ATTRIBUTION THEORY AND PERSUASION.

AN INTEGRATED PARADIGM

by

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CHAPTER I

INTRODUCTION

Man's environment consists of a multitude of potential stimuli demanding his attention. According to Burke (1968) those things to which man unconsciously reacts define the realm of motion, while those things upon which he chooses to act define the realm of symbolic behavior. When man interprets the nature of the world around him, he is defining a symbolic reality for himself. Human transactions occur when he acts in accord with that symbolic reality.

Messages constitute one of the most important sources of man's symbolic reality and symbolic behavior. When man interprets messages he utilizes symbolic processes to form linkages between recommendations (potential effects) and possible causes. These symbolic linkages, known as attributions, define the situation that the individual faces and in turn influence his resulting behavior.

Attributions and Persuasion

When a receiver is confronted with a persuasion attempt, he may ask two questions in his attempt to understand the situation· 1) "Why should I do it?" and 2) "Can I do it?" or "What will the outcome be if I do it?" The first of these questions centers on the intentions and motives of the person, while the second concerns the person's ability to act

Fritz Heider (1958) proposed a similar distinction in his discussion of the "naive" analysis of action. He argued that an individual's inferences about the cause of an action are the result of his analysis of ability ("can") and intention ("try"). Furthermore, he viewed "can" as

a function of "personal power" and "environmental force," and "try" as a function of "exertion" and "intention."

Harold Kelley (1967) has directly speculated about the relationship between attributions and persuasion when he specified two types of attributional social influence. The first type, instruction, is a "can" centered form of influence that attempts to show that the message's recommendation will lead to some consistent way of dealing with the world (a stable ability). The second type, persuasion, adds the additional element of "try" in terms of the potential rewards for the persuader and the receiver (intention). Thus, both Heider and Kelley see the individual faced with behavior as asking the questions "why?" and "can?" in an attempt to understand and respond to the situation.

The answers to the questions "why?" and "can?" fall into two broad categories. Heider (1944, 1958) first suggested this distinction when he argued attributions are made to internal causes and to external causes (these categories should not be taken as absolute, but instead as general classifications within which and across which attributions can be made). Internal causes are those which are part of the personality makeup of the person making the inference and external causes are those which are part of the world outside him. When the external cause is not a person, the distinction becomes one of a situational-dispositional dichotomy. However, in most persuasion situations the distinction is between something internal to the receiver (e.g. his own intentions or abilities) or something external to him (e.g. another person or some situational constraint). Thus, in most persuasion situations, the individual asks two basic questions about causality, "why?" and "can?" and finds answers to them either within himself or outside himself.

Some theoretical and empirical attempts have been made to predict what types of causes will be attributed to certain effects. Kelley (1967) has proposed that people form attributions according to a covariance principle whereby people attribute effects to the causes with which they covary over time. The criteria by which individuals judge whether a cause covaries over time with an effect are: 1) consistency over time and modality, 2) distinctiveness of entity, and 3) social consensus among people. MacArthur (1972) tested this formulation in an impression formation situation. She presented subjects with information about people and situations according to Kelley's principles and measured the resultant types of causal attributions that were made. MacArthur found that information about consistency, distinctiveness and social consensus did induce people to make different attributions than were made by people who were just given information about a single behavioral event. She found evidence to support Kelley's hypotheses that internal attributions to a person would result from information which showed the person making few discriminations among entities of a class (low distinctiveness), being very consistent in reacting to an entity over time and modality (high consistency), and in agreement with few other people in reacting to the entity (low consensus). Attributions external to the actor were found to result from information showing the individual reacting selectively to entities of a class (high distinctiveness), reacting consistently to the entity over time and modality (high consistency), and reacting in a manner consistent with other people (high consensus).

Attributions and Behavior

An important distinction needs to me made at this point between

attributions that are made before a behavior occurs (a before paradigm) and attributions that are made after the behavior occurs (an after paradigm). Most research on the attribution process has occurred within an after paradigm following the manner of dissonance theory research. However, most persuasion situations call for an individual to make a choice which in turn leads to some behavior. In many instances, the choice will involve first making attributions about causality in the situation, e.g. "Do I want to do this?" "Am I capable of doing it?" When this occurs attributions are being made in a before paradigm. This situation has been modeled by Lopes (1972) in the first part of an information integration model (Anderson, 1971) for attitude attribution. The model has two stages: 1) an initial stage in which an expectation is formed of what the person's attitude will be based on freedom of choice and prior probability (role or reference group) and 2) a second stage where the expectation is compared with the actual behavior of the person. A before paradigm is primarily concerned with the first stage of this model and an after paradigm takes into account both stages. A before paradigm is relevant to the persuasion situation when something makes information processing about the nature of the situation salient to the receiver. There are many possible reasons why such information processing might become salient to a receiver (e.g. see Kiesler's theory of stimulus incongruity, 1973; Jones and Nisbett's work with the actor and the observer, 1971; and Duval and Wicklund's work with objective self awareness, 1973), but the important thing is that when it does, a before paradigm for attributions is appropriate.

It is argued here that when an attribution is made to an internal

or external cause at any point in the persuasion process, the resulting type of behavior. Davison and Valins (1969) proposed that behavior changes which are believed to be brought about by oneself will be maintained to a greater degree than behavior changes which are believed to be due to some external force or agent. In line with this thesis, they found that subjects who attributed a behavior change (increased ability to withstand shock) to themselves, subsequently perceived that shocks were less painful and tolerated significantly more than subjects who attributed their behavior change to a drug. Thus, when a person perceives that the ability to withstand shock is due to his own internal makeup, then he is more likely to be able to maintain that immunity than if he attributes the ability to something external.

Kraut (1973) found support for the effect of dispositional labeling as opposed to no labeling in an experiment involving contributions to charity. He found that when a donor or nondonor was labeled with a dispositional trait (such as charitable or uncharitable) that a markedly different behavior response was obtained in future charity situations than when no label was applied to the person. In other words, dispositional labeling was found to affect behavior in a negative direction when an uncharitable label was used and in a positive direction when a charitable label was used. (However, caution must be used in interpreting these findings because of the possible effect of reinforcement and the fact that only the effect of dispositional labeling and not situational labeling was assessed).

When the behavior in question is verbal, as in attitudes, then there is also support for the idea that differential attributions have an effect upon the resultant behavior. Jones and Davis (1965) have developed a theory of "correspondent inferences" which argues

that a person's attitude will be seen to correspond to his behavior (as seen by an observer) when the prior probability of the behavior is low and the person's freedom of choice is high. That is, an internal attribution is made (e.g. the person acted in accordance with his own attitudes, not because he had to) when external forces are not strong (reducing the probability of behavior and preserving freedom of choice). When this theory is applied to a persuasion situation (or a before paradigm) and to an individual's view of himself, it predicts that a person is likely to see his attitudes as being linked to his future behavior and thus influencing it when he perceives his own behavior as having low probability and high freedom of choice. For example, an individual who is planning on voting for a certain candidate after listening to a message is more likely to see his own attitude as causing the behavior when he has never voted for a Republican before (low prior probability) and he has been exposed to messages from both candidates with no external cause strong enough to force his behavior (high freedom of choice). The influence of prior probability was illustrated by Steiner and Field (1960) in a study where people were better able to infer a person's attitude from his behavior when he was not acting consistently with his role. Later studies have also demonstrated this effect (Jones and Harris, 1967; Jones, Worchel, Goethals, and Grumet, 1971).

In summary, previous research has shown that attributions made to behavior that has already occurred affect an individual's future behavior. In general, internal attributions seem to bring about greater commitment and longer lasting effects. It is proposed here that attributions also mediate the persuasion process and thereby influence the individual's behavior. That is, attributions which follow a

message and attach cause to potential future behavior will affect that future behavior. If so, one would expect that when a person attributes a potential effect to an internal cause rather than an external cause, that more probable and longer lasting behavior change will occur.

Attributions and Forms of Behavior

The discussion up to this point has considered behavior as a unitary concept, however a distinction must be made between verbal behavior and overt behavior. In many ways behavior can be considered as lying on a continuum ranging from surface opinions on one end to the most momentous life acts on the other end with a slight gap lying somewhere in the middle providing a formal separation between verbal behavior and overt behavior.

Verbal behavior is a term that has become the dependent measure of such constructs as attitudes and beliefs. It is the oral or written form of these cognitive concepts. Much attention has been focused on the technical scaling and measurement of this concept.

Overt behavior refers to the physical actions of a person in some situation. It can take innumerable different forms and in many ways is considered the end that social science is seeking to study. Technical forms of measurement for overt behavior have received much less attention than verbal behavior with single scale measures receiving primary attention.

The main reason for making the distinction between verbal behavior and overt behavior lies with the large body of literature which seems to show a lack of relationship between the two concepts (Festinger, 1964; Wicker, 1969). If this finding is true then the relationship between each of these measures and attributions needs

to be discussed.

