EFFECTS OF TRAINING IN PROBLEM-SOLVING SKILLS
ON PERCEIVED LOCUS OF CONTROL

by

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ABSTRACT

Relationship treatment programs have proliferated in the last decade. These programs stress the development of specific interpersonal skills. Many studies have examined the effect of relationship treatment programs on overt behaviors, but few have assessed the impact these programs have on underlying perceptions.

Consequently, the purpose of this study was to examine the effect of an eight-week mutual problem-solving skills course on perceived locus of control. Hypotheses were formulated concerning individuals' posttreatment performances on the Levenson Locus of Control Scale.

Premarital couples were recruited from a southwestern university. Twenty-six couples participated in a mutual problem-solving training program (experimental group), while twenty-eight couples took part in a relationship discussion group (contact control group).

It was found that the experimental group, relative to the control group, did not alter their internality or chance orientations, but did demonstrate a greater decrease in scores on the powerful others index.
CHAPTER 1

INTRODUCTION

Relationship treatment programs designed to enhance relationships through interpersonal communication have proliferated in the last decade. Examples of such programs include assertiveness training (Cotler and Guerra 1976; Shoemaker 1977), problem-solving skill courses (Harrell and Guerney 1976; Strong 1975), communication skills education (Clarke 1970; Van Zoost 1973) and many others. Olson (1976) observes that certain trends are evident among these intervention programs.

One such trend is the increased emphasis on both system and learning theories. A relationship between two individuals is considered a subset of a larger interpersonal system. A particular problem in the relationship may be symptomatic of a basic difficulty, e.g., poor communication, elsewhere in the system. Though the approach and techniques utilized by various relationship treatment programs may differ, the common goal of the programs is to overcome both the specific and the basic problems affecting the relationship subsystem.

Furthermore, Olson notes that treatment programs do not take a global approach to relationship treatment, but instead stress the development of specific skills such as effective speaking and listening. A global approach would attempt to deal with relationship
satisfaction per se; today's intervention programs are more likely to focus on the interpersonal skills which are believed to be the foundation for relationship satisfaction.

Education models have become increasingly popular. The wide range of didactic techniques incorporated in contemporary programs includes behavior rehearsal, role playing, and homework. Program goals are outlined in terms of specific behaviors and fixed contracts are often employed. Immediate goals usually include an increase in target skills, while long-term goals aim for the enrichment of the current relationship and the prevention of future interpersonal problems.

The research concerning these programs deals primarily with the evaluation of the several techniques used to teach interpersonal skills. Several studies have assessed the effectiveness of role playing and behavior rehearsal (Friedman 1971; Olson 1976; McFall and Marston 1970). Other investigations have concentrated on determining the overall success of various programs in changing interpersonal behaviors (Guerney 1977). Such studies have supplied evidence that many relationship treatment programs do indeed cause a change in overt behaviors.

Studies dealing with alterations at the perceptual level have generally been limited to those which assess perceptual changes within the relationship context. For example, Guerney (1977) measured the effect of a relationship treatment program on marital adjustment and satisfaction. Likewise, Ginsberg and Vogelsong (1977) evaluated
change in relationship quality by measuring change in perceived trust, empathy, warmth, and genuineness.

However, social learning theory suggests that consideration should also be given to the individuals' perceptions which extend beyond the relationship context (Bandura 1971; Lefcourt 1966). The social learning theorists suggest that people possess certain underlying perceptions which may be reciprocally related to overt behaviors. Relationship treatment programs often focus on one subset of an individual's behavioral repertoire, such as problem-solving and decision-making skills. This subset of behaviors may not be associated with the entire set of perceptions, yet research does seem to indicate a possible link between problem-solving skills and perceived locus of control.

Locus of control is the perception which represents the "probability held by the individual that a certain reinforcement will occur as a function of a specific behavior on his part" (Rotter, Chance and Phares 1972, 12). Stated in other terms, the perceived locus of control determines whether or not individuals consider events to be contingent upon their personal behavior (Lefcourt 1966). Studies demonstrate that individuals are more likely to exhibit a certain behavior when they perceive a causal link between the behavior and subsequent events (Phares 1976; Bandura 1971; James and Rotter 1958; Lefcourt 1966).

Locus of control is defined further as a generalized expectancy which cuts across behaviors and situations (Phares, Ritchie and
Davis 1968). The construct is usually discussed in terms of internal or external dimensions (Rotter 1966). Lefcourt explains the distinction in this way:

Internal control refers to the perception of positive and/or negative events as being consequences of one's own actions and thereby under personal control; external control refers to the perception of positive and/or negative events as being unrelated to one's own behavior and therefore beyond personal control (1966, 186).

External control has been further delineated to differentiate between individuals who believe that the environment is ordered but under the control of powerful others and people who perceive the world to be unordered and entirely under the control of chance, fate, or luck (Levenson 1972).

Research lends credence to Rotter's assertion that locus of control is a perception related to overt behavior. Certain sets of behavior have been repeatedly correlated with perceived locus of control. For example, internals often demonstrate greater effort to obtain positive outcomes and to master their environment (Phares 1976). They are also more likely to confront problems directly and to actively seek and utilize information pertinent to solving problems (Phares et al. 1968; Seeman and Evans 1962). Internals exercise more self-control, strive for achievement and work persistently toward valued outcomes (Lefcourt 1966; Hersch and Scheibe 1967; Phares 1976).

