THE ROLE OF COGNITIVE ATTRIBUTIONS OF CAUSALITY
IN THE MAINTENANCE OF CONFLICT NEGOTIATION BEHAVIOR

by

BRIAN R. HARPER

M.Sc. Eastern Washington State University, 1973

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

in
THE FACULTY OF GRADUATE STUDIES
Interdisciplinary
(Clinical Psychology, Commerce, Counselling Psychology)

We accept this thesis as conforming
to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA
April 1989

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Department of ________________________________

The University of British Columbia
1956 Main Mall
Vancouver, Canada
V6T 1Y3

Date ____________
The Role of Cognitive Attributions of Causality in the Maintenance of Conflict Negotiation Behavior

by

Brian R. Harper
Interdisciplinary Ph.D. Candidate
University of British Columbia, 1988

This study was based upon the general thesis that individual performance expectations, attributions of causality and actual performance outcome interact to affect the maintenance and generalization of performance demonstrated during training. It compared the relative effectiveness of a management skill training program which included specific negotiation skills and "attribution structuring" components (designed to affect both expectations and causal attributions) with a similar program that included skill training only.

"General Performance Orientation", a hypothesized cognitive structure, comprising "efficacy" prediction and causal attribution, was operationally defined to include four levels: i) success - internal; ii) success - external; iii) failure - internal; and iv) failure - external. A questionnaire which measured locus of control and required respondents to predict their success or failure on a hypothetical negotiation task was distributed to all students in an administrative management program at a technical training school. One hundred and four volunteers from this population were classified into three groups (one cell was empty as no subjects predicted success with an external causal attribution). Equal numbers of subjects from each group were then randomly assigned to each of the training programs. During the course of training all subjects
engaged in a simulated negotiation task and completed a post-task questionnaire which (i) measured their locus of control; (ii) assessed their evaluation and attribution of causality for their performance on the task; and (iii) asked them to predict their performance in a similar future situation. The simulation task was repeated in a "non-training setting" four weeks after completion of the training program. Subjects' performance on the post-training simulation task was expected to be affected by an interaction between initial performance expectations, type of training experienced, and the type of causal attribution employed in explaining their performance during training. The relationships among measured locus of control, performance expectations, and causal attributions were investigated: i) prior to performance, ii) in reference to actual cause of performance effectiveness, and iii) post-performance.

Analysis of scores on the negotiation task four weeks following completion of training revealed that the experimental training group scores were significantly higher than those of the traditional training group. There was not a significant difference between group scores on the negotiation task at the final training session. The data were also supportive of the hypothesized interaction among locus of control, causal attributions, and performance expectations. The hypothesized relationship between locus of control and successful performance was not supported.
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ACKNOWLEDGMENT

A dissertation invariably reflects the influence and assistance of a number of individuals. All the members of the committee have been extremely supportive and helpful. The unwavering support, encouragement, and advice of the chairperson, Dr. Stephen Marks, have played a major role, not only in determining the present form of this document, but in its very existence. I have also benefited greatly from the support of my friend and "brother", Daniel Naegeli, whose inputs were instrumental in the initial development of this project and who has continued to "be there" throughout its gestation. Finally, the assistance and support of Andi, Toby and Matt, who have sacrificed much "that this beast might live", have contributed to all phases of this project.
BACKGROUND AND INTRODUCTION TO THE PROBLEM

Behavior change is not the exclusive domain of any single professional discipline. It is the speciality of teachers, counselling and clinical psychologists, and organizational consultants, among others. It is common however, that as individuals specialize within a particular field, they focus upon the uniqueness of that area and in the process sacrifice some of the expertise of related disciplines. This tendency is perhaps most evident at the applied level where concentration upon specific techniques often diverts practitioners' attention from the underlying theoretical perspective from which their particular techniques are derived. Practitioners tend to ignore many issues which are central to theory, but only peripheral to application.

One such underlying issue concerns the major determining factors of human behavior. Human behavior has been perceived, variously, as being determined by inherent traits, environmental events, intrapsychic events, cognitive processes, or some combination of these factors. The extent to which behavior is internally (consciously or unconsciously) or externally controlled has been a major theoretical controversy growing out of and contributing to these various views. It is
perhaps not surprising that practitioners have tended to avoid this issue since its history has been one of divisiveness amongst theorists for some time (Alker, 1972; Baars, 1986; Bem, 1972a; Epstein, 1986; Knapp & Robertson, 1986; Mischel, 1968; Rachlin, 1977a, 1977b, 1986; Skinner, 1977). While such theoretical exchanges may appear of little immediate value, especially to the practitioner, this does not negate the heuristic possibilities of examining this same issue from an applied perspective. The problem is, as Meichenbaum (1975, p. 237) has suggested, "... we have been seduced into arguing the either - or position ....", rather than focusing upon our real objective which is an increased understanding of human behavior.

The rigidly controlled procedures and impressive examples of behavior control which have been provided by numerous experimental and clinical investigations in the area of operant learning (Ayllon & Azrin, 1968; Baer, 1962; Ferster & Skinner, 1957; Lindsley, 1956; Lovass, 1966; Miller, 1951; Premack, 1965; Skinner, 1953; Stuart, 1969) have rather convincingly demonstrated that manipulation of environmental variables can have a very powerful effect on the behavior of a wide variety of populations. This evidence notwithstanding, it is equally clear that such manipulation does not satisfactorily account for all the variability in human behavior. That internal factors are also highly salient, while an anathema to a "radical behaviorist", is clearly attested to by a renewed interest in various cognitive elements evident in the work of

The emergence of this vital "cognitive-behavioral school" of clinical psychology has not occurred without some detractors (e.g., Ledwidge, 1978, 1979; Skinner, 1977; Epstein, 1986; Rachlin, 1977a, 1977b, 1986) who tend to view it as a fundamental rejection of scientific principles, abandoning the "science" of psychology in favor of a re-emergent "mentalism". Such a reaction is perhaps not surprising when the history of psychology can be perceived of as having being dominated by two "...theoretical perspectives that stressed overt behavior on the one hand and unconscious mentalism on the other" (Neimeyer & Neimeyer, 1981). Adoption of such a view, however, often results from a failure to differentiate those cognitive approaches which are fundamentally amotivational, such as Attribution Theory (Heider, 1958; Kelley, 1967) and Information Processing Models (e.g., Hamilton 1979, 1980; Lachman, Lachman, & Butterfield, 1979; Neufeld & Mothersill, 1980; Palmer & Kinchi, 1986; Suedfeld, 1971; Wyer, 1974, 1981), from those models derived from psychodynamic or ego, theories (e.g., Arieti, 1980; Frankl, 1985; Holzman & Gardiner, 1959, 1960; Klein & Fontance, 1968; Rogers, 1959; Wylie, 1974). Controversy has continued to focus on the relative merits of internal versus external "causes" of behavior. This controversy has
commonly been resolved by the adoption of the view that behavior is a result of an interaction of both personal and environmental factors (e.g., Endler, 1973; Schwinter, 1986). However, as Bandura (1978) has suggested, such interaction views are typically accompanied by methodologies which reflect an unidirectional causal approach to behavior.

Explanations of human behavior have generally been couched in terms of a limited set of determinants. Exponents of environmental determinism study and theorize about how behavior is controlled by situational influences. Those favoring personal determinism seek the causes of human behavior in dispositional sources... Interactionists attempt to accommodate both situational and dispositional factors... However these views of interaction and the accompanying methodologies essentially retain a unidirectional orientation toward behavior. (Bandura, 1978, p. 344-345).

This underlying split is implicitly present in the practitioner's choice and implementation of methodologies. Practitioners who favor the primacy of environmental factors in controlling behavior attempt to control and manipulate external environmental events believing that such events are the key to altering behavior. Their more internally oriented colleagues focus their procedures on the individual's internal cognitive processes. While only the most radical advocate of either approach would totally dismiss the other, each, in emphasizing a particular set of variables, tends to negate the value of the other to a secondary or supportive role.
Bandura suggests that behavior is actually a function of reciprocal interaction among behavioral, cognitive, and environmental variables (Bandura, 1977a, 1982, 1984). If this is true, the choice of either an environmental (e.g., Behavior Modification) or internal (Cognitive) approach to behavior change results in the exclusion of variables "inappropriate" to the methodology of choice which are nevertheless highly salient to behavior. Many contemporary clinical practitioners have developed procedures which are more consistent with Bandura's original model taking advantage of both methodological approaches in what have been termed "cognitive - behavioral" therapies (Bandura & Schunk, 1981; Beck, Rush, Shaw & Emery, 1979; Craighead, 1982; Dobson, Jacobson & Victor, 1988; Dzurilla, 1988; Jacobson, 1984; Kanfer, 1977; Kanfer & Hagerman, 1981; Kendall, 1983; Meichenbaum, 1977, 1985; McMullen & Giles, 1981; Rehm & Rokke, 1988; Reynolds & Stark, 1983; Wilson, Golding & Charbonneau-Powis, 1983; Wolpe, 1981; Wolpe, Lunde, McNally & Schotte, 1985).

GENERALIZATION AND MAINTENANCE OF CHANGE

One major issue which has been central in the clinical application of cognitive, behavioral, and cognitive-behavioral oriented approaches to behavior change is the controversy surrounding the relationship between cognitive and behavioral change. Practitioners who advocate a focus upon the cognitions of the individual assume that alteration of internal cognitions is primary in producing subsequent behavior change. Their more
behaviorally oriented colleagues argue for the opposite view, stressing the primary role of external contingency management in producing behavior change. The lack of convincing evidence that shows verbalized cognitive changes to be reliably associated with subsequent change in specific behavior has been cited by numerous authors (Bandura, 1969, 1977a; Fairweather, 1964; Kanfer, 1977; Lazarus, 1961; Paul, 1966; Rachlin, 1977a; Rachman, 1971; Risely, 1977).

Cognitive theorists, while generally accepting the efficacy of behavioral procedures in altering specifically defined behaviors in highly controlled situations, argue that change efforts focused solely upon environmental contingency manipulations are less effective. Changes resulting from this approach are likely to disappear quite rapidly when contingency control is relaxed, or when the changee leaves the artificially controlled environment (Beck & Rush, 1978; Ellis, 1962; Hall & Hall, 1974; Jeffery, 1974; Locke, 1979; Mahoney, 1974; Marston & McFall, 1974 Rosenthal, 1978; Rush & Beck, 1977). Such unenduring change is often viewed as being a temporary response to the "clinical" environment rather than a "real" change in the individual.

The issue of generalization and maintenance of behavior change is central to the present investigation. The major thesis is that behavior change programs, if they are to result in enduring change, must specifically address all of the reciprocally causal factors identified by Bandura (1977b). It
is suggested that behavior change programs of any type, whether they are labeled therapy, education, training or whatever, will benefit by developing methodologies which, explicitly, address both the internal and external sources contributing to the behavior variance in their target populations.

**BEHAVIOR CHANGE AS SOCIAL INFLUENCE**

Behavior change programs, regardless of their cognitive or behavioral methodological bias, are in fact attempts by one individual or group to influence the behavior of another individual or group. It may, therefore, be useful to conceptualize change methodologies in relation to Kelman's (1958, 1974) model of the social influence process.

Kelman stressed the relationship between the type of change which occurs and the process which is employed in bringing it about. Behavior change which results from the alteration of external environmental reinforcement contingencies is labeled "compliance" by Kelman. Change resulting from an individual's "self-defining" relationship with others is called "identification", while change which results from the supplying of new cognitive information which is integrated into the individual's existing "belief system" is referred to as "internalization". Compliance results from changes in contingencies of reinforcement and requires stability in the contingencies for its maintenance. Internalization requires no
such stability in the external contingencies of reinforcement. Individuals are able to self-reinforce changes of this type.

The relationship between Kelman's terms "compliance" and "internalization" and the issue of generalization of behavior change highlighted above seems obvious. His description of the alternative external power sources associated with each type of change is closely related to the controversy surrounding the relative merits of a behavioral versus cognitive focus by the external change agent. It might be assumed that a cognitive approach (supplying expert information) would result in change which will be generalized while manipulating environmental variables would result in change which would not be maintained beyond the specific situation. This assumption would however ignore the importance of the internal cognitive processes of the changee. It is clear from Kelman's description that internalization would only be expected to occur when the changee perceives the validity of the information supplied as being "expert". This perception may well be unrelated to any actual expertise on the part of the change agent. Internalization would only be expected to occur if the subject attributes "expertise" to the information source or external change agent. The internal cognitive processes of attribution are therefore a key variable in determining the type of change which ultimately occurs. The focus of many cognitive-behavioral clinicians upon the important role played by individuals' beliefs about the validity of the model of change employed and about the cause of change in their behavior in
determining the effectiveness of therapy is supportive of the importance of this relationship (e.g., Bandura, Adams & Bayer, 1977; Kanfer & Scheft, 1987; Meichenbaum, 1985; Sonne & Janoff, 1982).

CAUSAL ATTRIBUTION AND BEHAVIOR MAINTENANCE

Attribution Theory maintains that individuals attempt to "cognitively" process perceptual data from their external environment into meaningful causal relationships (Heider, 1958; Kelley, 1967, 1971). According to Harvey, Ickes and Kidd, (1976), this process involves an individual "acting like a scientist, obtaining information from his/her social surroundings and trying to determine the causes and consequences of ongoing behavioral events" (Harvey, Ickes, & Kidd, 1976, preface). Bem (1965, 1972b) suggested that individuals employ a similar procedure in attempting to understand and give meaning to their own behavior.

Dimensions of Causal Attributions

Rotter (1966) has identified generalized tendencies in individuals to employ either external or internal attributions of causality in reference to their own behavior. This generalized tendency or "locus of control" is developed from the individual's perceptions regarding contingencies of
reinforcement in the early years of life. Lefcourt (1976) describes the process:

It is not simply registering of success or failure experience that is pertinent to the generalized expectancy of internal versus external control, but rather it is the interpretation of the cause of these experiences. (Lefcourt, 1976, p. 28)

Thus it may be individuals' attributions of causality concerning changes in their own behavior rather than the actual external induction source (Kelman, 1958) that are the crucial factors in determining whether such change is due to compliance or to internalization. That is, if the individual attributes the cause to external factors, the change will be due to compliance, and if the change is attributed to internal factors it will be due to internalization. It is crucial therefore to consider this attribution process in designing change programs if the goal is to bring about changes which are independent of the environment in which they were acquired.

In order to understand more clearly the relationship between attribution of causality and learning, one must examine findings regarding locus of control in relation to attribution theory. Investigations into locus of control have suggested that the construct is perhaps not quite so straightforward as initially described by Rotter. A number of writers have questioned the generality of locus of control. It has been demonstrated that locus of control may not be consistent for an
individual in all situations. For example individuals may differ in the locus of causal attributions they employ for success and failure (Crandall, Katcorsky, & Crandall, 1965; Mischel, Zeiss, & Zeiss, 1974; Weiner, 1974a). It also appears that the categories of internal and external are not sufficient to account adequately for the types of causal attributions that individuals actually employ. Weiner and colleagues (Weiner, 1979, 1980a, 1985, 1986; Weiner, Frieze, Kukla, Reed, Rest, & Rosenbaum, 1971; Weiner, Heckenhauser, Meyer, & Cook, 1972; Weiner, Neirenberg & Goldstein, 1976; Weiner, Russel & Lerman, 1978) suggested causal attributions involve both "stable" and "variable" factors which may be either external or internal in locus. Thus they were able to employ a 2x2 table demonstrating four types of attribution regarding performance (see Figure 1).

Figure 1

Two Dimensional Model of Causality

<table>
<thead>
<tr>
<th></th>
<th>Fixed</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
<td>personality</td>
<td>effort</td>
</tr>
<tr>
<td>External</td>
<td>task difficulty</td>
<td>luck</td>
</tr>
</tbody>
</table>

(Weiner et al., 1971)

Employing this classification model, a single causal attribution regarding a specific event may fall into any of four categories.
## Attribution of Cause

<table>
<thead>
<tr>
<th>Attribution of Cause</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. &quot;Because he is stupid&quot;</td>
<td>Internal-Fixed</td>
</tr>
<tr>
<td>2. &quot;Because he worked hard&quot;</td>
<td>Internal-Variable</td>
</tr>
<tr>
<td>3. &quot;Because it was difficult&quot;</td>
<td>External-Fixed</td>
</tr>
<tr>
<td>4. &quot;Because the weather was good&quot;</td>
<td>External-Variable</td>
</tr>
</tbody>
</table>

When the above classification system is combined with the differences related to success and failure situations, the resulting model provides eight possible categories of attribution type which may be employed following a single behavioral performance (Figure 2). The attribution may vary depending upon the evaluation of the performance (i.e., success or failure), the locus of the factor (internal or external) and the stability of the factor (fixed or variable). Under this eight category model there are now two alternatives for each of the four examples provided earlier.

### THE RELATIONSHIP BETWEEN STABILITY AND LOCUS OF CAUSAL ATTRIBUTIONS AND PERFORMANCE

Weiner and his colleagues have contended that it is the stability dimension of causal attributions that is of major importance in determining expectations regarding future performance (Weiner, 1980a, 1985, 1986; Weiner, Heckenhauser, Meyer, & Cook, 1972; Weiner, Neirenberg & Goldstein, 1976; Weiner, Russel & Lerman, 1978). Numerous investigators have
Figure 2

Possible Behavioral Outcome - Attribution Type Classification

BEHAVIORAL OUTCOME

CAUSAL ATTRIBUTION

SUCCESS

FAILURE

BEHAVIOR

FIXED

INTERNAL

EXTERNAL

FIXED

EXTERNAL

INTERNAL

VARIABLE

VARIABLE

VARIABLE
found that subjects attributing failure to internal variable causes have significantly greater expectations of future success and exhibit performance in the future that is superior to that displayed by those who attribute failure to internal fixed causal factors (Anderson & Jennings, 1980; Andrews & Debus, 1978; Jennings, 1980; Wilson & Linville, 1982).

The importance of the relationship among performance, behavior, and locus of attributed cause has been demonstrated by Mischel, Zeiss and Zeiss (1974) who found that success, when attributed to internal factors, was predictive of "persistent efforts" in performance situations, while unsuccessful performance attributed to external causal factors resulted in "avoidance behaviors". A similar study by Dweck and Repucci (1973) found that internality for failure was "closely akin" to externality in its relationship to subsequent behavior. Such investigations link performance outcome with the locus of attributed cause in the determination of future performance. In doing so, they are closely related to work of Abrahamson,
Seligman, and Teasdale (1978) in the area of "learned helplessness", and numerous investigators employing Bandura's (1977b) "self-efficacy" construct who have provided evidence of the importance of internally attributed control in determining both expectations and future performance (Bandura, Adams, Hardy, & Howells, 1980; Biram & Wilson, 1981; Winberg, Gould, & Jackson, 1979).

The underlying premise of this study is that behavior change programs are examples of a "social influence" process (Kelman 1974) and that maintenance and generalization of behavior affected by this process are closely related to the type of causal attributions employed by the changee. Therefore, the inclusion of specific procedures designed directly to influence the cognitive attribution process of participants in change programs should have a significant impact on the endurance of their behavior.

This study was designed to examine the role of cognitive attribution structuring procedures in the maintenance and generalization of performance. It was intended as an exploratory investigation focused upon evaluating the effectiveness of an experimental training program in improving the maintenance and generalization of performance and examining the relationships among a number of factors (locus of control, causal attributions and performance expectancy) believed to mediate performance maintenance and generalization.
CHAPTER 2

LITERATURE REVIEW AND DEVELOPMENT OF HYPOTHESES

In the previous chapter several themes were identified as pertinent to the present study. This chapter will examine the literature relevant to each of these investigative threads, present a conceptual model of the process of generalized, enduring, behavior change, and establish a set of hypotheses for investigation.

SOCIAL INFLUENCE AND GENERALIZATION

The parallel between the generalization and maintenance of behavior and Kelman's (1958) processes of compliance and internalization was noted above. In Kelman's model the terms compliance and internalization include a description of both the processes involved in bringing about the change in behavior and the factors controlling the behavior after acquisition. Kelman's description of controlling factors — compliance: the external demands of a specific situation, and internalization: a person's value system (Kelman, 1961, p. 57) — reflects the internal-external controversy presented earlier and suggests that the internalized change should generalize and be maintained beyond the contingency environment in which it was acquired. Raven (1974) has also indicated that compliance and internalization are closely related to the issue of
generalizability of change which is central to the present investigation. He suggested that compliance and internalization can be perceived as having a one to one correspondence with the extremes of an environment dependent - environmental independent continuum (Raven, 1974, p. 177).

Just as the factors controlling behavior in Kelman's model reflect the internal-external dichotomy discussed earlier, his descriptions of the processes involved in bringing about each of these types of change are closely related to the controversy regarding cognitive and behavioral methodologies described in Chapter 1. Kelman (1974) and others (French & Raven, 1959; Raven & Kruglanski, 1970) have stressed the importance of the external power source in bringing about change. The power to bring about rewards and punishment is seen as initiating compliance changes, while the power of "expert" information produces internalized change. According to this model, supplying an individual with "expert" information should result in behavior change which is independent of the environment in which it first occurs.

It has been suggested however, that certain internal cognitive processes of the individual may be equally or even more crucial than the power source of the induction agent in determining the type of change which occurs (Raven, 1974; Schopler & Layton, 1974). Raven (1974) has suggested that internal cognitive processes and specifically attributions regarding the locus of control over change are more crucial
than the actual external power source in determining whether compliance or internalization occurs.

More recently, many cognitive-behavioral clinicians have adopted a similar approach to behavioral change. For example, Meichenbaum and his associates stress the importance of establishing a "collaborative" relationship with the client in order to facilitate the development of a "reconceptualization" of the presenting problem in therapy (Meichenbaum, 1985; Turk, Meichenbaum & Genest, 1983). These authors stress that the client's belief in and acceptance of this new conceptualization are of primary concern to the therapist. The objective validity of the reconceptualization is described as being relatively unimportant in determining the outcome of therapy.

A second major focus of therapy identified by Meichenbaum et al. and other cognitive-behavioral therapists is upon getting clients to perceive themselves as being responsible for any changes which do occur (Beck, 1985; D'zurilla, 1988; Jacobson, 1984; Kanfer, 1984). These foci correspond very closely, in both the identified goals and the description of the processes involved in attaining them, to Kelman's description of "identification" and "internalization". These clinicians do not assume that supplying "expert information" will automatically result in environmental independent change, nor that controlling contingencies of reinforcement will necessarily result solely in environmental dependent change. Changes of either type may occur independently of the external
change induction procedure depending upon the "beliefs" and cognitive attributions of causality employed by the changee.

LOCUS OF CONTROL AND CAUSAL ATTRIBUTION

The construct locus of control has been the source of considerable controversy (Phares, 1973; Reid & Ware, 1973, 1974; Rotter, 1975; Williams & Stack, 1972). The controversy tends to focus upon a "trait" versus "state" dispute not unlike the internal-external controversy described in Chapter 1. This focus also tends to evoke an either/or approach distracting attention from the primary goal of understanding behavior.

An individual's measured locus of control can vary depending upon performance success or failure (Crandall et al., 1965; Mischel et al., 1974; Weiner, 1974a). In addition, numerous studies by Weiner and his colleagues have failed to find a significant relationship between locus of control and performance expectancy which is predicted by Rotter's original conceptualization of the construct (Heckhausen & Weiner, 1972; Weiner et al., 1972; Weiner & Kukla, 1970). Investigations employing narrowly defined behavioral measures such as resistance to extinction (Battle & Rotter, 1963) have also had disappointing results. On the other hand, more broadly based investigations employing natural social settings have found significant relationships between locus of control and effective functioning (Gurin, Gurin, Lao, & Beattie, 1969; Lao,

These results are not surprising when one considers that Rotter's original 29 item self-report inventory remains the most commonly employed measure of the "generalized tendency" locus of control (Rotter, 1966). This scale is designed to represent a large number of categories of behavior in keeping with the conception of a generalized tendency (Rotter et al., 1961). Therefore it follows that its validity would be related to "broad social actions" rather than tightly controlled laboratory manipulations (Weiner, 1972).

