academic quality of his high school is

1	2	3	4	5	6	7	8	9	10	11
Avg.										11
										Very
										High
										Low
5. His grade point average is

1	2	3	4	5	6	7	8	9	10	11
Avg.										11
										Very
										High
										Low
6. The number of school-related activities in which he is involved is

1	2	3	4	5	6	7	8	9	10	11
Avg.										11
										Very
										High
										Low

Appendix B Communication Phase Profiles for Student Situation

Imagine that Student , a high school Senior, has applied for admission into a mid-western state university. We would like you to estimate the chances that this student will be accepted. Since, in real life, a judgment of this kind often depends both upon the opinions of others as well as knowing somethin about the background of the student, you will be given not only a summary of the student's background but also another person's opinion regarding the probability that the student will be accepted.

Imagine that this student is characterized as follows:

1. His mother's educational level is

: 1 : 2 : 3 : 4 : 5 : 6 : 7 : 8 : 9 : 10 : 11 :
Very Avg. High
Low

2. His economic status is

: 1 : 2 : 3 : 4 : 5 : 6 : 7 : 8 : 9 : 10 : 11 :
Very Avg. High
Low

Imagine that Student , a high school Senior, has applied for admission into a mid-western state university. We would like you to estimate the chances that this student will be accepted. Since, in real life, a judgment of this kind often depends both upon the opinions of others as well as knowing something about the background of the student, you will be given not only a summary of the student's background but also another person's opinion regarding the probability that the student will be accepted.

Imagine that this student is characterized as follows:

1. His scholastic aptitude test scores are

1	2	3	4	5	6	7	8	9	10	11
Avg.										11
										Very
										Low
										High
2. His mother's educational level is

1	2	3	4	5	6	7	8	9	10	11
Avg.										11
										Very
										Low
										High
3. His economic status is

1	2	3	4	5	6	7	8	9	10	11
Avg.										11
										Very
										Low
										High
4. The academic quality of his high school is

1	2	3	4	5	6	7	8	9	10	11
Avg.										11
										Very
										Low
										High
5. His grade point average is

1	2	3	4	5	6	7	8	9	10	11
Avg.										11
										Very
										Low
										High
6. The number of school-related activities in which he is involved is

1	2	3	4	5	6	7	8	9	10	11
Avg.										11
										Very
										Low
										High

Appendix C

Source Opinion and Response Scales for Student Situation

According to a high school friend of the student, the chances that this student will be accepted are

0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%
/...../	/...../	/...../	/...../	/...../	/...../	/...../	/...../	/...../	/...../	/...../	/...../	/...../	/...../	/...../	/...../	/...../	/...../	/...../	/...../	/...../
0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%
(definitely will											(definitely will									
not be accepted.)											be accepted.)									

Based upon all the information given to you, do you think this student will be accepted by the university?

In my opinion, the chances that this student will be accepted are

0% 5% 10% 15% 20% 25% 30% 35% 40% 45% 50% 55% 60% 65% 70% 75% 80% 85% 90% 95% 100%
(definitely will not be accepted.) (may or may not be accepted.) (definitely will be accepted.)

Appendix D
"Practice" Profiles and Response Scale for Film Situation

Imagine that French film , recently released abroad, is characterized as follows:

1. Relative to other French productions, the production costs of this film were

: 1 :	2 :	3 :	4 :	5 :	6 :	7 :	8 :	9 :	10 :	11 :
Very					Avg.					Very
Low										High

2. Relative to other French actors, the acting ability of the star of this film is

: 1 :	2 :	3 :	4 :	5 :	6 :	7 :	8 :	9 :	10 :	11 :
Very					Avg.					Very
Low										High

Imagine that French film , recently released abroad, is characterized as follows:

1. Relative to other French productions, the production costs of this film were

: 1 : 2 : 3 : 4 : 5 : 6 : 7 : 8 : 9 : 10 : 11 :
Very Avg. Very High
Low
2. Relative to other French directors, the skill of the director of this film is