On the other hand, an external perception has been associated with an entirely different set of behaviors. Joe (1971, 623) characterized externals as being "relatively anxious, aggressive, dogmatic,
less trustful and more suspicious of others, lacking in insight, and having low needs for social approval." Externals appear to be less competent and less confident than internals (Phares 1976). Hersch and Scheibe (1967) found that externals were more likely to describe themselves in unfavorable terms.

There exists a multitude of studies focusing on behavioral correlates of locus of control. Phares states:

> It is clear that believe in an internal locus of control can provide individuals with a greater sense of control and thus a greater potential for power and efficacy. The next step is finding ways of inculcating such beliefs . . . this may prove to be the most important aspect of locus of control (1976, 167).

Only recently have studies begun to investigate means for inducing change in perceived locus of control. What little work has been completed demonstrates that locus of control can be altered through action-oriented programs which increase individuals' insight and enhance their ability to interact effectively with their environment (Dua 1970; Gottesfield and Dozier 1966; DeCharms 1972).

Locus of control is reflected in personal efficacy. The skills leading to such competence are the center of relationship treatment programs. The acquisition of these interpersonal skills enables individuals to structure their behavior in a manner which will elicit desirable events. These skills are tools to use in coping with and mastering the environment. They increase individuals' competencies and enable them to display behaviors associated with people who perceive an internal locus of control.
Research has demonstrated that relationship treatment programs are effective in changing overt behaviors (Guerney 1977; Jacobson 1978; Strong 1975). What has not been determined is whether or not this behavioral change is associated with a concomitant alteration in perceived locus of control. The present study will deal with this issue.

Statement of the Problem

The purpose of this study is to determine if a relationship treatment program can induce change in an individual's perceived locus of control. Specifically, the present study will examine the effect of an eight-week mutual problem-solving skills course on the internal, powerful others, and chance dimensions of the Levenson Locus of Control Scale.

The problem-solving skill course encourages individuals to confront problems directly and to actively seek a solution. Participants are taught to incorporate the following steps in order to successfully manage relationship conflict (Ridley and Harrell 1976, 23-26):

- Listen carefully and express own feelings
- Explore problem area
- Locate and define problem in relationship terms
- Identify how each partner contributes to the problem
- State goal in terms of more of or less of specific behavior
- Generate alternative solutions
- Evaluate alternative solutions
- Select best solution
- Implement solution
- Evaluate progress

Collectively, these ten steps foster a sense of personal control by developing skills essential to conflict management and
decision making. Possessing these skills enables an individual to assume an active and effective role in resolving relationship problems. These skills augment an individual's ability to obtain desired outcomes in interpersonal relationships and thus lead to a display of behaviors which research demonstrates to be associated with an internal locus of control.

Because both the overall approach and the behavior outcomes of the problem-solving skills course are congruent with the set of behaviors identified as correlates of an internal locus of control, it is anticipated that participation in the course will induce an increase in the internality scores on the Levenson Locus of Control Scale. Conversely, it is predicted that the powerful others and chance scores of the Levenson Scale will decrease following participation in the problem-solving skills course.

A decrease is expected in both of these latter dimensions, even though the two are distinct. A person perceiving the locus of control to be with powerful others views the world as structured; on the other hand, an individual believing in chance deals with an unstructured world. The commonality of these two dimensions is that both place events beyond personal control. Furthermore, in neither case does the individual believe his behavior determines what occurs in his environment (Levenson 1973).

The problem-solving skills course teaches the opposing view by fostering the development of attitudes and skills which increase personal efficacy in interpersonal relationships. The ten-step program
demonstrates to individuals that their behavior can indeed determine the outcome of relationship, conflict. For this reason, it is suggested that the increase in problem-solving skills will be reflected in decreased scores on the powerful others and chance dimensions of the Levenson Locus of Control Scale.

Hypotheses

1. Participants in a mutual problem-solving skills course will demonstrate a greater increase in scores on the internal dimension of the Levenson Locus of Control Scale than the contact control group.

2. Participants in a mutual problem-solving skills course will demonstrate a greater decrease in scores on the chance dimension of the Levenson Locus of Control Scale than the contact control group.

3. Participants in a mutual problem-solving skills course will demonstrate a greater decrease in scores on the powerful others dimension of the Levenson Locus of Control Scale than the contact control group.

Importance of Study

Studies indicate that the construct of locus of control is related to overt behavior. From the studies which examine various behavioral correlates of locus of control, it is inferred that an internal orientation is likely to enhance an individual's ability to cope
competently with his environment. Yet there is a paucity of research dealing with methods of inducing change in locus of control.

Likewise, relationship treatment programs have been demonstrated to be effective in changing overt interpersonal behaviors. Yet little is known of the impact of such programs on underlying perceptions.

This study offers an insight to both issues by examining the effect of a problem-solving skills course on locus of control. It will help determine whether or not programs designed to alter overt behaviors can be utilized to implement change in underlying perceptions, namely locus of control.
CHAPTER 2

REVIEW OF THE LITERATURE

This chapter presents the literature which is related to the present study. The chapter is divided into two sections: 1) relationship treatment programs; 2) locus of control.

Relationship Treatment Programs

In recent years, treatment of relationship discord has frequently been aimed at improving communication between intimates. In order to enhance interpersonal communication, individuals are taught very explicit skills in both speaking and listening. For example, couples learn to clarify communication by distinguishing between "I" and "You" messages and by expressing interpersonal directives in behavioral terms. Instead of simply stating, for example, that one's partner does not seem to care, individuals learn to articulate how it is they feel and what specific behavior they would like changed (Ridley and Harrell 1976).