Weiner (1972, 1974a, 1980a, 1986), in an expanded classification system, suggested that the locus of control construct actually incorporates two separate dimensions. Weiner's system attempts to differentiate a dimension which he labeled as "control" from the "locus" (internal - external) dimension. In Weiner's classification system, "locus" is defined as a "backward looking belief" regarding the location of the cause of an event which has already occurred. "Control" is defined as the degree to which a cause is perceived as being controllable by the actor. Weiner acknowledges (Weiner, 1980a, p. 45) that there may be some weaknesses in this classification system. Specifically, he raised doubts regarding the degree of independence which exists between locus and controllability and whether or not external causes can ever really be perceived as being controllable (pp. 45-47).
Weiner suggested "task difficulty" as an example of an external, unstable, and uncontrollable "cause" of students' grades and offered "teacher bias" as a cause which "might" be perceived as external, stable and controllable. He suggested that "unusual help from others" is an example of a cause which is external, unstable but controllable. Weiner concedes that the latter two examples may be considered suspect, and it does seem somewhat unlikely that an individual would actually perceive either of these attributed causes as being controllable by him/herself.

Weiner's classification system is also vulnerable to the criticism advanced by Feidler (1982) and others (Renis, Hansen, & O'Leary, 1983; Tetlock & Levi, 1982), suggesting that much of the controversy in Attribution Theory results from its dependence upon the level of semantic interpretation, rather than systematic investigation of operationally defined and experimentally controlled variables. It is apparent that the "control" and "locus" dimensions are not conceptually unrelated since as Weiner suggested a "controllable" cause could also be classified as necessarily being internal in locus. The relationship between stability and control is also unclear. It could be argued that for a factor to be controllable it must be variable. Meyer (1978, 1980) identified the factors advanced in Weiner's classification system with factor analysis techniques, but found them to be non-orthogonal. Michela, Peplau and Weeks (cited in Weiner, 1979) and Passer (1977) also
employed factor analysis techniques and failed to provide support for the existence of the multitude of different dimensions which have been identified.

Weiner (1980b) identified a fourth dimension, "Globality", but did not explicitly include it in his classification system at that time. In his 1986 explication of his Attributional Theory of Motivation and Emotion, "globality" is combined with "stability" as the key factor in determining expectancy (Weiner, 1986). Experientially "globality" would appear to be closely related to the stability dimension since it is defined as generalization of a cause across situations. Stability refers to such generalization over time. Weiner's description of globality suggests that it must be closely associated with "internality" since global causes must be present across all situations that an individual enters. Very few external causal factors could be expected to exist in every situation an individual enters.

Globality also appears to be very closely related to Bandura's (1977b) "self-efficacy" construct. Examples of globality provided by Weiner (1980a) are indistinguishable from common examples of self-efficacy evaluations. An example of a global factor is lack of intelligence evidenced in the causal attribution for failure: "I am dumb". Furthermore, both of these constructs would appear to fall into the "internal-stable" category of Weiner's original locus by stability model of causal attributions (Weiner, et al., 1971).
In summary, the addition of the factors globality, intentionality, and changeability, and the separation of control from locus have done little to enhance our understanding of the process of attributing causality, and the relationship between this process and "expectations" and/or "performance". Support for the contention that locus of control is unrelated to performance expectations has not been demonstrated despite Weiner's (1986) claims to the contrary.

It is advantageous to view both locus of control and causal attributions as contributing to individuals' expectancy instead of viewing one or the other as being primary. This can be done if each is conceived of as representing a different level of analysis. In this investigation locus of control is conceived of as a cognitive structure and causal attributions as a cognitive process. Specifically it is suggested that locus of control can best be understood as a measure of a learned response tendency which reflects an underlying cognitive schema, or structure, relating to the locus of the cause of events. Causal attributions are the cognitive processes involved in assigning causality for events that occur. The reciprocal relationship between structures and processes provides for causal attributions being influenced by the underlying cognitive structure locus of control and for locus of control being influenced by the process of attributing causality.
COGNITIVE STRUCTURES AND COGNITIVE PROCESSES

Cognitive structures are defined (following Averill, 1979) as the "...existing cognitive models which give meaning to events". They are differentiated from cognitive processes, which are defined as "thoughts, images (self statements, appraisals, expectancies, etc.) that precede, accompany and follow event behaviors" (Meichenbaum, Butler, & Gruson, 1981 p. 37). From this perspective, causal attributions are "processes" while locus of control is conceptualized as a measure of an "existing model, or structure". In effect attribution of causality and locus of control each represent a different focus or level of analysis. They are interrelated, but categorically different phenomena (Goldfried & Robins, 1983; Meichenbaum & Gilmore, 1984; Turk & Speers, 1983).

Kelley postulated the existence of an internal cognitive schematic system, suggesting that individuals develop a number of different "cognitive schemata", or "...general conception(s)... about how certain kinds of causes interact to produce a certain kind of effect" (Kelley, 1972, p.1). According to Kelley different schema may be activated in particular situations and as a result, different conclusions will be reached about the cause of an event. Numerous subsequent investigators examining the attribution process have
provided evidence that is supportive of this contention (Anderson, 1983a; Metalsky & Abrahamson, 1981; Reeder & Brewer, 1979; Reeder & Fulks, 1980; Schwartz & Higgins, 1979) and others have suggested that such structures are organized in a hierarchical form (e.g., Hastie, 1981; Meichenbaum, 1985; Meichenbaum & Gilmore, 1984).

The Social Learning Theory conceptualization of the organization of potential responses into a hierarchical system provides a model for the organization and operation of such a schematic system (Bandura & Walters, 1963; Bandura, 1977a). Staats (1975) described behavior as resulting from "cumulative hierarchical learning". That is, a repertoire of associative or adaptive behaviors is learned as a hierarchy of potential responses. In subsequent situations the dominant behavior in the hierarchy will tend to be produced, resulting in a response pattern that tends to be constant across situations. However, if that behavior proves to be non-adaptive in a specific situation, a new behavior from the hierarchy will be produced. Thus, variations between specific situations occur along with consistency across situations.

Rotter (1954) described an inverse relationship between generalized expectancies such as locus of control and an individual's familiarity with a particular situation. In the model advanced here, a system of cognitive schemata is conceived of as being organized in a hierarchical fashion, and locus of control is conceptualized as being a dominant causal
schema within such a hierarchy. Following this model, a tendency to employ internal attributions of causality could be dominant in an individual's available hierarchy and therefore tend to be employed across a wide variety of situations. This would be especially likely in situations which were novel, or highly nonspecific. However, it would also be likely that some situations will offer specific cues which would tend to elicit an alternate or non-dominant causal schema from the hierarchy. The differences in locus of control for success and failure might reflect such a process. An example of this relationship is presented in Figure 3.

As indicated in Figure 3, when specific situational cues are absent, the individual's dominant causal schema determines his/her attributed causality. When specific situational information is available, however, it can cue an alternative causal schema from the individual's available schemata, resulting in an attribution which is inconsistent with his/her dominant schema or measured locus of control.

The present conceptual model of locus of control as a dominant cognitive schema is consistent with both Heider's (1958) contention that causal attributions are sometimes determined by habits of thought, Kelley's (1972) description of internal causal schemata, Rotter's (1954) description of the relationship between a generalized expectancy and situation specific expectations, and Lefcourt's (1975) findings relating locus of control, initial expectations and performance outcome.
More recently Kelley and Michela (1980) and Metalsky and Abrahamson (1981) have described similar organizations of cognitive schemata. While Pyzsezinski and Greenberg (1981) found that individuals employ "pre-existing causal theories" in explaining unexpected events. Weiner (1986) alludes to a similar relationship between two cognitive variables which he refers to as an "underlying cognitive organization" and an
"activated schema" (Weiner, 1986, p. 72). Ross' (1981) contention that the "false consensus attributional bias" is accounted for by the fact that certain choices are "more cognitively available" than others and Kahnmen and Tversky's (1973) description of the heuristics of information processing are also supportive of this position. Wong and Weiner (1981) indicated that locus and control were the most common heuristics employed in "attributional search".

Ruble (1973), employing the same performance measure as used in this investigation, found that individuals employ different factors in predicting future behavior depending on the degree of similarity between present and (expected) future situations. Ruble's results indicate that the "locus" of individuals' attributions affected their expectations about future performance in dissimilar situations, while the "stability" of their attributions was most influential in determining expectations of performance in future similar situations. In Ruble's study when individuals attributed their performance to stable causal factors they expected to repeat their performance in future similar situations regardless of whether these causal factors were perceived as being internal or external in locus. When they considered performance in future dissimilar situations, however, the locus of their causal attribution was an important factor in determining their future performance expectations.
LOCUS OF CONTROL, CAUSAL ATTRIBUTIONS, AND PERFORMANCE EXPECTATIONS

The relationship between the locus and stability dimensions of causal attributions in determining performance expectations is crucial to the present investigation. Weiner (1974a) contended that the relationship between internal and external locus of control and performance expectation is less important than Rotter originally suggested. Weiner among others has argued that the stable-variable dimension of attributions is more important than internal-external orientation in affecting expectations and therefore future performance.

The Weiner model indicates (Figure 4) that when an individual makes an attribution regarding the cause of a completed performance, it is the stability dimension which determines expectations of future performance. Whether or not

Figure 4

Dimensions of Causal Attributions and Expectancy

Stability → Expectancy

Globality

Causal Attribution

Locus of Control → Affect

Controllability

(adapted from Weiner, 1986, p. 240)
the causal factor is seen as being stable across time and situation is the key to whether individuals will expect similar outcomes in the future. In this model, the locus of perceived cause is viewed as being only peripherally if at all involved in determining expectancy of future performance outcomes.

Weiner suggests (1974 a&b, 1986) that previous investigations which have found a relationship between the locus dimension and expectancy were confounded by a failure to consider the stability dimension of attributions. When the stability dimension is included, Weiner contends locus of control has little effect on expectancies regarding future performance.

I find it unfortunate that psychologists continue to discuss locus of control in relation to expectancy of success and continue to confound the internal aspects of perceived control with the volitional and stable dimensions of causality. (Weiner, 1974a, p. 61)

Weiner (1986), in summarizing the literature contrasting what he characterizes as the "Social Learning Theory" position in which "locus" of cause is viewed as being the primary determinant of expectation and the "Attribution Theory" position in which "stability" is seen as being paramount, concluded that support for the latter position is overwhelming. However, he does acknowledge numerous problems in the "quality" of many of the studies reviewed. In particular, the tendency to pre-determine the classification of particular causes,
despite the fact that individuals might well classify them differently, is noted as a weakness of many investigations. For example, effort is typically classified as a "variable" causal factor although it might in fact be perceived by some subjects as being "stable".

Rosenbaum (1973) attempted to address this difficulty by suggesting the addition of a third variable which he called "intentionality". However in describing possible attributions which might be employed by individuals, addressing all three variables, he was forced into the somewhat awkward position of constructing an example of a "stable-unintentional attribution for success" as follows: "blank is the kind of person who usually has the ability"; while in the success-unstable-unintentional situation: "subordinate's ability to produce was higher than usual on that occasion." While these attributions may meet the requirements of the model, they appear rather artificial. It is much more likely that individuals in the situations described would attribute the results to variability in effort, an unstable intentional attribution rather than to any actual changes in ability which is usually conceived as a relatively stable factor. At any rate investigators have continued to ask subjects to choose between factors that have been pre-classified and to assume that the subjects' perceptions of these factors are identical to their own. "Luck" and "effort" are defined as unstable for example, despite the fact both may well be perceived by many individuals as being highly stable factors. For example: "She is lucky", "He is lazy".
A second area of concern is that many investigations of this type employ attributions and expectations concerning another persons' behavior as dependent and independent variables (Kun & Weiner, 1973; Rest, Nierenberg, Weiner, & Heckhausen, 1973; Ruble, 1973; Weiner & Kukla, 1970). In those cases where the individual's own behavior is employed, the artificial nature of the situation and/or the manipulation of attributions make interpretation difficult (Foesterling & Engleken, 1981; Holtzworth, Munroe & Jacobson, 1985; Meyer, 1980; Wong & Weiner, 1981). It is unclear in these studies that subjects actually believed the information supplied by the experimenter and/or employed it in their attribution process (Kanfer, 1977). For example, Frieze and Weiner (1971) supplied subjects data on performance outcome and asked them to "imagine the data pertained to themselves". Kukla (1972) instructed subjects that outcome on a particular task was almost entirely dependent on effort, or alternatively, was dependent on both effort and ability, but no attempt was made to discover whether the subjects actually believed these attributions. Indeed the results indicate that they did not. While there have been attempts to overcome this difficulty by employing more naturally occurring situations and simulations, most of these have not been concerned directly with the relationship between locus and stability in relation to performance which is the focus of interest in this investigation (Anderson, 1983a; Gilovich, 1983; Brunson & Matthews, 1981; Meyer & Koelbel, 1982).
A third possible problem area acknowledged by Weiner (1986) is the perhaps artificial separation of locus of control and stability. It seems clear that actual attributions of causality involve both of these dimensions. It may be that while this combination can be 'separated' for the purpose of research, it is not a naturally occurring process (Anderson, 1983a; Greenberg, Saxe & Bar-Tal, 1978, Weiner, 1986). Focusing on the "either - or" question may be a hindrance to our understanding of the joint role they play in mediating future expectations. Ruble (1973), for example, found that although the stability dimension mediated expectations concerning behavior in future "similar situations", expectations of future behavior in a different situation depended upon an interaction of both the stability and locus dimensions.

Weiner (1986) concludes that the lack of recent research in this area is appropriate since the question as to "... whether attributions and causal stability relate to expectancy change and expectancy... has been determined both logically and empirically". While he acknowledges that the "theoretical analysis and the data" might be looked upon "with something less than enthusiasm" (Weiner, 1986, p.94) this is not due to the problems with the studies that have been identified above. His comment is meant to suggest that he believes the findings regarding the unimportance of locus are so logically consistent with experience and so obvious as to seem trivial. Despite this "triviality", Weiner perceives these findings as having
great import due to the fact that they are at variance with Social Learning Theory predictions. It is suggested here that while the studies he cites are supportive of his contention that the stability dimension is important in determining expectancy, they have many flaws, and do not provide any clear justification for the dismissal of the importance of "locus" of cause (e.g., Anderson 1983a, 1983b; Clifford, 1986; Greenberg et al., 1978; Ruble, 1973) nor should they necessarily be viewed as a 'triumph' for Attribution Theory.

This investigation was undertaken from a perspective in which locus of control measures and causal attribution measures including both stability and locus are seen as assessing separate but interdependent levels of cognitive functioning. Cognitive structures and cognitive processes are both perceived as being involved in the determination of expectancy. While the present investigation employed Weiner's two dimensional model of causal attributions relating to performance situations, it differed from Weiner in its view of the import of the two dimensions. In this study both the stability and the locus of causal attributions were viewed as important in determining performance expectations. It was believed that the locus dimension would play a major role in determining expectations in situations that are defined in "general" (non-specific terms), while the stability dimension would be most important when more specific information about the performance situation was available. This relationship is discussed more fully below.
Weiner and his colleagues (1972) outlined a two dimensional model of causal attributions regarding performance in achievement related situations. In this model the locus of control dimension is viewed as being intimately related to "affective responses" to performance, while the stability of causal attributions is seen as the major determinant of expectations. Ruble (1973) however, found a relationship between both these factors and expectations in certain situations. Ruble's results indicate that the locus dimension is important when the future prediction situation being considered is different from the situation recently completed. When future similar situations are considered, however, he found a pattern similar to that described by Weiner.

These findings suggest the need for a model which differentiates between situational typologies in explaining the causal attribution and expectancy relationship. In such a model individuals' performance expectations and causal attributions may vary depending upon whether they are considering "the general" or "a specific" case. Future similar situations would be an example of the "specific" case in which key components will be identical to those in a familiar situation. Future situations which vary on such key components would, however, be the general performance case. Depending
upon which typology is being considered, a different cognitive schema may be utilized to determine performance expectations.

The hierarchical model of cognitive schemata would predict that in the "general case" individuals will utilize the dominant cognitive schema in considering their likely performance. In the specific case informational cues are available which may evoke an alternative schema from the available alternatives (see Figure 5).

The model suggests that a dominant cognitive schema determines the performance expectations of individuals considering "general case" performance. Such a dominant schema may incorporate either internal or external causal factors, and also include a personal efficacy evaluation (Bandura, 1977b). For example, the individual may perceive him/herself as being a generally effective performer and therefore expect to succeed, or s/he may perceive him/herself to be generally ineffective and expect to fail. In addition the causal attributions related to the expectations may be either to internal or external factors.

Figure 6 indicates that individuals approaching the task have an initial expectation regarding their performance and that they attribute this expectation to either internal or external factors. For example the individual might predict success based upon an internal causal attribution like a belief that "I'm good at this kind of thing". Success could also be
Situation Typology and Performance Expectations

Hierarchy of Cognitive Schemata re: Perf.

Success-Internal
(e.g. ability)

Success-External
(e.g. easy task)

general case

Failure-External
(e.g. difficult task)

specific case
(e.g. extremely difficult)

Failure-Internal
(e.g. inability)

success - ability

failure - task difficulty

* For any given individual the order of these structures could be different.

predicted with an external causal attribution. For example a belief that "they always make these things easy". Similarly, one can expect to fail and attribute this to internal causal factors. For example: "I am no good at this". Finally, a prediction of failure could employ an attribution to an external causal factor - "They never give you enough time".
When actual performance confirms a prediction of success which was attributed to internal factors, then the postdiction or explanation of performance will also employ internal attributions of causality and subsequent tasks will be approached with the same expectation. When actual performance disconfirms the prediction of success, the postdiction will likely employ external attributions as has been previously demonstrated (Baumgardner, Kepner & Arkin, 1986; Crandall et al., 1965; Lefcourt, 1975; Mischel et al., 1974). For example: "I am good at this, I did not succeed, therefore there must be something especially difficult about this particular situation". Subsequent performances in related situations would be approached with the original success expectation since one would have no reason to expect the same particular situation to hold in a new environment.

When the initial prediction of success is based upon external factors and successful performance follows, postdiction will attribute to external factors and future expectations will depend upon whether the external factors are viewed as being stable or unstable. If external failure predictions are not confirmed by performance, that is when the individual succeeds, the postdiction will also be to external factors and, if these are viewed as unstable, failure predictions are likely to be repeated in regard to future situations.
The bottom of Figure 6 presents the relationship between initial expectation of failure and subsequent post-performance expectations. As is readily apparent in this situation it is expected that the performance experience, even when it is successful, will not be expected to influence future performance expectations. If internal attributions are employed in this prediction of failure, then subsequent performance failure simply confirms the accuracy of the original attribution. Alternatively if the performance does not confirm the initial expectation (i.e., it is successful), then it will be attributed to factors external to the individual and peculiar to this particular situation. As indicated in Figure 6, if initial failure expectations were attributed to external factors, actual successful performance will again have little effect on subsequent expectations.

ATTRIBUTION STRUCTURING, GENERALIZED CHANGE AND RECIPROCAL CAUSALITY

The model which has been developed indicates that individuals who have a dominant cognitive schema which includes an internal locus of causality and personal efficacy, will attribute successful performance to internal stable factors. For such individuals, any newly acquired behaviors which are associated with successful performance would be generalized to other environments. The model also suggests that if such behaviors are to be generalized by individuals who do not possess this dominant schema, it would be important for
Figure 6

Model of the Relationships Among Expectations, Performance, and Attributions

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<tr>
<th>EXPECTATION</th>
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<td>Prediction</td>
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Performance Expectation

- 成功
- 失败
them to develop a new schema or to alter their hierarchy of causal schemata. This model suggests that the causal attributions employed by the targets of change are as important as successful performance in determining the effectiveness of change procedures. The alteration or structuring of causal attributions is therefore an important component of any change program.

It has been demonstrated in clinical practice that cognitive attributional changes (Davison, 1966; Ellis, 1958; Meichenbaum, 1971) and changes in measured locus of control (D'zurilla & Nezu, 1982; Nezu, 1982) can be achieved through direct clinical intervention into the cognitive processes. In addition, investigators in non-therapy situations have demonstrated the effectiveness of a cognitive attributional approach to behavior change (Anderson, 1983c; Anderson & Jennings, 1980; de Charms, 1972; Fowler & Peterson, 1981; Medway & Venino, 1982; Schunk, 1984; Dweck, 1975; Remanis, 1971). Employment of similar cognitive procedures in other behavior change situations would seem appropriate. In management skill training programs, for example, one would not expect that supplying (a) instruction, (b) an opportunity to practice, and (c) reinforcement following performance, would produce any lasting behavioral change if the student attributes the outcome to external factors.

Bandura's (1978) model suggesting the reciprocally deterministic nature of behavioral, cognitive, and
environmental influences supports the use of this approach as does the model of the relationship between causal attributions and expectations developed above. There is convincing evidence (e.g., Dweck, 1975) that behavior change brought about through controlling environmental contingencies does not automatically nor particularly easily generalize to other environments.

Clinical experience, illustrated by an anecdotal report by Lefcourt, supports this position as well. Lefcourt describes the patient, a man reporting pervasive feelings of inadequacy. The clinician had developed a treatment program which specified that the patient was to perform certain tasks at work and home. It had been previously determined that he could perform these tasks successfully. The cooperation of his wife and boss was obtained and they were instructed to be aware of his performance when it occurred and to comment upon it. Following a period of treatment the patient remarked:

...my wife and boss do attend to me more now than they used to. They appreciate me more. But that is because of you - you instructed them to be more appreciative.

(Lefcourt, 1976, p. 24)

This is not an uncommon clinical experience and it clearly demonstrates how individual cognitive differences can and do mediate the effects of contingency manipulation (e.g., Goldfried & Robins, 1983; Mahoney, 1985; Meichenbaum & Gilmore, 1984). An investigation by Dweck (1975) employing elementary school students demonstrates this very vividly. Dweck found
that the type of attributions employed by the students was much more influential than their actual success or failure, or amount of reinforcement, in learning mathematics.

ATTRIBUTION STRUCTURING AND MANAGEMENT SKILL TRAINING

Attributional restructuring procedures become especially important in management training when one considers the typical participants in these programs. Participant groups frequently include a high proportion of low level management and supervisory personnel, as well as an increasing percentage of females. That these two factors are important in determining the effectiveness of training programs is apparent in the findings of a number of investigators. Specifically their findings include:

1) Females generally have lower expectations for their own performance than males do (Deaux & Farris, 1977; Montanelli & Hill, 1969).

2) Females tend to attribute causality to internal stable factors about themselves when these expectations are confirmed by subsequent performance (Bar-Tal & Frieze, 1976; Deaux & Emswiller, 1974; Deaux & Farris, 1977).

3) Females tend to attribute causality to external factors when subsequent performance disconfirms their expectations. (Crandall, 1969; Deaux & Farris, 1977; Montanelli & Hill, 1969).
4) Both men and women who occupy positions of powerlessness over extended periods of time tend to employ external attributions of causality (de Charms, 1972; Harvey, 1971; Stephens & Delys, 1973) and demonstrate learned helplessness behaviors in performance situations (Dweck, 1975).