The crucial question for these distinctions lies in whether each variable lies under the perceived control of external forces or internal forces. In most instances of research on this question verbal behavior can be seen to lie under the control of internal forces (e.g. beliefs, values) while overt behavior is more influenced by external forces. Under such circumstances there is no reason to believe that the two variables should be consistent, which is what is usually found. Only when both verbal behavior and overt behavior are perceived as under the same type of control, which is usually internal control, can it be expected that a consistent relationship will be found between the two variables.

Operationalization Difficulties in Attribution Research

The attempt to independently manipulate internal and external attributional states presents certain difficulties because of the unobservable and mediating nature of attributions. There appear to be three general ways to achieve such a manipulation: 1) through Kellian notions of consistency and distinctiveness, 2) through psycholinguistic manipulations and 3) through manipulation of antecedent attributional states. Kelley (1967) has defined attributions in terms of distinctiveness of entities, consistency over time and modality and consensus of other people. MacArthur (1972) has utilized these distinctions to manipulate descriptions (in terms of information) of behavioral situations in an attempt to create different attributional states. She found that person attributions were more likely to result from information that depicted low social consensus, high consistency over time and modality, and low distinctiveness of

entity. On the other hand stimulus attributions were found to result from information that reflected high social consensus, high consistency over time and modality, and high distinctiveness of entity. Thus, using an after paradigm MacArthur was able to manipulate attributional states through informational components conforming to the principles of consistency and distinctiveness.

Second, in a series of studies Kanouse has suggested that certain linguistic forms may reflect attributional differences. In two early studies (Gilson and Abelson, 1965; and Abelson and Kanouse, 1966), it was found that certain verb forms create differences in the process of generalization. Gilson and Abelson (1965) found that there was a greater tendency to agree with inductive inferences (a generalization based on preceding sentences with specific pieces of information) when manifest (overt, observable actions such as "hit") or positive (favorable actions such as "like") verbs were used than when subjective (internal states such as "feel") or negative (unfavorable actions such as "dislike") verbs were used. In addition, they found that the manifest-subjective dimension had the strongest impact on subject rate of agreement with the inductive inferences (as compared with the positive-negative dimension). Abelson and Kanouse (1966) replicated these findings for inductive inferences. However, when they looked at deductive inferences (the application of a previous generalization to a specific instance) they found the positive-negative dimension to be the strongest and that negative or subjective verbs were more likely to lead to greater agreement with the inference than positive or manifest verbs (a mirror image reversal of the previous findings). Kanouse (1971) has explained these results in terms of

"implicit quantifiers" associated with the verb In other words, agreement with a deductive inference is more likely when a subjective verb is used because the subjective verb implies a greater degree of generalizability than a manifest verb. Kanouse (1972) has demonstrated that in simple sentences of a deductive nature that subjective verbs and negative verbs have greater implicit quantities of the object associated with them than manifest and positive verbs respectively. This study is consistent with the previous work on deductive inferences in all respects except one, the manifest-subjective dimension was stronger than the positive-negative dimension.

It should be clear that Kanouse's work with verb forms has strong implications for resulting attributions because the degree to which a verb generalizes the relationship between a subject and an object will affect the degree of association between a subject or actor and an object or entity. When the relationship between a subject and a class of objects is generalized it illustrates a consistent way of acting across the class of objects and thus leads to a person attribution when the subject is a human being. On the other hand when the relationship between subject and object does not generalize, the relationship is most likely specific to that object and the cause of the relationship is more likely to be seen as residing in the object (a stimulus attribution). The validity of this type of reasoning was demonstrated by MacArthur (1972) when she showed that manifest verbs were more likely to lead to person attributions and that subjective verbs were more likely to lead to stimulus attributions when using inductive inferences.

This work has demonstrated that the syntactical structure (at

least verbs) of our language carries with it implicit statements about causality and attributions. Kanouse has suggested that other syntactical forms such as active-passive verbs, adverbial modifiers and adjectives may also reflect attributional differences. Thus it is clear that the manipulation of linguistic structures is also a viable approach to manipulating attributional states.

Third, it is possible to manipulate attributional states through antecedent informational variables (freedom of choice, prior probability, magnitude of affective consequences, attentional perspective, labeling). The use of such methods assumes that a direct relationship exists between the antecedent variable and the resulting attributional state.

One of the most promising of these approaches is provided by the manipulation of attentional perspective. This approach consists of the use of a number of devices (such as mirrors, manual activity, television camaras) to focus the individual's attention upon himself or away from himself. The assumption is that when a person's attention is focused on himself that he will show a greater tendency to attribute the cause of behavior to himself, whereas when the person's attention is focused away from himself he will be more likely to see external sources as the cause of the action.

Support for this approach to manipulating attributions has been found in the work of Duval and Wicklund (1972). Duval and Wicklund (1973) found that when subjects were presented with hypothetical situations which placed them in the role of actors, that those who worked in front of mirrors tended to attribute the behavior in question more to themselves than those who did not work in front of mirrors. Furthermore they found this effect to be constant across both positive and

and negative behavior situations. Their conclusion is that when a subject's attention is focused on himself (by the mirror) that he is more likely to see himself as the source of the action than when his attention is focused outward (through the absence of a mirror). Thus, it seems that by focusing the individual's attention on himself, a mirror can lead to greater internal attributions than would normally occur in its absense.

Hypotheses

The basic thesis of this study is that behavior which is attributed to internal causes instead of external causes will lead to greater and longer lasting behavior change. This prediction is made across all types of attributional manipulations as long as they are truly successful in changing an individual's attributions. This basic proposition leads to three hypotheses in relationship to different types of behavior.

1) Internally oriented attributional munipulations will lead to greater and longer lasting changes in actual behavior than externally oriented attributional messages.

2) Internally oriented attributional manipulations will lead to greater and longer lasting changes in verbal behavior than externally oriented attributional messages.

3) Greater consistency will exist between intended behavior and actual behavior when the behavior is associated with internal attributions than when associated with external attributions.

CHAPTER II

A PILOT STUDY

A pilot study was undertaken to establish the validity of hypothesis one concerning actual behavior. The basic experimental design consisted of one factor with two levels: an internal oriented message and an external oriented message. A linguistic manipulation was chosen to attempt to induce differential attributional states. It was reasoned that a message which consistently used "you" as the subject of sentences would be one that focused the attention of the subject upon himself as an actor in the situation. With attention so focused it was expected that more internal attributions would result. On the other hand, the use of the onoun "we" in a devisive sense was expected to focus the attention of the subjects on external sources in the situation.

The study sought to take advantage of a natural occuring behavior situation and thereby avoid the demand characteristics and reactive nature of laboratory settings. Therefore the subjects were unaware that they were involved in an experimental situation. The setting for the experiment consisted of the Novice Debate Tournament at the University of Kansas. It involved debate teams from about 20 schools in the Middle West. Behavior and the persuasive messages were focused on the "ten minute rule" which is an effort to limit the amount of preparation time between speeches in a debate. The rule says that a team has ten minutes total preparation time in a debate, after which the timekeeper starts subtracting from their speaking time.

Method

A single factor designed was used for two groups of subjects:

1) debaters and 2) judges. The first group consisted of 32 debaters from various schools who were participating in the tournament. A debate team consists of two people who have an equal number of speeches. The second group of subjects consisted of 15 debate judges who were assigned to hear the debate rounds. Assignment to conditions was done on a random basis.

Subjects in the debaters' half of the study were mostly male freshmen in college. The judges' half of the study consisted of graduate students and full time faculty members. Again, most of them were males.

Procedures:

Subjects in the debaters' half of the study were given a written message when they registered for the tournament which was anywhere from 15 minutes to 2 hours before the first debate round. At a general meeting approximately 15 minutes before the first round, subjects were reminded to read their messages.

The messages exhorted the debaters to observe the "ten minute rule" (a time limit on the amount of time allowed each team for preparation between speeches) and use as little time as possible for preparation. The only difference in messages was the consistent variation of "we" and "you" as subjects of the sentences (see Appendices A and B).

The dependent behavioral measure for the debaters was the actual amount of time they used for preparation in the first round of the debate tournament.

Subjects in the judges' half of the experiment received their messages with their ballots for the first round of the tournament. Their

messages exhorted them to keep track of the amount of preparation time used on an enclosed form and to return the form with their ballot at the end of the round. Once again the only difference between internal and external conditions was the consistent variation of "we" and "you" in the messages (see Appendices C and D). The dependent behavioral measure for the judges was simply whether they returned the "ten minute rule" forms or not.

Results

Due to the preassignment of subjects to conditions and the failure of some debaters to arrive at the tournament, the debaters' half of the experiment was left with uneven numbers of subjects in each condition: 14 in the internal and 18 in the external. Since there were fifteen subjects in the judges' half of the study, the conditions were also uneven: 7 in the external condition and 8 in the internal condition.