: 1 : 2 : 3 : 4 : 5 : 6 : 7 : 8 : 9 : 10 : 11 :
Very Avg. Very High
Low
3. Relative to other French actors, the acting ability of the star of this film is

: 1 : 2 : 3 : 4 : 5 : 6 : 7 : 8 : 9 : 10 : 11 :
Very Avg. Very High
Low
4. Relative to other French movies, the amount of violence in this movie is

: 1 : 2 : 3 : 4 : 5 : 6 : 7 : 8 : 9 : 10 : 11 :
Very Avg. Very High
Low

Imagine that French film

, recently released abroad, is characterized as follows:

1. Relative to other French productions, the production costs of this film were

: 1 : 2 : 3 : 4 : 5 : 6 : 7 : 8 : 9 : 10 : 11 :
Very Avg. Very High
Low

2. Relative to other French actors, the popularity of the starring actor in this film is

: 1 : 2 : 3 : 4 : 5 : 6 : 7 : 8 : 9 : 10 : 11 :
Very Avg. Very High
Low

3. Relative to other French directors, the skill of the director of this film is

: 1 : 2 : 3 : 4 : 5 : 6 : 7 : 8 : 9 : 10 : 11 :
Very Avg. Very High
Low

4. Relative to other French actors, the acting ability of the star of this film is

: 1 : 2 : 3 : 4 : 5 : 6 : 7 : 8 : 9 : 10 : 11 :
Very Avg. Very High
Low

5. Relative to other French movies recently released, the number of favorable reviews of this movie has been

: 1 : 2 : 3 : 4 : 5 : 6 : 7 : 8 : 9 : 10 : 11 :
Very Avg. Very High
Low

6. Relative to other French movies, the amount of violence in this movie is

: 1 : 2 : 3 : 4 : 5 : 6 : 7 : 8 : 9 : 10 : 11 :
Very Avg. Very High
Low

Appendix E

Communication Phase Profiles for Film Situation

Imagine that French film has been recently released abroad. We would like you to estimate the chances that this film will be shown in the United States. Since, in real life, a judgment of this kind often depends both upon the opinions of others as well as knowing something about the film, you will be given not only a summary of the film but also another person's opinion regarding the probability that the film will be shown in the United States.

Imagine that this film is characterized as follows:

1. Relative to other French productions,
the production costs of this film were

: 1 :	2 :	3 :	4 :	5 :	6 :	7 :	8 :	9 :	10 :	11 :
Very				Avg.						Very
	Low									High

2. Relative to other French actors,
the acting ability of the star of
this film is

: 1 :	2 :	3 :	4 :	5 :	6 :	7 :	8 :	9 :	10 :	11 :
Very				Avg.						Very
	Low									High

Imagine that French film has been recently released abroad. We would like you to estimate the chances that this film will be shown in the United States. Since, in real life, a judgment of this kind often depends both upon the opinions of others as well as knowing something about the film, you will be given not only a summary of the film but also another person's opinion regarding the probability that the film will be shown in the United States.

Imagine that this film is characterized as follows:

1. Relative to other French productions, the production costs of this film were

1	:	2	:	3	:	4	:	5	:	6	:	7	:	8	:	9	:	10	:	11
Very								Avg.												Very
																				High
2. Relative to other French directors, the skill of the director of this film is

1	:	2	:	3	:	4	:	5	:	6	:	7	:	8	:	9	:	10	:	11
Very								Avg.												Very
																				High
3. Relative to other French actors, the acting ability of the star of this film is

1	:	2	:	3	:	4	:	5	:	6	:	7	:	8	:	9	:	10	:	11
Very								Avg.												Very
																				High
4. Relative to other French movies, the amount of violence in this movie is

1	:	2	:	3	:	4	:	5	:	6	:	7	:	8	:	9	:	10	:	11
Very								Avg.												Very
																				High

Imagine that French film has been recently released abroad. We would like you to estimate the chances that this film will be shown in the United States. Since, in real life, a judgment of this kind often depends both upon the opinions of others as well as knowing something about the film you will be given not only a summary of the film but also another person's opinion regarding the probability that the film will be shown in the United States.