These findings suggest that a significant number of participants in a typical management training program will have a dominant cognitive schema which will tend to inhibit the generalization of successful performance demonstrated during training. These individuals expect to fail in achievement situations and, if they do succeed, tend to attribute success to external causes over which they have no control.

DEVELOPMENT OF HYPOTHESES

The central thesis in the present investigation was that the inclusion of cognitive structuring procedures designed to identify, monitor, and control the attributions of causality of participants in a management skills training program would increase the maintenance and transferability of successful performance during training to a negotiation task performed four weeks after the completion of training. It was believed that if trainees altered their attributions of causality such that they attributed success to internal stable factors and failure to internal variable factors, they would perform more
successfully than their counterparts in an identical program where attempts to alter attributions of causality were absent. The rationale underlying this belief is that although the majority of participants in both types of training will succeed on a performance task during training, only those who attribute their performance to factors they control will demonstrate endurance and transferability of such performance to non-training situations. Participants who do not succeed and attribute their failure to factors they do not control, either fixed internal or external factors, would not be expected to improve in their subsequent performance.

Figure 7 demonstrates the hypothesized relationships between the experimental attribution restructuring program and performance in subsequent non-training environments. As shown the control of attributions, regardless of original expectations or actual performance during training, is expected to mediate the process outlined in Figure 6 to facilitate successful post training performance. Individuals in the experimental group will attribute success to internal fixed or variable factors, and failure to internal variable factors. Such attributions are expected to facilitate post-training performance because success attributed to internal fixed factors is likely to result in expectations of success in future situations. Failure attributed to internal variable factors facilitates success expectations in future situations since present failure is perceived as being caused by factors which are both changeable and under the individual's control.
Figure 7

Model of the Effect of Cognitive Attribution Restructuring
On Expectation - Performance - Attribution Relationship

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<td><strong>Performance</strong></td>
<td><strong>Attribution</strong></td>
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<td>SUCCESS</td>
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<td><strong>EXTERNAL</strong></td>
<td>SUCCESS</td>
<td>INTERNAL</td>
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</tbody>
</table>

* Pilot data yielded no cases of success prediction attributed to external factors
HYPOTHESES

It was expected that there would be no significant performance differences between training groups immediately following the completion of the training period. It was believed that the special circumstances of the training situation would induce success expectations in all participants and they would tend to perform equally well on all tasks assigned as part of the training program. Significant differences were expected on the 4 weeks post-training trial, however, when the special training environment was no longer present. The effects of the experimental training program were expected to mediate more successful performance in this later trial.

Hypothesis Ia

There will be no significant difference in performance between groups on the simulated negotiation task immediately following completion of training.

Hypothesis Ib

The experimental training group will perform more effectively than the traditional training group on a simulated negotiation task four weeks after the completion of training.

A comparison of the top half of Figure 6 (page 42) and the top half of Figure 7 (page 48), and the bottom halves of these
same two figures, reveals that cognitive restructuring procedures of the Experimental Training Program were expected to have the greatest influence on the causal attributions, performance expectations, and subsequent performance of those subjects who initially predicted that they would fail on a negotiation performance task. The influence of these procedures upon subjects who initially expected to succeed was not expected to be significant. Hypotheses IIa and IIb were established to test these anticipated effects.

**Hypothesis IIa**

Those subjects who initially predict failure and who are in the experimental group will perform more effectively on the task four weeks after training than those subjects in the traditional group who make the same prediction.

**Hypothesis IIb**

There will be no significant difference between experimental and traditional training groups for those who initially predict success.

The cognitive restructuring procedures employed in the Experimental Training Program were designed to induce participants to attribute performance outcomes to internal causal factors. Successful performance was to be attributed to either stable or variable internal factors, while unsuccessful performance was to be attributed to internal variable factors. Therefore, if these procedures were successful, the Experimental Training Group would be expected to employ more
internal causal attributions than the Traditional Training Group.

**Hypothesis III**

Members of the Experimental Training group will employ significantly more internal attributions than members of the Traditional Training group in explaining their performance on both negotiation tasks.

These internal attributions were expected to occur as follows:

a) successful performance: internal fixed or variable attribution.

b) unsuccessful performance: internal variable attribution

In an attempt to throw more light on the actual nature of the construct locus of control and its relationship to causal attributions and expectations, a measure of locus control was given to all subjects. Although a comprehensive investigation of these issues was beyond the scope of the present study, preliminary hypotheses were established based upon the conceptualization of locus of control as a "dominant cognitive structure or schema" that was described above.

**Hypothesis IV**

Subjects who employ internal attributions of causality in predicting their performance will score significantly higher
(internal) on the locus of control measure than subjects who employ external attributions in their predictions.

Comparison of performance outcome with prediction was expected to result in consistency between locus of causal attributions and measured locus of control when outcome confirmed prediction, but inconsistency between the two was expected when outcome failed to confirm prediction. When performance outcome failed to match predictions, individuals were expected to employ attributions which could explain the outcome of the particular performance but were inconsistent with their "general orientation" to performance.

**Hypothesis V**

Subjects in the traditional training group whose performance matches their prediction will employ post-performance causal attribution of a locus which matches their measured locus of control, while subjects whose performance fails to match their prediction will employ post-performance causal attributions with a locus different than their measured locus of control.

Claims that individuals exhibit differences in locus of control for success and failure and that internality for success is related to successful performance were examined by the following hypotheses:
Hypothesis VIA

Subjects who predict success with an internal causal attribution will score significantly higher on the locus of control measure subscale for success than those who predict failure with an internal attribution.

Hypothesis VIB

Subjects who predict failure with an internal causal attribution will score significantly higher on the locus of control measure subscale for failure than subjects who predict success with an internal attribution.

Hypothesis VII

Subjects in the traditional training group who score internal for success will perform significantly better on the negotiation task four weeks following the last training session than those who score internal for failure or external for success.

The model employed suggests that the relationship between the cognitive process causal attribution and the cognitive structure locus of control was such that changes in the former would result in subsequent changes in the latter. More specifically, it was anticipated that employment of the procedures for monitoring and controlling the locus of their causal attributions would result in an increase in the post
training locus of control scores of subjects in the Experimental Training Group.

Hypothesis VIII

Subjects in the experimental training group will score significantly higher (more internal) on the locus of control measure than subjects in the traditional training group following completion of training.
As indicated above, a number of deficiencies appear to exist in attribution theory research. Kelley (1971) pointed out that although numerous studies assumed the mediational link of attributions, few up to that time had employed explicit measures of this mediating variable. More recent reviews (Harvey & Weary, 1984; Kelley & Michlea, 1980) have stressed a continuing need for systematic investigation of the process of attribution. While the last decade has seen a dramatic increase in the number of studies which have attempted to focus on attribution process directly, most have suffered from shortcomings in the manner by which subject attributions were measured, manipulated, and/or classified. Specific problems previously discussed include:

1) assumptions that certain attributions are necessarily of a particular locus or are stable or variable;

2) assumptions that subjects necessarily accept experimenter descriptions of controlling factors as being accurate;

3) reliance upon imagined rather than real behavior situations;
4) failure to recognize that the experimental situation itself provides a strong influence on the type of attributions subjects are likely to employ; and

5) employment of subject attributions regarding the behavior of others, rather than their own behavior.

The present investigation attempted to overcome some of these deficiencies through some basic methodological changes. There was an attempt to make the experimental performance situation more 'real' by engaging subjects in a simulated negotiation task. The task itself was designed to provide subjects with considerable freedom to vary their behavior within a minimal number of pre-specified parameters. The performance situation occurred first as part of a formalized training program and then was repeated a month later in a seemingly unrelated context allowing for some evaluation of the effects of the artificial "experimental environment" and of the process of attribution. Finally the subjects' attributions concerned their own behavior and the assessment tool employed did not force them to choose amongst specific attributions which had been previously categorized as internal or external, fixed or variable.

In general this investigation can be categorized following Winer (1971) as a controlled experimental study employing a 2 X 3 X 2 (treatment by predictive-attribution by occasion) factorial design with repeated measures on the last factor.
The design provides a basis for inferring causal relationships between treatment conditions and subjects' performance.

**TREATMENT CONDITIONS**

**Traditional Training Program**

The failure of management skill training programs to produce convincing evidence that skills acquired during training are utilized subsequently within the organization environment has been recognized and described by a number of investigators (Feidler, 1967; Mitchell, Larson, & Green 1977; Wolfe, 1975). The failure of these training programs might be explained by the fact that their curricula did not recognize and address the internal cognitive processes and structures of individual students.

Typically, the instructional procedures in these programs are based upon principles of learning which have been derived from the rather comprehensive research relating to environmentally induced behavior change (operant conditioning) and are demonstrated in educational procedures such as "precision teaching", or "systematic instruction" (Haring, Lovitt, Eaton, & Hansen, 1978). This type of program has been labeled traditional in the present study. In this approach, a global skill to be learned is first analyzed into serially constituent parts which become individual components of the
curriculum. The global skill is acquired through a "chaining" procedure in which the individual demonstrates mastery of each separate component which is combined with each preceding component culminating in acquisition of a total skill.

The actual procedures employed in teaching a particular component follow a standard format. First a description of the required skill is provided, followed by a description of the first component to be mastered. Next the component skill is modeled and the student is given an opportunity to practice with corrective feedback and reinforcement. When criterion levels are reached, the procedure is repeated with subsequent components. Mastery of a given component or global skill is dependent upon the individual's demonstrated ability to perform it effectively in a given situation. This is typically accomplished by utilizing "simulations", designed to replicate a real life situation within the training session. Since this entire procedure is perceived as a shaping process, care is taken to ascertain that the performance of each component is successful in order to provide a continuous schedule of positive reinforcement during the acquisition process.

Experimental Training Program

The Experimental Training Program consisted of the main elements of the traditional program plus an additional component comprised of procedures derived from a reciprocal interaction model of behavior. The experimental program was designed to increase individuals' sense of their own control.
over any behavior acquisition which occurred. This was accomplished through explicit instruction in self-monitoring, self-evaluation, and self-reinforcement because these factors have been identified (Kanfer, 1970, 1975; Kanfer & Karoly, 1972; Spates & Kanfer, 1977) as being crucial to internal (self) control. Control of attributions of causality were a direct focus of instruction in this program. Complete descriptions of both the Experimental and Traditional Training programs are found in Appendix 1.

Presentation of Training Programs

The Traditional Training Program was designed to be presented within three, three hour sessions. Approximately one third of each session was utilized for group exercises which simulate actual application of skills and for the presentation, analysis, and evaluation of assignments.

The additional materials of the experimental program would require that its sessions be longer. Depending on the particular session, this supplementary material took up to an additional hour of presentation time. In order to allow sufficient time to present the supplementary material within a three hour session, the portion of time allotted for assignment analysis/evaluation, and group task simulations was truncated for the experimental groups during sessions one and two. In these sessions instructors had to maintain the schedule and were required to present all material to each group; however,
neither the specific activity truncated nor the precise reduction in time were controlled. This allowed instructors to adjust these activities in relation to specific class needs. It was noted that the length of the sessions for all experimental groups exceeded the time allotted by up to 30 minutes.

There was no truncation of any activity for any group in session three. The only difference between experimental and traditional group presentations for this session was the inclusion of an additional brief review of the supplementary experimental material with the experimental groups. This resulted in slightly longer third sessions for the experimental groups. However all were completed within three hours.

SUBJECTS

The subjects were male (N=63) and female (N=41) volunteers drawn from the population of students enrolled in an administrative management program at a technical institution. This population is made up of predominately low level management and supervisory personnel presently employed in a variety of settings ranging in size from very large to very small organizations in both the public and private sectors. The group was rather heterogeneous in that it included both male and female members from various ethnic backgrounds and ranging in age from their early twenties to late fifties. It
is difficult to assess the representativeness of the sample in terms of these factors. However, it seems reasonable that the observed heterogeneity is representative of the larger population employed in various organizations. At any rate it seems safe to conclude that this population is more representative of the general population than the typical "college student" pool employed in the majority of published studies.

**INSTRUMENTS**

**Simulated Negotiation Task**

The negotiation task employed (see Appendix 2) is an adaptation of one developed by Ruble (1973). Individuals are assigned a role as department manager, of either Children's Toys or Adult Games, within a medium sized toy company. All are provided with an identical outline of the company's structure and the responsibilities of each manager. The individual managers are then provided with more detailed information about the needs of their specific departments. Included in this information is a summary of the department's current performance in relation to the total organization and a set of possible research projects which the department could undertake in the coming year. A brief description of each research project including its cost and expected profit is also provided. The two managers are then required to negotiate the allotment of the company's total "Research and Development" budget for the coming year.
In this investigation all subjects were assigned the role of Manager of Children's Toys and their negotiating partners were assigned to manage Adult Games. Members of each group were told that their counterparts also had a group of projects that they wished to develop but the total cost of both sets combined exceeded the total budget available for research and development. Their task was to negotiate a mutually acceptable allocation of the total budget. Participants were instructed that their goals in the negotiation session were: 1) to maximize profits for their own department, and 2) to maximize profits for the total organization. At the end of the negotiation session the negotiators were required to complete and sign a form indicating projects they had agreed to pursue and the profit associated with each.

Individual performance scores were determined by first summing the total profits associated with each department's projects and taking the difference between these totals. This value was then added to the total profit for all projects to determine the score for the individual managers. For example:

\[
\begin{align*}
\text{a. Adult Games total profit} & = 13,200. \\
\text{Children's Toys total profit} & = 12,500. \\
\text{difference} & = 700.00 \\
\text{Adult Games} & = +700 \\
\text{Children's Toys} & = -700
\end{align*}
\]

\[
\begin{align*}
\text{b. The total profit all projects} & = 25,700 \\
\text{Adult Games Score} & = 25,700 + 700 = 26,400 \\
\text{Children's Toys Score} & = 25,700 + (-700) = 25,000
\end{align*}
\]
Participants were given 30 minutes to familiarize themselves with this material and then instructed to report to a room where they would meet the head of the other department. There was a direct instruction not to show any of their written material to the other manager but they were free to communicate any information they wished during the sessions. They were informed they had 15 minutes to complete negotiations and that the session would be halted at that point. All sessions were timed and not allowed to continue beyond 15 minutes.

Adapted I.A.R. Questionnaire

The measure of locus of control employed in this study was an adaptation of the Intellectual Achievement Responsibility (I.A.R.) Scale (Crandall et al., 1965). The I.A.R. Scale was employed rather than the more commonly used Rotter (1975) measure because the former is more closely related to the type of situation being investigated (i.e., work achievement) and offers the advantage of both an overall internal-external score and subscale scores for both success and failure. The subscales are important since a number of investigators have found a low correlation between positive and negative outcome items (Crandall et al., 1965; Weiner & Kukla, 1970; Weiner & Potepan, 1970). The I.A.R. Scale was designed for elementary school students. However Weiner and Potepan (1970) employed an adapted version with college students and reported that "... transformation of some of the items so they are appropriate for adults does not destroy the validity of the index" (1970, p. 149).
Following Weiner and Potepan, the items in the original (school related) I.A.R. Scale were modified in this investigation to make them appropriate for adults and to make them relevant to achievement in a "work environment" rather than achievement in a school environment. For example an original I.A.R. item was adapted as follows:

Original I.A.R. Item:

When a teacher says something nice about your work is it:

A) because you did especially good work.

B) because your teacher is in a good mood.

Transformed I.A.R. Item:

If you received a compliment from your superior about your work is it more likely to be:

A) because your performance was especially good.

B) because s/he is in good mood.

Appendix 3 contains a complete copy of the modified I.A.R. questionnaire.

The modified I.A.R. questionnaire was administered twice to a group of students (n=50) from the same program as the subjects employed in the present study in order to assess its face validity and to obtain an estimate of its test-retest reliability. There was a four month interval between the two administrations. Table 1 presents the mean, range and standard deviation of I.A.R. scores for the two administrations. The
corresponding test-retest reliability was .70. Pilot study subjects indicated that the modified questionnaire items were clear and easy to understand, and were relevant to their experience.

| TABLE 1 |
| Comparison Statistics of Adapted I.A.R. |

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Range</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot Study (Adapted I.A.R.) (T1)</td>
<td>23.28</td>
<td>14-29</td>
<td>2.70</td>
</tr>
<tr>
<td>Pilot Study (Adapted I.A.R.) (T2)</td>
<td>23.40</td>
<td>15-29</td>
<td>2.86</td>
</tr>
</tbody>
</table>

In the Crandall et al., study a social desirability measure was employed to assess the influence of social desirability on subjects' responses to the items. Based upon their results it was concluded that social desirability tendencies were of little importance in determining I.A.R. scores. However, in the present study adult subjects were assessed. Given this difference between the samples it could not be assumed that the subjects would not attempt to "fake" their answers in order to portray some desired profile. Consequently a "lie scale" was developed to make it possible to identify such attempts.
The procedure followed in developing the lie scale was to initially develop 25 questions which fit with the "general nature" of the Adapted I.A.R. Questionnaire, but to which it was felt the majority of adults would respond in an identical fashion. For example:

Lie Scale Item:

(1) If you were to describe your job would you say it was:
   a) always stimulating and exciting
   b) sometimes stimulating, but sometimes routine and repetitive.

This initial question pool was first administered, as an anonymous survey, to a group of 35 graduate students in business administration and psychology. Of the 25 questions, 12 were answered identically by all subjects. These 12 items were then embedded randomly in the modified I.A.R. questionnaire. This new version of the I.A.R. was then administered to an additional 20 subjects from the same graduate student population. These subjects were asked to "try to respond to the questionnaire in a fashion which will make you look good". It was found that all of these subjects answered 10, 11 or 12 of the items differently than the subjects in the original group of 35 who were asked to respond to the questions honestly. The 10 questions which "discriminated" between the "faked" and "genuine" questionnaires in all 20 cases were retained and included as a
"lie scale" in the final form of the Adapted I.A.R. Questionnaire.

The Adapted I.A.R. Lie Scale scores from the Pilot Study data were compared with those from the group of subjects who had been instructed to attempt to "make themselves look good" when completing the Adapted I.A.R. The comparison revealed that no individual in the Pilot Study scored more than 3 on the Lie Scale, while all subjects instructed to "fake" their responses scored 10. A Lie Scale score exceeding 3 was established as the cutoff point for determining whether or not subjects' data would be included in the present investigation.

PROCEDURES

All students were initially surveyed by questionnaire (see Appendix 3) at the beginning of the fall semester. All classes were informed that the questionnaire was part of a survey designed to investigate the negotiation styles typically employed by individuals within organizational settings. Included in this questionnaire was the modified locus of control measure. The students were also given a separate announcement at the first class meeting inviting them to take part in a three session "Management Skills Seminar" to be conducted over the next four weeks. The announcement gave a brief description of the various topics to be covered: Decision Making, Time Management, and Conflict Management.
Individuals who applied for the training seminar were assigned to treatment conditions in the following manner. Subjects' responses to the Management Survey question asking them to predict their performance in a hypothetical conflict situation were employed to divide them into two groups: 1) predict success and 2) predict failure. The two groups were sub-divided by employing the Management Survey question which required subjects to attribute the cause of performance outcome in such a situation to either: a) "situational factors" present in negotiations such as this (e.g. the other person's experience, or power, or the complexity of the task) which determine the outcome regardless of an individual's skill or effort; or b) the individual's effort or skill. Subjects who selected the former causal explanation were classified as "external" and those selecting the latter were classified as "internal". These procedures had the potential to provide four subgroups of the original pool of applicants. However, only three subgroups were actually formed because all subjects who predicted success selected the internal causal explanation. Equal numbers of subjects from each of these three subgroups were then assigned randomly to one of four training classes. The four training classes were comprised of two Experimental Training Program classes and two Traditional Training Program classes.

Each of the three subgroups initially contained 40 subjects who were randomly assigned to the four training groups. Of this total subject population (N=120), 9 failed to complete the
training program. Data from an additional 7 subjects were randomly excluded from the analyses in order to achieve equal N's. The Experimental Training Group included 31 male and 21 female subjects, while the Traditional Training Group had 32 males and 20 females (see Appendix 4, p. 244).

Two trained instructors (both female), each with one year's experience in presenting these seminars, were randomly assigned to the groups so that each instructor taught one experimental and one traditional group. The four treatment groups met for three hours, one evening per week for three consecutive weeks. At the conclusion of the final instructional session all subjects participated in the simulated negotiation task with assigned partners who were volunteers from another class and were identified as such. Following the completion of this task subjects completed a questionnaire measuring their attributions regarding their performance and the adapted I.A.R. Questionnaire (see Appendix 3).

A second negotiation session was held four weeks later as part of the subjects' regular classroom activity. This was described to the subjects by their regular classroom instructor as being a follow-up for a number of randomly selected students on the initial negotiation questionnaire which had been completed during the first class session. At the second negotiation session each subject was assigned a negotiating partner from a volunteer pool.
The pool of negotiating partners were volunteers who had no previous experience with the negotiation task but were instructed to dress appropriately (i.e., "business like" appearance) to convey the impression that they were, in fact, experienced managers. They were identified to the subjects as experienced, skilled, negotiators but they actually had no specialized training or experience. The volunteer partners were given no special instructions or information and were free to act spontaneously. Following this negotiation task, all subjects were given a brief description of the entire study during which questions were answered and arrangements made to provide them with a summary of the findings when completed.

DESIGN

A schematic representation of the basic design of this investigation appears as a three factor, fully crossed repeated measures design (see Figure 8). The two grouping factors included treatment conditions (Traditional and Experimental Training Programs) and prediction-attribution categories (success-internal, failure-internal, and failure-external). The repeated measures factor, measurement occasions or trials, varied with the particular measures. In the case of negotiation task, two occasions were employed (immediately following training and four weeks after completion of training); for the Adapted I.A.R. Questionnaire the measurement occasions were pre-training and immediately following training; and, finally,
causal attributions were measured on three occasions: pre, post, and follow-up. The prediction - attribution factor was originally conceived of as two separate, fully crossed, factors: prediction (success-failure) and attribution (internal-external). However, there were no subjects in the sample who, having predicted success, attributed the cause to external factors and the prediction and attribution categories were collapsed into one three level factor labeled prediction - attribution (described above).

FIGURE 8

Repeated-Measures Factorial Design

<table>
<thead>
<tr>
<th>Training</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAD</td>
<td>N=18</td>
<td>N=18</td>
<td>N=16</td>
</tr>
<tr>
<td>EXP</td>
<td>N=18</td>
<td>N=18</td>
<td>N=16</td>
</tr>
<tr>
<td>Succ - Int</td>
<td>Fail - Int</td>
<td>Fail - Ext</td>
<td></td>
</tr>
<tr>
<td>Prediction - Attribution</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The exploratory nature of this study meant that it was focused upon particular "slices" of the data corresponding to the hypotheses presented in Chapter 2. For example while the overall effectiveness of the Experimental Training Program was a major focus, it was believed that the program's impact would be most pronounced upon subjects who anticipated failure prior to beginning training.

**DATA COLLECTION AND ANALYSIS**

**Data Preparation**

All questionnaire information, negotiation task scores, and adapted I.A.R. scores were transcribed and coded for computer entry. The initial data transcription and coding were verified separately by two different observers and one error in transcription was corrected. Data were entered by the U.B.C. Computing Center staff with 100% verification.