In the debaters' half of the experiment, visual inspection of the data made it apparent that another factor was also working in the study: the side of the topic the debate team was representing. As a result the subjects were divided according to the side they represented, resulting in a two factor analysis. A two-way analysis of variance was employed with attributional state as one factor and side of the topic as the second factor. Means are presented in Table 1. The side of the topic represented had a highly significant effect ($F = 9.96$, d.f. 1,30 $p < .01$). The results for the attributional factor were in the predicted direction, but failed to reach the .05 level of significance ($F = 3.10$, d.f. 1,30 $p < .08$). The interaction was not significant ($F = 1.54$).

Table 1

Means for Amount of

Preparation Time Used by Debaters

Side of Topic	Attributional Message: Internal	Attributional Message: External
Affirmative	4.82	7.00
Negative	8.01	8.22

In the judges' half of the experiment, 7 out of 8 subjects returned their time sheets in the internal condition and 5 out of 7 subjects returned their time sheets in the external condition. This distribution is nonsignificant according to Fisher's Exact Probability Test.

Discussion

The results of the pilot study lent marginal support to the hypothesized relationship between attributions and behavior change. While the results were weak, they did show the presence of some effect. The strength of this finding was probably affected by many factors such as the time interval between message and behavior, the sole use of a written message, and the general distractions of a debate tournament. As a result of these factors the finding of any support for the hypothesis was encouraging. The use of a solely linguistic manipulation of attributions seemed to have an effect similar to that predicted for it.

CHAPTER III

METHOD

Design

The main study was designed to replicate and extend the findings of the pilot study. To do this it was decided to use two manipulations of attributions. First a linguistic manipulation was used to create "actor" differences. Second, it was decided to manipulate attributions through attentional perspective. On the basis of Duval and Wicklund's (1973) finding that those who worked in front of mirrors tended to attribute the cause of their behavior to themselves more than those who did not work in front of mirrors, it was decided to use mirrors as a second way of manipulating attributions. By manipulating linguistic messages and attentional perspective orthogonally it was hoped to create a situation where the two means of manipulating attributions would demonstrate their effects independently and in combination.

As a result, a factoral experiment was designed with two mutually orthogonal variables: 1) linguistic attributions and 2) attentional attributions. The first factor, linguistic attributions, had two conditions· a) a message designed to induce an internal attributional state and b) a message designed to induce an external attributional state. The second factor, attentional perspective, also had two conditions: a) one where the subject worked in front of a mirror and b) one where the subject did not work in front of a mirror. Due to theoretical questions of how a mirror interacts with positive and negative consequences, it was decided to limit the manipulation to positive consequences. This was done by emphasizing the positive benefits of the desired behavior in all conditions.

Finally, the design of the study sought to utilize a natural behavior sequence and thereby avoid many of the demand characteristics associated with experimental situations. The study made use of the evidence gathering pool of a summer high school debate workshop. The workshop was composed of high school students who come from all parts of the country to receive instruction in debate theory and work on the debate topic for the following year. Students expected to stay for either two or four weeks, but worked together for the first two weeks. One of the functions of the Institute was to provide the students with an opportunity to do research on the debate topic. To facilitate this, the Institute set up a central evidence gathering pool. During the summer in which this study was conducted, students were issued dittos (as many as they could use) on which they typed (or wrote) their pieces of research evidence. The dittos were then collected, run off, and fifteen copies were distributed to the student who turned them in. Students were then encouraged to trade their evidence among themselves. The present study utilized this function of the Institute by providing messages to the students (the linguistic manipulation) urging them to gather large amounts of evidence for the central evidence pool. Pledges of intended behavior were obtained to "facilitate the administration of the project." Furthermore subjects were isolated by themselves (in rooms with mirrors or without mirrors) to insure "that they made their decisions by themselves." Measures of both intended and actual behavior were obtained within this setting.

The study was initially conducted in the first week of the Institute utilizing both two and four week students. It was also decided to replicate the original findings during the second two weeks of the

Institute with the four week students. Thus the study consisted of two parts: 1) part one utilizing all students in the Institute and 2) part two utilizing only those students who stayed for the second two weeks.

Subjects

The study began with a pool of 82 subjects taking part in the 1974 University of Kansas summer high school Speech and Debate Institute. Forty-one subjects were in attendance for two weeks and the remaining 41 were on campus for four weeks. All 82 students were together for the first two weeks of the Institute.

Subjects were randomly assigned to the four experimental conditions from seven different classes. Due to the early dismissal of one class only 69 subjects participated in the original study. One subject was dropped from the 69 because he failed to follow the directions for his experimental condition. At the time intended behavior was measured there were, therefore, 68 subjects. Three subjects left the Institute before actual behavior was measured, thus leaving an N of 65. Thirty subjects who participated in part one were also in part two, to which were added 10 subjects who had not fully participated in part one of the study (due to the dismissal). One subject was lost due to sickness before the measurement of actual behavior in part two thus leaving 39.

Procedures

The study took place on the first full day of classes for the Institute. The experimenters appeared in each class and explained that they wanted to present the workshop's central evidence pool

system to the students and obtain their initial pledges. It was further explained that since past experience had shown that students tended to make the same choices when working together it was necessary to have each individual make his pledge by himself. At this point the subjects were randomly divided between the two experimenters with one E taking subjects to rooms without mirrors and the other E taking subjects to rooms with mirrors. As each student entered his room he was handed a sheet of paper containing one of the two linguistic manipulations. In each of the attentional conditions, half of the subjects received internal messages and half received external messages. The non mirror conditions concsisted of ordinary class rooms, while the mirror conditions used experimental rooms equipped with two-way mirrors. In the mirror conditions lights were adjusted so that the two-way mirrors operated as mirrors for the subjects. (It was obvious to most subjects that the mirrors were not being operated as two-way mirrors for purposes of observation). To make sure that the subjects were aware of the mirrors, only one chair and one table were present in each room placed directly in front of the mirrors. In addition, the E made a casual comment to each subject about the presence of the mirror.

Upon completion of the forms the subjects turned them into the experimenters and were instructed to go to the library. They were asked to leave the building to avoid interaction with those subjects who had not yet taken part in the study.

Over the next week dittos were distributed to the subjects for them to type their evidence on. One week later the dittos were collected, reproduced and returned to the students. While being

reproduced, a count was made of the amount of evidence each subject turned in which provided the measure of actual behavior

The procedures for part two were identical for those of part one except in two instances. First, subjects were divided into cells before the actual experiment on the basis of what cell they had been in in part one, or if not in part one, to obtain equal cell distributions. Second, the messages were rewritten to include assurance of anonymity and requests for signatures were removed from the bottom of the messages. Messages were numbered, each subject was given a number, and the appropriate messages were given to the subjects. The subjects were also told to leave the completed forms in a box instead of returning them to the experimenters.

Instruments

Two forms of the linguistic message were constructed to manipulate internal and external attributional states through linguistic variations. The basic message explained the details of the evidence pooling project, encouraged the students to participate, and asked them for a pledge of how much evidence they intended to gather. In the internal attribution message (see Appendix E) the linguistic structure was designed to place the subject in the position of an actor and thus provide him with internal reasons to collect evidence. This was done by using the grammatical subject "you" as often as possible while showing positive intrinsic effects and consequences resulting from the desired behavior.

In the external attributional message (see Appendix F) the linguistic structure was varied so as to place emphasis on the Institute as the actor and provide the subject with externally oriented

reasons for collecting evidence. To create this effect the subject "we" was used as much as possible and the reasons for performing the behavior were oriented to the benefits that the group would receive from the desired action.

The bottom of each message contained a line for the subject to indicate how many pieces of evidence he intended to turn in and a line for him to sign on. This constituted the dependent measure of intended behavior. Such a pledge is analogous to the signed release forms used by DeFleur and Westie (1958) in their studies of attitudes and behavior. The rationale behind it is that in our society a signed commitment to do a behavior has a quasi-legal flavor to it and constitutes a form of behavior in itself. The second form of behavioral analysis consisted of the actual amount of behavior the subjects performed over the next two weeks. In this study no observation of the subjects was necessary to obtain this behavior measure because it consisted of the number of pieces of evidence that each subject turned in. The lack of need for observation and the interval level scaling of the actual behavior overcame many of the scaling and validity problems often associated with obtaining artifactual evidence of human behavior.

In part two of the study some changes were made in the messages. References were made to the previous message, reasons for doing the project were reiterated, and procedures to be followed were outlined (see Appendices G and H). The main change was the inclusion of the following sentence, "Since the number of cards you do is your personal business, you need not sign this form and can place it anonymously in the box outside the room." Such a change was an effort to reduce any

effects due to conformity and pressure from the administration of the Institute.