As opposed to some forms of therapy, relationship treatment programs typically do not try to "do something to people that changes them," but rather attempt to "give them skills that they may use or not use as they see fit to change themselves" (Guerney 1977, 19). The individuals' behavioral repertoires are augmented through the addition of interpersonal skills; personal efficacy is consequently
increased. Not only is the present situation managed, but skills are acquired which can be utilized when the couple confronts conflict in the future. In this way, relationship treatment programs are considered to be preventative in nature (Olson 1976).

Relationship treatment programs are generally structured in the form of an educational model. Participants are provided with the rationale for their particular skill program. Trained leaders explain and demonstrate the specific skill or skill steps. Participants then practice the skill through activities such as behavior rehearsal or role playing. Leaders and other group members observe and provide constructive feedback for the couple. In many instances, the participants are also given an assignment to be completed at home (Ridley and Harrell 1976; Guerney 1977; Olson 1976).

Research concerning relationship treatment programs has generally been two-fold. The first set of studies has centered around the question of whether or not interpersonal skills can be taught. Though the effectiveness of individual programs attempting to accomplish this goal has varied, it is apparently possible to teach the skills which enhance interpersonal relationships. For example, studies by Eisler and Hersen (1973) and Olson (1976) indicate that assertive behavior can be effectively learned and applied to interpersonal communication. Intagliata (1978) instructed an alcoholic population in interpersonal problem-solving skills and found that a structured program can be an operative means for increasing conflict management abilities. Jacobson (1978) reported that communication skills training combined with
a problem-solving skills course is an effective method for improving interpersonal skills.

The second set of research has attempted to assess the impact of relationship treatment programs on individuals' perceptions of the relationship. Most prevalent in this class of studies are those investigating the link between improved interpersonal communication and relationship adjustment and satisfaction. Navran (1967) and Murphy and Mendelson (1973) found that marital satisfaction and openness of marital communication were closely associated. Jacobson (1978) reported that poor communication was related to poor conflict management and relationship dissatisfaction. Guerney (1977) demonstrated that improvement in communication did indeed increase marital satisfaction. Ginsberg and Vogelsong (1977) related the quality of relationship adjustment to the communication of trust and empathy. The findings from these and similar studies seem to indicate that communication and interpersonal skills are associated to some degree with perceived relationship satisfaction and adjustment.

Few studies have been conducted to assess the impact of relationship treatment programs on individuals' perceptions outside of the relationship context. Does the improvement in interpersonal skills and the increase in personal efficacy, goals of many relationship treatment programs, alter more generalized perceptions held by individuals?

**Locus of Control**

To answer this question, it is logical to look first at social learning theory, as it forms the theoretical base for many relationship
treatment programs (Jacobson 1978). Social learning theory proposes a relationship between perceptions and overt behavior (Bandura 1971). One such generalized perception is the construct of locus of control. In a discussion of this psychological construct, Rotter states:

When a reinforcement if perceived by the subject as following some action of his own but not being entirely contingent upon his action, then in our culture, it is typically perceived as a result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him. When the event is interpreted this way by an individual, we have labeled this belief in external control. If the person perceives that the event is contingent upon his behavior, we have termed this belief in internal control (1966, 1).

Although locus of control is considered to be a generalized perception which cuts across both time and situations, it is also apparently subject to change (Phares 1976). One agent of change is simply natural events. For example, Penk (1969) studied children ages seven to eleven and found that internality generally increased with age. He suggests that since young children often have very limited control over their environment, it is reasonable to expect them to be externally oriented. As they mature, they become increasingly independent and competent, which consequently fosters an internal locus of control. Crandall and Katkovsky (1965) noted a similar trend in his study of school-age children. While still relatively external in the third grade, the students in grades eight through ten demonstrated a high degree of internality.

A second agent capable of inducing change in locus of control is accidental occurrences. In other words, change can be caused by
real-life situations not specifically intended to alter locus of control. Some of these accidental occurrences are historical in origin. For instance, Gorman (1968) studied supporters of Eugene McCarthy. After the 1968 Democratic National Convention, which did not go the way McCarthy backers had hoped it would, the group tended to have higher external scores than the norms would predict. Likewise, McArthur (1970) found that students who were eligible for the military draft via the lottery were more externally oriented than those not affected by the lottery.

A common element among accidental occurrences as change agents is the tendency for them to demonstrate a relationship between anxiety and change in locus of control. Kiehlbauch (1968) investigated this relationship in his study of reformatory inmates. Using a cross-sectional research approach, Kiehlbauch found that an increase in anxiety was often associated with an increase in externality. At the beginning and end of their sentences, inmates scored relatively high on measures of both externality and anxiety. At the middle of their reformatory stay, the inmates experienced a decrease in anxiety and movement toward a more internal orientation.

Kiehlbauch suggested that when the inmates first entered the reformatory, they were unfamiliar with the structure of their new environment and consequently felt out of control. As they became more familiar with their surroundings and the imposed limitations, they began to understand how the system worked. In this way, the inmates felt less anxious and more in control, a feeling reflected in their
increased scores of internality. But as they faced the prospect of reentering the outside world, they were once again forced to confront uncertainty. For this reason, their anxiety and externality again increased.

In a similar study, Levenson (1972) found that psychiatric patients increased their internality scores within one month of their hospital stay. Yet immediately prior to their release, the patients demonstrated a decreased belief in internal locus of control. As in the Kiehlbauch study (1968), Levenson hypothesized that the imminent release from the hospital caused increased anxiety and a greater feeling of lack of control.

Gilbert (1976) also demonstrated that an increase in anxiety may be accompanied by an increase in externality. According to Gilbert, real-life stress may cause an individual to feel a loss of control. Once the stress is removed, the individual is likely to experience an increase in scores of internality.

