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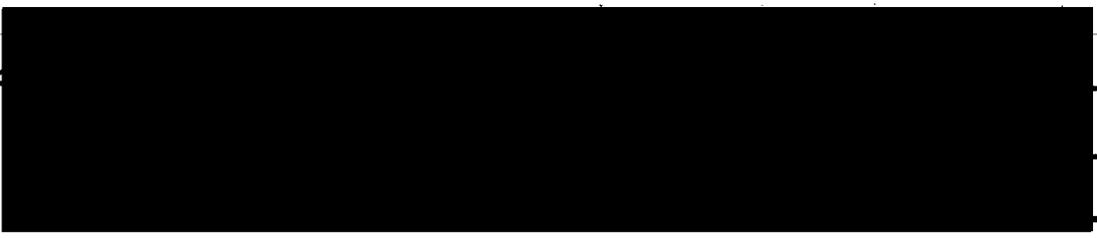
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THE MODIFICATION OF ASSERTIVENESS AND  
SOCIAL PROBLEM-SOLVING SKILLS IN A  
PENITENTIARY POPULATION

by

Michael Sylvan Stoian

B.A. (Hons.), Queens University, 1976

A THESIS SUBMITTED IN PARTIAL FUPILLMENT OF  
THE REQUIREMENTS FOR THE DEGREE OF  
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of  
Psychology

Michael Sylvan Stoian 1978

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## ABSTRACT

The purpose of the present study was to compare the relative efficacy of standard assertion training (AT) and problem-solving assertion training (PSAT) in the modification of social problem-solving skills, assertion and social fear. A no-treatment group (NT) was included to control for the effects of assessment.

Twenty penitentiary inmates volunteered to take part in the study. Measures of social fear, assertion and social problem-solving skills were obtained before and after treatment. Results indicated that the PSAT and AT treatments produced significantly superior behavioural improvements in assertion, while not differing significantly from each other. The measure of social problem-solving skills indicated that only the PSAT treatment yielded significant improvement. All treatments failed to produce significant reductions in measured social fear. The PSAT and AT treatments did not significantly differ in the production of generalization of assertion training effects.

It was concluded that an effective assertion training programme would benefit from the inclusion of a social problem-solving skills training component.

## TABLE OF CONTENTS

	Page
Approval	ii
Abstract	iii
List of Appendices	vii
List of Tables	viii
List of Figures	x
Introduction	1
Measurement of Assertiveness	4
Self-Report Measures	5
Behavioural Measures	17
Modification of Assertiveness	23
Contribution of the Components	
of Assertive Training	25
Overassertiveness	34
Generalization of Assertive	
Training Effects	38
Social Problem-Solving Skills	51
Impersonal and Interpersonal Problem-Solving	
Skills: A Distinction	52
Measurement of Social Problem-Solving Skills	55
The Modification of Social Problem-Solving Skills	62

Social Fear Hypothesis	74
Descriptive Studies	75
The Effect of Assertion Training on Social Fear	78
The Effect of Fear Reduction on Assertiveness	79
The Study	81
Aims and Hypotheses	81
Subjects	82
Assessment	83
Procedure	87
Treatments	88
Results	94
Outcome Measures	95
Treatment Effects	96
Generalization	98
Correlational Analysis	101
Discussion	102
Limitations of the Clinical Study	102
Treatment Effects	105
Social Problem-Solving Skills	105
Assertiveness	106
Generalization of Treatment Effects	109
Social Fear Hypothesis	115

Clinical Implications	117
Implications for Future Research	123
Appendices	128
References	169

## LIST OF APPENDICES

	Page
Appendix A: Memorandum Sent to Classification Officers	128
Appendix B: Social Response Behavioural Test	129
Appendix C: Social Response Inventory	133
Appendix D: Social Fear Scale	143
Appendix E: The Means-Ends Problem-Solving (MEPS) Procedure	144
Appendix F: MEPS Procedure Scoring Categories	148
Appendix G: Tables	150
Appendix H: Figures	164

## LIST OF TABLES

	Page
Table I. Group Data for Outcome Measures	150
Table II. Summary of the Analysis of Variance with Pre-treatment Scores as the Dependent Variable	153
Table III. Summary of the Analysis of Variance with Change Scores as the Dependent Variable	154
Table IV. Summary of the Planned Contrasts of Group Means for Assertion Data	155
Table V. Generalization Data	156
Table VI. Summary of the Analysis of Variance with Pre-treatment Generalization Scores as the Dependent Variable	159
Table VII. Summary of the Tests for Linearity of Overall Regression and Homogeneity of Within-class Regressions for Post-treatment Measures	160
Table VIII. Summary of the Analysis of Variance with Generalization Change Scores as the Dependent Variable	161