As a result of these changes the dependent measure for intended behavior changed from the signed form of behavior to a form lacking a public commitment. While this change was made subjects seemed to treat the commitment in a similar manner in both parts one and two (with some subjects still signing the form in part two).

Data Analysis

The basic form of data analysis for this study consisted of two and three way analyses of variance for unequal cell sizes using harmonic means (Winer, 1971; pp. 445-449). When the analysis of variance effects were found to be significant they were further analyzed by decomposing them into appropriate two way analyses of variance or analyses of simple main effects.

In all cases the distribution of the scores in each sample was graphed to determine the shape of the distribution. In most cases the data were not found to be distributed as a normal curve; instead the scores usually approximated a positive skew. As a result the data was usually transformed with an appropriate transformation to reduce the variability in scores. Appropriate transformations were determined through the use of range scores (Winer, 1971; pp. 397-402). After transformations the data was usually resubmitted to analysis of variance.

In certain cases the data was also analyzed using non-parametric tests with results paralleling the parametric tests. Greater use of non-parametric tests was not made because. 1) many of the same effects could be achieved through transformations, 2) the parametric statistics

are more powerful, 3) the parametric statistics are highly robust, and 4) the tendency for the non-parametric statistics to parallel the parametric results when direct comparisons were made.

CHAPTER IV

RESULTS

Intended Behavior

The means for intended behavior of the four groups in part one are presented in Table 2. It can be seen that the greatest amounts of intended behavior were performed in the non mirror-external conditions and that the lowest amounts of intended behavior occured in the mirror-external condition.

Analysis of variance for intended behavior in part one revealed no significant differences for main effects or interactions (all tables for analyses of variance are presented in Appendix I). Differences between the mirror and non mirror conditions were also tested using a non-parametric statistic, the chi square, but failed to show any significant results (X^2 = 3.12, d.f. 3, p<n.s.).

This means for intended behavior seemed to show differences between experimental conditions, but skewed distributions of scores and heterogeneity of variance may have obscured the statistical analysis of differences. This lead to the repetition of the study for the four week subjects with the changes outlined earlier. The means for part two intended behavior scores are presented in Table 3. The pattern of scores closely resembles the original pattern of scores suggesting a reliable replication of the original variables affecting the outcomes. The only major difference was that the scores tended to be lower than for part one, which may suggest a more conservative estimate of intended behavior in part two, more in line with the subject's recent experience. Once again the highest intended behavior score was in the non mirror-external message condition and the lowest

Table 2

Means and Number of Subjects for Intended Behavior in Part One

Linguistic Messages

Attentional Perspective	External	Internal
Non Mirror	91.7 (19)	87.8 (20)
Mirror	62.3 (15)	85.7 (14)

Table 3

Means and Number of Subjects for Intended Behavior in Part Two

Linguistic Messages

Attentional Perspective	External	Internal
Non Mirror	61.5 (10)	48.1 (11)
Mirror	29.4 (9)	42.5 (10)

Measures are of the Total Number of Pieces of Evidence Pledged

score was in the mirror-external message condition.

Results of the two-way analysis of variance for intended behavior in part two revealed two significant results. 1) a main effect for attentional perspective ($F = 5.96$, d.f. 1,36 $p < .02$) and 2) an interaction between attentional perspective and linguistic message ($F = 4.17$ d.f. 1,36 $p < .05$). The main effect indicated that those subjects who did not work in front of a mirror had higher intended behavior scores than those who did work in front of a mirror. Thus the presence of the mirror depressed the intended behavior of the subjects. The significant interaction revealed that the main effect for attentional perspective was affected by the nature of the linguistic message presented to the subjects. Subjects in the external message condition were most affected by the mirror. Specifically, those with no mirror who received the external message intended to do the most, whereas those who received the external message with a mirror before them intended to do the least. Figure 1 pictures this relationship. Computation of simple main effects revealed that the effect for external messages was significantly affected by the attentional perspective of the subject ($F = 10.0$ d.f. 1 36 $p < .003$).

While the pattern of data was the same for both samples of intended behavior, the findings of significant results in part two (composed solely of four week subjects) raised the question of whether the expected length of stay at the Institute had any effect upon the distribution of scores. As a result, the original sample was redivided with the addition of a third factor, the expected length of stay at the Institute. The means from the three factor analysis are presented in Table 4. Visual inspection of the means reveals that there are

Figure 1

Interaction between Attentional Perspective and Linguistic Messages for Intended Behavior Part Two

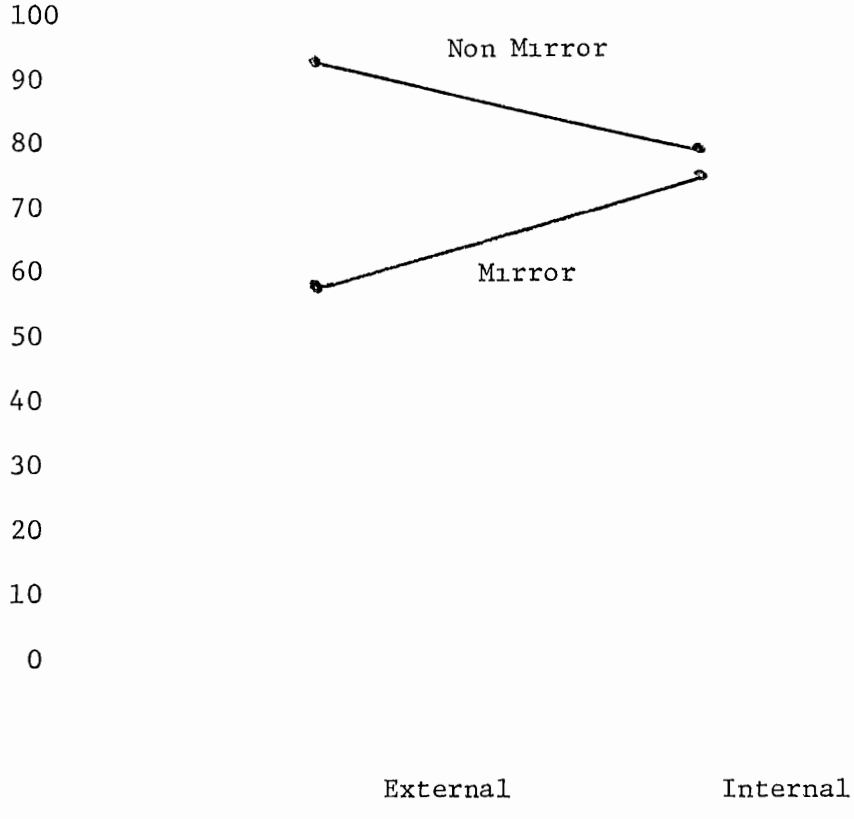


Table 4

Means and Number of Subjects in the

Three-Way Analysis of Intended Behavior in Part One

Expected Length of Stay

	Two Weeks		Four Weeks	
	Linguistic Message			
	External	Internal	External	Internal
Non Mirror	90.80 (10)	64.55 (11)	92.78 (9)	116.11 (9)
Attentional Perspective				
Mirror	71.25 (8)	86.88 (8)	52.14 (7)	59.17 (6)

major differences between the two week subjects and the four week subjects in three out of four of the original experimental conditions (with only the non mirror-external condition remaining constant). A three-way analysis of variance on intended behavior for part one failed to yield any significant main effects or interactions.

On the whole the data failed to support the hypothesized relationship between intended behavior and the independent variables. The two significant findings for the second part contradicted the hypothesized relationship in that the main effect for attentional perspective showed greater intended behavior in the non mirror condition than in the mirror condition. The interaction showed a stable effect for the internal message across both attentional perspectives, but the external message showed a highly volatile effect across both attentional perspectives. Only within the mirror condition did the hypothesized pattern of internal and external attributional message effects materalize.

Actual Behavior

Means for actual behavior as recorded at the end of the first two weeks are presented in Table 5. They reveal a picture somewhat similar to that for intended behavior, i.e. means are higher for the non mirror conditions than for the mirror conditions and higher for the internal message conditions than for external message conditions. Nevertheless, the two-way analysis of variance for actual behavior in part one revealed no significant main effects or interactions.

Means for actual behavior in part two are presented in Table 6. The greatest actual behavior was in the non mirror-internal message condition. Analysis of variance for actual behavior in part two

Table 5

Means and Number of Subjects for

Actual Behavior in Part One

Attentional Perspective	Linguistic Message: External	Linguistic Message: Internal
Non Mirror	33.29 (17)	36.55 (20)
Mirror	26.50 (14)	32.79 (14)

Table 6

Means and Number of Subjects for Actual Behavior in Part Two

		Linguistic Message	
		External	Internal
Attentional Perspective	Non Mirror	16.0 (10)	27.2 (10)
	Mirror	18.2 (9)	9.5 (10)

revealed a significant interaction between attentional perspective and linguistic messages ($F = 8.49$ d.f. 1,35 $p < .006$).