A third agent for inducing change in locus of control is deliberately contrived situations. Eisenman (1972) conducted an experiment in which the subjects were forced to rely on random guessing to manipulate the reinforcement. These subjects became more external than those individuals who were able to predict and control the reinforcements. Similarly, Brecher and Denmark (1969) found that college students who received very negative feedback on their exams had significantly higher external scores than did students in a control group.
A fourth agent of change may be therapeutic programs whose goals include "mastery over the environment and competence" (Levenson 1973, 397). Smith (1970) noted that internality seemed to increase as the patients began to be able to cope effectively with stress. Phares (1976) also reported that patients who improved in psychotherapy increased in internality to a greater extent than did an untreated control group.

Dua (1970) found support for the notion that as therapeutic programs assisted individuals in lowering their personal anxieties, scores of internality were likely to increase. Furthermore, Dua (1970) demonstrated that behavior-action programs which work toward expanding the behavior repertoire of an individual are more effective locus of control change agents than reeducative programs which are designed only to alter attitudes toward intimates.

A final agent of change is programs specifically designed to alter locus of control. DeCharms (1972) developed a program which aimed to strengthen an internal locus of control in a group of inner city teachers and students. This change program proposed to alter the perceived locus of control toward internality by teaching participants to do the following (DeCharms 1972, 97):

1. To determine realistic goals for himself;
2. To know his own strengths and weaknesses;
3. To determine concrete action that he can take now that will help him to reach his goals; and
4. To consider how he can tell whether he is approaching his goal, that is, whether his action is having the desired effect.
Both the teachers and students demonstrated a significant increase in internality after participation in this program. It is suggested that the incorporation of these four steps into other programs could likewise increase internality.

Nowicki and Barnes (1973) found that an internal locus of control was fostered in inner city adolescents through participation in a very structured summer camp program. The program was based on contingency reinforcement, emphasizing the relationship between an individual's behavior and subsequent events.

Since research indicates that the locus of control can indeed be altered, it is advantageous to know which dimension of locus of control is desirable. Research suggests that a strong case can be made for attempting to alter an individual's perceived locus of control in a more internal direction. As discussed previously in the introduction, internals are likely to possess more competence and self-confidence (Joe 1971). They are better able to interact positively with the environment and obtain desired outcomes more frequently (Phares 1976). Internals generally have better insight, are more trustful, less aggressive and less anxious (Joe 1971). They are able to confront problems directly and effectively resolve conflict (Phares et al. 1968). Internals exercise more self-control, strive for achievement and work persistently toward goals (Lefcourt 1976; Hersch and Scheibe 1967; Phares 1976).

In general, an internal locus of control is reflected in greater personal efficacy. It is logical to suggest that increasing
personal efficacy would therefore result in greater internality. Indeed, as was evidenced earlier, therapeutic programs which increased, e.g., coping skills, did also increase people's perceived internality.

Increased personal efficacy is a focal point in relationship treatment programs. Problem-solving skill courses, one type of relationship treatment program, attempt to increase personal efficacy by giving participants a set of skills appropriate for successful conflict management.

Jacobson (1978) reports that these programs have been successful in teaching participants the target skills. He states that "particularly promising is the combination of training in communication and problem-solving skills with instructions in contingency management procedures, especially contingency contracting" (Jacobson 1978, 442).

This combination is the basis for the problem-solving skills course incorporated in the present study. This skills course aims to improve the general communication style and conflict management and decision-making skills of premarital couples (Ridley and Harrell 1976).

Summary

A case can be made for suggesting that the problem-solving skills course will alter individuals' perceptions of locus of control toward an internal direction. First, the skills course incorporates elements of the change agents previously discussed. For example, the skills course decreases conflict-induced anxiety by giving participants
a specific method of mutual problem-solving. As suggested by Kiehlbauch (1968), Levenson (1972), and Gilbert (1976), a decrease in anxiety should be related to a change toward internality.

The subjects do not have to rely on random guessing to manipulate reinforcements; they learn to acquire an active role in eliciting desirable outcomes. Unlike the subjects in Brecher and Denmark's study (1969), the participants in the problem-solving skills course received positive reinforcement, which again should foster the development of an internal locus of control.

As Levenson (1974) suggested, the goal of many intervention programs is to increase an individual's personal competence and his ability to master his environment. This is likewise the intent of the problem-solving skills course. Therapeutic programs incorporating this goal have been shown to successfully change individuals' perceived locus of control (Smith 1970; Phares 1976; Dua 1970). Thus it can be anticipated that the problem-solving skills course could also function as a locus of control change agent.

Examining the characteristics of an individual possessing an internal locus of control further reinforces the idea that the problem-solving skills course has the potential for effectively inducing a change in locus of control. Internals apparently possess the interpersonal skills which are the center of the problem-solving skills program. The behavioral correlates of an individual believing in an internal locus of control are congruent with the behavioral outcome goals of the problem-solving skills training program. It is therefore
reasonable to suggest that training participants in interpersonal skills such as problem-solving may increase the degree to which they perceive events as being contingent upon their behavior.
CHAPTER 3

METHOD

This chapter describes the methods and procedures used in this study. The chapter is divided into the following sections: 1) subjects, 2) treatment, 3) experimental couple training, 4) dependent variable, and 5) procedure.

Subjects

Premarital couples were recruited from a southwestern university and surrounding community through posters, radio and newspaper announcements, as well as at an information table during class registration. On the basis of class schedules, twenty-six couples were assigned to a problem-solving skills course (experimental group) and twenty-eight couples were placed in a relationship discussion group (contact control group). The mean age of the subjects was 19.84 years, with the range being from 18 to 24 years.