Table IX.	Summary of the Planned Contrasts of Group Means for Generalization Data	162
Table X.	Pearson Product Moment Correlations Between Social Fear Change Scores and Assertion Change Scores	163

## LIST OF FIGURES

	Page
Figure 1. Mean Total Deviation Score Data	164
Figure 2. Outcome Measure Data	165
Figure 3. Mean Total Deviation Change Score Data	166
Figure 4. Outcome Measure Change Score Data	167
Figure 5. Generalization Data	168
Figure 6. Mean Generalization Change Score Data	169

### INTRODUCTION

The training of social skills and in particular assertiveness, has been the centre of much research (Fensterheim, 1972; Hersen and Eisler, 1963; Lange and Jakubowski, 1976; Rosenthal, 1976), and is now generally regarded as having the status of an established method of producing significant changes in peoples lives. Such changes include the ability to identify both personal rights and the rights of others thereby acquiring self-respect and respect for others. Further, assertion involves the ability to stand up for personal rights and express thoughts, feelings and beliefs directly and honestly without violating another person's rights (Lange and Jakubowski, 1976). These skills are generally viewed as prerequisites for personal and interpersonal gratification. As such assertion training can be seen to affect a significant area of human conduct.

Several widely read sources describe procedures for increasing assertiveness (Alberti and Emmons, 1970; Fensterheim and Baer, 1975; Lange and Jakubowski, 1976; Smith, 1975), which have been subjected to empirical investigation (Eisler, Hersen and Miller, 1973; McPall and Twentyman, 1973; Rosenthal, 1976). However reviews of these investigations have indicated the need for the refinement and development of assessment techniques

(Hersen and Bellack, 1977), and a lack of evidence demonstrating generalization of treatment effects, (Hersen and Eisler, 1977; Hersen, Eisler and Miller, 1974; McFall and Lillesand, 1971; Young, Rimm and Kennedy, 1973).

The absence of generalization is not specific to assertive training but rather constitutes a major shortcoming of many behaviour modification techniques (D'Zurilla and Goldfried, 1971). In attempts to increase generalization, recent clinical studies have characteristically increased the emphasis on covert cognitive elements. Winship and Kelly (1976) have hypothesized that the teaching of general coping strategies via a verbal response model, may facilitate the generalization of assertive training effects. Others have suggested the teaching of social problem-solving skills as a general coping strategy to facilitate generalization (D'Zurilla and Goldfried, 1971; Lange and Jakubowski, 1976; Mahoney, 1974; Meichenbaum, 1971). At present there are no published reports concerning the efficacy of the addition of a social problem-solving skills-training component in the production of generalization of assertive training effects in a clinical population. Although of significant consequence for members of all clinical populations, the failure to produce generalization via current assertive training methods is of particular importance to penitentiary inmates. Given the impossibility of training appropriately assertive responses to every possible interpersonal situation,

current methods of training may be viewed as inadequate, modifying only a small portion of the subjects deficient social skills repertoire. If social skills deficits are a contributing factor in the maintenance of criminal behaviour and an obstacle to successful rehabilitation, such band-aid treatments may be viewed as lubricant for the "revolving doors" of Canada's present penal institutions.

The first goal of the present dissertation was to provide a thorough review of the assertiveness literature in an attempt to determine the appropriateness of the "band-aid" label. Specific topics reviewed include the definition and measurement of assertiveness, assertion training techniques, and methods used to enhance generalization effects. In reference to the latter a review of the social problem-solving skills literature is also provided.

The second goal of the present research proposal was to test the relative efficacy of two assertion training techniques in the production of generalization of assertion training effects within a penitentiary population.

The relationship between anxiety and assertiveness was also investigated as the present study further attempted to examine Wolpe's (1958) Social Fear hypothesis.

## MEASUREMENT OF ASSERTIVENESS

Assertiveness " ...involves standing up for personal rights and expressing thoughts, feelings and beliefs in direct, honest and appropriate ways which do not violate another person's rights." (Lange and Jakubowski, 1976, p. 7). "Although the most common class of assertive behaviours involved in therapeutic action is the expression of anger and resentment, the term assertive is used to cover all socially acceptable expressions of personal rights and feelings." (Wolpe and Lazarus, 1966). Non-assertiveness is viewed as clinically significant because both over- and underassertiveness can impede the effective development and maintenance of rewarding interpersonal relationships.