**Preliminary Analysis**

Prior to conducting the main analyses, the data were subjected to a preliminary examination to identify any subjects who exceeded the Adapted I.A.R. Lie Scale criterion score, and to test for the possible confounding effect of the presence of two different instructors. Examination of the Adapted I.A.R. Questionnaires revealed that none of the subjects Lie Scale scores exceeded the cut off criterion of 3.
In order to ascertain if subjects' scores were affected by differences between the two instructors, the data were analyzed using a 2 x 2 (instructors by treatment) repeated measures analysis of variance. In order to increase the probability of finding a significant "instructor effect", if it did exist, the alpha level was relaxed to the .10 level. The results of this analysis indicate that there was no significant main or interaction effects for instructors (see Appendix 4, p. 224).

Main Analyses

The hypotheses investigated in this study can be divided into two groups. The first group was focused upon evaluating the effectiveness of the Experimental Training Program. The second set of hypotheses was primarily focused upon examining the cognitive processes which were thought to underlie the superior effectiveness of the Experimental Training Program. Therefore, the effectiveness of the Experimental Training Program needed to be demonstrated prior to testing the second set of hypotheses. All hypotheses were tested at the .05 level of significance.

Hypotheses Ia, Ib, IIa, IIb, III and VIII (see Chapter 2, p. 47 - 51) comprised the first hypotheses set. Analyses for each of these hypotheses compared data from the members of the two training groups. Hypotheses IV, V, VIa, VIb and VII comprised the second set which was focused upon examining the
nature of the relationship among expectations, locus of control, attribution of causality, and performance without the confounding effects of the treatment. Therefore data from the Experimental Training group were not employed in analyses where confounding could occur (i.e., Hypotheses V and VII). Since Hypotheses IV, VIa and VIb were tested by analyzing data from the pre-training Negotiation Style Survey, data from the entire subject population were included in these analyses.
CHAPTER 4

RESULTS

As described in the previous chapter, the hypotheses presented in Chapter 2 were divided into two groups. The hypotheses in the first group were more directly concerned with the relative effectiveness of the two training programs employed while the hypotheses in the second group were established primarily to shed additional light on the relationship among locus of control, attributions of causality, and behavior. The results presented below are organized into two corresponding sections. Within each section, the results relating to each individual hypothesis are presented separately. A summary and discussion of the combined findings is presented in Chapter 5.

HYPOTHESES I TO III AND VIII

Hypotheses Ia and Ib

Hypothesis Ia proposed that there would be no significant difference between training groups on the negotiation task performed at end of the final training session; while Hypothesis Ib proposed that there would be a significant
performance difference between training groups on the negotiation task performed four weeks following the end of training where the experimental group would perform more effectively than the traditional group. A summary of the repeated measures ANOVA of negotiation task scores is presented in Table 2.

**TABLE 2**

2 X 3 X 2 Repeated Measures ANOVA of Negotiation Task Scores

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>MS.</th>
<th>F.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training Group (A)</td>
<td>1</td>
<td>173125120</td>
<td>4.12*</td>
</tr>
<tr>
<td>Predict.-Attrib. (B)</td>
<td>2</td>
<td>40627072</td>
<td>.97</td>
</tr>
<tr>
<td>A x B</td>
<td>2</td>
<td>9059696</td>
<td>.22</td>
</tr>
<tr>
<td>Within</td>
<td>98</td>
<td>420004560</td>
<td></td>
</tr>
<tr>
<td>Trials (C)</td>
<td>1</td>
<td>36238784.</td>
<td>4.75*</td>
</tr>
<tr>
<td>A x C</td>
<td>1</td>
<td>122872112.</td>
<td>16.13*</td>
</tr>
<tr>
<td>B x C</td>
<td>2</td>
<td>2972712.</td>
<td>.39</td>
</tr>
<tr>
<td>A x B x C</td>
<td>2</td>
<td>14155768.</td>
<td>1.86</td>
</tr>
<tr>
<td>Within</td>
<td>98</td>
<td>7616219.</td>
<td></td>
</tr>
</tbody>
</table>

*p<.05

Subsequent to finding a significant interaction effect between treatment and measurement occasion or trials (F=16.13; df=1,98; p<.05), the means for the two training groups at each performance trial (see Figure 9) were compared following the procedure described by Winer (1971, p. 559-567). The mean for the experimental group at T1 (Time 1) was 23640.38 and for the traditional group it was 23355.77. The F value for this comparison was not significant (F=.08, df=1,102; p>.05). The
respective means at T2 (Time 2) were 24334.62 and 21013.46 which yielded a significant F value ($F=11.56$, $df=1,102; p<.05$).

FIGURE 9

Mean Negotiation Task Scores for Training Groups at T1 and T2

Subsequent dependent measures t-tests comparing the Trial 1 (T1) and Trial 2 (T2) means of the Experimental Training Group (Table 3) and the Trial 1 (T1) and Trial 2 (T2) means of the Traditional Training Group (Table 4) revealed no significance difference between T1 and T2 for the former group ($t=-1.71$, $df=51; p>.05$) but a significant difference for the latter ($t=4.93$, $df=51; p<.05$).
TABLE 3

Dependent Measures t-test of T1 and T2 Negotiation Task Scores of Experimental Training Group Subjects

<table>
<thead>
<tr>
<th>Trial</th>
<th>Mean</th>
<th>d.f.</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>23,640.38</td>
<td>51</td>
<td>-1.71</td>
</tr>
<tr>
<td>T2</td>
<td>24,334.62</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TABLE 4

Dependent Measures t-test of T1 and T2 Negotiation Task Scores of Traditional Training Group Subjects

<table>
<thead>
<tr>
<th>Trial</th>
<th>Mean</th>
<th>d.f.</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>23,355.77</td>
<td>51</td>
<td>4.93*</td>
</tr>
<tr>
<td>T2</td>
<td>21,013.46</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.05

The findings are clearly supportive of hypotheses Ia and Ib. Subjects in the Experimental Training group performed more effectively four weeks following training than subjects in the Traditional Training group. The finding of no significant performance difference between groups on the "during training" trial (T1) indicates that the post training difference was not due to superior skill acquisition, or ability, of the Experimental Training group. The finding of a significant
difference between T1 and T2 performance for the Traditional Training Group but not for the Experimental Training Group indicates that the Experimental Group's significantly superior performance at T2 can be attributed to a deterioration in the performance of the Traditional Group from T1 to T2 rather than to any significant improvement in the performance of the Experimental Group.

Hypotheses IIa and IIb

It was predicted in Hypothesis IIa that there would be a significant difference (in favor of the Experimental group) between the Experimental and Traditional Training groups on the negotiation task trial at the completion of training for subjects who predicted they would fail prior to beginning training. Hypothesis IIb predicted there would not be a significant difference between the two training groups on the negotiation task performance at the completion of training for subjects who initially predicted success. These hypotheses were tested employing a two-way ANOVA (prediction by training) of subjects' scores on the first negotiation task performance. A summary of this analysis is presented in TABLE 5. The A X B interaction effect was non-significant (F=.45; d.f.=1,100; p>.05) indicating that the data did not support Hypotheses IIa. While Hypothesis IIb was supported by the data, this finding was of little import by itself. These results are discussed more fully in Chapter V.
TABLE 5

2 X 2 ANOVA of T2 Negotiation Task Scores

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>MS.</th>
<th>F.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prediction (A)</td>
<td>1</td>
<td>32914888.</td>
<td>1.45</td>
</tr>
<tr>
<td>Training Group (B)</td>
<td>1</td>
<td>228955234.</td>
<td>10.07 *</td>
</tr>
<tr>
<td>A x B</td>
<td>1</td>
<td>10181388.</td>
<td>.45</td>
</tr>
<tr>
<td>Within</td>
<td>100</td>
<td>22738620.</td>
<td></td>
</tr>
</tbody>
</table>

*p<.05

Hypothesis III

Hypothesis III was established in order to provide evidence that the unique features of the Experimental Training program were actually reflected in the behavior of the subjects undergoing this training. More specifically, it was predicted that subjects exposed to the Experimental Training program would employ significantly more internal attributions of causality regarding their performance on both Negotiation Task trials than subjects exposed to the Traditional Training program. It was suggested that the pattern of internal causal attributions employed by subjects in the Experimental Training Program would be consistent with the instructions contained in that program. That is they were expected to employ either internal/fixed or internal/variable causal attributions following successful performance, and internal/variable causal attributions following unsuccessful performance.
The qualitative nature of these variables might suggest that non-parametric procedures are most appropriate in analyzing these data. However, the assumption that non-parametric analyses are most appropriate (or even required) with categorical variables is not universal. Gaito (1980) cites the argument, advanced previously by Lord (1958), Eisenhart (1947), and Savage (1957) that "data do not know where they come from" and concludes that "The only requirement for the use of ANOVA... (is)...that the mathematical assumptions underlying the procedure be met, or approximated" (Gaito, 1980, p. 566). Glass, Peckham, and Sanders (1972) suggest that even these criteria are dictated more by tradition and convention than by any objective necessity; and they offer rather convincing evidence that the underlying assumptions can be violated rather grossly with little negative effect under certain circumstances. Specifically pertinent to the present study is Lunney's (1970) findings that the F test is extremely robust in relation to normality violations (including the analysis of dichotomous data) so long as equal N's are present.

The proportion of internal causal attributions employed by Experimental and Traditional Training Group subjects following negotiation task performance 1 and 2 were compared employing a repeated measures ANOVA. Subjects' attributions following successful task performance were classified as internal regardless of whether they were internal fixed or internal variable, while subjects' attributions following unsuccessful performance were only classified as internal if they were
internal variable. Internal fixed attributions following unsuccessful performance were considered to be equivalent to external attributions since causality was attributed to factors which the individual was not able to control. A summary of the ANOVA results is presented in Table 6. The results

\[
\begin{array}{|c|c|c|c|}
\hline
\text{Source} & \text{d.f.} & \text{MS.} & \text{F.} \\
\hline
\text{Between Subs.} & & & \\
\text{Training Group (A)} & 1 & 15.62 & 59.28^* \\
\text{Within} & 102 & .26 & \\
\hline
\text{Within Subs.} & & & \\
\text{Trials (B)} & 1 & .39 & 6.76^* \\
\text{A x B} & 1 & .24 & 4.09^* \\
\text{within} & 102 & .05 & \\
\hline
\end{array}
\]

* p < .05

indicate the presence of a significant interaction between trials and treatment (F=59.28, df=1,102; P<.05). Group mean comparisons were performed utilizing the procedure described by Winer (1971, p. 559-567). These analyses revealed a significant difference between groups at T1 (F=15.87, df=1,102; p<.05) and T2 (F= 26.03 df= 1,102; p<.05).

Figure 10 presents a comparison of the proportion of internal causal attributions employed by subjects in the
Experimental and Traditional Training groups on the Post Training Questionnaire (Appendix 3, p. 213) following each performance, and for both performances combined. The figure also presents between group comparisons of the proportion of internal causal attributions of successful and unsuccessful performers for each performance, and for both performances combined.

FIGURE 10

Proportion of Internal Causal Attributions
Negotiation Task Performance 1 & 2

<table>
<thead>
<tr>
<th>Group</th>
<th>Negotiation Task 1</th>
<th>Negotiation Task 2</th>
<th>Total Internal Attrib. T1 &amp; T2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Succ. I.F &amp; I.V.</td>
<td>Fail I.V.</td>
<td>Total Succ/Fail</td>
</tr>
<tr>
<td>Exp. Train</td>
<td>1.00</td>
<td>.72</td>
<td>.90</td>
</tr>
<tr>
<td>Trad. Train</td>
<td>.61</td>
<td>.10</td>
<td>.31</td>
</tr>
</tbody>
</table>

The results of the ANOVA indicate that the Experimental Training group did employ significantly more internal causal attributions following each performance and the pattern of those internal attributions, revealed in Figure 10, indicates that the subjects in the Experimental Training Program attributed causality in a manner which was consistent with the instructions they received in the Experimental Training Program. Hypothesis III is supported by these findings. The
fact that the differences between groups observed following the first performance were still present, in a non-training environment, one month following completion of training suggests that the observed differences between the groups were not simply a response to the demands of the training situation. The proportion of internal causal attributions employed by the two groups prior to beginning training, in predicting their performance, was equal. A reduction in the proportion of internal attributions between the predictive measures and the post-performance measures for the Traditional Training Group was predicted by the model presented in Figure 6. The present findings indicate that the Experimental Training Program prevented the decrease in the proportion of internal attributions between the prediction and post performance measures that was observed in the Traditional Training Group.

Hypothesis VIII

In Hypothesis VIII it was predicted that the Experimental Training group would score significantly higher than the Traditional Training group on the Adapted I.A.R. scale administered at the completion of training. The hypothesis was tested by comparing subjects' pre-training Adapted I.A.R. scores with their end of training Adapted I.A.R. scores employing a repeated measures ANOVA analysis. The analysis revealed a significant treatment by trials interaction effect (F=16.13, df=1,102; p<.05). Summary data are presented in Table 7.
Comparison of the group means for each trial (Winer 1971, p. 559-567) revealed a significant difference at the post-treatment trial ($F=6.00$, $df=1,102$; $p<.05$) but not at the pre-treatment trial comparison ($F=.28$, $df=1,102$; $p<.05$; see Figure 11).

### TABLE 7

ANOVA Adapted I.A.R. Scores By Treatment

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>MS.</th>
<th>F.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Subjects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training Program (A)</td>
<td>1</td>
<td>27.04</td>
<td>1.06</td>
</tr>
<tr>
<td>Within</td>
<td>102</td>
<td>25.55</td>
<td></td>
</tr>
<tr>
<td>Within Subjects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trials (B)</td>
<td>1</td>
<td>25.62</td>
<td>6.28</td>
</tr>
<tr>
<td>A x B</td>
<td>1</td>
<td>65.18</td>
<td>16.13*</td>
</tr>
<tr>
<td>Within</td>
<td>102</td>
<td>4.08</td>
<td></td>
</tr>
</tbody>
</table>

*p<.05

The significance of the difference between the T1 and T2 mean scores for each training group was examined separately employing dependent measures t-tests. The results of these analyses are presented in Tables 8 and 9. The t value associated with the comparison of the Experimental Training
FIGURE 11

Mean I.A.R. Scores for Training Groups Pre-treatment (T1) and Post-treatment (T2)

![Graph showing mean I.A.R. scores for experimental and traditional training groups.]

Experimental Training ■
Traditional Training ●

TABLE 8

Dependent Measures t-test of Experimental Training Group T1 and T2 Adapted I.A.R. Scores

<table>
<thead>
<tr>
<th>Trial</th>
<th>Mean</th>
<th>d.f.</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>24.42</td>
<td>51</td>
<td>-4.22*</td>
</tr>
<tr>
<td>T2</td>
<td>26.25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.05

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Groups T1 and T2 scores was significant \((t=-4.22, df=51; p<.05)\) while the \(t\) value for the Traditional Training Group was not significant \((t=1.19, df=51;)\).

**TABLE 9**

*Dependent Measures t-test of Traditional Training Group T1 and T2 Adapted I.A.R. Scores*

<table>
<thead>
<tr>
<th>Trial</th>
<th>Mean</th>
<th>d.f.</th>
<th>(t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>24.83</td>
<td>51</td>
<td>1.19</td>
</tr>
<tr>
<td>T2</td>
<td>24.40</td>
<td>51</td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis VIII was supported by the data. This hypothesis was established in order to provide additional support for the view that locus of control is a "generalized orientation" which although it is believed to be relatively stable under most conditions, can be affected by direct cognitive intervention under certain conditions. The present data suggest that a brief, cognitive-behavioral, attribution restructuring procedure can produce alterations in measured locus of control.

**HYPOTHESES IV TO VII**

**Hypotheses IV**

It was predicted that the attributions of causality subjects employed in making predictions regarding performance
would tend to be consistent with their measured locus of control. More specifically it was hypothesized that those individuals who employed internal causal attributions in predicting performance would have higher Adapted I.A.R. scores than those whose predictive causal attributions employed an external locus. A t-test for independent means was utilized to compare the means of these two groups. Group means are shown in Table 10. The obtained t value was significant (t=6.40,

**TABLE 10**

Mean Locus of Control Scores for Subjects Employing Internal and External Predictive Attributions

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Score I.A.R.</th>
<th>df</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>internal attrib.</td>
<td>26.10</td>
<td>102</td>
<td>6.40*</td>
</tr>
<tr>
<td>external attrib.</td>
<td>21.40</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.05
df=102; p<.05) and thus supports the present hypothesis. These findings are consistent with the contention that measured "locus of control" represents a dominant generalized tendency, or cognitive schema, which is reliably associated with the locus of causal attributions individuals employ when attributing causality to relatively nonspecific or broadly defined events.
Hypothesis V

In Hypothesis V it was predicted that when subjects' actual performance outcome was consistent with their prediction, the locus of the causal attribution regarding that performance would be consistent with their measured locus of control but that when performance outcome did not match prediction, the locus of causal attribution would not match the measured locus of control. The hypothesis was tested employing a chi square analysis. Data were arranged in a 2 X 2 frequency table wherein rows were agreements and disagreements between predicted and actual performance outcome. The columns were agreements and disagreements between measured locus of control and locus of causal attribution. These data are presented in Table 11. Only data pertaining to the Traditional Training group were employed in this analysis in order to avoid possible confounding by treatment effects. Subjects' Adapted I.A.R. scores were classified as being internal or external based upon whether or not they exceeded the group mean. Four subjects were eliminated because their scores fell exactly on the mean, yielding 48 subjects for this analysis.

The results (chi square =4.20, p<.05) support hypothesis V. When subjects prediction and performance agreed, whether they succeeded or failed, there was a tendency for the locus of their causal attributions to be consistent with their measured locus of control. If their prediction and performance
disagreed, this tendency was absent. This finding is consistent with the conceptualization of measured locus of control as a dominant cognitive schema or structure.

TABLE 11

Adapted I.A.R. Locus of Control - Locus of Causal Attribution Frequency Table

<table>
<thead>
<tr>
<th>Prediction-Performance</th>
<th>Locus of Control and Attribution Locus</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Agree</td>
<td>14</td>
</tr>
<tr>
<td>Disagree</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
</tr>
</tbody>
</table>

Hypotheses VIa and VIb

It was hypothesized in VIa that subjects who predicted success employing internal causal attributions would score higher on the Adapted I.A.R. success subscale than those subjects who predicted failure employing internal causal attributions. In Hypothesis VIb it was predicted that the latter group would score higher on the Adapted I.A.R. failure subscale than the former. Hypotheses VIa and VIb were tested by employing a MANOVA followed by univariate F-tests (Finn, 1974; Hummel & Sligo, 1971). The MANOVA result was
significant \((F=4.62, \ df=2,69; \ p<.05)\) as was the univariate test associated with Hypothesis VIb \((F=9.36, \ df=1,70; \ p<.05)\). The univariate test of Hypothesis VIa was not significant \((F=.48, \ df=1,70;)\). Summary results of these analyses are presented in Table 12.

**TABLE 12**

MANOVA and Univariate Analysis: Adapted I.A.R. Success and Failure Subscales for Subjects Predicting Success and Failure

<table>
<thead>
<tr>
<th>Multivariate Test (Hotellings)</th>
<th>Univariate F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>df</td>
</tr>
<tr>
<td>Predictive Attrib.</td>
<td>2</td>
</tr>
<tr>
<td>Residual</td>
<td>69</td>
</tr>
</tbody>
</table>

* \(p<.05\)

It was expected that the respective subscale scores would be reliably related to subjects' predictions of success and failure. The results which are supportive of Hypothesis VIb, but fail to provide support for Hypothesis VIa, indicate that the expected relationship was evident for the failure predictors but not for the success predictors. The means for each group for both the success subscale and the failure subscale are presented in Table 13.

Subjects who employed internal causal attributions in predicting failure tended to score significantly more internal
on the failure subscale than subjects who predicted success with internal attributions; but success and failure predictors were not significantly different on the success subscale.

**TABLE 13**

Mean Adapted I.A.R. Subscale Scores for Success and Failure Prediction

<table>
<thead>
<tr>
<th>Pred. &amp; Attrib.</th>
<th>N</th>
<th>Success Subscale</th>
<th>Failure Subscale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success Int.</td>
<td>36</td>
<td>14.58</td>
<td>10.78</td>
</tr>
<tr>
<td>Failure Int.</td>
<td>36</td>
<td>14.22</td>
<td>12.52</td>
</tr>
</tbody>
</table>

Non-significant Significant

**Hypothesis VII**

Hypothesis VII predicted that subjects who scored internal (i.e., exceeded the mean score for all subjects) on the success subscale of the Adapted I.A.R. would have higher negotiation task performance scores on the T2 trial than subjects who scored internal (i.e., exceeded the mean score for all subjects) on the failure subscale. Experimental Training group data were not included in testing this hypothesis in order to avoid confounding by treatment effects. Summary ANOVA data are presented in Table 14.
The ANOVA results were not significant \((F=3.02; \ p>.05)\) and therefore the hypothesis must be rejected. Hypothesis VII was tested employing data from only 30 subjects as a result of elimination of members of the Experimental Training program and those individuals in the Traditional Training program who scored external, or who scored internal on both the success and failure subscales. As a result of the small number of subjects whose data were included in the analysis, the power of the test of this hypothesis was reduced and the results are viewed as being very tentative in light of the fact that the observed lack of significant findings for Hypothesis VII appears to be inconsistent with the findings of previous investigators.

In order to shed more light on the relationship between internal locus of control and performance, a second analysis was performed. For this analysis subjects were classified as being either internal or external based upon their total

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>MS.</th>
<th>F.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Effects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I.A.R. Rating</td>
<td>1</td>
<td>63130888.89</td>
<td>3.02</td>
</tr>
<tr>
<td>Residual</td>
<td>28</td>
<td>20867420.63</td>
<td></td>
</tr>
</tbody>
</table>

TABLE 14

ANOVA of Negotiation Task Scores (T2) By Adapted I.A.R. Subscale Ratings
Adapted I.A.R. scale score, regardless of their subscale classification. Once again only data for subjects from the Traditional Training group were employed for this analysis. A summary of the results of this analysis is presented in Table 15. The significant results ($F=5.08$, df=1,46; $p<.05$) for this analysis suggest that the failure to find support for Hypothesis VII which examined the relationship between success and failure subscale scores and performance is not directly comparable with investigations employing an overall locus of control score. This result will be discussed further in Chapter V.

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>MS.</th>
<th>F.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Effects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I.A.R. Rating</td>
<td>1</td>
<td>106212396.71</td>
<td>5.09*</td>
</tr>
<tr>
<td>Residual</td>
<td>46</td>
<td>20877225.98</td>
<td></td>
</tr>
</tbody>
</table>

*p<.05
DISCUSSION OF THE FINDINGS

The results of the present study support the efficacy of the experimental causal attribution structuring procedures in promoting the endurance of successful performance. The results are also supportive of the hypothesized relationships amongst the locus and stability dimensions of causal attributions, expectations, and performance which were delineated in Figures 6 and 7 of Chapter 2. In this chapter the results presented in Chapter 4 are summarized and discussed. The discussion is initially focused separately upon each hypothesis set. The chapter concludes with a discussion of the integrated findings in relation to an unifying conceptual model.

DISCUSSION OF FINDINGS RELATED TO HYPOTHESES I TO III AND VIII

The data indicate that the Experimental Training Program was effective in altering subjects' attributions in the manner which was predicted and that subjects in the Experimental Training Program were more successful than those in the Traditional Training Program on the performance trial four weeks following completion of training.

The lack of support for Hypotheses IIa is problematic for the model presented in Chapter 2 (Figures 6 and 7) which
predicted that the Experimental Training procedures would influence subjects to change expectations of failure to expectations of success, and that individuals who expect to succeed would tend to perform more effectively than those who expect to fail.