Treatment

The experimental group was divided into small groups consisting of three or four couples along with a male and a female group leader. Each group received eight weekly three-hour problem-solving training sessions (24 hours total). The control group also met for three hours per week for eight weeks (24 hours total), but received
no specific training in mutual problem-solving skills. The control
group attempted to gain a better understanding of relationship func-
tioning through supervised group discussions and selected readings.
The group members were further encouraged to apply ideas gained from
the course to their relationships.

**Experimental Couple Training**

Group leaders were graduate students who had been trained in
problem-solving skills. In their didactic role, they explained and
demonstrated the skills being taught and responded to questions posed
by the participants. The problem-solving skills were introduced se-
quentially over the eight-week training period.

Ridley et al. (1977) identify and briefly describe the ten
steps incorporated in the problem-solving skills course. Similar
steps are described by Harrell and Guerney (1976).

**Step 1: Listen carefully and express own feelings.** This step
is structured so that at any one time, one person is speaking
and one person is listening. The person who is speaking ex-
presses his/her thoughts and/or feelings on a topic. It is
important that the speakers owns his/her feelings and does
not talk about something someone else feels or believes.
While one person speaks, the other person listens very care-
fully and then lets the speaker know they understand him/her.
This is accomplished by a verbal summarization of the speak-
er's message by the listener.

**Step 2: Explore problem area.** This step involves a discus-
sion about what is bothering one or both partners. The dis-
cussion should be characterized by each person stating how
they perceive the problem and disclosing their feelings and
thoughts about it.

**Step 3: Define problem in relationship terms.** In this step
it is important to determine if the stated problem affects
both persons and also if both persons desire that the problem
be solved. This is in contrast to an individual complaint or an individual request for change. The outcome of this step should be that both partners genuinely agree to work together toward a solution and that a specific relationship problem is stated.

Step 4: Identify how each person contributed to the problem. Each partner identifies how he/she perceives his/her contributions to the problem.

Step 5: State relationship goal. The couple determines what they want to see happen more often or less often. The goal must be stated to indicate what specific behaviors need to increase or decrease.

Step 6: Generate alternative solutions. This step involves locating some alternative ways of achieving the relationship goal.

Step 7: Evaluate alternative solution. Each alternative must be evaluated to determine if the alternative would achieve the goal and solve the problem, and if it is consistent with each person's values and resources.

Step 8: Select the best solution. The couple selects the best alternative solution and determines who would do what, when, where, and how often.

Step 9: Implement the solution. The couple establishes a trial period to test the viability of the selected alternative solution.

Step 10: Evaluate progress. At an agreed-upon time after the solution had been implemented (e.g., several days or weeks), the partners discuss and evaluate their progress. They answer the following questions: (1) Did we do what we agreed to do? (2) If yes, do we think it achieved our goals and do we want to continue with these behaviors? (3) If not, what went wrong? If the goal was not achieved, the partners return to step 5 (Ridley et al. 1977, 7-8).

**Dependent Variable**

The dependent variable, locus of control, was measured by the Levenson Locus of Control Scale. This scale is a modification of Rotter's (1966) internal-external scale. Rotter's scale is based on
the concept that perceived locus of control is on a continuum ranging from internal to external; thus Rotter's internal and external scores describe what is conceptualized as being opposite ends of the same continuum (Rotter 1966).

Levenson's scale was constructed as a factor analyzed measure of three different aspects of locus control: internal, powerful others, and chance. The rationale behind the tripartite differentiation was the reasoning that people who believe the world is unordered (chance) would perceive events differently from individuals who believe the world is ordered but under the control of powerful others (Levenson 1972). Levenson (1972) found the scales to operate differentially in respect to each other.

The Levenson Locus of Control Scale is a self-reported, paper and pencil measure. Each of the three dimensions (internal, powerful others, chance) consists of eight items in a Likert form. Subjects receive scores on each of the dimensions, the range for each being from 0 to 48 points. Each of the statements in the scale pertains to the subject himself and not to "people in general."

The reliability of the Levenson Locus of Control Scales compares to that of Rotter's I-E Scale, \( r = .64 \) for the I scale, \( .77 \) for the P scale, and \( .78 \) for the C scale. The test-retest reliability for a one week period were \( rs = .64, .74, .78 \) (Levenson 1974). The internal consistency was only moderately high, probably because the items represent a great variety in situations (Levenson 1973). None
of the items correlated significantly with the Marlowe-Crowne Social Desirability Scale (Levenson 1974).

**Procedure**

Each experimental and control couple completed a battery of pre and post paper and pencil measures, one of which was the Levenson Locus of Control Scale. The effectiveness of the problem-solving course itself was assessed by evaluating four 20-minute audio-taped conversations made by each experimental and control couple. The conversations consisted of two pretest and two posttest conversations. The first pretest and the first posttest conversations were based on role-playing situations that illustrated typical problems of dating couples. The second pretest and posttest conversations centered around current conflicts within each couple's relationship. The problem-solving skills of each partner were judged on the basis of his/her involvement in the ten-step process. Ridley et al. (1977) found that the experimental group showed a significant increase on all of the steps, while the contact control group did not (see Appendix A).

In the present study, it was hypothesized that as a result of the problem-solving skills training, the experimental group, relative to the control group, would demonstrate greater increases in scores on the internal dimension of the Levenson Locus of Control Scale. Furthermore, it was hypothesized that the experimental group, relative to the control group, would demonstrate greater decreases in scores on
the chance and powerful others dimensions of the Levenson Locus of Control Scale.