Although two studies have included physiological measures in a test battery used to assess the effects of assertive training (Borkovec, Stone, O'Brien and Kaloupek, 1974; McFall and Marston, 1970) these measures were not used to assess assertiveness per se, but rather levels of autonomic arousal elicited by the test situation. The prevalent measures of assertiveness are self-report paper and pencil measures, and role-played behavioural tests.

### Self-Report Measures

Several self-report measures have been developed for college students: the Constriction Scale (Bates and Zimmerman, 1971), the Conflict Resolution Inventory (McFall and Lillesand, 1971), the Assertive Inventory (Lawrence, 1970), the Assertiveness Schedule (Rathus, 1973a), the College Self-Expression Scale (Galassi, DeLo, Galassi and Bastien, 1974), the Intensity of Angry Verbalization Scale (Doering, Hamlin, Everstine, Eigenbrade, Chambers, Wolpin and Lockner, 1962) and Bryant and Trower's (1974) measure of social difficulty.

The Constriction Scale was so named in accordance with the author's view that non-assertion is caused by the interference of covert responses with appropriate behaviours. The measure consists of 23 specific interpersonal situation items which require "yes" or "no" responses. Reliability is reported to be at an acceptable level, with validity not psychometrically tested. A factor analysis of this scale yielded 13 factors for men and 14 for women. No interpretation of these factors was given. The relationship of Constriction Scale scores to behavioural ratings has not been determined. The Constriction Scale has not often been used in assertive training research.

The Conflict Resolution Inventory was designed to measure

the ability to refuse unreasonable requests. It consists of 35 items, each describing a specific refusal situation. Subjects are required to describe their behaviour via a five point scale in which comfort-discomfort, reasonable-unreasonable, and refusal--non-refusal situational dimensions are varied. The Inventory has been cross-validated and scores are reported to be significantly related to actual behaviour in simulated laboratory refusal situations. Test--re-test reliability data is missing.

The Assertive Inventory is one of two unpublished scales which consider both over- and underassertiveness. Its disadvantages are that scores are significantly related to the social desirability of the rated response (Lacks and Connelly, 1975), and that an average of 25 minutes is required to complete the scale.

The Rathus Assertiveness Schedule is one of the most used measures in studies of assertion training. It consists of 30 items. Twenty refer to general social situations while the remaining ten refer to specific interpersonal situations. The respondent is required to respond along a six point continuum, rating items as self-characteristic or not. Test-retest reliability was reported at  $r = .78$  (Rathus, 1973a) over a two month period, with split half reliability rated at .77. Scores

on the Rathus schedule have the disadvantage of being related to social desirability (Lacks and Connelly, 1975). However in its favour correlational studies have demonstrated a moderately high association between Assertiveness Schedule scores and behavioural test scores. While the Assertiveness Schedule measures a broader range of behaviour than does the Conflict Resolution Inventory, inspection of the items indicates that the Rathus measure is confounded as aggression is often confused with assertion.

The College Self-Expression Scale (Galassi et al., 1974) was designed to assess three aspects of assertiveness; positive opinions, negative opinions and expressions of self-denial. However only six of the fifty test items tap the positive aspect of assertiveness. Test-retest reliability is reportedly high ( $r = .89$ , Galassi et al., 1974). Construct validity was assessed by correlating the scale scores with the Adjective Checklist Scale scores (Gough and Heilbrun, 1965). Scale scores have been shown to be unrelated to social desirability (Lacks and Connelly, 1975). This measure enjoys the status of being considered methodologically sound (Lange and Jakubowski, 1976).

The Intensity of Angry Verbalization Scale was designed to assess the effects of treatments intended to increase the intensity of angry verbalizations (Doering et al., 1962). Specifically the scale is restricted to the measurement of students reactions to frustration and is little used in investigations of assertion training effects.

A final self-report measure of assertiveness within a college population is the 30 item Social Situation Questionnaire, designed by Bryant and Trower (1974). All items refer to specific social situations and call for the respondent to rate each item along a four point "difficulty" continuum. Difficulty was defined as "The situation makes you feel anxious or uncomfortable either because you don't know what to do or because it makes you feel frightened, embarrassed or self-conscious." (Bryant and Trower, 1974, p. 15). Thus the scale is intended to assess both the respondents' knowledge of social skills and his level of social anxiety without providing a separate measure of either. As such the Social Difficulty Scale fails to qualify as a self-report measure of assertive behaviour. The reliability and validity of this scale remains unexplored.