One of the foci of this study was to explore the relationship between the experimental cognitive restructuring procedures, expectations, causal attributions, and subsequent performance presented in Figures 6 and 7. Figures 6 and 7 indicate that the experimental cognitive restructuring procedures were expected to have a greater impact upon the performance of subjects who initially predicted failure than they would on the performance of those who initially predicted success.

Unfortunately, in this study, the number of subjects who initially predicted failure (N=68) was almost twice the number that predicted success (N=36) and the effect of this disparity on the power of the statistical test employed may have been a contributing factor in the failure to find a significant interaction between prediction and treatment in the 2 X 2 ANOVA conducted for Hypotheses IIa and IIb. Because this was an exploratory investigation, it was decided to examine the data from those subjects who initially predicted failure separately from those who had predicted success. This was accomplished by employing a Repeated Measures ANOVA of the T1 and T2 negotiation task scores of Experimental and Traditional
Training Group subjects who predicted failure. A summary of the results of this analysis is presented in Table 16. The results revealed a significant treatment by trials interaction ($F=20.31$, $df=1,66$; $p<.05$).

**TABLE 16**

Repeated Measures ANOVA of Negotiation Task Scores of Subjects Predicting Failure

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>MS.</th>
<th>F.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Training Group (A)</td>
<td>1</td>
<td>100139520.</td>
<td>2.63</td>
</tr>
<tr>
<td>Within</td>
<td>66</td>
<td>38145920.</td>
<td></td>
</tr>
<tr>
<td>Trials (B)</td>
<td>1</td>
<td>38645760.</td>
<td>5.44*</td>
</tr>
<tr>
<td>A x B</td>
<td>1</td>
<td>144321024.</td>
<td>20.31*</td>
</tr>
<tr>
<td>Within</td>
<td>66</td>
<td>7105691.</td>
<td></td>
</tr>
</tbody>
</table>

*p<.05

The mean scores of the two groups at T1 (final training session) and T2 (four weeks following completion of training) were compared employing the procedure described by Winer (1971, pp. 559-567). The Experimental Training group mean at T1 was 23158.82 while the Traditional Training group mean at T1 was 23502.94 (See Figure 12). The F value for this comparison was not significant. The T2 means for the two groups were: Experimental Training = 24152.94 and Traditional Training = 20376.47. The F value for this comparison was significant ($F=10.40$; $df=1,66$; $p<.05$).
A t-test for dependent means was employed to examine the relationship between the T1 and T2 means of subjects who predicted failure in each training group (Tables 17 and 18). The results of these tests indicate that the difference between the two groups on the T2 mean scores can be accounted for by a significant deterioration in negotiation task performance amongst members of the Traditional Training Group. There was no significant difference between T1 and T2 performance for the Experimental Training Group.
In summary, although Hypothesis IIa was rejected, a subsequent analysis of the data from only those subjects who initially predicted failure was supportive of the existence of the relationship among the effect of the Experimental Training Program, expectations, and task performance which was predicted by Figures 6 and 7 in Chapter 2. These data provide some basis for suggesting that the Experimental Training Program would be
particularly effective with individuals who have initial
expectations of failure and demonstrate the need for further
investigation of the relationships which were predicted.

Examination of the prediction - attribution - performance
patterns for both training groups (See Appendix 4, Figures 14
and 15) revealed that subjects who failed to perform
successfully on the trial at the end of training (T1) were,
with the exception of two individuals, equally ineffective on
the performance trial four weeks later (T2) regardless of the
type of training program or their initial expectations.
However, subjects who predicted failure and performed
successfully at T1 were much more likely to repeat their
successful performance at T2 if they were in the Experimental
Training group (see Table 19). Subjects who initially
predicted success did not demonstrate a similar differential
pattern between training groups at T1 and T2 (Table 20).

The effectiveness of the attribution structuring procedures
appears to have been concentrated in that group of individuals
who predicted failure but actually succeeded on the performance
at the end of the training period. While the Experimental
Training Program was clearly more effective than the
Traditional Training Program, as evidenced by subjects'
performance upon the trial four weeks after completion of
training, it is apparent that the key to the efficacy of the
experimental program lies in its contributing to the
maintenance of successful performance over time. The mediating
effects of attribution structuring procedures do not appear to be capable of overcoming lack of skill in influencing successful performance.

These findings are consistent with the model of behavior change which underlies this investigation. While the data support the contention that cognitive structuring can mediate the maintenance of behavior, they also clearly support the contention that such cognitive changes do not cause behavior change. More specifically, in this study cognitive attribution restructuring procedures mediated the ability of certain

TABLE 19

<table>
<thead>
<tr>
<th></th>
<th>T1 Success</th>
<th>T2 Success</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Training</td>
<td>22</td>
<td>17</td>
</tr>
<tr>
<td>Traditional Training</td>
<td>22</td>
<td>7</td>
</tr>
</tbody>
</table>

individuals to effectively employ skills which they had demonstrated during training in a subsequent "non-training" situation. However, the attribution restructuring procedures did not effectively mediate post-training performance of individuals who were exposed to the same training but failed to demonstrate effective employment of these skills during training.
TABLE 20

T1 and T2 Negotiation Task Performance
of Subjects Predicting Success

<table>
<thead>
<tr>
<th></th>
<th>T1 Success</th>
<th>T2 Success</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Training</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>Traditional Training</td>
<td>11</td>
<td>7</td>
</tr>
</tbody>
</table>

These data suggest that the attribution restructuring component of the Experimental Training Program was successful in altering subjects' cognitions regarding their ability to control the cause of their performance and that the altered causal attributions mediated their ability to repeat that successful performance in the future non-training performance situation. The fact that subjects in the Experimental Training group continued to employ the "restructured" attribution pattern one month following completion of training suggests that this alteration was not simply compliance to training expectations but represents some degree of change in their original cognitive processes. These findings must be interpreted cautiously in light of the exploratory nature of this investigation. The four week period between the two performance trials was a relatively short interval and conclusions as to the "durability" of the observed effects can
not be made based upon these results. Similarly, although the first and second performance environments were different in a number of important ways, there were a substantial number of similarities between the two situations. Therefore the degree of "generalization" demonstrated in these results must be viewed as being somewhat limited.

Finally the results associated with Hypothesis VIII indicate that the cognitive attribution structuring procedures employed in the Experimental Training Program resulted in an increase in internality of subjects' measured locus of control. This result suggests that if locus of control is conceptualized as being a cognitive structure, then such structures can be influenced by controlling cognitive processes such as attribution of causality.

DISCUSSION OF FINDINGS RELATED TO HYPOTHESES IV TO VII

Hypotheses IV through VII were included in the present investigation in an attempt to provide support for the presumed interdependent relationships among locus of control, attributions of causality, and performance. Locus of control was conceptualized as a cognitive structure which is evidenced by a dominant generalized tendency or "orientation" toward interpreting causality as having either an internal or external locus. Attributions of causality were defined as cognitive processes that identify the cause of any particular
event. The qualitative difference between these two is crucial to interpretation of the data relevant to their relationship with one another and with performance.

The position adopted was that locus of control scores would be a relatively reliable predictor of the locus of causal attributions employed by subjects making predictions about their future performance, but would not reliably predict the locus of attributions regarding a just completed performance. In the latter case, specific information about the particular performance would be available and this could lead individuals to employ alternative causal structures. Thus following a particular performance individuals might be expected to employ causal attributions with a locus which is inconsistent with their measured locus of control or "dominant orientation" to causality.

The present data are generally supportive of this conceptualization of locus of control and causal attributions. The data indicate that the locus of attributions subjects employed in explaining the cause of their predicted performance tended to be consistent with their measured locus of control score. However, this consistency was not present when subjects' attributions about the cause of their just completed performance was examined. In the latter situation, the data indicate that performance - expectation consistency plays an important role in determining the locus of the causal attributions subjects employ. When performance matched
expectations, the locus of subjects' attributed cause tended to be consistent with their measured locus of control score. When subjects' performance failed to match their expectations this consistent relationship was not present.

Hypotheses VIA and VIB examined this relationship from a slightly different perspective. These hypotheses were only concerned with subjects who employed internal attributions for success or failure in predicting their performance. Among this group it was expected that subjects who predicted success would score higher on the success subscale of the locus of control measure while subjects who predicted failure would score higher on the failure subscale. The results indicate that the group of subjects who predicted failure did score higher than those who predicted success on the subscale for failure. However, the subscale for success scores for the two groups were not significantly different. The implications of these findings are unclear. They suggest the possibility that there is a difference between individuals who predict success and failure such that those who predict failure tend to be "generally" internal for both success and failure while those who predict success tend to be internal for success only.

The failure to find the expected relationship between locus of control subscale scores for success and failure and subjects' negotiation task performance (Hypothesis VII) would be consistent with this possibility. If in fact some individuals are internal for success only while others are
"more generally internal" (i.e., for both success and failure) then a comparison of internal success and internal failure subjects scores would include some individuals in both categories. While these individuals were eliminated in this investigation, the limited number of subjects remaining in the analysis reduced the chances of finding a significant difference if it did exist.

The failure to find support for Hypothesis VII could also be accounted for by the unexpected presence of individuals who expected to fail within the group of subjects who scored internal for success. It was expected that group of subjects who scored internal on the success subscale would tend to be success predictors while individuals who scored internal on the failure subscale would tend to be failure predictors. However, the data from Hypotheses VIa and VIb indicate that the group of subjects who scored internal on the subscale for success tended to include individuals who predicted they would succeed as well as individuals who predicted they would fail. However, the group of subjects that scored internal on the failure subscale tended to include only individuals who predicted failure. This suggests the possibility that the failure to find a significant difference in performance between these two groups may have been partially accounted for by the mixture of performance expectations of the subjects in the comparison groups.
THE RELATIONSHIP AMONG LOCUS OF CAUSAL ATTRIBUTION, STABILITY, AND PERFORMANCE EXPECTATION

Weiner's (1985) contention that the locus of causal attributions is unrelated to performance expectations was not supported by the findings of this investigation. In this study locus of control scores were reliable indicators of the locus of attributions individuals employed in making predictions about a hypothetical novel situation, but were not reliable indicators of the locus of attributions they employed following an actual performance. The consistency between initial performance expectations and actual performance was the key factor in determining whether or not the locus of causal attributions following performance was consistent with the locus of their predictive attributions and locus of control scores. When performance expectations were confirmed, locus of control was a reliable indicator of the locus of attributions employed in explaining performance. But when expectations were disconfirmed by performance, locus of control was not a reliable predictor.

In the latter situation, if the locus of causal attributions employed in predicting performance was internal, the locus of the causal attributions they employed following unexpected outcome tended to shift from internal to external factors. In cases where the predictive attributions were external, the post-performance attribution's locus tended to remain external (See Appendix 4, Figures 14 and 15). Figure
14 also reveals that there was a small group of subjects in the present study who originally predicted failure employing external attributions and subsequently altered the locus of their causal attributions following unexpected success.

One implication of these findings is that causal attributions regarding a just completed performance can be expected to be reliably related to causal attributions about future performance expectations only in situations where the just completed performance outcome matches individuals' initial performance expectations. This finding is consistent with the contention that locus of control is a cognitive structure and causal attribution, a cognitive process. The discrepancy between Weiner's position regarding the unimportance of the locus dimension in relation to expectancy and the present finding of a systematic relationship between locus and expectancy can be explained by the nature of the relationship between cognitive processes and cognitive structures. In predicting future performance in a hypothetical situation, the individual's dominant cognitive (causal) structure is employed. In situations where performance matches expectations, the dominant causal schema would be employed on all measurement occasions (i.e., initial prediction, post-performance explanation, and future performance prediction). In situations where original performance expectations are not met, the unexpected outcome cues an alternative cognitive (causal) structure and individuals' post-performance causal attributions.
are based upon a different cognitive (causal) schema than was employed in the original prediction. Thus, in the latter situation the dominant causal structure is employed only when predictive attributions are made. That is at the first and third instances of attribution measurement (i.e., initial prediction and prediction of future performance). On the occasion of the second attribution measurement (immediately following performance) a different cognitive causal schema is employed in attributing casualty.

If the process described is employed in examining the studies that Weiner cites to support his contention, it is apparent that the procedure employed in many of these investigations would be insensitive to the relationship between causal structures and causal attribution processes described here. The experimental procedure employed assumes that an attribution regarding a single previous performance is directly related to future performance expectations. Therefore, no measure of the subjects' original expectations and attributions (prior to the performance) regarding performance is included. As a result, only a segment of an ongoing process is being examined by such investigations.

A MODEL OF THE RECIPROCAL CAUSALITY RELATIONSHIPS AMONG LOCUS OF CONTROL, CAUSAL ATTRIBUTIONS, AND PERFORMANCE

The results of this study suggest that locus of control (cognitive structure), attributions of causality (cognitive
process), and performance are interrelated factors in determining the maintenance of performance demonstrated during a training program. It has been demonstrated that changes in the types of attributions individuals employ can affect both their measured locus of control and the maintenance of performance. A close relationship between individuals' locus of control and attributions of causality in certain situations has also been established. The data did not support the predicted relationship between internal locus of control for success - internal locus of control for failure and performance. However the failure to find the predicted relationship appears to have been related to the tendency for a number of individuals to score internal for both success and failure. Analysis of the data for overall Adapted I.A.R. scores did support the findings of previous investigators who have found internality to be associated with more effective performance.

Collectively the present findings provide some preliminary support for a model of reciprocal causality among a number of factors which affect performance and demonstrate the value of further investigation of the relationships amongst these variables. The specific factors included in this model are a hypothesized cognitive structure which is labeled General Performance Orientation (G.P.O.), the cognitive process attribution of causality, and performance. General Performance Orientation is conceptualized as comprising both a locus of control (internal or external) and a general performance
expectation (success or failure). Causal attributions processes are viewed as being in a reciprocally causal relationship with the cognitive structure G.P.O. Actual performance has a similar reciprocal relationship with the other factors. A graphic presentation of the hypothesized relationships among these factors is presented in Figure 13.

In Figure 13, "Al" represents the hypothesized cognitive structure labeled "General Performance Orientation" (G.P.O.). The cognitive structure G.P.O. is conceptualized as consisting of both a self-efficacy component and a locus of control component. An individual's G.P.O. is viewed as having primacy in determination of his/her expectancies and causal attributions regarding performance when approaching a novel situation.

As indicated at point A2 in Figure 13, however, in approaching any given performance an individual may be provided with specific information about this particular situation or type of situation. Such information can provide "cues" which mediate the direct effect of G.P.O. in determining an individual's expectations and causal attributions regarding the specific performance (at Point "B"). The particular expectations and causal attributions (whether determined by the G.P.O. or an alternate cognitive structure) affect individuals' actual performance and evaluation at Point "C".
Assuming that there is no information that would cue an alternative expectation and causal schema, an individual will approach a performance situation with expectations based upon his/her G.P.O. The actual performance provides feedback indicating that either, his/her expectations have been met ("D1", Figure 13), or they have not been met ("D2", Figure 13). Performance which confirms expectations ("D1") would tend to be attributed to the same factors as were employed at "B", and this would strengthen his/her G.P.O. (dominant cognitive structure), increasing the likelihood of it being employed in approaching future situations.

Performance outcome which disconfirms the individual's expectations would tend to be attributed to factors unique to the situation ("D2") and would affect the future cue value of these specific factors ("A2") in mediating the effect of G.P.O. However, because it would be attributed to external factors unique to the particular situation, the unexpected performance would not be expected to produce changes in the strength of his/her G.P.O.
FIGURE 12

Reciprocal Relationship Among
Expectancy - Attribution - Performance

A1
General Performance Orientation (Including expectation and causal attribution)

A2
Situation Specific "Cues"

Situational Information

Strengthen G.P.O.

B
Specific Performance Expectation

C
Actual Performance Evaluation

D1
Performance meets Expectations

D2
Performance fails to meet Expectations
SUMMARY AND IMPLICATIONS OF THE FINDINGS

This investigation was undertaken in an attempt to demonstrate that the addition of cognitive attribution structuring procedures to a management skills training program would improve participants' ability to reproduce their successful negotiation task performance on a performance trial four weeks after completion of training. Prior to beginning training subjects completed a locus of control measure and were divided into three groups on the basis of their predicted performance outcome and causal attributions regarding a hypothetical negotiation task. These were: predicted-success internal attribution, predicted-failure internal attribution, and predicted-failure external attribution. Then equal numbers from each group were randomly assigned to either the Experimental Training Program which included specific instructions on how to monitor and control causal attributions, or the Traditional Training Program which was identical except for the absence of the attribution monitoring and control instruction. During the last training session all subjects participated in a negotiation task which was similar to the hypothetical negotiation task referred to above and once again completed the locus of control measure. Four weeks after completion of the training sessions all subjects participated in a second trial of the negotiation task.
Examination of the scores of the two groups revealed that the experimental group performed more successfully than the comparison group on the trial four weeks after training but there was no significant difference between groups on the trial during the last training session. Further analysis of the data highlighted several important points.

1) The data analysis associated with Hypotheses IIa and IIb was not supportive of these hypotheses. However, analyses of the data from only those subjects predicting failure and visual examination of the expectation – performance – attribution patterns suggested that the Experimental Training Program was most effective with those subjects who had predicted they would fail on a hypothetical negotiation task but had actually succeeded on the actual negotiation task during the final training session.

2) There was not a significant difference between the training groups on a locus of control measure administered prior to training; however, subjects in the Experimental Training group scored significantly higher (more internal) than those in the Traditional Training group on an administration of the measure following completion of training.

3) Analysis of subjects' stated attributions demonstrated that those in the Experimental Training group employed the
attribution control procedures that were taught during the training.

4) The locus of control scores of subjects who employed internal causal attributions in predicting their performance were higher (more internal) than the locus of control scores of subjects who employed external causal attributions in predicting performance.

5) Among subjects who employed internal attributions in predicting their performance, the group that predicted failure scored higher (more internal for failure) than those who predicted success on the locus of control failure subscale. There was no significant difference in the success subscale scores of these two groups.

6) In the Traditional Training group there was no significant difference between negotiation task performance scores of subjects who scored internal on the success subscale of the locus of control measure and those who scored internal on the failure subscale.

These results are generally supportive of the contention that the employment of attribution structuring procedures as an adjunct to a skill training program can increase the likelihood that training participants will be able to reproduce their "in-training" performance in future "non-training" situations. They are also generally supportive of the model of the relationships among causal attributions, performance
expectations, and performance which was proposed. While the present findings must be considered to be tentative in light of the exploratory nature of the study, they provide considerable encouragement for further investigation and have some important preliminary implications for behavior change programs, behavior change theory and attribution theory, and future research in these areas.

**IMPLICATIONS FOR BEHAVIOR CHANGE PROGRAMS**

It was the contention of the present investigation that skill training programs are behavior change processes and the results suggest that the effectiveness of behavior change programs (e.g., teaching, counselling, therapy, coaching, etc.) may be enhanced by the inclusion of cognitive structuring procedures designed to induce participants to monitor and control their internal cognitive processes. Although this was an exploratory investigation and the findings require further confirmation, the results indicate that maintenance and generalization of performance is superior if subjects are given instruction, opportunities to practice, and feedback on how to control their causal attributions and expectations regarding their own performance during the training process.

The importance of individuals' beliefs about causes of changes in their performance has been a major focus of cognitive-behavioral clinicians in recent years (Meichenbaum,
The present investigation demonstrates the effectiveness of a simple procedure for influencing individuals to control their beliefs about the cause of their performance. This investigation was exploratory in nature and the effectiveness of the treatment program was only demonstrated by the maintenance of performance over a limited period of four weeks. However, the experimental training procedures employed could be readily integrated into a wide variety of clinical and non-clinical programs making future more extensive evaluation a relatively easy task.

The enhanced effectiveness of the "cognitive structuring" training appeared to be most evident in that group of subjects who predicted prior to beginning the training that they would fail if asked to perform a task similar to that employed in the training program. However it is not believed that future attempts to employ these cognitive attribution structuring procedures in behavior change programs should be limited to individuals who exhibit similar initial expectations for the following reasons:

1) The results obtained here indicate that the reliable identification of such individuals, in advance, may be very difficult if not impossible to achieve.

2) The attribution structuring procedures employed in this investigation are not difficult to employ. They could be integrated into existing and/or newly developed behavior
change programs with relative ease and very little additional expense.

3) It is believed that the attribution structuring procedure has more generalized benefits. The ability to monitor and control ongoing cognitive processing is believed to be a skill which is beneficial in a wide variety of everyday situations.

IMPLICATIONS FOR THEORIES OF BEHAVIOR CHANGE

The results of this investigation are supportive of the existence of a reciprocal causal relationship among cognitive factors, external reinforcement contingencies, and behavior that is postulated in the Social Learning Theory model advanced by Bandura (1977a, 1978). The present findings indicate that the interactive relationship among cognitive processes, cognitive structures, and performance feedback is crucial to our understanding of behavior change.

The data indicate that internal cognitive structures and processes are able to mediate the reinforcing effects of performance feedback. They also indicate that internal cognitive processes and structures can be influenced by attribution structuring procedures and that performance maintenance and generalization can be influenced by a combination of attribution structuring procedures and performance feedback. Attribution structuring procedures by
themselves, while they may have influenced subjects' internal cognitive structures, did not appear to mediate more successful performance in the future for subjects who failed to perform successfully during the training program. Similarly, performance feedback of success at T1 did not, in the absence of attribution restructuring, mediate maintenance and generalization of successful performance for subjects who had expected to fail. These results indicate that it is important for behavior change theories to focus attention upon delineation of the relationship among cognitive structures and processes, cognitive and behavioral interventions, and performance rather than upon attempting to determine the relative efficacy of cognitive or behavioral interventions if the goal is to increase our understanding of the process of behavior change.

IMPLICATIONS FOR ATTRIBUTION THEORY

Causal Attributions and Expectancy

The present findings are supportive of Weiner's contention that individuals' "perceived control" of causal factors plays a key role in determining their performance expectancy. In Weiner's (1985) model perceived "control" is separated from "stability" and "locus". The latter is not viewed as being important in determining individuals' expectations. The present data indicate the separation of "locus", "control", 118
and "stability" in the determination of expectancy, is not as straight-forward as has been suggested by Weiner. The data in this study indicate that locus and control are related constructs in the determination of expectancy.

The locus of control construct suggests that individuals may perceive control as residing within themselves (internal locus) or outside of themselves (external locus). Thus an internal locus of control is required in order for an individual to be able to perceive him/herself as being able to control causal factors. Therefore controllability is necessarily linked systematically to an internal locus of control but not to the stability dimension.

To illustrate, consider performance which is attributed to an external cause (e.g., the weather). The cause is not perceived as being controllable by the individual and future expectations are, therefore, determined by how probable the individual thinks it is that similar weather will occur in future situations (i.e., the relative stability of this factor). In this case, even though it is perceived as being unstable, and subject to change in a future situation, the individual does not perceive him/herself as having any control over the causal factor.

The same performance, if attributed to an internal cause however, may be perceived as being under the individual's control regardless of the perceived stability of the cause. An
An internal, unstable, attributed cause (e.g., effort) is perceived to be under the individual's control, and expectations regarding future performance are determined by consideration as to how much effort the individual will choose to exert in future performances. An internal, stable, attributed cause (e.g., ability) may, however, also be perceived as being under the control of the individual. Thus ability, although a "stable" factor, may well be perceived as being under the individual's control in future situations. Some internal, stable, causal factors will also, typically, be perceived as being beyond the control of the individual (e.g., intelligence). Attributions to causal factors of this type would be equivalent to attributions to external factors in so far as expectations are concerned.

A stable internal causal factor may, therefore, be perceived by an individual as being under his/her own volitional control. In such a case, future performance expectations will be determined by the individual's consideration of how this volitional control will be exercised in the future, not by the "stability" of the factor.