Analysis of variance of repeated measures was performed to determine if these hypotheses were to be rejected or accepted.
CHAPTER 4

RESULTS

Preliminary Analysis

A two-way analysis of variance (two-factor ANOVA) was performed on the pretest data to determine whether there were significant group or sex differences on the dependent measure prior to treatment.

On the internal dimension of the Levenson Locus of Control Scale the pretest analysis revealed no significant difference by group, F (.521) p = .472, nor by sex, F (.149) p = .700. The means and standard deviations for the pretreatment internal scores are presented in Table 1. Each of the three dimensions was reversed scored with a high score indicating a low orientation and a low score corresponding to high orientation.

There was not a significant pretreatment difference by group on the chance dimension, F (.072) p = .790, but there was a significant difference by sex, F (3.827) p = .053. The means and standard deviations presented in Table 2 indicate that the males were significantly more oriented to chance than were the females.

There was no significant pretreatment difference by group on the powerful other dimension, F (.931) p = .337, but again there was by sex, F (9.77) p = .002. Males exhibited a stronger powerful other
Table 1. Pretreatment Means and Standard Deviations on Internal Dimension of the Levenson Locus of Control Scale

<table>
<thead>
<tr>
<th>Sex</th>
<th>Experimental Group (N = 48)</th>
<th>Control Group (N = 54)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td>Males</td>
<td>19.54</td>
<td>4.30</td>
</tr>
<tr>
<td>Females</td>
<td>19.83</td>
<td>6.18</td>
</tr>
<tr>
<td>Male and Female Combined</td>
<td>19.69</td>
<td>5.27</td>
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</tbody>
</table>
Table 2. Pretreatment Means and Standard Deviations on Chance Dimension of the Levenson Locus of Control Scale

<table>
<thead>
<tr>
<th>Sex</th>
<th>Experimental Group (N = 48)</th>
<th>Control Group (N = 54)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>30.37</td>
<td>31.70</td>
</tr>
<tr>
<td>S.D.</td>
<td>6.14</td>
<td>5.78</td>
</tr>
<tr>
<td>Females</td>
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<td></td>
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<tr>
<td>Mean</td>
<td>33.50</td>
<td>32.74</td>
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<td>S.D.</td>
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<tr>
<td>Mean</td>
<td>31.94</td>
<td>32.22</td>
</tr>
<tr>
<td>S.D.</td>
<td>5.65</td>
<td>5.23</td>
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</table>
orientation than females, as evidenced by the means and standard deviations listed in Table 3.

**Main Analysis**

A two-way analysis of variance (two-factor ANOVA) was performed on the Levenson Locus of Control Scale posttreatment scores to determine if there were group or sex differences.

It was hypothesized that the experimental group, relative to the control group, would demonstrate increased scores on the internal dimension. The results did not support this hypothesis. No significant difference existed between the experimental and control groups, $F(1, 566) p = .454$. The difference by sex approached significance, $F(3, 128) p = .080$, but sex by treatment was not significant, $F(3, 231) p = .632$. The mean scores and standard deviations are listed in Table 4.

No support was found for the second hypothesis, which stated that the experimental group, relative to the control group, would demonstrate decreased scores on the chance dimension on the Levenson Scale. The differences between the experimental and control groups at posttest were not significant, $F(1, 722) p = .398$. Posttest difference by sex was significant, $F(11, 84) p = .001$, but sex by treatment was not, $F(3, 389) p = .534$ (see Table 5 for means and standard deviations).

The data did support the third hypothesis which stated that the experimental group, relative to the control group, would demonstrate decreased scores on the powerful others dimension of the Levenson Scale.
Table 3. Pretreatment Means and Standard Deviations on Powerful Others Dimension of Levenson Locus of Control Scale

<table>
<thead>
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<th>Experimental Group (N = 48)</th>
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<tr>
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<tr>
<td>Mean</td>
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<td>28.96</td>
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<tr>
<td>S.D.</td>
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<td>7.07</td>
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<td>Females</td>
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<td>Mean</td>
<td>33.79</td>
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<td>S.D.</td>
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<td></td>
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<tr>
<td>Mean</td>
<td>31.42</td>
<td>30.28</td>
</tr>
<tr>
<td>S.D.</td>
<td>5.63</td>
<td>6.65</td>
</tr>
</tbody>
</table>
Table 4. Posttreatment Means and Standard Deviations on Internal Dimension of the Levenson Locus of Control Scale

<table>
<thead>
<tr>
<th>Sex</th>
<th>Experimental Group (N = 48)</th>
<th>Control Group (N = 54)</th>
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<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
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<tr>
<td>Males</td>
<td>19.42</td>
<td>5.50</td>
</tr>
<tr>
<td>Females</td>
<td>20.62</td>
<td>4.57</td>
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<tr>
<td>Male and Female Combined</td>
<td>20.02</td>
<td>5.04</td>
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</table>
Table 5. Posttreatment Means and Standard Deviations on Chance Dimension of the Levenson Locus of Control Scale

<table>
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<th>Sex</th>
<th>Experimental Group (N = 48)</th>
<th>Control Group (N = 54)</th>
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<td>Mean</td>
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<tr>
<td>Male</td>
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<td>Female</td>
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<td>4.63</td>
</tr>
<tr>
<td>Male and Female Combined</td>
<td>32.58</td>
<td>5.80</td>
</tr>
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</table>
(see Table 6 for means and standard deviations). On this dimension, the two groups did differ significantly at the posttest time, $F(4.09) p = .046$. There was a significant sex difference, $F(14.53) p = .001$ but not a significant sex by treatment difference, $F(.543) p = .463$.