Several measures have been developed for non-college adults; the Adult Self-Expression Scale (Gay, Hollandsworth and Galassi, 1975), the Assertion Inventory (Gambrill and Richey, 1975), the Interpersonal Situation Inventory (Goldsmith and McFall, 1975), the Assertiveness Scale (Wolpe and Lazarus, 1966) and the Social Response Inventory (Marshall, Marshall and Keltner, 1976).

The Adult Self-Expression Scale consists of 48 items, each describing a specific interpersonal situation. Subjects are required to respond along a five point Likert format scale. Standardization was conducted using a part-time community college adult population, who ranged in age from 18 to 54 years with a mean of 24.5 years of age. One-third of the standardization sample were married, and roughly one-half were employed either full- or part-time. Test-retest reliability is reported at .88 and .91 for two week and five week inter-test intervals. Construct validity was established via correlational investigations which yielded significant relationships between Self-Expression Scale scores and Taylor's Manifest Anxiety scale scores (Taylor, 1953) and Adjective Checklist Scale scores (Gough and Heilbrun, 1965). Factor analysis of scores on the Self-Expression scale yielded 14 factors which accounted for 56% of the variance. Factors were interpreted in terms of either the particular type of interpersonal situation or the various

categories of assertive responses required. Validation studies with a clinical population have not been conducted.

Gambrill and Richey's Assertion Inventory was designed to yield three types of information concerning assertive behaviour. The first aspect concerned the subject's level of discomfort within social situations, the second aspect attempted to predict the probability of the performance of an assertive response within a specific situation, and the third aspect described those situations in which the subject desired to behave more assertively. Psychometric evaluation of this inventory has been limited to the factor analysis of discomfort scores rather than an analysis of the assertion dimensions.

The Wolpe and Lazarus Assertiveness Scale was developed for use in clinical situations and no reliability or validity data are presented. However psychiatric inpatients rated high and low in overall assertiveness, via behavioural assessments, were significantly differentiated by this Assertiveness Scale in work done by others, (Eisler, Miller and Hersen, 1973; Hersen, Eisler, Miller, Johnson and Pinkston, 1973). Its prime importance appears to be as a source of items used in the construction of other self-report measures.

Situations in the 55 item Interpersonal Situation Inventory were derived from detailed interviews with eight male and eight female psychiatric patients (Goldsmith and McFall, 1975), and refer to specific problematic interpersonal situations. Subjects are required to respond to each situation with one of five alternatives, which range from being able to handle a situation and feeling comfortable in it, to not being able to handle a situation and feeling uncomfortable. Reliability and validity data for this inventory have not been reported. It would appear that the Interpersonal Situation Inventory fails to qualify as a self-report measure of assertiveness per se due to the inclusion of discomfort ratings.

The unpublished Social Response Inventory (Marshall et al., 1976) was developed for clinical use within a penitentiary population and was designed to assess positive and negative aspects of assertiveness. In addition this inventory is capable of measuring both over- and underassertiveness. Of the 18 test items, 12 describe specific problematic situations in non-penitentiary settings while the remaining six situations, (generated via detailed inmate interviews), refer to penitentiary-specific interpersonal situations. Each item is accompanied by five alternative responses, ranging from extremely underassertive, to appropriately assertive, to extremely overassertive. One hundred per cent concordance was

obtained between three independent judges required to rank the sets of five alternatives along the assertiveness dimension and to specify the appropriate response. Normative data was collected on a penitentiary population, and prisoners rated high or low in overall assertiveness via behavioural tests and/or staff ratings were significantly differentiated by the Social Response Inventory (Marshall, 1976). The test-retest reliability of this instrument has yet to be determined.