Tests for simple main effects showed the interaction to be due to the effect of different attentional perspectives in the internal message condition ($F = 8.39$ d.f. 1,35 $p < .006$). This is pictured in Figure 2.

As with earlier analyses, the data for actual behavior in part one was redivided to add expected length of stay at the Institute as a third variable. Means for the behavioral data are presented in Table 7. The three-way analysis of variance for this data revealed two significant results: 1) a main effect for the expected length of stay ($F = 3.80$ d.f. 1,57 $p < .06$), and 2) an interaction between attentional perspective and expected length of stay ($F = 5.32$ d.f. 1,57 $p < .02$). These results show that the two week subjects were more likely to have higher actual behavior scores than the four week subjects. Furthermore, the pattern of results is similar to the two factor pattern for two week subjects, but contains some major differences for the four week subjects. Specifically, the non mirror conditions had much lower actual behavior scores among the four week subjects.

The profile for the interaction is presented in Figure 3. The simple main effect for length of stay in the non mirror condition was highly significant ($F = 42.52$, d.f. 1,57 $p < .0001$). Thus subjects in the mirror condition were fairly stable in their actual behavior across all conditions, but subjects in the non mirror condition were highly affected by their expected length of stay.

Finally, the three-way analysis of variance was split into two two-way analyses of variance, one for the two-week subjects and one

Figure 2

Interaction Between Attentional Perspective and Linguistic Message for Actual Behavior in Part Two (Two-Way Analysis)

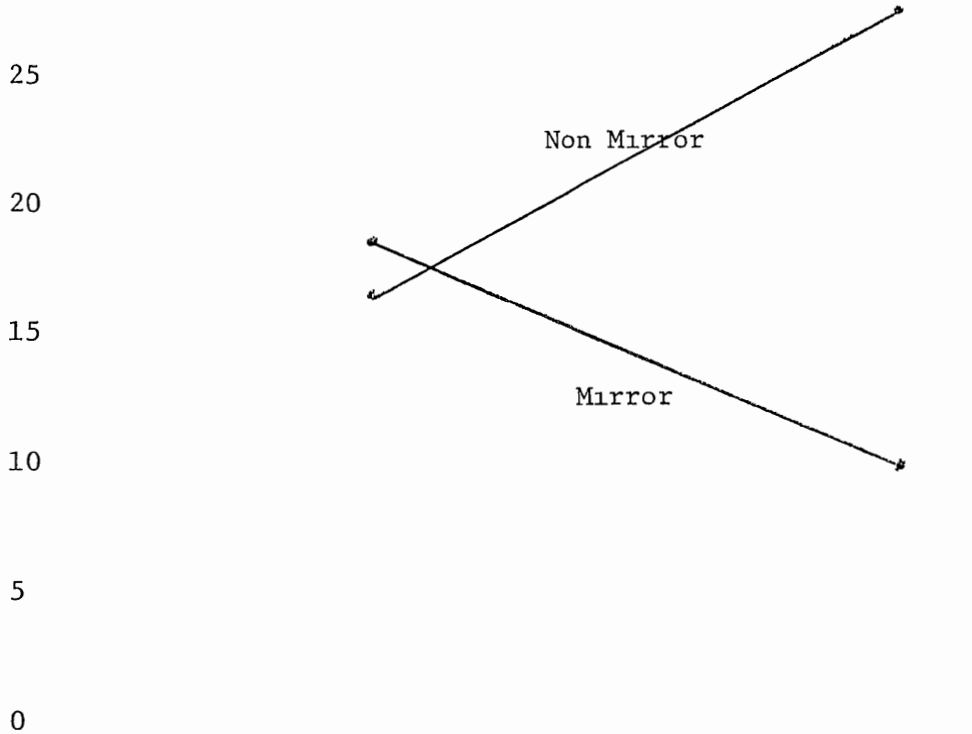


Table 7

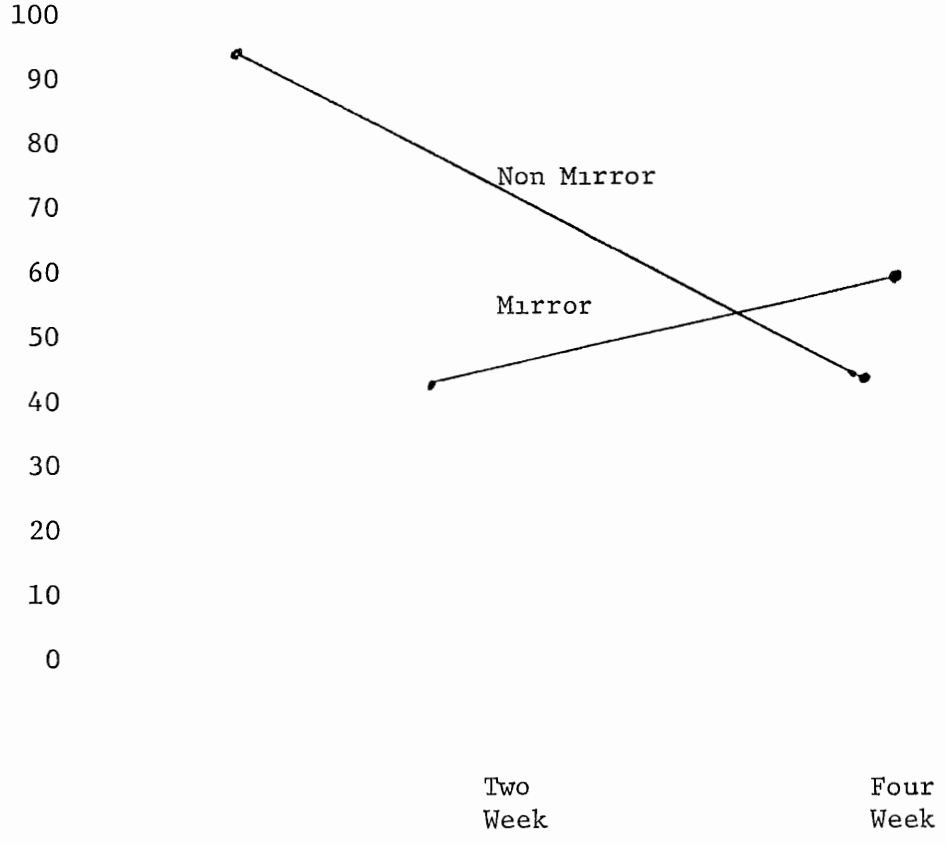
Means and Number of Subjects for Actual Behavior in Part One

Length of Stay

Attentional Perspective	Two Weeks		Four Weeks	
	External	Internal	External	Internal
Non Mirror	43.38 (8)	54.00 (11)	24.33 (9)	15 22 (9)
Mirror	25.43 (7)	31.63 (8)	27.57 (7)	34.33 (6)

Figure 3

Interaction Between Attentional Perspective and Expected Length of Stay for Actual Behavior in Part One (Three-Way Analysis)



for the four week subjects. The only effect that approached significance was the main effect for the attentional perspective condition for the two week subjects ($F = 3.21$ d.f. 1,30 $p < .08$).

The results for actual behavior provide mixed support for the hypothesized effects. The significant interaction between attentional perspective and expected length of stay in part one shows the predicted pattern of effects for attentional perspective among the four week subjects, but the opposite pattern of results for the two week subjects. On the whole, the results for linguistic messages in part one are in the right direction even though failing to reach conventional levels of significance. The significant interaction in part two between attentional perspective and linguistic messages reflects the fact that linguistic messages had the predicted pattern of results in the non mirror condition, but the opposite pattern of results in the mirror condition. Thus, the predicted pattern of results for actual behavior seems to prevail under certain circumstances and not under others.

Relationships between Intended Behavior and Actual Behavior

The relationship between intended behavior and actual behavior was explored by computing actual behavior scores as a percentage of intended behavior scores. The mean percentages for each experimental condition are presented in Table 8. They show a somewhat different pattern of results than were found for intended behavior or actual behavior alone. The highest percentage is in the mirror-internal message condition and the lowest percentage is in the non mirror external message condition. Distribution of percentages seemed to conform to the predicted relationship, but the two-way analysis of variance failed to yield any significant results.

Table 8

Mean Percentages and Number of Subjects for Actual Behavior as Percentage of Intended Behavior for Part One

Attentional Perspective	Linguistic Message: External	Linguistic Message: Internal
Non Mirror	48% (17)	62% (20)
Mirror	55% (14)	69% (14)

The means for the three factor breakdown of the data are presented in Table 9. The three-way analysis of variance for this data revealed that the attentional perspective by length of stay interaction was highly significant ($F = 6.98$ d.f. $1,57$ $p < .01$) Subjects expecting to stay two weeks did a greater percentage of intended behavior in the non mirror condition while subjects expecting to stay four weeks did a greater percentage of intended behavior in the mirror condition Tests of simple main effects for this interaction showed that the effect for the mirror condition on both two week subjects ($F = 7.04$ d.f. $1,57$ $p < .01$) and four week subjects was significant ($F = 27.58$ d.f. $1,57$ $p < .0001$).