To determine the degree of change from pretest to posttest for each sex, a matched pair $t$-test was performed on the pretest and posttest scores for each dimension of locus of control. The only significant change was for the male control group, which increased in internality, $T(2.22) p = .035$. The means and standard deviations for pretest and posttest scores on each dimension are shown in Table 7.
Table 6. Posttreatment Means and Standard Deviations on Powerful Others Dimension of the Levenson Locus of Control Scale

<table>
<thead>
<tr>
<th>Sex</th>
<th>Experimental Group (N = 48)</th>
<th>Control Group (N = 54)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td>Male</td>
<td>29.37</td>
<td>5.99</td>
</tr>
<tr>
<td>Female</td>
<td>35.29</td>
<td>4.69</td>
</tr>
<tr>
<td>Male and Female Combined</td>
<td>32.33*</td>
<td>6.10</td>
</tr>
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</table>

*Significant at p = .046.
Table 7. Means and Standard Deviations for Pretest and Posttest Levenson Locus of Control Scale

<table>
<thead>
<tr>
<th>Dimension</th>
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<th></th>
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<tr>
<td></td>
<td>pre</td>
<td>post</td>
<td>pre</td>
<td>post</td>
</tr>
<tr>
<td>Internal Dimension</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>19.69</td>
<td>20.02</td>
<td>20.44</td>
<td>19.31</td>
</tr>
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<td>S.D.</td>
<td>5.27</td>
<td>5.04</td>
<td>5.21</td>
<td>4.51</td>
</tr>
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<td>Chance Dimension</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>31.94</td>
<td>32.58</td>
<td>32.22</td>
<td>31.56</td>
</tr>
<tr>
<td>S.D.</td>
<td>5.65</td>
<td>5.80</td>
<td>5.23</td>
<td>6.88</td>
</tr>
<tr>
<td>Powerful Others Dimension</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>31.42</td>
<td>32.33</td>
<td>30.28</td>
<td>29.70</td>
</tr>
<tr>
<td>S.D.</td>
<td>5.63</td>
<td>6.10</td>
<td>6.65</td>
<td>7.64</td>
</tr>
</tbody>
</table>
CHAPTER 5

DISCUSSION

The purpose of this study was to examine the effect of an eight-week mutual problem-solving skills course on perceived locus of control. It was hypothesized that the experimental group, relative to the control group, would demonstrate an increase in internality, while the chance and powerful others orientations would decrease. An overview of the results did not provide evidence of any significant alterations on the internal or the chance dimensions of the Levenson Locus of Control Scale. However, the predicted change on the powerful others index did occur. Methodological and theoretical factors which may help explain these results are discussed below.

Methodological Factors

The review of literature indicated the existence of a positive relationship between personal efficacy and perceived internal locus of control. Furthermore, several studies gave credence to the theory that locus of control could be altered. The literature supported the idea that increasing an element of personal efficacy, such as problem-solving skills, should increase scores on internality on a locus of control scale. However, this hypothesis was not supported in the present study.
While it may be that the particular training program employed in this study simply was not an effective tool for altering locus of control, there are other considerations. One aspect to examine is the methodology incorporated in the current study. The specific methodological factor under consideration is the instrument utilized to assess change in locus of control, the Levenson Locus of Control Scale. A relatively new scale, its strength lies in the distinction it makes between three locus of control dimensions: internal, chance, and powerful others.

These items cover a very wide spectrum of situations since they are intended to measure a generalized attitude. For instance, questions range from causes of car accidents to determinants of friendship. It is this breadth which presents the first methodological weakness. Since the scope of the items is so wide, it seems possible that the scale might not reflect subtle changes in perceived locus of control. This does not necessarily signify that no change was effected. What it does suggest is that a more refined instrument may be needed in order to recognize and measure these changes.

Furthermore, the Levenson Scale may not be sensitive to the problem-solving program. For instance, the items dealing with causes of car accidents bear little relationship to the concepts presented in the course and are probably not going to be affected one way or the other. The refinement of the assessment instrument should include the incorporation of items sensitive to the program being employed as a change agent.
A second methodological consideration is the time (date) at which the posttest was administered. The post treatment survey was given within one week of the completion of the skills course. The participants perhaps had not had ample time to assimilate the newly learned strategies into their everyday life. While they were accustomed to employing the ten-step process when conflict arose within their relationship, they had not had a great deal of time to generalize this approach to other areas. It is speculated that at the time point at which the posttest was given, a significant change in locus of control was not yet evident. By assessing the perceived locus of control at a later date it might be possible to assess adequately changes in perceived locus of control due to the participation in a problem-solving skills course.

There is also another factor related to the time of the posttest. The participants in the problem-solving training program were presented with new strategies for dealing with interpersonal conflict. They encountered new ways to solve old problems. It seems plausible that these new ideas may have created a type of stress situation in their thought patterns.

As seen in the review of literature, several studies reflect the idea that an increase in stress and anxiety corresponds to a decrease in internality scores. While the couples did not display overt stress, it may be that there was a certain amount of inner tension and struggle as they dealt with the problem-solving strategies. The scores on the posttest may thus be a function of temporary
anxiety. Had the posttest been administered at a later date, perhaps the scores would more directly reflect the overall impact of the problem-solving skills course.

Finally, a methodological consideration in any study is the sample selection. While the participants in the present study were volunteers, their pretest scores were very similar to the available norming data (Levenson 1973). Thus it seems probable that the results obtained in this study were not due to inadequate sampling procedures.