The present data support a model which proposes that both locus and stability are related to perceived control of causal factors. Locus, in this model, represents a fundamental dimension of attributions because only attributions to internal causes are perceived as being potentially controllable by the individual. The relationship between "stability" and
controllability is more complicated since either type of cause, stable or unstable, may be viewed as being controllable by an individual, provided that it is internal. There is, clearly, a need for further investigation of these relationships.

The Process of Causal Attribution

In the present study expectations of future performance were more closely related to the causal attributions subjects employed in predicting their initial performance outcome than to the type of causal attributions they employed in explaining that initial performance after it had occurred. These results suggest that conclusions which are based upon data related to any single event may be misleading. Data pertaining to any arbitrary event, within a process, are not a reliable basis for subsequent generalization from the event to the process. Individuals do not experience "single isolated events". Their attributions regarding a single event are not isolated from previous events and their attributions about those previous events. When the attribution process is conceptualized as a series of related events and attributions, where and how often within the series measurements are taken becomes an important issue in determining the validity of data collected. The view of causal attributions as ongoing processes is contradictory to suggestions that attributions occur only when they are "triggered" by the occurrence of an "unexpected" event (Pyzszinski & Greenberg, 1981; Ruble, 1973; Wong & Weiner, 1981).
It is contended here that causal attributions are a component of an ongoing cognitive information processing system, which "matches" various stimuli (input from the sensory system) with an existent complex of cognitive structures. This is believed to be an ongoing process which occurs outside of the focus of conscious attention much of the time. An "unexpected" event (i.e., an event which does not assimilate readily into an existing dominant cognitive schema) results in an individual becoming "aware" of its occurrence.

In suggesting that individuals become "aware" of the occurrence of this process, it is not implied that they are aware of "how it occurs", only that it is occurring. The process continues to operate automatically in the sense that it is not "controlled" by the individual (Shiffrin & Schneider, 1977). That is, awareness of its occurrence is not synonymous with awareness of how the process itself operates. The latter requires what is termed "meta-cognition" by some authors (e.g., Brown, 1977; Meichenbaum & Asarnow, 1979).

It is suggested that the impact of an "unexpected" event is an "attention shift" resulting in increased awareness of an already occurring process rather than the sudden instigation of one which was previously not occurring. A similar "attention shift" can be produced by the investigators inquiry as to the perceived cause of an event.
LIMITATIONS OF THE RESEARCH METHODOLOGY

This investigation attempted to provide a more "natural" experimental environment than many previous attribution studies. The hypotheses necessitated a design which allowed dependent measures to be taken within the training environment and then repeated in a contrasting more natural "everyday" setting. However, as indicated earlier, the relatively brief period (four weeks) of time between the final training session and the follow-up measure, and the existence of a number of similarities between the two performance situations, raise questions about the degree to which subjects actually perceived them as being unrelated.

Subjects' attributions about their own performance were examined in a relatively uncontrolled situation designed to simulate a "real" task which was relevant to their everyday lives. There were few limitations upon their freedom of action within the performance situation. However, a simulation no matter how realistic, is not the same as "real life" and the results obtained suggest that the artificial nature of the experimental situation may have been a cue for attributing causality to the training program itself.

A major problem area for investigations of this kind is the difficulty of assessing causal attributions in an unobtrusive manner. In this investigation subjects were asked to select from descriptions of attribution categories which described
each of the underlying dimensions of interest rather than asking them to choose from examples of actual causal attributions which were previously categorized by dimension. This procedure helped to avoid the possibility of different subjects perceiving the same causal factor (e.g. luck) as being at different extremes of a single underlying dimension (e.g. stability). However, this approach does not overcome the problem inherent in presenting them with a choice in the first place. Providing subjects with a choice between possible causes risks the possibility that they may be influenced to consider causal explanations that would not have occurred to them in more "natural" circumstances.

Finally, the fact that the first two training sessions for the Experimental Training Group were longer than those of the Traditional Training Group contributed another element of uncertainty to this study. While there is no readily apparent reason for assuming that this additional time was a major factor in determining the present findings, future investigations should attempt to control this variation. This could be accomplished by the including additional relevant material to Traditional Training Program to standardize the length of all training sessions. A future design should also consider the addition of third non-training ("control" ) group which would meet for the same number of sessions (of equal duration) as the training groups, but would not be presented materials relevant to the content of either the Traditional or Experimental Training Programs.
It is not clear how great an impact these methodological shortcomings had on the present study. However, they do result in limitations on the generalizeability of the findings and emphasize the need for further investigation.

**IMPLICATIONS FOR FUTURE RESEARCH**

This study was a preliminary exploration of the effectiveness of an experimental training program, and of the relationships amongst various cognitive variables and performance outcome. Implications for further research can be divided into three general areas, research methodology, behavior change programs, and theory.

**Methodology**

The results and limitations of the present study suggest that future research should attempt to assess subjects' attributions in naturally occurring situations, and should attempt to develop unobtrusive assessment techniques such as structured interviews in attempting to identify the nature of the attributions that subjects employ. It is also evident that measures should be taken on more than one occasion in order to detect and identify the relationship between past, present and future attributions regarding related issues.
Behavior Change Programs

Further research is required to increase the generalizability of the present findings. One thrust of such research would be to extend the present study by employing multiple dependent variables derived from subjects' day to day "job related" activities. These variables could be measured unobtrusively within the individuals' actual work setting. For example, identification of "real" negotiation activities which subjects engage in during their regular work routines would be used as one of the dependent variables in a future replication of the current study.

A second direction for future research in this area would be to evaluate the effectiveness of incorporating the attribution structuring procedures employed in this study into a variety of existing "change programs" including management and other skill training activities.

Theory

Further research defining the nature of the relationship among the construct "General Performance Orientation", causal attribution processes, and specific situational cues such as "unexpected outcome" is required. A second focus of research in this area should be the identification and elaboration of the role played by situational variables, other than expectation - performance congruency, which may disrupt and/or cue specific cognitive processes and structures. The role that
other internal processes such as emotion play in these relationships is another area which needs to be examined.

Finally, it is reiterated that the present investigation was undertaken with the intent to further the integration of behavioral and cognitive theoretical models as the most fertile approach for studying behavior change. The results obtained here are seen as being supportive of this perspective. However, many of the constructs and concepts which are current in clinical cognitive-behavioral theory are related to and/or derived from constructs employed in the literature of other areas such as social psychology, personality, linguistics and information processing. The difficulty of overcoming the lack of clarity in terminology is a major impediment to the integration of existing research, and it lends legitimacy to the claims of those critics who suggest that there is a corresponding conceptual "fuzziness" amongst cognitive-behavioral theorists generally. If the cognitive-behavioral approach is to fulfill its early promise and avoid becoming simply another detour into the morass of populist "mentalism", it is imperative that future investigations place great emphasis on establishing research questions and procedures in very precisely defined terminology. It will be a major challenge for future investigations to accomplish this goal while, at the same time, avoiding a process of reductionism that sacrifices the meaningfulness of the phenomena of interest.
REFERENCES


APPENDIX 1

TRAINING PROGRAMS

Training Program Week 1 .......................... 152
Training Program Week 1 Experimental Supplement .. 161
Training Program Week 2 .......................... 174
Training Program Week 2 Experimental Supplement .. 181
Training Program Week 3 .......................... 188
Training Programs

Both the Traditional and Experimental programs utilize all of the content listed for the traditional program. The Experimental training program allocates less time for presentation of these materials however, in order to cover the additional content listed under the Experimental Program. Three hour sessions are held for each group.
Training Program Week 1: Problem Solving and Decision Making

I. Introduction and Group Formation

A. Have students complete name tags and wear them.
B. Brief introduction of yourself and your background.
C. Brief outline of Seminar Schedule and tonight's schedule. (Emphasize applied nature of the training).
D. Group Formation (6 Groups of 5 members).
   1) 10 minute period for mingling and meeting one another.
   2) Participants form groups of 5 members.
   3) Allow groups 5 minutes to get to know one another, and assign each individual the task of knowing the name of everyone in his/her group by the end of the night

(instructors assignment is to know everyone's names)

Note to Instructor: The small group is important to encourage individual attendance. Encourage them to talk to one another and to begin to establish relationships through shared tasks.

II. Problem Solving and Decision Making

A. Introduction

1) Examples of how managers' decisions get made (quotes).

   Charles Cox (Kennecot Copper): "I don't think businessmen really know they make decisions. I know I don't."

   Charles Dickey (J.P. Morgan): "There are no rules."
   Dwight Joyce (Glidden Co.): "If a vice-president asked me how I was able to choose the right course, I'd have to say, 'I'm damned if I know.'"
2) Question: Is there any right way?

3) Examine some typical procedures:
   a) appealing to experts
   b) tradition
   c) "hunches" and inspiration

All of these are employed and can be effective but research has demonstrated that effective problem solving and decision making is a skill which can be learned. The technique takes time and practice, and is not for every situation:

a) some situations are relatively simple and frequent, and the costs of a poor decision are small (e.g., deciding on what flavor of ice cream to purchase at Baskin Robbins). In situations like this, decision making is almost an automatic process. We refer to these as "Pre-programmed" situations in which an elaborate decision making process is inappropriate.

b) Other situations are more unique, and the potential costs of a poor decision are much greater (e.g. Purchasing a computer system). Effective decisions in situations such as this are crucial to effective management. The decision making technique presented here is designed to result in effective, efficient decision making in these situations.

B. The Process of Effective Decision Making

Note to Instructor: project overhead diagram of process on screen and go over it quickly (leave diagram projected on screen). Stress in introductory comment that this is a systematic four phase system made up of nine separate steps but it is not designed to be a "lock step" process.
PHASE I: PROBLEM IDENTIFICATION

Step #1: "Information Assembly"

1) Stress the need to be pro-active and anticipate. The need to arrange for regular flow, "monitoring systems" of the organization.

2) Examine the costs of obtaining value of additional information vs. costs of acting with too little

   (Tourist Guide Joke - see page 215)

Step #2: "Information Clarification"

1) Make information concise and precise but not too narrow to exclude valuable information.

2) Employ behavioral terms (e.g., job satisfaction, morale, etc., are terms which need to be made observable and measurable). Discussion of how this can be done:
   i) Key Question: How many? How often?
   ii) Goal: Quantify
   iii) Advantages:
       - indicates possible actions to remedy
       - makes it easier to communicate accurately to others
       - aids in evaluating

Step #3: Prioritize

1) Consider:
   i) Immediacy - urgency of the problem
   ii) Scope of the problem
   iii) Structure of organization

2) Common Errors:
   i) Premature conclusions
   ii) Over simplification (search for Single Central Problem)
   iii) Symptom level analysis
   iv) Problem-objective confusion

Step #4: Outcome Criteria

1) Develop standards against which potential solutions can be measured.
2) Define constraints - binding and non-binding  
3) Examine organization objectives and personal objectives  

(Civil Service Problem: group activity - see page 211)

PHASE II GENERATION OF SOLUTIONS

Step #5: Develop a number of alternative solutions  
1) Wisdom of the ages  
2) Possibility lists  
3) Consultants  
4) Brainstorming

(Group Exercise - See page 216)

5) Creative Thinking

Note: Stress the importance of isolating this phase from phase III. Keep mind free of any constraints so wild and unusual solutions can be created. Even the "craziest" possibility may have some aspects which can be utilized in an effective solution.

PHASE III SELECTING A SOLUTION

Step #6: Evaluate Alternatives

1) Compare Solutions to constraints  
   i) eliminate the obvious - but look for ways to combine  
   ii) reduce to a "few best"

2) Task: Choose between possible solutions; All of which meet your criteria to some degree. How?
   a) Principle of "Optimization"

   All things being equal, which alternative has greatest value? How to decide?

   Assign "utility" - assess value and costs of a particular course of action.
Its "worth" or "utility" is the relationship between value and cost.

Example Problem: Choosing a Mate in Kanta Burra - Assigning Utilities to Complex Alternatives (see page 212)

b) Risks

Real life decisions involve choice in uncertain situations. -- assessing utilities and gambling on what will actually happen. E.g. value of decision to carry umbrella depends on whether or not it rains.

*So in decision both utility and chance factors must be included.

EXAMPLE:

Which do you prefer?:

1. $.10 with certainty or one chance in ten at $1.00?
2. $1
3. $10
4. $100
5. $1000
6. $1 million

You are not indifferent to any of the choices - i.e., in case one you may prefer to gamble, also in case 2 but at some point you will reverse; unless you place extremely high utility on risk.

The switch occurs at point which utility for money begins growing less rapidly than its dollar value. i.e., When the certainty of $100 is chosen over a 10% chance for $1000. The utility of $1000 is less than 10 times $100.

c) Probability

The long run expectation of relative frequency of an event's occurrence range from 0 to 1.
Example:
Probability of living forever is 0.
Probability of dying is 1.
Probability of flipping a "head" is .5

These are **Objective Values** based on physical properties (e.g., Coin -two sides, dice -six sides)

d) **Expected value**

Rational decision maker attempts to maximize his long-run expected gains. (Both probability of events and their value are considered in selecting an optimal course of action)

Example:
Suppose you are invited to play a game, flipping a coin which will pay you $10 each head, but cost you $5 each tail.

**SHOULD YOU PLAY?**

Expected value, or winnings expected in long run:
- p. head = .5
- v. head = $10
- p. tail = .5
- v. tail = -$5

Expected Value (EV)
\[(v_{head} \times p_{head}) + (v_{tail} \times p_{tail})\] =\[($10 \times .5) + (-$5 \times .5)\]
\[= + $2.50\]

In long run you will win $2.50 for each flip of the coin.

This is a procedure for optimal decision making but few people use it because they don't understand it, or it is too much trouble. **Gambling Casinos and Insurance Companies use it.**

e) **Subjective Probability:**

How likely a role of 7, if 7 has not appeared in last 100 rolls?

Gambler will bet "law of averages" say it's got to happen soon (subjective notion of probability) but
actual (objective probability) probability is still one in six.

- People tend to overestimate the occurrence of events with low probability and underestimate the occurrence of events with high probability.

- People tend to exhibit the gambler's fallacy, predicting that an event that has not occurred for a while is more likely to occur in the near future.

- People tend to overestimate the true probability of events that are favorable to them and underestimate those that are unfavorable.

It is possible to combine subjective probability with utility, in the same manner as above, in making decisions.

Step #7: Choice

PHASE IV IMPLEMENTATION AND EVALUATION

[The final phase, which is also the first first phase]

Step #8: Implement

1) Consider:
   i) Resources needed: Human, Financial.
   ii) Schedule: Time frame, Sequence.

   iii) Organizational Impact: People, Procedures, Structure.

   iv) Contingency Plan: Anticipate what can go wrong.

Step #9: Evaluation

1) Establish a feedback system which supplies you reliable information flow regarding progress. (actually step #1 repeated).

C. Summarize
D. **Assignment**

Hand out assignment and have them work together in groups on the first decision making task. Move from group to group and facilitate in this process. At the same time collect name tags from each group. Make sure you can identify each individual and match them to their name tags, you will be required to hand them out to the correct people next week (Keep name tags in groups to assist this process).
Training Program Week 1:

Experimental Program Supplement
I. Introduction

On blackboard: The Wages of S.I.N.

Connect to problem solving:
The procedures for problem solving discussed tonight are fairly simple and straightforward. The most difficult task in finding effective solutions is overcoming:

SIN - "Self Imposed Negatives"

II. The Perception - Behavior Connection

Our actions are based upon what we perceive reality to be, but do we perceive "reality"?? What we perceive is determined by a process of filtering and classifying.

1) The "filtering process":
Our perceptual processes (e.g., vision, hearing, smell), "filter" incoming stimuli: There are "sounds" "smells" etc. "out there" that we do not perceive.

a) This filtering occurs partly because of limitations on how much data we are able to process at one time, and the ability of our sensory organs to detect stimuli whose magnitude is outside certain threshold values.

E.g., sound waves which have a frequency inaudible to the human ear, but which animals can readily detect (human range is approximately 20 to 20,000 Hz).

b) A second way in which filtering occurs is through the process of

"Attending" - focusing our attention to certain stimuli while shutting out others.

Attending can be a partially voluntary process where we consciously direct our attention to specific stimuli ignoring others, or it can be involuntary.
Involuntary attending occurs when a stimulus because of some unique property (e.g., strength) forces our attention and as a result we fail to attend to others even though we may have no conscious intent of doing so.

E.g., Mothers who bring home a new baby often report being extremely tired because the baby "fusses" and cries during the night and as a result they get very little sleep. Interestingly, fathers often report that they hear nothing.

WHY?

Clearly the sounds are within the normal hearing ranges yet one individual "hears" them and the other doesn't.

Explanation:
Mother is very acutely aware that the baby is home now and is all her responsibility. As a result she is very consciously tuned to any indication that the baby is in distress and immediately awakes at the slightest sound. Father, however, is not so tuned in (after all he knows she will handle things) as a result he fails to perceive these "low level" sounds. As mother becomes more sensitive in her ability to distinguish "noise" from distress signals she begins to sleep through much of this low level "fussing". Father often begins complaining about disturbed sleep at this point. (Note: If the father were left alone with the baby over night when it first arrives home, he would likely be every bit as sensitive to its noises in the night as the mother is. In fact he would probably be so attentive to the baby sounds the he would have a difficult time even going to sleep.)

2) The Classifying - Organization Process:

Unorganized stimuli have no meaning

Steamily or information which we do perceive must be organized in some way to give it meaning.

a) "Cognitive Maps" - internal models or templates that we employ to organize information so that it has meaning.

i) Information that we receive only has meaning when we can fit it to a cognitive map. E.g., number series...4 61 8 46 5 52

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(every second term is the square of the preceding one but "reversed")

ii) It is an active process: We attend to information which fits existing maps and fail to perceive much information which might contradict them.

Example:

story about my friend the Doctor that illustrates "sexual stereotyping" in the thinking of the average person

iii) The "F.O.F.O. Principle"

(Count the F's ...)

FINISHED FILES ARE THE RESULT OF YEARS OF SCIENTIFIC RESEARCH COMBINED WITH THE EXPERIENCE OF MANY YEARS

When we Fix On specific information as being important, or upon certain ways of organizing that information, we automatically Filter out other information which is viewed as unimportant. We act as if what we perceive is all there is.

III. Self-Perception

We have cognitive maps of ourselves which we construct as we grow up from earliest childhood.

1) They begin to be formed when we have very limited ability or opportunity to analyze, or to get alternative information.

2) A single event can be "reinforced" over and over again by our "reliving" it in our mind.

3) The "self-image" becomes a "cognitive map" and as such it is employed to filter and organize new information (F.O.F.O)

4) Therefore, contradictory information or occurrences will not automatically alter self-image.
IV. Self-Image and Performance

Your cognitive map of yourself (your self-image) can influence your performance in any situation.

1) The Self-image -- Self talk -- Performance connection

   a) We tend to act as if our perceptions of ourself are in fact reality (i.e., the way we really are).

   b) We tend to reinforce the way we perceive ourselves through our "self-talk". "Self talks" are "conversations we have within our mind and they often go something like this:

      "Well there I go again, boy am I ever clumsy".

2) The "sure enough" phenomenon:

   in approaching a situation in your mind you are thinking about your performance and typically that is what you experience.

   E.g. You think: "Oh no, I'm going to make a fool of myself" - and "sure enough", you do.

   (Henry Ford:"If you think you can, or you can't, you're probably right")
3) **The Process of S.I.N.:** Self Imposed Negatives

   a) Self Image - "I'm really dumb."

   b) Self Talk -
      "Oh, oh. This is going to be a math problem. I'm going to screw it up then I'll really be in trouble. Everyone else will see how dumb I am."

   c) Performance - "Sure Enough."

   d) Self Talk -
      "I knew it, I should never have gone into this. Now everyone will think I'm really stupid. I'm not going back tomorrow."

4) **S.I.N. Prevention**

   a) Self-talk:
      "Hey this is going to be interesting, Math is a real challenge for me. This is a chance to stretch myself. I'll probably learn something new and useful."

   b) Performance:
      "Sure Enough." - it does turn out to be difficult and you don't do very well but it isn't a total disaster.

   c) Self Talk:
      "Well, I didn't do as well as I can. I'm going to find out where I went wrong. I know I was o.k. up until I had to transpose that vector - maybe someone can show me where I went wrong. If I take some time to practice this it will be easier next time."

5) **The Key to Escaping SIN:** "Monitor your Self-Talk"

   a) We are usually not even fully aware of our self-talk before, during and after an activity. The first step is to begin to become aware:

      - get into the habit of checking your "self talk" regularly.

   
   Assign: Monitor Self Talk during rest of evening when we are working on Problem Solving.
Training Program Week 2: Time Management
I. Introduction

A. Participants form into their groups - challenge them to name other members of the group.

B. Demonstrate your memory by distributing name tags to the entire class.

II. Assignment Review

A. Distribute Score Sheets and have groups go over each sequentially

1) Individuals score own decisions.
2) Group discussion of decision (assign a recorder/group spokesperson)
3) Class discussion (relate to sequential process).

III. Time and Management

A. General Discussion

1) Question: "What is time?"
   i) a bird (time flies); a burden (time weighs heavily)
   ii) a valuable commodity (time is money)
   iii) a commodity of little value (it will only cost a little time)

2) Question: "What is time to YOU?"

   Write down definitions, discuss, and point out similarities.

   3 basic views:

   i) Time is an enemy
ii) Time is a valuable resource to be hoarded

vi) "Time blindness"

3) Typical Managers view: "There is never enough time"

BUT!!! "Typical Manager" is Wrong!

There is no such thing as "not enough time". No matter what your task, no matter who you are, you have 24 hours a day - no more, no less.

Key Point #1 (Project Transparency)

"You have all the time there is
If you don't "have enough time" -
you are trying to do too many
things in the time available."

B. The Value of Time

1) Time is money
   people sell it (e.g., consultants)
   costs of products largely represent person/hours re-
   quired for production and supervision.

2) Time is a valuable commodity
   The supply is fixed the demand infinite.

   Poor Richard: "Dost thou love life?
   Then do not squander time for that's
   the stuff life is made of."

Key Point #2 (Project Transparency)

"Time is a manager's most valuable resource, its
effective use the greatest challenge."

C. Understanding Time

The key to effective use of time is understanding it.

1) Time is a flow from past to present to future and for
   all practical purposes the flow is irreversible.

   The past - no longer exists

   The future - does not exist, but it will
The present - exists only very briefly, then it will be the past.

**Key Point #3** (Project Transparency)

"The past and future don't exist, all you have is now and it is almost gone"

2) Control of the past is impossible. What was done cannot be undone. The past is not manageable.

3) The present is largely determined by past events.
   a) In the present we live with the decisions we, or our predecessors, made in the past.
   b) The present is brief, even if we extend "present" to include this week, and most of what we will do is already determined.

**Key Point #4** (Project Transparency)

"Controlling Time is only possible by orienting yourself towards the future, in the present."

D. Summarize:

"The key to effective management is control over time. You can gain control over time by acting now to control the future."

1) The past and future do not exist - there is only the present-now!

2) You can only act now.

3) The past can not be controlled.

4) The future can be controlled, but only by acting now.
IV. TIME MANAGEMENT

A. The Time Trap

The "Time trap": to get control over time takes time, and I don't have any time to do it.

1) Escaping the Time Trap:

It takes analysis, thought, imagination, and TIME

a) Review key points above - you can only escape by orienting yourself towards the future.

b) You either control time or it will control you, dictating your activities and always leaving you with not enough time.

c) If you act now to control time - TIME will be your ally in the future.