The three-way interaction between attentional perspective, linguistic messages and expected length of stay approached significance ($F = 3.16$ d.f. $1,57$ $p < .08$). This effect seemed to reflect the fact that in those conditions where behavior levels were highest (the two week non mirror and the four week mirror), the internal linguistic message lead to greater consistency between intended behavior and actual behavior.

Means for percentage behavior in the second two weeks of the Institute are presented in Table 10. The two-way analysis of variance for the data showed a significant interaction between attentional perspective and linguistic messages ($F = 3.88$ d.f. $1,35$ $p < .06$). It appears that the internal message was most effective in leading to consistent behavior in the non mirror condition and that the external message was most effective in leading to consistent behavior in the mirror condition.

When the intended behavior and actual behavior for the two parts of the study are combined for those subjects who were in both parts of

Table 9

Mean Percentages and Number of Subjects for
Actual Behavior as Percentage of
Intended Behavior in Part One

	Length of Stay			
	Two Weeks		Four Weeks	
	External	Internal	External	Internal
Non Mirror	50% (8)	88% (11)	46% (9)	31% (9)
Attentional Perspective				
Mirror	46% (7)	45% (8)	64% (7)	102% (6)

Table 10

Mean Percentages and Number of Subjects for Actual Behavior as Percentage of Intended Behavior in Part Two

Attentional Perspective	Linguistic Message: External	Linguistic Message: Internal
Non Mirror	31% (10)	62% (10)
Mirror	75% (9)	26% (10)

the study are combined for those subjects who were in both parts of the study, the resulting percentages are presented in Table 11. They show that the two greatest overall percentages occurred in the mirror condition with the mirror-external condition having the highest overall percentage. However, the analysis of variance for this data failed to show any significant results.

The relationship between intended behavior and actual behavior was further explored through correlations between the two forms of behavior. The results are presented in Table 12. Correlations for all conditions in part one revealed significant relationships except in the non mirror-internal message group. When these groups were divided into two and four week subjects, it was discovered that the correlations for the four week subjects fell to non-significant levels. Correlations for the second part of the experiment revealed a general pattern of negative relationships, but only one approached significance, the mirror-internal condition.

Overall the results concerning the consistency between intended behavior and actual behavior showed some support for the hypothesized effects. The general pattern of relationships for part one conformed to the predicted pattern. When the experimental conditions were divided on the basis of expected length of stay, it was found that the relationship was markedly different for two week subjects as opposed to four week subjects. As reflected in the significant length of stay by attentional perspective interaction, the mirror condition was found to yield results in the predicted pattern for four week subjects but in the opposite pattern for two week subjects. However, for both two and four week subjects the internal message was found to produce the highest percentages as predicted. This effect produced

Table 11

Mean Percentages and Number of Subjects for Actual Behavior as Percentage of Intended Behavior for Parts One and Two

Attentional Perspective	Linguistic Message: External	Linguistic Message: Internal
Non Mirror	35% (9)	43% (8)
Mirror	67% (6)	51% (6)

Table 12

Pearson Product Moment Correlations for

Actual Behavior and Intended Behavior

	Non Mirror External	Non Mirror Internal	Mirror External	Mirror Internal
Part One	.54 (17)	.05 (20)	.53 (14)	.53 (14)
2 Week	.75 (8)	.92 (11)	.64 (7)	76 (8)
4 Week	.30 (9)	-.14 (9)	.08 (7)	.04 (6)
Part Two	-.07 (10)	.02 (10)	-.07 (9)	-.02 (10)
4 Week in Part One	-.14 (9)	-.25 (8)	-.01 (6)	-.57 (6)
Both Parts	-.01 (9)	-.32 (8)	-.26 (6)	-.14 (6)

the near significant three-way interaction between attentional perspective, linguistic messages, and expected length of stay. The percentages found in part two seemed to reflect a compensating factor with reversals of part one behavior in the extreme cells.

CHAPTER V

DISCUSSION

In explaining the findings of this study it is necessary to try to reconstruct the environmental interpretations the subjects placed on the situation they found themselves in. While it is impossible to fully reconstruct such cognitive functionings, it is necessary to come to some general understanding of the variables that the individual encountered in the situation and the resulting interactive relationship between these variables and the individual. The interaction between these variables and the individual creates the person's symbolic world which in turn becomes reality for him. It was the symbolic reality created by attributions that this study set out to explore and it is only by placing the attributional system of the person within this symbolic world that it is possible to even partially understand the person's behavior. The following discussion of results is built on the assumption that it is necessary to reconstruct such a symbolic world on the basis of the variables known to be operating in the situation and evident in the findings.

To begin with it is necessary to postulate a set of generalized expectations that formed the basis of the subjects' symbolic reality as they entered the study. The subjects' expected length of stay at the Institute obviously influenced their general set. The analysis of data in terms of expected length of stay at the Institute revealed that whether the subjects expected to stay two or four weeks had a strong influence on their subsequent behavior. Subjects who expected to stay for two weeks were aware of the fact that whatever work they would accomplish at the Institute would occur within the time period

of part one (the "now or never" effect). Furthermore, their orientation probably involved an expectation to fulfill whatever commitments they made in the first two weeks. On the other hand, subjects who expected to stay for four weeks were more likely to put things off and feel that they had plenty of time to do them (the "procrastination" effect). As a result the commitment to fulfill intended behavior would be felt less strongly among the four week subjects than among the two week subjects. The results of such generalized expectations can be seen most clearly in the three-way analysis of variance for actual behavior in part one. Here a main effect was obtained for expected length of stay with the finding that two week students turned in more evidence than did four week students. It seems that two week subjects were more likely to perform because it presented their only chance to do so whereas the four week subjects had another two weeks in which to meet goals.

Upon entering the experiment the subject encountered situational elements that apparently interacted with his expectations. The situation contained two elements that combined to produce a general situational norm or expectation about behavior. While this experiment utilized a naturalistic setting and thereby avoided the demand characteristics associated with such a situation, it could not eliminate the demand characteristics induced by the fact that the director and assistant director of the Institute served as the experimenters. Furthermore, the messages which argued for high levels of behavior were presented as coming from the Institute and therefore created expectations of high levels of behavior. In addition the signed measures of intended behavior were collected by the experimenters

in part one thereby making it clear that the administrators of the Institute would know how much work subjects intended to do. The result of all this is a situation where the authority of the Institute and its administrators was placed behind the norm of high amounts of behavior with the awareness that levels of intended behavior would be readily known. This variable had its most readily apparent effect on intended behavior in that it created normative expectations about how much evidence the subject should promise to produce in the next two weeks. The expectation resulted in estimates of intended behavior in part one that were much higher than actual behavior or intended behavior in part two. In the non mirror conditions where the physical circumstances were more "normal" and one might expect greater attention to Institute demand variables, there were higher intended behavior scores than in the mirror condition.

Whether the normative expectation was translated into actual behavior seemed to depend on whether it was combined with the "now or never" attitude of the two week subjects or the "procrastination" attitude of the four week subjects. This interpretation is supported by the previously discussed main effect for length of stay on actual behavior. The generalized expectations seem to provide the motivation and commitment to carry out (or not carry out) the normative behavior of the situation.

The two factors discussed so far are considered as operating intrinsic to the natural situation that this experiment utilized. At this point we shall consider the two experimental variables, attentional perspective and linguistic messages, as factors introduced into the situation and interacting with the already existing variables.

It was initially hypothesized that greater amounts of the encouraged behavior would occur when the subject was exposed to the mirror than when he worked without it. However the results of the experiment showed the mirror manipulation working both ways depending upon what other variables it was combined with. In part one the mirror conditions interacted with the length of stay to produce higher actual behavior and percentages in the non mirror condition for two week subjects and in the mirror condition for four week subjects.

To explain this behavior it is necessary to explore the possible effects that the mirror can have upon the various types of behavior in this situation. Duval and Wicklund (1972) have argued that the presence of a mirror will induce a state of objective self-awareness whereas the absence of a mirror will induce a state of subjective self-awareness. They have further argued that in the state of objective self-awareness the person views himself as an object which he compares with his personal standards of correctness, whereas in the subjective self-awareness state the individual reacts to situations subjectively and views his behavior in response to environmental pressures. According to Duval and Wicklund (1972) the discrepancy between self perceptions and standards of correctness observed in the state of objective self-awareness is aversive and leads the person to either alter his behavior or leave the situation. In examining the experimental situation in this study, it is difficult to decide what might be the standards of correctness the individual used to judge himself as an object. It is possible that the situational norm for high levels of behavior might correspond closely enough with personal beliefs to create such a standard of correctness. If this were true

it would be expected that the subjects would set high standards of behavior in an attempt to remove the discrepancy between this standard and their personal behavior. However the data do not support this interpretation.