Theoretical Factors

There are theoretical factors which should be considered when examining the results of this study. As cited earlier in the literature review, other investigations incorporated approaches similar to the problem-solving course and were able to improve personal efficacy, as well as to alter perceived locus of control. The literature provided strong support for all three hypotheses, yet only one could be accepted in terms of the data presented here. What distinguishes this study from those employing similar programs but which found initial support for the hypotheses of this study?

The single most important difference between this study and those using similar methods involves the unit at which the treatment programs were aimed. In previous work, the skill training programs were designed to increase an individual's behavioral repertoire; thus, the unit at which they were aimed was the individual. These
studies demonstrate that as personal efficacy increases, so does internality (DeCharms 1972).

As discussed in the literature review, DeCharms (1972) effected a change toward greater internality by teaching the participants to do the following:

1. To determine realistic goals for himself;
2. To know his own strengths and weaknesses;
3. To determine concrete action that he can take now that will help him to reach his goals; and
4. To consider how he can tell whether he is approaching his goal, that is, whether his action is having the desired effect (DeCharms 1972, 97).

This program is very "me" oriented. Everything is expressed in terms of the individual. The program was effective as a locus of control change agent.

The problem-solving skills program incorporated in the current study was a relationship treatment program. It was not aimed at individuals, but rather at dyads. This particular focus of attention perhaps played a significant role in the program's effectiveness as a locus of control change agent.

Listed below are the ten steps involved in the problem-solving process. They are different from DeCharms' steps in that they involve the cooperation and effort of two people working together. They are "we" oriented, as opposed to being "me" oriented. The participants in the mutual problem-solving course were taught to:

1. Listen carefully and express own feelings;
2. Explore the problem area;
3. Locate and define the problem in relationship terms;
4. Identify how each partner contributes to the problem;
5. State goal in terms of more of or less of the specific problem;
6. Generate alternative solutions;
7. Evaluate alternative solutions;
8. Select the best solution;
9. Implement solutions; and
10. Evaluate progress (Ridley and Harrell 1976, 23-26).

The couples went through these steps together; each had an equally important role. Furthermore, the process was not devised to determine what was best for only one of the individuals, but rather what was best for the dyad.

It is speculated that the emphasis placed on the dyad as a functioning unit is a partial explanation for the results in this study. In the problem-solving process, neither partner was put into a power-position, nor was one person put into a subordinate role. Individuals were encouraged to recognize their own importance, as well as the vital role played by their partners. For this reason, the fact that the internality scores demonstrated no significant change is understandable. The internality of the individuals was not threatened nor extensively reinforced by the mutual problem-solving skills course.

The scores on the chance dimension also remained virtually unchanged. A decrease in chance scores was expected to occur as a residual effect of increased internality. However, internality was not increased. Furthermore, in examining the treatment program it appears that the concept of chance was not given any role in the relationship setting. Since chance was excluded as a factor in
problem-solving, the individuals most likely did not reevaluate their chance orientations. For this reason, the stable chance scores are a logical outcome.

The one hypothesis which was accepted predicted a decrease in powerful others scores on the Levenson Scale. This hypothesis appears to be the most sensitive to a relationship treatment program such as the problem-solving skills course. A relationship treatment program attempts to dissolve and prevent power struggles and thus enhance the quality of interaction between two people.

The problem-solving skills course achieved this goal by removing the source of power from any one person in the dyad and placing it in the hands of both people, as partners. The two individuals shared an equally important role in conflict management. Because power was evenly divided between the two individuals, it stands to reason that the participants' orientation toward powerful others would be diminished.
CHAPTER 6

CONCLUSION

This study attempted to determine the effects of a relationship treatment program on underlying perceptions. Specifically, it examined the possibility of utilizing a problem-solving skills course as a change agent for locus of control. Results indicated that this skills program could effectively diminish an individual's powerful others orientation.

This finding has significance for other relationship treatment programs. When a treatment program can cause a change in a basic underlying perception, it is more likely to have long-term consequences. Programs which attempt to enhance the quality of relationships by dissolving and preventing power struggles will be most successful if the powerful others orientation of individuals can be reduced. The present study demonstrated that such a goal can be achieved.

Another important aspect of this study lies not in the data and results but rather in what the study discovered about current research dealing with locus of control. The literature offers many studies which have examined the effect of skill training programs on locus of control. But all of these studies deal strictly with skill programs aimed at individuals.
The uniqueness of the present study is that because it incorporates a relationship treatment program, it deals not with individuals but with dyads. On the basis of the results, it appears that when couples are the basic unit acquiring skills, changes in locus of control may not occur as predicted in the literature.

It is suggested that more work needs to be done in the area of employing relationship treatment programs as change agents for locus of control. Future investigations should refine the assessment instrument and closely examine the role of the dyad in shaping perceived locus of control.
APPENDIX A

BEHAVIORAL ANALYSIS: MEANS AND STANDARD DEVIATIONS OF THE MUTUAL
PROBLEM-SOLVING STEPS

46
<table>
<thead>
<tr>
<th>Group</th>
<th>&quot;I&quot; Messages M. S.D.</th>
<th>Step 1 Summary Statements M. S.D.</th>
<th>Open Questions M. S.D.</th>
<th>Step 2 M. S.D.</th>
<th>Step 3 M. S.D.</th>
<th>Step 4 M. S.D.</th>
<th>Step 5 M. S.D.</th>
<th>Step 6 M. S.D.</th>
<th>Step 7 M. S.D.</th>
<th>Step 8 M. S.D.</th>
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</thead>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td>0.32 0.80</td>
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Ridley et al. 1977, 18.
REFERENCES