B. Procedure Outline - Time Management

1) Examine how your time is being used presently.

a) Each individual is asked to go over a typical day at work utilizing a time sheet beginning at time of arrival and broken into 15 minute periods until the end of the work day.

b) Assignment: Instructor to hand out additional time log sheets and assign task of monitoring actual time use for next four work days. Typically we find that managers are not actually spending their time the way they think they are.

2) Identify your long and short term goals

a) If you do not have clear prioritized goals, it is impossible to decide how to use your time most effectively.

b) Assignment: over the next few days while you are monitoring your time at work, identify and
prioritize clear long and short term goals for yourself in your job.

3) Analyze your Time Use
   a) M.B.O. (Management By Objectives)
   b) Evaluate their usefulness in accomplishing your goals.

Paretos law (20/80)

"In any series of elements to be controlled, a certain small fraction (approximately 20%) always accounts for the major portion (approximately 80%) in terms of effect.

Hence: 20% of a managers activities are the vital few. 80% of a managers activities are the trivial many.

4) Rearrange your activities - guidelines
   a) Identify the vital few - the 20% of your activities which are crucial to accomplishing your goals.
   b) Assume these activities are all you really have to do and arrange your schedule to do these in the most effective possible way.
   c) When the vital 20% of your activities are completed satisfactorily, utilize any remaining time for the "trivial many".

5) Some points to consider
   a) The top 15 time wasters.
   b) Efficiency vs Effectiveness
   c) Activities vs Results
   d) Time Estimates (Murphy's 2nd Law), Planning (Murphy's 1st Law)
   e) Tyranny of the Urgent, Crises Response, Calculated Non-action
   f) Delegation - Up and Down
g) "Blocking" and "Chunking"

h) Management by Exception

V. Assignment:

1) Hand out material for assignment

2) Go over example

3) Participants to log their time for the next five working days, completing analysis for each day.
Training Program Week 2: Experimental Supplementary Material
I. Review: Self-Talk monitoring assignment


III. Improving Performance by Avoiding SIN

A. Positive Thinking & Success

1) It is not magic, success is not guaranteed if you just think positively, or engage in lots of positive self-talk.

   a) Successful performance requires preparation and effort

   b) But, to insure the maximum benefit from your effort (in any activity) your thinking is vitally important.

   c) Focus on what you want to have happen. Believe it will happen, and work like hell!

B. Positive and Negative Attitudes

1) Attitude = Lean

   a) Aeronautical definition - angle (or lean) of an aircraft moving through space.

      Attitude is a lean

      Toward = Positive

      Away = Negative

   b) Your lean or attitude is expressed in your self-talk.

   c) No matter how much effort and preparation, if your attitude is negative your chance of success is limited.
E.g., Football game:

On the last play of the game - losing by 4 points and the ball is on the 2 yard line. You are the quarterback. You are thinking about what play to call. You have two running backs. Both are in top shape, and they are equally skillful. Imagine you are able to monitor their self-talk.

<table>
<thead>
<tr>
<th>Self Talk</th>
<th>Attitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Player #1 &quot;Give me the ball, man&quot;</td>
<td>+</td>
</tr>
<tr>
<td>Player #2 &quot;Geez, I hope he gives the ball to somebody else, I'm worn out!&quot;</td>
<td>-</td>
</tr>
</tbody>
</table>

Which player would you want carrying the ball?

#2 will go into the line "leaning away"

#1 will go into the line "leaning toward"

d) Summary

"What we believe to be true, or possible, limits our ability to achieve"
(e.g. Ph.D. who believes he cannot do mathematics)

Attitude (lean) ---> Performance

Question: How many of your self-imposed limitations are real?

C. Removing Self-Imposed Limitations on Performance

1) Rule: "Control your thoughts or they will control you"

Caution: it sounds simple - and it is - but it's not easy.

(demonstration of thought stopping)
Problem: old habits are hard to break, those negative thoughts keep creeping back (they probably always will occasionally)

a) It is not enough to go around saying positive things to yourself and waiting for success.

b) You have to believe those positive things.

c) They have to become part of your "self-image".

d) You have to "walk your talk" - act as if what you are saying to yourself is true.

2) How Do You Do It?

a) Monitor and control your "self-talk".

b) At first it will seem strange, even artificial, but if you stay at it consistently it will become natural. It will be "you".

Self Talk → Self Image

c) you must control your "lean" (attitude) through your self-talk.

D. Controlling Self-Talk

1) Pre-Performance Self-talk

The self-talk that goes on in anticipation of a performance situation. Change negative to positive:

<table>
<thead>
<tr>
<th>Negative</th>
<th>Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>I hate this kind of job</td>
<td>This will really be a challenge</td>
</tr>
<tr>
<td>I'm afraid I won't do well</td>
<td>This will be a chance to see how much I've improved</td>
</tr>
<tr>
<td>I have to ....</td>
<td>I want to ....</td>
</tr>
<tr>
<td>I can't do ....</td>
<td>I'm going to ....</td>
</tr>
</tbody>
</table>

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2) **Performance Self-Talk**

The self-talk that goes on during the actual performance. Typically, if performance is going well, little self-talk is occurring. However, when problems begin to appear, "self-talk" begins to happen. When it does, change negative to positive:

<table>
<thead>
<tr>
<th>Negative</th>
<th>Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Oh hell! I'm screwing it up.&quot;</td>
<td>&quot;Wait a minute, I was doing OK. I must have have gone off on the wrong track, I'll go back over it and see where I went wrong&quot;</td>
</tr>
<tr>
<td>&quot;This is extremely complicated, I'm lost. There is no way I'll ever solve it. I give up.&quot;</td>
<td>&quot;Now wait a minute, I can do this easily as long as I go step by step and don't panic. So far I've done 'a', and 'b', and now what is next.&quot;</td>
</tr>
<tr>
<td>&quot;Oh, no I'm running out of time, I'll never finish, why don't they give you more time, it's impossible I'm going to complain&quot;</td>
<td>&quot;Well it has taken me quite a while to get this far but now that I've got the first part done the rest will be much easier.&quot;</td>
</tr>
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</table>

3) **Post Performance Self-Talk**

The self talk that goes on after the performance. Typically includes an evaluation of the performance. Change negative to positive:

<table>
<thead>
<tr>
<th>Negative</th>
<th>Positive</th>
</tr>
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<tbody>
<tr>
<td>&quot;Well I screwed up again.&quot; (just like me)</td>
<td>&quot;I didn't do that very well, that's not like me. I can certainly do better. I'll go back over it and find out exactly where I went wrong so it doesn't happen again.&quot;</td>
</tr>
</tbody>
</table>
Negative  Positive
"I can't believe I did so well. They made it so easy anybody could have done it"

"Gawd that was awful - I'll never try that again."

"Great I knew I would do well, I was well prepared. When you know what you're doing, things seem easy."

"I didn't do very well, I need to be better prepared next time, I wonder who can help me practice."

E. Self Talk and Unsuccessful Performance

1) Performance: Don't attempt to "fool" yourself in evaluating your performance, but no matter how you evaluate it, take responsibility for it.

a) Unsuccessful Performance: blamed on others, fate, the weather, or any other external cause, is beyond your control.

b) Unsuccessful Performance: blamed on things about yourself which are perceived as being unchangeable (e.g., "I'm dumb", "uncoordinated", "unloveable", etc.) is also beyond your control.

c) Unsuccessful Performance: blamed on things about yourself which you can change (e.g., effort, preparation, etc.) is your responsibility, it is possible to control the cause and you can do something about it.

d) Self-talk which leads to Improved Performance. Self-talk which fixes the blame for poor performance on uncontrollable factors does not allow you any way to take action to improve performance. If you believe you fail because you're stupid, it doesn't matter how hard you study. If you believe you lose because you're "no good", it doesn't matter how hard you practice. To allow improved performance, poor performance must be seen as being caused by factors over which you have some control. Following unsuccessful or disappointing
performance avoid "limiting" self-talk, and engage in positive self-talk.

<table>
<thead>
<tr>
<th>Self-Talk to Avoid</th>
<th>Positive Self Talk</th>
</tr>
</thead>
<tbody>
<tr>
<td>It was too hard</td>
<td>I can do better if I try harder.</td>
</tr>
<tr>
<td>They were too good</td>
<td>I can really improve - if I practice.</td>
</tr>
<tr>
<td>I'm no good.</td>
<td>I know I can do a lot better than I did today, I'm really going to work harder next time.</td>
</tr>
<tr>
<td>I'm unlucky ...</td>
<td>I can do well when I stick with it. I make my own luck.</td>
</tr>
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F. Assignment: Monitoring and Controlling Pre, During, and Post Performance Self-Talk.

1) Identify at least 3 discrete situations each day where you will engage in some type of performance.

2) Begin to "monitor" your self-talk prior to the performance and to eliminate "limiting" self-talk, replacing it with self-talk which facilitates maximum performance at all three occasions. Keep a written record of your self-talk and bring it with you next week.
Training Program Week 3: Conflict Management
I. Introduction

(Participants in groups - name challenge )
(Distribute name tags to all participants.)
( Ask if anyone else would like to try )

II. Review Time Management Assignment

III. Conflict Management - Negotiation Skills

A. Views of Conflict

1) Historical View

Something bad or destructive to be reduced or eliminated.

based on experience with negative results of conflict (war, riots, fights, divorce, etc.)

2) More recent positive view

seen as a constructive process, the basis for all change.

shift in emphasis from conflict elimination to conflict management.

3) It is inevitable

Wherever there are individuals (or groups) with incompatible goals, mutually exclusive interests, factual disagreement, emotional hostility, etc.

4) Focus of Present Seminar - Interpersonal Conflict

Thomas:
The conflict process begins when one party perceives that the other has frustrated or is about to frustrate some concern of his.
B. Model: Process of interpersonal conflict

1) Beginning point frustration.

2) Individual's conceptualization of the frustration - understanding of own concerns and some awareness of alternative actions and possible outcomes.

3) Action - behavior, based on individual's conceptualization, designed to cope with the frustration.

4) Reaction - other party's reaction.

5) The reaction of the other party produces a feedback loop to the individual's conceptualization of point 2.

6) Circular process 2-3-4-2 continues until some outcome or resolution is realized.

7) The outcome sets the stage for subsequent interaction.

C. Behavior in Conflict Situations

1) It is "interactive" - i.e., the behavior of each participant has an effect on the other.

2) Each individual's behavior is complexly determined
   a) Individual predispositions and social pressures.
b) Framework of "rules" which constrain possible alternatives.

c) Incentives which are present in the situations.

3) Each individual's "conceptualization of the situation" mediates the influence of the situational variables.

D. Conflict Management

Conflict Management is based on the view of conflict as a constructive process which if managed effectively will result in maximal possible outcomes for both parties.

1) One Dimensional Model

"Cooperation vs. Competition"

a) Views conflict behavior as being centered upon achieving one of two possible goals.
   i) Individual Gain
   ii) Mutual Welfare

b) Is unsatisfactory because of tendency to focus upon a choice between dichotomous forms of behavior, neglecting other possibilities.
   (Example: Prisoner's Dilemma Game)

c) Is also viewed as having fostered win-lose thinking leading to "zero-sum" bargaining - leaving possible alternative solutions unexplored.

d) More recent research indicates that these two polarities are not adequate to describe actual behavior exhibited in conflict situations.

2) Two Dimensional Model (Thomas)

a) The model views conflict behavior as having two separate dimensions arising from:
   i) Assertiveness - a desire to satisfy ones own concerns
   ii) Cooperativeness - a desire to satisfy the concerns of the other party
b) **Descriptions of Conflict Styles**

According to this model individuals develop characteristic styles of responding to conflict situations. These styles are determined by combinations of the two dimensions. Thomas has identified four characteristic styles to which he has given labels.

- i) Avoiding - unassertive, uncooperative
- ii) Competitive - assertive, uncooperative
- iii) Accommodative - unassertive, cooperative
- iv) Compromising - somewhat assertive, somewhat cooperative
- v) Collaborating - assertive, cooperative

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<td>Cooperative</td>
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**Desire to Satisfy Other's Concerns**
3) **Comparison of the Models**

Contrast two dimensional model with one dimensional model using Prisoner's Dilemma Game as an example. Examine different outcomes in relation to the "styles" which could produce them.

4) **What is the best style**

   a) There is no single correct answer
      i) Conflict behavior is extremely complex.
      ii) Individuals behavior in conflict situations is part of an "interactive process".
      iii) Individual perceptions of the situation, of possible outcomes, of motivation, etc., will vary and may not reflect an objective reality.

   b) In general, if the goal of all people involved is to maximize potential outcomes for each, then a collaborative style should be most effective. This would not necessarily be the case, however, if the individuals do not share the same goals in their approach to the situation.

IV. **Negotiation Task Exercise**

(see Appendix 2)

V. **Discussion and Feedback**.

A) Brief discussion regarding the Negotiation Task Exercise.

B) Brief outline of Research Project and their role in it, indicate that results will be made available to them when the analysis is completed.
Answer any general questions you feel able to but keep the discussion brief.

Inform them of the name of the individual who is in charge of the project and direct them to the room where I will be available to respond to any further questions.

Invite them to complete feedback/comment form.
Training Program Week 3: Experimental Supplement
I. Review Self-Talk and Re-Attribution Assignment


III. Review: 3 Kinds of Self-Talk
EXAMPLE PROBLEM OUTCOME CRITERIA

Creating a Bilingual Civil Service

The established long term goal of the government is the development of a completely bilingual civil service. The following objectives were listed in connection with accomplishing this goal:

a) To be accomplished within 10 years.
b) To cause minimal disruption of present service delivery.
c) To be national in scope.
d) To operate on a budget of 10 million dollars per annum.
e) To include all personnel, in all departments.
f) To allow citizens of any region of the country to receive services, in their own local community, in both official languages.
g) Must not require any additional legislation, nor violate existing employer/employee agreements.

Your groups task is to examine this list of objectives, reduce the number where possible, identify any "binding constraints" (if present) and prioritize the remainder.
EXAMPLE PROBLEM ASSIGNING UTILITY

Choosing a Mate in Kanta-Burra

The kingdom of Kanta-Burra is a "progressive" land in which the universe has already "unfolded as it should". The kingdom is run by women (actually a "queen"dom) employing a type of democratic/monarchy which is headed by an exalted personage known as the "Maga". Men are rather insignificant in the political process of Kanta-Burra although they hold some value as mates. There has recently been an election which has culminated in the installation of a new Maga and, at the present time, she is currently in the market for a mate.

Over the years, a list of the most valued attributes in a mate has been developed and the current list of candidates has been tested on each established critical dimension. They have each been assigned a numerical rating on a '-5' to '+5' scale where '0' is the average score. The list of candidates has been reduced to two.

Ratings of the Candidates 'Shar' and 'Malik':

<table>
<thead>
<tr>
<th>Attribute</th>
<th>SHAR</th>
<th>MALIK</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Military skill</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>b) Sexual skill</td>
<td>5</td>
<td>-1</td>
</tr>
<tr>
<td>c) Conversational skill</td>
<td>-2</td>
<td>4</td>
</tr>
<tr>
<td>d) Intelligence</td>
<td>-4</td>
<td>3</td>
</tr>
<tr>
<td>e) Personality</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>f) Physical attractiveness</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>g) Prestige of family name</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

THE PROBLEM: HOW DO YOU COMPARE THEM?

e.g. 'sexual skill' with 'intelligence'
'personality' with 'military skill'

191
THE SOLUTION:

1) All values must be put on a common scale. This can be accomplished by transposing each individual value to a corresponding value on an established single scale (e.g., money). In order to do this, ask the question - How much monetary difference in purchase price is needed to offset a rating difference of one point on a particular dimension?

i.e.

a) Suppose both were equal on all dimensions except one (c) where Shar was rated one point higher than Malik.

b) How much of a difference in the asking price of Malik would be required to offset this difference? (e.g., $1000)

c) A utility value of one rating point, on dimension 'c' has now been established (I., $1000). The same procedure is then repeated for each of the dimensions to establish a common single scale upon which comparisons can be made.

2) Suppose that this has been accomplished for our example (i.e., the values listed represent common scale utility values). How will you proceed to make a decision?

a) Overall Ratings: examine each separately, establish a single overall rating of utility and select the highest overall rating.

b) Dimensional Rating: Compare each dimension separately, one at a time, and select on the basis of which is the leader on the most dimensions.

PROBLEM:

Overall Rating: SHAR = 10 MALIK = 13

Dimensional Rating: SHAR = 4 MALIK = 2 TIE = 2

A different decision will be reached depending on which process is employed.

There is no single best answer.

Overall ratings are probably the most accurate but are more difficult to employ.
Dimensional ratings are easier, but likely to be less efficient in the long run.

NOTE:

In actual practice it is likely that one methodology or the other will be employed up to a certain point, and then there will be an effort to seek more information before making a final decision.

For example in the above situation, after going through the process of assigning utilities and comparing the two candidates, the Maga decided to invite each over for dinner "in order to get better acquainted with them" (and as a result determined that she would remain single).
TOURIST GUIDE STORY

(Illustrating the risks of acting before you have sufficient information, as well as the costs of failing to act when you have enough information.)

A tour bus is just beginning to embark with a load of passengers on a tour of New York city and the guide has indicated that he will be announcing various points of interest as the bus moves through the city. It is apparent, from his rather loud and frequent comments, that a young man sitting in the front seat is attempting to impress the attractive woman sitting next to him by his knowledge and familiarity with the city.

As the tour progresses, the guide's announcements are frequently interrupted by the young man's comments to his companion. The guide announces that the passengers can see the Rockefeller Mansion if they look out the windows on the right. The young man interjects - "That is the home of Nelson Rockefeller, former governor of New York and son of John D. Rockefeller, and one of the wealthiest men in the world." The guide remarks, with a slight look of annoyance but in a quiet and polite voice - "Actually folks, this is the home of David Rockefeller, a younger son of John D. Rockefeller" - and proceeds to offer some additional information. The young man looks slightly uncomfortable but offers no comment. The bus swings around a corner and the guide says "If you will look to your left, you will see Central Park and the large building directly ahead, overlooking the park, is the home of many very well known celebrities such as the Kennedys, the .... ". At that point the young man's voice once again interrupted the guide's announcement with a loud comment to his companion describing the apartment of senator Ted Kennedy, which he claims to have visited with friends and proceeding to describe the senator in glowing and very familiar terms. The guide waits patiently while the young man completes his story and then, in a cold voice he once again corrects the young man explaining that the apartment building actually contains the apartment of the "Matriarch of the Kennedy clan - Mrs. Joseph Kennedy, nee Fitzgerald". At this point the young man is clearly embarrassed. He slouches in his seat silent, and red-faced offering no more comments as the tour continues past many more points of interest.

Finally the driver announces that the tour is nearly complete and that on the way back to their hotel, if they look to the right as the bus passes the next street they will catch a glimpse of the famous Christ Cathedral. Then turning slowly toward the young man, who has remained uncharacteristically quiet for the past half hour, he remarks in a voice dripping with sarcasm "It's your last chance son...... go ahead take a chance."
INSTRUCTIONS:

1) Elect one member of your group to serve as chairperson and recorder.

2) Think of as many uses as you can for one red brick.

3) Spontaneously call out these uses to your group.

4) The chairperson will record all the group's ideas on the back of this sheet of paper.

5) The chairperson will also participate in the exercise.

6) Do not at any time make any evaluation, or analytical comments about any of the ideas or thoughts that are produced. All ideas are accepted and recorded. The task is to produce ideas, not "good" ideas or "practical" ideas.

7) You have five minutes to complete this task.
APPENDIX 2

SIMULATED NEGOTIATION TASK

Simulated Negotiation Task ..................... 197
Sample Transcript of Negotiation Session ...... 204
Examples of Negotiation Outcomes .............. 209
Simulated Negotiation Task

BACKGROUND

The Lancer Toy Company is a medium-sized manufacturer of toys and games. The company is located in Southern California and sells in eleven western states. The company started as a manufacturer of children's toys in the early 1950's and enjoyed considerable success during the 1960's. However, due to the decline in the birth rate and stiff competition within the industry, sales of children's toys have leveled off.

When the growth in the toy industry began to show signs of slowing, the company turned its attention to other areas. Because of their expertise in developing games, it was natural for them to step in the market for adult games. In the late 1960's and early 1970's, the market for adult games has experienced tremendous growth. One important factor in this growth has been an increasing use of games for educational purposes in both schools and industry. Currently, the line of adult games accounts for about one-third of the company's sales while the children's toys account for two-thirds of sales.

Because the production facilities, type of customer, and marketing channels are quite different for the two lines, the company has divided responsibility between two department managers. The company is organized as follows:

```
President

Manager | Manager | Manager | Manager
Children's Toys | Fin. & Acctg. | Personnel | Adult Games

```

Each product-line manager is responsible for Research and Development, Production and Marketing of his product line.

SITUATION

Each year the total budget for Research and Development (R&D) is allocated to the two departments. Each department submits a
Budget Request to the Manager of Finance and Accounting. The Budget Request identifies specific projects the department will work on and their costs.

This year, the company has a maximum of $200,000.00 for R&D. The Manager of Finance and Accounting has asked the Managers of Children's Toys and Adult Games to reach an agreement on how much to request for R&D. The department managers have, in turn, assigned the task of preparing the Budget Request to the respective R&D managers. The two R&D managers will meet to decide which problems to work on this year.

ASSIGNMENT

You will act as one of the R&D managers. You are to negotiate a joint budget with the other R&D manager. You will have approximately 15 minutes to work out a budget with the other manager. You will receive a form which must be completed, and signed by both parties. This form will identify the specific projects to be included in the budget. The projects will be identified by their code numbers and will have their costs listed. Remember the limit of 200,000.00 for the budget.
YOU WILL ACT AS THE R&D MANAGER OF CHILDREN'S TOYS

This is one of your first assignments and you are anxious to make a good impression. During the past few years, sales in children's toys have declined slightly. You feel that part of this decline is a direct result of low expenditures on R&D. Last year the budget for Children's Toys was approximately 102,000.00. This figure is down from previous levels. At the present time, it seems that the Children's Toys line must be made competitive if Lancer is going to remain successful. This can only be accomplished through adequate expenditures on R&D.

This year, you have a number of projects which should make money for your department, and you would like to get as many approved as possible. You hope you can "turn around" the decline in sales of children's toys by working on profitable projects in the coming year.

PROJECTS

The information you have concerning your project is known only to you. The other manager has no idea of how many projects you can work on or the profits you expect for each project. You may disclose as much or as little of your information as you like. You may use your information in any way you wish to achieve your goals, BUT you cannot change the cost estimates. The cost estimates reflect the lowest possible costs of completing the projects. The expected profit figures are reasonably good estimates but are slightly conservative. Your staff has identified five projects you can work on during the coming year. The projects listed below are the only ones you can propose as it is too late to develop new ideas.
<table>
<thead>
<tr>
<th>Project Code</th>
<th>Cost</th>
<th>Expected Profit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT-07</td>
<td>$25,000</td>
<td>$2,500</td>
<td>To develop lower cost packaging.</td>
</tr>
<tr>
<td>CT-09</td>
<td>$22,000</td>
<td>$2,800</td>
<td>To develop a new line of building sets.</td>
</tr>
<tr>
<td>CT-11</td>
<td>$33,000</td>
<td>$4,800</td>
<td>To develop stronger, new materials for various toys.</td>
</tr>
<tr>
<td>CT-12</td>
<td>$75,000</td>
<td>$10,000</td>
<td>To develop a new line of Sesame Street dolls.</td>
</tr>
<tr>
<td>CT-14</td>
<td>$13,000</td>
<td>$800</td>
<td>To modernize our line of checkers.</td>
</tr>
<tr>
<td>CT-16</td>
<td>$3,000</td>
<td>--</td>
<td>To develop toys to sell to schools at cost. There is no profit here, but, we can gain goodwill.</td>
</tr>
</tbody>
</table>

With only $200,000 to be allocated, it is clear that you cannot finance all your projects. You should think about priorities before attending the negotiations.
YOU WILL ACT AS THE R&D MANAGER OF ADULT GAMES

This is one of your first assignments, and you are anxious to make a good impression. For the past few years, the growth of Lancer Company has come almost totally from increased sales in adult games. Accordingly, the R&D budget for Adult Games has increased steadily. Last year, the budget was about $98,000.00. At the present time, it seems that if Lancer is going to continue to grow, the Adult Games line must stay ahead of its competition. This can only be accomplished through increased expenditures for R&D.