While it is possible that other standards of correctness were operating in this situation let us suppose that the person chose the other alternative to altering his behavior, leaving the situation. It has been argued recently (Liebling, Seiler, and Shaver, 1974) that subjects may attempt to symbolically leave the situation by being distracted to some other stimuli in the situation. There is some observational evidence that the subjects in this study used the messages as a source of distraction to avoid looking at the mirror. It was observed that most subjects in the mirror condition made a conscious effort to not look at themselves in the mirror and buried their heads in the message. If this were true a differential effect for the linguistic messages would be found only in the mirror condition, however this was not found to be true.

It has been suggested by others that the mirror has a distracting effect upon whatever activities are going on in its presence. If this is true, differential effects from other variables in the situation should be wiped out. However in this experiment differential effects existed for internal and external message conditions across the mirror conditions. Another effect that has been attributed to mirrors by some is the lowering of self esteem levels. Some studies have shown that when a person's self esteem is temporarily lowered that he becomes more susceptible to persuasion attempts (McGuire, 1968; p. 250). If this is true it would be expected that subjects in the mirror condition would react to the persuasive message by performing

higher amounts of behavior than in the non mirror condition. However, the results of this study showed otherwise. Finally others have argued that the mirror leads to arousal which triggers a generalized drive response leading to the activation of whatever learned responses are associated with the situation (Liebling, Seiler and Shaver, 1974). The learned responses associated with this situation may involve the tendency to be hesitant in situations that call for some form of commitment. While such a response would probably lead to more conservative behavior, to the degree it involves a commitment, that commitment would be stronger because of its association with internal aspects of the person. In this study such an effect would lead to levels of intended behavior lower for mirror subjects than for non mirror subjects but levels of actual behavior more consistent with intended behavior for mirror subjects than for non mirror subjects. In general this pattern seemed to hold for the results of this study.

In summary, the effect for the mirror seemed to be a combination of a drive response and self awareness. If such an effect for the mirror existed then it would be expected that the levels of intended behavior would be lower for the mirror condition than for the non mirror condition (when a norm of high behavior expectations exists). For actual behavior, levels would be expected to be stable across the mirror condition (because of the consistent levels of commitment) which conforms to the data. Such an explanation for the effects of the mirror can be combined with the previously discussed factors to explain the interaction between the attentional perspective condition and the expected length of stay. In general intended behavior levels were lower for the mirror condition because of the conservative attitude

resulting from the drive level while the actual behavior was stable and consistent across all conditions because of the degree of commitment associated with them. Two week non mirror condition subjects seemed to have been primarily influenced by the situational norm and their commitment to achieve something in two weeks. Thus the resulting behavior levels (both intended and actual) were higher than for comparable two week mirror subjects. On the other hand, four week subjects seemed to find their high response to the situational norm (in terms of high intended behavior) eroded by their general expectation that they would have two more weeks to achieve things (the "procrastination" effect). As a result low levels of actual behavior were found, lower than for mirror subjects in comparable four week conditions where some commitment seemed to result. A similar effect for mirrors has been found by Liebling and Shaver (1973). They discovered that the mirror interacted with evaluation to determine levels of behavior. Specifically the mirror tended to stablize behavior across both levels of evaluation while high evaluative conditions lead to greater behavior in the non mirror condition and low evaluative conditions lead to less behavior in the non mirror condition. Thus, the mirror seemed to interact with the situational norms present to create the final levels of behavior.

It is appropriate to consider the final variable, the linguistic messages, last, because it seemed to have its effect only in combination with other variables. In terms of part one the expected pattern of internal messages was found across levels of the other variables where the greatest behavior change occurred. For intended behavior, this was true across all conditions except the two week, non mirror

condition, which was also the cell where the external situational norm would be expected to have its strongest effect. In addition, the intended behavior for the internal two week, non mirror group was quite high for intended behavior conditions. For actual behavior the predicted pattern was true for all conditions except the four week non mirror condition where the "procrastination" effect had its strongest impact. Finally the same pattern holds true for percentages in all conditions except the four week non mirror condition where the scores are a result of the discrepancy between intended behavior (which resulted from the situational norm) and actual behavior (which resulted from the procrastination effect). On the whole the linguistic variable seemed to have the greatest effect within the mirror condition.

Part two of the experiment showed a general reversal of the pattern of effects found for the linguistic messages in part one. For intended behavior (expect the mirror condition), actual behavior, and the percentages, the pattern of internal and external message effects is reversed. For example, in the four week mirror-internal condition which had the highest percentage in part one (102%) had the lowest percentage in part two (26%) whereas the four week non mirror-internal condition which had the lowest percentage in part one (31%) had one of the highest percentages in part two (62%). These effects seemed to reflect feelings of "I've done enough" or "I've got one more chance."

In conclusion the results found in this study seem to be the end product of several variables operating in the situation and the experimental structure. In many ways the situational variables seem

to have been the strongest with the experimental variables serving to alter the already existing structure.

Out of the findings discussed in this study we shall tentatively advance several conclusions to guide further research. First, attributional effects upon intended behavior seem the hardest to gauge. Whenever any credibility, conformity or situational norm is present it seems to have a much greater impact upon levels of intended behavior than purely differential attributions to internal or external causes. It is only when attributions are linked to such other variables that their impact is felt, e.g. the interaction between expected length of stay and the attributional manipulations.

Second, actual behavior seems to be more strongly influenced by the manipulations than intended behavior. There is evidence that the mirror condition had a stabling effect upon actual behavior. Whether this effect was stronger or weaker than the non mirror condition seemed to dependent upon whether the other variables present (e.g. situation norms and generalized expectations) worked to promote high or low levels of behavior.

Third, attributions seemed to have their greatest effect upon the consistency between intended behavior and actual behavior. In general those conditions where internal attributions were manipulated seemed to be the conditions where the greatest consistency existed between intended behavior and actual behavior. This effect seemed to exist for both attentional perspective and linguistic messages.

Fourth, the mirror manipulation is highly ambiguous in terms of the type of effect it has and the reasons for this effect. It seems to have a conservative effect upon levels of behavior but it also

seems to have a stabilizing effect across conditions. While the various possible effects that could be resulting from the mirror are discussed it is not wholly clear which ones are operating in this study.

Fifth, the linguistic manipulation of attributions seems to have a fairly weak effect upon behavior. In those cases where its effect had significant results it was only in combination with other variables. While it is unclear as to the strength of the particular manipulations used it is possible that linguistic manipulations of attributions have their greatest effect when other information is lacking and serve primarily to determine the direction of behavior when combined with other variables.

Sixth, there is a great need for research on the relationship between manipulations of attributions, i.e. attentional perspective and linguistic messages, and the resulting attributional states. As used in this study only indirect evidence existed as to these relationships. Until this link is strongly established it is impossible to argue conclusively for particular relationships between attributions and behavior.

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APPENDIX A

Debaters' Message for Internal Condition in Pilot Study

TIME INSTRUCTIONS

YOU, THE DEBATERS OF THIS TOURNAMENT, CAN AND WE HOPE WILL TRY TO SEE THAT THIS TOURNAMENT RUNS ON TIME THROUGH THE USE OF THE TEN MINUTE RULE. THE LESS TIME YOU SPEND IN PREPARATION, THE MORE EFFICIENT THE TOURNAMENT WILL RUN AND THE MORE ENJOYABLE THIS EXPERIENCE WILL BE FOR YOU. YOU, THE DEBATERS, CAN MAKE THIS TOURNAMENT RUN ON TIME IF YOU MAKE AN EFFORT TO OBSERVE THE TEN MINUTE RULE.

APPENDIX B

Debaters' Message for External Condition in Pilot Study

TIME INSTRUCTIONS

WE, THE TOURNAMENT STAFF, CAN AND WILL TRY TO SEE THAT THIS TOURNAMENT RUNS ON TIME THROUGH THE USE OF THE TEN MINUTE RULE. THE LESS TIME SPENT IN PREPARATION, THE MORE EFFICIENT THE TOURNAMENT WILL RUN AND THE MORE ENJOYABLE THIS EXPERIENCE WILL BE. WE, THE TOURNAMENT STAFF, BELIEVE THAT THE TOURNAMENT CAN RUN ON TIME, IF AN EFFORT IS MADE TO OBSERVE THE TEN MINUTE RULE.

APPENDIX C

Judges' Message for Internal Condition in Pilot Study

Judges Instructions

You, the judges of this tournament, can help us find out how effective the ten minute rule is by keeping track of how well it is being observed. You can do this by keeping track how much of the ten minutes each team is using. So would you please keep track of each team's use of time on the enclosed sheet of paper and return it with your ballot at the end of the round.