Numerous aspects of the above described self-report measures warrant discussion. First the majority of these measures concentrate on the measurement of either the expression of negative affect, standing up for one's rights or making social contacts. Few measures even attempt to assess the expression of positive emotion. Where such an attempt is made, such as in the College Self-Expression Scale and the Interpersonal Situation Inventory, only a small minority of the total number of test items refer to this aspect of assertion. This trend may be taken to indicate either confusion concerning the definition of assertiveness or the relative unimportance accorded to expressions of positive feelings and opinions in the acquisition and maintenance of appropriate, effective social behaviours. The former is somewhat understandable in that the originator of assertion training in North America, A. Salter (1949), equated aggression and assertion and until 1966 the

positive aspects of assertiveness were all but ignored (Wolpe and Lazarus, 1966). The relative unimportance awarded to the positive aspects of assertive behaviour may also result from the predominance of studies employing college populations. The competitive college environment demands that students critically appraise each others thoughts, beliefs and attitudes. It would be, therefore, no surprise that college students' nonassertiveness mainly concerns the expression of negative feelings and opinions, the ability to refuse unreasonable requests and the ability to stand up for one's rights. Since non-college subjects are likely to find themselves in interpersonal situations having the above demand characteristics less frequently than college subjects it is to be expected that for the former both negative and positive aspects of assertiveness would be of importance and equally worthy of assessment (Hersen and Bellack, 1977; Lazarus, 1971; Wolpe, 1969). It would seem that the majority of researchers have under-played differences in the social-interpersonal contexts of both groups in determining the appropriateness and importance of the different components of assertive behaviour. In fact only one study has addressed itself to the situational determinants of assertive behaviour (Eisler, Hersen and Miller, 1975).

Secondly, many of the self-report scales are designed to assess only the underassertive to appropriately-assertive range of assertion. Only two scales consider the overassertive or aggressive end of the continuum and both are unpublished (Lawrence, 1969; Marshall et al., 1976). In light of recent findings that periodic rages and abusive outbursts were related to chronic underassertiveness in most social situations (Eisler, Hersen and Miller, 1974; Poy, Eisler and Pinkston, 1975; Frederikson, Jenkins, Poy and Eisler, 1976), the assessment of both over- and underassertive behaviour must be stressed. The predominant failure to do so may reflect a basic misunderstanding regarding the definition of assertiveness.

Just what self-report measures of assertiveness do measure is difficult to determine. Factor analytic studies have either yielded factors which have gone uninterpreted, or were conducted on self-report measures that failed to clearly differentiate between social discomfort and assertiveness. Although concurrent and predictive validity have been examined for some of the college oriented scales, correlation coefficients are generally low (Hersen and Bellack, 1977) and provide little meaningful information regarding the construct involved. Further psychometric evaluation of the clinical scales is generally missing, leaving face validity to attest to the phenomena measured. The ample evidence (see below) that

self-report scales are sensitive to the effects of assertive training lends some construct validity to the clinical self-report measures, however the nature of the construct remains poorly defined. In addition, since the available evidence does not support a global trait construct of assertiveness but rather points to the situational specificity of assertiveness, properly designed self-report measures can best be viewed as providing a count of the number of specific situations in which a person says he acts assertively. Such information is not yielded by assertion measures which contain items referring to general categories of interpersonal situations.

The relationship of self-report scale scores to behavioural scores is often not reported, leading to the impression that perhaps the relationship is of insufficient strength to warrant reporting. However large subjective-behavioural discrepancies are not uncommon in behavioural research (Hodgson and Rachman, 1974), and while problematic in terms of predictive validity, they do not necessarily invalidate a specific measure capable of yielding data of potential use. For example, such measures are of value in providing information concerning response modality differences. The absence of such data therefore impedes a fuller understanding of the nature of assertiveness and what to expect when attempting to assess assertion via subjective

self-report measures. The relationship of self-report and behavioural measures will be discussed further in a later section .

Another source of confusion regarding the nature of the construct measured concerns the conceptual distinction drawn between assertion and social discomfort or social anxiety. Assertiveness refers to behaviour, while social anxiety deals with feelings sometimes associated with the performance or non-performance of assertive behaviour. An assessment measure which does not recognize this distinction can only yield data of little value to the understanding of either. Such is the case with many of the above described measures.

To conclude, few self-report measures have been standardized yet some rely on nonempirically derived norms for the definition of "appropriate" assertion. The use of norms, empirically founded or not, is often unnecessary . For example, in many cases the modification of nonassertiveness has been the patient's primary reason for seeking therapy (Foy et al., 1975; Frederikson et al., 1976; Salter, 1949; Wolpe, 1958; 1966). In other instances patients are so clearly deficient in social skills that the clinician may and probably should instruct the patient as to what behavioural changes are needed (Goldsmith and McFall, 1975; Hersen and Luber, 1976; Marzillier, Lambert and Kellet, 1976). In other cases clients should be

allowed to indicate for themselves the situations in which increased assertiveness is seen as appropriate and desired. At present only the Assertion Inventory (Gambrell and Richey, 1975) affords subjects such an opportunity. Therefore the selection of nonassertive subjects on the basis of a comparison to statistical norms and the selection of such a norm as the goal of treatment is not easily justified.