Imagine that this film is characterized as follows:

1. Relative to other French productions,
the production costs of this film were
: 1 : 2 : 3 : 4 : 5 : 6 : 7 : 8 : 9 : 10 : 11 :
Very Avg. Very High
Low
2. Relative to other French actors, the
popularity of the starring actor in
this film is
: 1 : 2 : 3 : 4 : 5 : 6 : 7 : 8 : 9 : 10 : 11 :
Very Avg. Very High
Low
3. Relative to other French directors,
the skill of the director of this film is
: 1 : 2 : 3 : 4 : 5 : 6 : 7 : 8 : 9 : 10 : 11 :
Very Avg. Very High
Low
4. Relative to other French actors, the
acting ability of the star of this film is
: 1 : 2 : 3 : 4 : 5 : 6 : 7 : 8 : 9 : 10 : 11 :
Very Avg. Very High
Low
5. Relative to other French movies recently
released, the number of favorable reviews
of this movie has been
: 1 : 2 : 3 : 4 : 5 : 6 : 7 : 8 : 9 : 10 : 11 :
Very Avg. Very High
Low
6. Relative to other French movies, the
amount of violence in this movie is
: 1 : 2 : 3 : 4 : 5 : 6 : 7 : 8 : 9 : 10 : 11 :
Very Avg. Very High
Low

Appendix F
Source Opinion and Response Scales for Film Situation

According to an usher at a local movie house,
the chances that this French film will be shown in the United States are

/...../...../...../...../...../...../...../...../...../...../	/...../...../...../...../...../...../...../...../...../...../
0% 5% 10% 15% 20% 25% 30% 35% 40% 45% 50% 55% 60% 65% 70% 75% 80% 85% 90% 95% 100%	(definitely will be shown in the United States.)
(definitely will not be shown in the United States.)	(may or may not be shown in the United States.)
(definitely will be shown in the United States.)	(definitely will be shown in the United States.)

Based upon all the information given to you,
do you think this French film will be shown in the United States?

In my opinion, the chances that this French film will be shown in the United States are

/...../...../...../...../...../...../...../...../...../...../	/...../...../...../...../...../...../...../...../...../...../
0% 5% 10% 15% 20% 25% 30% 35% 40% 45% 50% 55% 60% 65% 70% 75% 80% 85% 90% 95% 100%	(definitely will be shown in the United States.)
(definitely will not be shown in the United States.)	(may or may not be shown in the United States.)
(definitely will be shown in the United States.)	(definitely will be shown in the United States.)

Appendix G

Levels of Each Cue Used in Each Profile of Each Situation

		Student Situation											
		Two Cues		Four Cues				Six Cues ^a					
Profile ^b		MEL	ES	MEL	ES	AQHS	GPA	SAT	MEL	ES	AQHS	GPA	NEA
FIR ST SET	1	7	4	1	7	9	5	1	3	9	1	6	4
	2	2	1	6	7	10	1	3	7	9	10	1	2
	3	6	3	4	6	5	3	6	7	5	6	9	2
	4	2	3	5	4	6	2	3	4	5	4	2	3
	5	4	4	9	2	1	5	5	5	3	2	2	4
	6	1	7	1	4	5	7	1	8	5	9	4	2
	7	1	9	9	8	4	2	9	8	7	3	6	2
	8	3	2	2	5	9	1	6	5	6	3	1	2
	9	6	1	3	4	9	4	1	3	6	2	5	1
	10	1	3	2	5	7	2	3	2	3	6	2	1
	11	1	5	7	6	5	3	4	7	3	4	5	9
	12	6	4	7	2	9	7	2	6	3	8	4	5
	13	3	1	4	6	7	2	4	4	6	6	2	1
	14	8	6	6	4	3	6	2	8	7	2	8	3
	15	5	7	8	9	6	2	8	9	2	8	6	3
SEC OND SET	16	6	6	9	5	1	7	1	5	3	9	8	4
	17	1	3	2	5	7	2	3	2	3	6	2	1
	18	4	2	1	5	6	6	6	1	2	8	5	1
	19	7	6	1	6	4	8	1	4	7	7	8	7
	20	2	1	6	7	10	1	3	7	9	10	1	2
	21	6	5	1	8	6	2	8	1	5	3	6	8
	22	8	1	7	3	1	1	6	1	3	6	2	9
	23	3	2	2	5	9	1	6	5	6	3	1	2
	24	5	4	5	7	4	9	6	3	9	4	5	7
	25	3	7	3	4	5	8	2	2	2	9	7	1
	26	2	3	5	4	6	2	3	4	5	4	2	3
	27	9	2	1	6	3	9	9	9	5	4	7	8
	28	8	3	3	8	9	3	3	6	8	6	8	4
	29	5	8	7	8	9	7	8	6	2	5	4	9
	30	3	1	4	6	7	2	4	4	6	6	2	1