Negative Time Used	Affirmative Time Used
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____
6. _____	6. _____
7. _____	7. _____
8. _____	8. _____
9. _____	9. _____
10. _____	10. _____

Affirmative _____ Negative _____

Judge _____ Room _____

APPENDIX D

Judges' Message for External Condition in Pilot Study

Judges Instructions

We, the tournament staff, are trying to find out how effective the ten minute rule is by keeping track of how well it is being observed We can do this only if we know how much of the ten minutes each team is using. So would you please keep track of each team's use of time on the enclosed sheet of paper and return it with your ballot at the end of the round.

Negative Time Used	Affirmative Time Used
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____
6. _____	6. _____
7. _____	7. _____
8. _____	8. _____
9. _____	9. _____
10. _____	10. _____

Affirmative _____ Negative _____

Judge _____ Room _____

APPENDIX E

Internal Linguistic Message

for Part One

Research is one of the most important aspects of this Summer Debate Institute. Those who work the hardest tend to become the best debaters. You can maximize your research through the Institute's central evidence pool. To do this, you will need to agree to type evidence on dittos that will be supplied to you. Your typed dittos will be collected next Monday, and copies of the evidence will be returned to you next Wednesday. You will then be able to trade the dittoed evidence with other Institute members and thereby increase the amount of new evidence you have.

You can make this project a success by researching a large amount of evidence. Your commitment, below, for the amount of evidence you intend on turning in can help us arrange for the success of this project. You will find blanks below for your commitment and signature.

Number of pieces of evidence
I will turn in: _____

Signature _____

APPENDIX F

External Linguistic Message

for Part One

Research is one of the most important aspects of this Institute. Those who work the hardest make the greatest contribution to the Institute. We can maximize debaters' research through the Institute's central evidence pool. To do this we will supply each debater with dittos which can be used to type evidence on. We will then collect the typed dittos next Monday and return copies of the evidence to each debater next Wednesday. These can then be traded with other Institute members and thereby increase the amount of new evidence available in the Workshop.

We can make this project a success if each debater will commit himself/herself to researching a large amount of evidence To help us arrange for this project we need commitments for the amount of evidence that each person expects to turn in. A blank is listed below for each debater's commitment of the amount of evidence and a blank for each debater's signature.

Number of pieces of evidence to be turned in: _____

Signature _____

APPENDIX G

Internal Linguistic Message

for Part Two

You will be able to participate in the central evidence pool again for the next two weeks. You will once again have the chance to increase your amount of evidence by trading with other Institute Members. Obviously the more evidence you put on dittos the more you have to trade with other debaters.

Dittos will be distributed this week and collected by next Monday with copies returned the following day. Since the number of cards you do is your personal business, you need not sign this form and can place it anonymously in the box outside the room. The only reason for indicating the number of cards you intend to do is to help make arrangements for the number of dittos and amount of paper needed. The number of cards you intend to do is purely for your benefit.

Number of pieces of evidence
I will turn in:

_____

APPENDIX H

External Linguistic Message

for Part Two

We are continuing the central evidence pool again for the next two weeks. Institute members will once again have the chance to increase their amount of evidence by trading. Obviously the more evidence turned in to us, the more evidence there will be available in the Institute.

Dittos will be distributed this weekend collected by next Monday with copies returned the following day. Since the number of cards done is a personal matter, we do not need signatures on these forms which can then be placed anonymously in the box outside the room. The only reason for indicating the number of cards to be done is to help us in making arrangements for the number of dittos and amount of paper needed. The only benefit from the amount of evidence turned in to us is for the members of the Institute.

Number of pieces of evidence to be turned in.

_____

APPENDIX I

Analysis of Variance

Analysis of Variance for Intended

Behavior Part One

	SS	df	MS	F	P
Attention	2552.42	1	2552 42	53	n.s.
Linguistic	679 94	1	679.94	.14	n.s.
Attention x Linguistic	1761.09	1	1761.09	.36	n.s.
Error Within	305738	64	4777 00		

Analysis of Variance for Transformed

(Log_{10}) Intended Behavior Part One

	SS	df	MS	F	P
Attention	2125	1	.2125	1.49	n.s.
Linguistic	.0017	1	.0017	.01	n.s.
Attention x Linguistic	.0282	1	.0282	.20	n.s.
Error Within	9.1324	64	.1427		

Analysis of Variance for Intended

Behavior in Part Two

	SS	df	MS	F	P
Attention	3553 20	1	3553.20	3.68	.06
Linguistic	.20	1	.20	0	n.s.
Attention x Linguistic	1755.70	1	1755.70	1.82	n.s.
Error Within	34749	36	965.25		

Analysis of Variance for Transformed (1/x)

Intended Behavior in Part Two

	SS	df	MS	F	P
Attention	.000930	1	.000930	5.96	.02
Linguistic	.000210	1	.000210	1.35	n.s.
Attention x Linguistic	.000650	1	.000650	4.17	.05
Error Within	.005600	36	.000156		

Three-Way Analysis of Variance for

Intended Behavior in Part One

	SS	df	MS	F	P
Attention	9239.67	1	9239.67	2.06	n s.
Linguistic	400.12	1	400.12	.09	n.s.
Length	46.54	1	46.54	.01	n s.
Attention x Linguistic	672.20	1	672.20	.15	n.s.
Attention x Length	10355 06	1	10355.06	2.31	n.s.
Linguistic x Length	1727.13	1	1727.13	.39	n.s.
Attention x Linguistic x Length	3481.16	1	3481.16	.78	n.s.
Error Within	25998.98	60	4481.55		

Analysis of Variance for Actual

Behavior in Part One

	SS	df	MS	F	P
Attention	442.34	1	442.34	.52	n.s.
Linguistic	362.52	1	362.52	.43	n.s.
Attention x Linguistic	36.57	1	36.57	.04	n.s.
Error Within	51429	61	843.10		

Analysis of Variance for Actual

Behavior in Part Two

	SS	df	MS	F	p
Attention	586.28	1	586.28	1.61	n.s.
Linguistic	15.32	1	15.32	.04	n.s.
Attention x Linguistic	966.14	1	966.14	2.66	n.s.
Error Within	12732	35	363.77		

Analysis of Variance for Transformed (1/x+1)

Actual Behavior in Part Two

	SS	df	MS	F	p
Attention	.2738	1	.2738	1.40	n.s.
Linguistic	.0453	1	.0453	.23	n.s.
Attention x Linguistic	1.6607	1	1.6607	8.49	.006
Error Within	6.8455	36	.1956		

Three-Way Analysis of Variance for

Actual Behavior in Part One

	SS	df	MS	F	p
Attention	318.07	1	318.07	.44	n.s
Linguistic	206.25	1	206.25	.28	n.s.
Length	2762.78	1	2762.78	3.80	.06
Attention x Linguistic	128.97	1	128.97	.18	n.s.
Attention x Length	3867.61	1	3867.61	5.32	.02
Linguistic x Length	361.90	1	361.90	.50	n.s.
Attention x Linguistic x Length	405.86	1	405.86	.56	n.s.
Error Within	9860.95	57	726.42		

Analysis of Variance for Actual

Behavior as Percentage of Intended Behavior Part One

	SS	df	MS	F	p
Attention	.159	1	.159	.54	n.s.
Linguistic	.318	1	.318	1.09	n.s.
Attention x Linguistic	.159	1	.159	.54	n.s.
Error Within	17.82	61	.292		

Analysis of Variance for Transformed (Arc Sin)

Actual Behavior as Percentage of Intended Behavior Part One

	SS	df	MS	F	p
Attention	.9143	1	.9143	.38	n.s.
Linguistic	3.5346	1	3.5346	1.45	n.s.
Attention x Linguistic	.1639	1	.1639	.07	n.s.
Error Within	148.55	61	2.435		

Three-Way Analysis of Variance for Actual Behavior

as Percentage of Intended Behavior in Part One

	SS	df	MS	F	p
Attention	1646.50	1	1646.50	.63	n.s.
Linguistic	3277.62	1	3277.62	1.25	n.s.
Length	196.13	1	196.13	.07	n.s.
Attention x Linguistic	185.78	1	185.78	.07	n.s.
Attention x Length	18336.53	1	18336.53	6.98	.01
Linguistic x Length	203.50	1	203.50	.08	n.s.
Attention x Linguistic x Length	8299.22	1	8299.22	3.16	.08
Error Within	32280.95	57	2627.11		

Analysis of Variance for Actual Behavior

as Percentage of Intended Behavior in Part Two

	SS	df	MS	F	p
Attention	.0156	1	.0156	04	n.s.
Linguistic	.0788	1	.0788	.20	n.s.
Attention x Linguistic	1.5568	1	1.5568	3.88	.06
Error Within	14.06	35	.4016		