You have a number of projects which should make money for your department, and you would like to get as many approved as possible. You hope to maintain the strong position of Adult Games by working on profitable projects this coming year.

PROJECTS

The information you have concerning your project is known only to you. The other manager has no idea of how many projects you can work on or the profits you expect for each project. You may disclose as much or as little of your information as you like. You may use your information in any way you wish to achieve your goals, BUT you cannot change the cost estimates. The estimates reflect the lowest possible costs of completing the projects. The expected profit figures are reasonably good estimates but are slightly conservative.

Your staff has identified five projects you can work on during the coming year. These are the only projects you can propose as it is too late to develop new ideas. The projects are listed below.
ADULT GAMES PROJECTS

<table>
<thead>
<tr>
<th>Project Code</th>
<th>Expected Cost</th>
<th>Profit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AG-03</td>
<td>$36,000</td>
<td>$5,000</td>
<td>To develop games for college classrooms.</td>
</tr>
<tr>
<td>AG-06</td>
<td>$31,000</td>
<td>$4,000</td>
<td>To develop a new game in non-verbal communication</td>
</tr>
<tr>
<td>AG-08</td>
<td>$72,000</td>
<td>$9,800</td>
<td>To develop games for management development workshops.</td>
</tr>
<tr>
<td>AG-09</td>
<td>$28,000</td>
<td>$3,400</td>
<td>To develop deluxe versions of various games</td>
</tr>
<tr>
<td>AG-10</td>
<td>$16,000</td>
<td>$1,000</td>
<td>To develop new packaging for our Movie game</td>
</tr>
</tbody>
</table>

With only $200,000 to be allocated, it is clear that you cannot finance all your projects. You should think about priorities before attending the negotiations.
LANCER COMPANY

BUDGET REQUEST

<table>
<thead>
<tr>
<th>PROJECTS (listed by Code No.)</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>-----------------------------</td>
<td>--------</td>
</tr>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL (not to exceed $200,000)</td>
<td>---------</td>
</tr>
</tbody>
</table>

If you could not agree, write NO AGREEMENT here:

----------------------------------------

SIGN BOTH NAMES CLEARLY:

----------------------------------------
CT: Well I guess we're supposed to decide how to divide up this money.

AG: Yeah...how are we going to do it...they said we weren't supposed to show you our project sheet.

CT: Yeah...well have you done this before?

AG: What? ...you mean this case?...or....

CT: Yeah....

AG: No.....have you?

CT: Yeah we did it a few weeks ago in a class I took.

AG: So..I guess that means you have a big advantage eh?

CT: Oh....I don't think so....I mean it's pretty straightforward don't you think?

AG: Yeah, I guess......well we probably should get started eh....they said we only had 15 minutes. So what is it? ...you have a sheet like mine with a list of projects ...and we have to decide how to divide up a total of 200,000 ...right?

CT: Yep...and we're supposed to try to maximize profits for the company ....what is it...Lancer?

AG: Right...I put together the projects which will maximize profits for Adult Games and ....

CT: Yeah well you know that when we both take our most profitable projects the total cost is going to be over the limit so maybe we should try to look at options which will total less than 200,000....

AG: Sure...ok....but how do we know that?...I mean what the total will be...
CT: Well I've done this before right, and that's the way they allocate the costs....

AG: Sure but how do you know the amounts aren't different this time? I mean they might be different...I don't think we should just assume they are the same.

CT: Well they look exactly the same to me............. Anyway we have to start somewhere I guess, so what have you got down there for a total?

AG: Well I think that we should probably try to divide the total available as evenly as possible.....

CT: Ok...so what do you have?

AG: Well.. If I can do two projects I will maximize the profits available......

CT: Ok...so whats it gonna cost?

AG: Well..I would need just a little more than 100,000..

CT: (chuckle)..really?..I am in the very same position...so I guess that is the point of this eh?......... to negotiate some kind of compromise....Why don't we start by taking a look at the cost-benefit ratio for the projects each of us want and .....if the goal is to maximize the profit for the company it should be possible to find a solution....

AG: Ok by me....lets take a look...

A few minutes are spent discussing the profit and costs associated with each individual's selected projects.

AG: Well...the overall profit from my projects is biggest so if we go with them It will maximize our outcome and if we went with yours, I would have to scratch one of mine with a big profit and replace it with something that isn't much better than break even.

CT: Yeah but if we go with your two projects, I will be in the same position ....in fact, I wouldn't even be able to utilize all of the money that was left over from your two..so that would even be a worse situation.
AG: Well...maybe I could use what you didn't...how much would be left?

CT: Uh..well..it wouldn't be much..but the point is it is not the best way for us to go if we want to maximize our resources.

| PAUSE |

CT: Well I suppose I could just do the one project with the biggest profit and than do a different second project so the total cost for the two of them would be 100,000... it would cut the profit but at least the funds would be split evenly......

AG: .......... Well..yeah but if we did that then I would also have to do something less profitable for my second project too and we would just be cutting our own throats, eh?

CT: .....Sure so we have to decide what are we trying to do I mean I think the point of this whole thing is to see if we can reach an agreement that is mutually beneficial..or....if we will each try to get the most despite the cost in overall profit....

| PAUSE | ......right?

AG: Right.. so...what we need to do is figure out a combination that will provide the maximum overall profit for the total cost.

CT: Ok, so lets forget about our big projects for a minute and look at the other possibilities that each of us has available and see what we come up with. Besides those two big profit makers what other options do you have?

They begin to develop a list of alternatives for Adult Games and then for Children's Toys. After the lists are completed they begin comparing the possible different combinations and come up with several different alternatives.
AG: Well it looks like we have can maybe each hang on to our one big profit maker and then put together a combination of smaller projects which will still give each of us pretty much the same net profit.

CT: Yep what about this as a possibility, we go with my big project which gives us 10,000 profit right ...and then throw in your three projects which give us another ...uh..12,400...and mine with 2500 that gives us uh....a total of 24,900 profit ...almost equally divided between us.....and costs a total of..uh..195,000.. ..not bad eh.... and we can split the 5,000 left over ...or if I take 3 I can do one more project...with no profit but goodwill for the company ...and you could take the other 2. What do you say?

AG: Well that's a possibility...but we could do better if we were to go with my two biggies and your smaller ones our profit would be bigger right ..... and that's the point ...right?

CT: But the profits would be largely in your division that way...It wouldn't be nearly even. If we go with the first combination the total profit is not much smaller and the split between departments is almost exactly equal....and we are supposed to attempt to maximize the profit for each of our departments as well..right?

AG: Sure....but if it reduces the total its hurting us both in the long run....

CT: If it was a big difference...sure...but this wouldn't make much impact and it allows us to come away with an almost equal distribution of the funds ..... everybody wins...  

AG: Well.... its not quite equal.....you would be getting 103 and I would get 97....

| PAUSE |

CT: Hey if that's all it is ...its easy. You take the whole thing ... the extra 5,000 doesn't mean any more profit for either of us I just thought that since I had that 3,000 project and you didn't have anything you could use it for..... it made sense ....just a sort of goodwill thing for the company...... Hell it's not worth
spending more time on ...lets put it all in your budget and get out of here before we run out of time....

AG: Well no that's not going to make any real difference if we are going to go with this we might as well put the 3 in your budget I guess.

CT: Hey, whatever you want...it doesn't matter to me either way lets just get it down and get out of here ...what do you say?

AG: [laughs]...yeah lets do it..
EXAMPLES OF SOME POSSIBLE PROFITS AND RESULTING SCORES FROM SIMULATED NEGOTIATION TASK

<table>
<thead>
<tr>
<th>EXAMPLE 1</th>
<th>PROFIT</th>
<th>SUBJ. SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Games: Project - 08</td>
<td>- = 13,200</td>
<td>- = 25,700</td>
</tr>
<tr>
<td>Child. Toys: Project - 12</td>
<td>- = 12,500</td>
<td>- = 25,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EXAMPLE 2</th>
<th>PROFIT</th>
<th>SUBJ. SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Games: Project - 08</td>
<td>- = 13,800</td>
<td>- = 26,600</td>
</tr>
<tr>
<td>Child. Toys: Project - 12</td>
<td>- = 12,800</td>
<td>- = 25,600</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EXAMPLE 3</th>
<th>PROFIT</th>
<th>SUBJ. SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Games: Project - 08</td>
<td>- = 14,800</td>
<td>- = 25,600</td>
</tr>
<tr>
<td>Child. Toys: Project - 12</td>
<td>- = 10,800</td>
<td>- = 21,600</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EXAMPLE 4</th>
<th>PROFIT</th>
<th>SUBJ. SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Games: Project - 08</td>
<td>- = 10,800</td>
<td>- = 25,600</td>
</tr>
<tr>
<td>Child. Toys: Project - 12</td>
<td>- = 14,800</td>
<td>- = 29,600</td>
</tr>
</tbody>
</table>
EXAMPLE 5

Adult Games: Project - 08
|---= 10,800
10

=------= 21,600 21,600

Child. Toys: Project - 12
|-- = 10,800
14

210
APPENDIX 3

NEGOTIATION STYLE SURVEY INCLUDING
ADAPTED I.A.R. QUESTIONNAIRE

Negotiation Style Survey ......................... 212
Post Training Questionnaire ..................... 216
Adapted I.A.R. Scale ............................ 217
The following questionnaire is part of a survey of management negotiation styles. The survey is not being conducted by the British Columbia Institute of Technology, nor will the data be available to British Columbia Institute of Technology personnel. This survey is being conducted as part of a research project at the University of British Columbia, the data collected will be coded immediately and then the original data will be destroyed. Following this destruction, it will be impossible for anyone to connect any information with you personally. You are not required to complete the questionnaire and failure to do so will have no effect on your standing in any course at the British Columbia Institute of Technology. In fact you may simply turn in the blank form and no one will know whether you completed it or not. Your cooperation in completing the questionnaire is requested however in order to assure a large enough sample to make the data collected meaningful. A small percentage of those who complete the questionnaire may be requested to take part in a brief follow-up session (approx. 1/2 hour) at a later date, however completion of the questionnaire in no way obligates you to take part in such a follow-up session. Completion of the questionnaire will be interpreted as indicating a willingness on your part to allow data collected to be used in the manner described.
NAME: 
SEX: 
AGE: 
OCCUPATION: (title and brief description) 

YEARS IN PRESENT POSITION: 

SIZE OF ORGANIZATION: 
(indicate the size of the organization which employs you, small=less than 50 employees medium=50-100; large=100+) 

Small    Medium    Large
SECTION A:

As part of your duties you are required to negotiate with the head of another department concerning the distribution of a shared resource (example: worker time, equipment use, funds, etc.) the person with whom you have to negotiate is a long time employee of the organization and is head of a department which is much larger than yours. Officially your position in the hierarchy of the organization is approximately equal, however unofficially it is recognized that the person you must negotiate with has considerably more power than you.

If you have never been in a situation similar to this in your work, try to imagine yourself in the situation, then respond to the questions on the following pages.
1. In the situation outlined on the previous page, predict which individual would attain the greatest advantage (i.e., which would end up with the greatest share of the resource in question).
   A) myself.
   B) the head of the other department.

2. Circle one of:
   A) There are "situational factors" present in negotiations which as this (e.g., the other person's experience, or power, or the complexity of the task) which determine the outcome regardless of the individual's skill or effort.
   B) The final outcome of such negotiations is ultimately determined by the effort or skill of the individual negotiator.

3. My past experience in negotiations would lead me to classify myself as:
   A) an experienced, expert negotiator.
   B) a skillful but relatively inexperienced negotiator.
   C) a moderately skillful negotiator.
   D) a novice, inexperienced negotiator.
Post Training Questionnaire

1. My evaluation of this task is (circle one):

   A) I was more successful than my negotiating partner.
   B) My negotiating partner was more successful than me.
   C) Neither party was more successful than the other.

2. I would rate my degree of satisfaction with the outcome achieved (circle number which best describes your degree of satisfaction.)

<table>
<thead>
<tr>
<th>Dissatisfied</th>
<th>Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
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<td>3</td>
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<tr>
<td>4</td>
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<td>5</td>
<td></td>
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<tr>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

3. The most important factor in determining the outcome of this exercise was: (circle one)

   A) my ability or personality traits.
   B) the amount of effort I put into it.
   C) factors in the situation (E.G. the difficulty of the task; my partner's skill, luck, etc.)

4. How likely would it be that a similar outcome would occur if you were to engage in a similar task in the future?

<table>
<thead>
<tr>
<th>Very Likely</th>
<th>Very Unlikely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td></td>
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<tr>
<td>3</td>
<td></td>
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<tr>
<td>4</td>
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<td>5</td>
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<tr>
<td>6</td>
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</tbody>
</table>
In the following situation, you are to circle either (a) or (b) depending upon which alternative you believe is most accurate. There is no right or wrong answer. Some people might choose one alternative while others would choose the other. It may be difficult to decide which is most accurate in some instances, however, you are asked to circle that which you think is most generally true in your situation.

Please answer all questions and try to focus your attention on what is most accurate for you, personally, regardless of how you think others might respond.
1) If you were to describe your job, would you say it was:
   a) always stimulating and exciting.
   b) sometimes stimulating, but sometimes routine and repetitive.

2) If you were promoted at work would it probably be:
   a) because of seniority.
   b) because of the high quality of work that you did.

3) When you perform a particular task well at work is it more likely to be:
   a) because of your knowledge and special skills.
   b) because most of the tasks you do at work are quite simple.

4) When you have difficulty understanding a particular task at work is it likely to be:
   a) because it wasn't explained adequately.
   b) because you didn't listen carefully enough to the instructions.

5) When you read something and then can't remember much of it, is it usually:
   a) because it wasn't well written.
   b) because you weren't interested in it.

6) When you have personal business to perform during the day, do you:
   a) make it a rule to do it only on your own time (i.e. at lunch, during coffee breaks, or after work).
   b) occasionally do it on company time
7) When you receive a compliment from your superior on your work performance, is it more likely:
   a) because your work is especially good.
   b) because s/he is in a good mood.

8) If you performed better than usual on a particular task would it probably be because:
   a) you tried harder than usual.
   b) you got some assistance from somebody else.

9) When you lose at a game of cards or checkers or some such contest is it usually because:
   a) the other player is good at the game.
   b) you don't play the game very well.

10) Suppose someone thinks you aren't very bright or clever:
    a) you can change their opinion if you really try.
    b) some people will think that way no matter what you do.

11) If you solve a puzzle quickly is it usually:
    a) because it wasn't a very difficult puzzle.
    b) because you were very careful in working on it.

12) If you were to describe your normal mood at work would you say you were:
    a) always cheerful and optimistic.
    b) usually cheerful, but occasionally discouraged and unhappy.

13) If somebody suggests you are dumb is it most likely that the reason they say it is:
    a) because they are mad at you.
    b) because you did something which was not very smart.
14) Suppose you decide to work really hard to attain a certain position but fail to get it. Would this be most likely due to the fact that:

a) you didn't work hard enough.

b) you needed some assistance at some point which others did not give you.

15) When you learn a task quickly is it usually:

a) because you concentrated on it.

b) because the explanation was very clear.

16) If your superior says "Your work is fine" is it likely because:

a) "bosses" usually say this kind of thing to encourage subordinates.

b) you are doing very good work.

17) When you find a task at work especially difficult is it likely because:

a) you didn't learn enough about it before taking it on.

b) it is a very hard task.

18) If you were able to make changes in your present work situation would you:

a) probably make few changes because your present situation is quite satisfactory.

b) probably change a number of things which need improving.

19) When you forget something you have been told is it likely:

a) because it wasn't explained adequately.

b) because you didn't try to remember.
20) Suppose your superior asked you a particularly difficult question and you weren't sure of the answer, but you replied as if you knew and your answer was accepted. Is this likely to be because:

a) your superior didn't really care what kind of answer was given.

b) your answer was the best one available.

21) When you read something and remember most of it, is it usually:

a) because you were especially interested in it.

b) because it was especially well written.

22) If someone tells you that you are acting silly and not thinking clearly is it more likely because:

a) something in particular that you did.

b) they are in a bad mood.

23) When you don't perform a task well at work, is it likely because:

a) the task was especially difficult.

b) you did not prepare yourself adequately to perform it well.

24) When you are at work do you find that:

a) your mind occasionally wanders to things that are not really related to work.

b) you are almost always concentrating on the task which you are performing.

25) When you win at a game of cards or checkers or other similar game is it most likely:

a) because you play well.

b) because your opponent does not play well.
26) If people think you are bright and clever is it more likely:
   a) because they like you.
   b) because you usually act that way.

27) If you failed to gain a promotion you were due for would it probably be because:
   a) your superior didn't like you.
   b) your work was not good enough.

28) Suppose you didn't perform a particular task as well as you usually do, would this probably be because:
   a) you weren't as careful as usual.
   b) there was some distraction which kept you from working on it as you usually do.

29) When you are not feeling very well, but are not really sick, do you:
   a) occasionally take a day (or half of a day) sick leave.
   b) always go to work and hope you will feel better in a while.

30) If one of your co-workers were to tell you that they thought you were very smart, is it likely because:
   a) you have come up with some really good ideas.
   b) they like you.

31) Suppose you had achieved some position which you had been aiming at for some time. Would it be because:
   a) others had been willing to help you when you needed it.
   b) you had worked very hard.
32) If you were to evaluate the things that were important to you in your present job:
   a) money would not be an important factor.
   b) money would be an important factor.

33) Suppose your superior tells you that your work is unsatisfactory, is this likely due mainly to the fact that:
   a) your work has not been very good.
   b) your superior is in a bad mood.

34) Suppose you are instructing a co-worker and he/she is having difficulty learning the task, is this most likely because:
   a) they were unable to understand the task.
   b) you were unable to explain the task well.

35) When you find your tasks at work easy, is it usually:
   a) because you have been given easy tasks to perform.
   b) because you analyzed them carefully before you began.

36) Suppose you have a choice between two tasks, one of which is dull and repetitive and one stimulating and interesting. You know that if you do one of them somebody else will do the other. Would you most likely:
   a) do the boring one so somebody else doesn't have to.
   b) do the interesting one.

37) When you remember how to perform a specific task at work, is it usually:
   a) because you made a special effort to remember it.
   b) because the person who showed you how made a special effort to explain it well.
38) If you can't solve a puzzle is it more likely because:
   a) you are not good at working out puzzles.
   b) the instructions are somewhat confusing and unclear.

39) When you go to work each day would you describe yourself
   a) as always looking forward to the days work.
   b) as sometimes wishing you could just forget about work for the day.

40) If someone you admire compliments you, is it more likely because:
   a) they are in a good mood.
   b) because of something in particular that you did.

41) Suppose you were explaining something to a friend and she/he catches on very quickly, would this likely be:
   a) because you explained it very well.
   b) because your friend was clever and able to understand easily.

42) Suppose your superior asks you to solve a particularly difficult problem and you are uncertain of the solution but supply an answer anyway. Later your superior indicates that she/he is not pleased with the answer you gave. Is this likely to be: )
   a) because she/he is particularly hard to please.
   b) because you answered too quickly.

43) If your superior was to say to you "try to improve your work", would it be because:
   a) this is something that they might say to anyone in order to motivate them to work harder.
   b) your work had not been as good as it usually is.
44) When you leave work each day would you describe yourself as:

a) always having a good feeling about what you had accomplished that day.

b) sometimes having a good feeling about what you had accomplished that day.
APPENDIX 4

FIGURES AND TABLES
### TABLE 21

**Distribution of Male and Female Subjects by Treatment Groups**

<table>
<thead>
<tr>
<th>Group</th>
<th>Male</th>
<th>Female</th>
<th>Tot.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>15</td>
<td>11</td>
<td>26</td>
</tr>
<tr>
<td>B</td>
<td>16</td>
<td>10</td>
<td>26</td>
</tr>
<tr>
<td>Tot.</td>
<td>31</td>
<td>21</td>
<td>52</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Group</th>
<th>Male</th>
<th>Female</th>
<th>Tot.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>15</td>
<td>11</td>
<td>26</td>
</tr>
<tr>
<td>D</td>
<td>17</td>
<td>9</td>
<td>26</td>
</tr>
<tr>
<td>Tot.</td>
<td>32</td>
<td>20</td>
<td>52</td>
</tr>
</tbody>
</table>

### TABLE 22

**Repeated Measures ANOVA Instructors by Treatment**

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
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<tbody>
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<td>Between</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Treatment (A)</td>
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<td>169022464</td>
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<tr>
<td>Instructors (B)</td>
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<td>.28</td>
</tr>
<tr>
<td>AB</td>
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<td>.76</td>
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<tr>
<td>Within</td>
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<tr>
<td>Trials (C)</td>
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<tr>
<td>Within</td>
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</tbody>
</table>

*p<.10
FIGURE 14

Experimental Group: Prediction - Attribution - Performance - Pattern

<table>
<thead>
<tr>
<th>Prediction</th>
<th>Attribution I</th>
<th>Performance I</th>
<th>Attribution II</th>
<th>Performance II</th>
<th>Attribution III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success</td>
<td>Internal F. (18)</td>
<td>Success (12)</td>
<td>--&gt;</td>
<td>Intern. F (12)</td>
<td>Success (9)</td>
</tr>
<tr>
<td>Failure</td>
<td>Internal F. (18)</td>
<td>Fail (6)</td>
<td>--&gt;</td>
<td>Intern. V (4)</td>
<td>Failure (4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>External (2)</td>
<td>Failure (2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Failure</td>
<td>External (16)</td>
<td>Success (10)</td>
<td>--&gt;</td>
<td>Intern. F (10)</td>
<td>Success (8)</td>
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</tbody>
</table>

*Subjects who failed on Performance I and succeeded on Performance II*
FIGURE 15

Traditional Group: Prediction - Attribution - Performance - Pattern

<table>
<thead>
<tr>
<th>Prediction</th>
<th>Attribution I</th>
<th>Performance I</th>
<th>Attribution II</th>
<th>Performance II</th>
<th>Attribution III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success</td>
<td>Internal F. (18)</td>
<td>--</td>
<td>Success (11)</td>
<td>--&gt; Intern. F (11)</td>
<td>--</td>
</tr>
<tr>
<td>Failure</td>
<td>Internal F. (18)</td>
<td>--</td>
<td>Fail (7)</td>
<td>--</td>
<td>External (6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>--</td>
<td>Success (13)</td>
<td>--&gt; Intern. F (5)</td>
<td>---</td>
</tr>
<tr>
<td>Failure</td>
<td>External (16)</td>
<td>--</td>
<td>Fail (7)</td>
<td>--</td>
<td>Internal F (2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>--</td>
<td>Success (9)</td>
<td>--&gt; Internal F (4)</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td></td>
<td>--</td>
<td>Failure (2)</td>
<td>---</td>
<td>External (5)</td>
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