^aNote: SAT = Scholastic Aptitude Test scores
 MEL = Mother's Educational Level
 ES = Economic Status of student
 AQHS = Academic Quality of High School
 GPA = Grade Point Average
 NEA = Number of Extracurricular Activities

^bThe following pairs of profiles are identical: 2, 20; 4, 26; 8, 23; 10, 17; and 13, 30.

Film Situation												
Two Cues			Four Cues				Six Cues ^a					
Profile ^b	PC	AAS	PC	SD	AAS	AV	PC	PSA	SD	AAS	NFR	AV
	1	2	3	1	6	3	8	2	3	6	3	2
	2	8	10	9	10	8	9	8	11	10	9	2
	3	2	6	1	9	8	8	5	1	2	7	10
F	4	9	8	9	8	10	8	11	10	9	10	1
I	5	1	2	4	1	4	6	3	9	9	2	7
R	6	8	9	1	4	5	1	1	6	1	8	1
S	7	5	7	6	6	9	1	2	11	4	10	6
T	8	10	9	8	9	8	7	9	8	11	8	3
	9	6	2	3	1	6	8	6	9	9	3	5
S	10	8	11	8	10	9	7	10	11	9	11	8
E	11	5	9	2	5	3	6	11	4	11	5	9
T	12	8	1	3	8	5	2	5	7	9	4	11
	13	9	10	7	9	10	6	9	10	11	9	1
	14	4	9	9	2	4	2	1	2	3	5	10
	15	5	3	8	2	6	5	8	3	7	1	11
											3	8
												2
	16	7	8	2	8	4	9	2	7	5	6	
	17	8	11	8	10	9	7	10	11	9	11	2
S	18	5	4	4	2	7	4	7	5	7	2	3
E	19	5	1	2	5	9	4	6	2	9	8	2
C	20	8	10	9	10	8	9	8	11	10	9	9
O	21	3	8	3	5	1	2	5	8	6	8	10
N	22	4	3	8	8	7	2	9	4	9	9	8
D	23	10	9	8	9	8	7	9	8	11	8	2
	24	8	3	2	7	3	5	8	7	1	9	1
S	25	4	2	4	8	7	8	3	1	7	7	4
E	26	9	8	9	8	10	8	11	10	9	10	3
T	27	8	2	1	8	3	1	2	4	5	3	4
	28	2	4	8	6	3	8	1	3	1	4	2
	29	3	9	5	9	9	3	10	3	9	2	3
	30	9	10	7	9	10	6	9	10	11	9	5
											8	2
											10	6

^aNote: PC = Production Costs
 PSA = Popularity of the Starring Actor
 SD = Skill of the Director
 AAS = Acting Ability of the Star
 NFR = Number of Favorable Reviews
 AV = Amount of Violence

^bThe following pairs of profiles are identical: 2, 20; 4, 26; 8, 23; 10, 17; and 13, 30.