Given the lack of standardization of paper-and-pencil assertion measures and their questionable relationship to actual assertive behaviour, a more promising approach would seem to require the measurement of subjects' behaviour in specific interpersonal situations.

### Behavioural Measures

The behavioural assessment of assertiveness is conducted mainly via in vivo laboratory role-played situations (eg. Goldsmith and McFall, 1975; Hersen, Miller and Hersen, 1973; Kazdin, 1974; McFall and Lillesand, 1971; Rathus, 1972). The situations are either contrived (eg. Hersen et al., 1974; McFall and Marston, 1970) or naturally occurring (eg. Chittenden, 1942; Frederikson et al., 1976). Typical of the tests employed are the Behavioural Assertiveness Test (Eisler, Miller and Hersen, 1973), the revised Behavioural Assertiveness Test (Eisler, Hersen, Miller and Blanchard, 1975), the

Behavioural Role Playing Test (McFall and Marston, 1970) and the Interpersonal Behaviour Role Playing Test (Goldsmith and McFall, 1975).

The Behavioural Assertiveness Test, designed for use with male psychiatric subjects, consists of a series of fourteen male-female interpersonal situations. Each situation requires the male subject to respond following a prompt given by a female role model. Ten of the fourteen situations involve husband-wife interactions and all focus on the negative aspects of assertiveness. Due to the nature of the situations involved, subjects are required to have been married, separated or divorced. The test is conducted in vivo with the subject's response video-taped and later rated for overall assertiveness and specific components of assertiveness such as compliance, affect, number of requests for new behaviour, duration of eye contact, duration of reply, number of smiles, latency of response and loudness of voice. Interrater percentages of agreement ranged from 99.3% to 100% and interrater reliabilities ranged from .96 to .99 on the component measures. Test-retest reliability has not been evaluated. Scores on the Behavioural Assertiveness Test successfully differentiated high and low assertive subjects as classified by the Wolpe-Lazarus (1966) Assertiveness Scale. Duration of response, duration of eye

contact, speech fluency and number of smiles failed to differentiate high and low assertive subjects, classified according to their overall Behavioural Assertiveness Test scores. Other validation research has not been conducted.

The revised Behavioural Assertiveness Test (Eisler et al., 1975), also designed for use with male psychiatric subjects, consists of 32 situations, half pertaining to the expression of positive assertiveness and half pertaining to the expression of negative assertiveness. The situations are divided such that in one half the protagonist is familiar to the subject while in the other half the protagonist is unfamiliar. Further, the scenes are sub-divided along the male-female dichotomy with respect to the sex of the role model used to prompt subjects' responses. Test administration and scoring procedures are identical to those used for the unrevised Behavioural Assertiveness Test. Inter-rater agreement, reliability and validity data are extremely similar to that reported for the unrevised version of this test. Test-retest reliability data is again missing.

The Behavioural Role Playing Test (McFall and Marston, 1970), designed for use with a college population, is considered the prototype of the behavioural tests. The items used were derived from an original sample of over 2000 situations calling for assertive behaviour. This sample was screened and condensed

to a list of 80 situations which were then rated by 60 undergraduates. The student ratings were then factor analysed. Items having the highest factor loadings and rated as most difficult were extracted and cross-validated using an additional pool of 45 undergraduate raters. Sixteen situations, predominantly involving negative assertion, were selected for inclusion on the basis of the cross-validated study. Each situation consists of a tape recorded narrative describing the situation, followed by the protagonist's prompt. Subjects' responses are tape recorded and later rated for overall assertiveness and for various assertive response components. Interrater reliabilities and percentage agreement are generally high (Kazdin, 1974; McFall and Twentyman, 1973; Rathus, 1972; 1973a, b). Test-retest reliability data are non-existent.

The Interpersonal Behaviour Role Playing Test (Goldsmith and McFall, 1975), designed for use with a psychiatric population consists of 25 tape recorded interpersonal situations. All items were selected from the 55-item Interpersonal Situation Inventory (Goldsmith and McFall, 1975), according to their relevance to the clinical population. Responses to the 55-item Inventory were rated for social competence by a panel of eight psychiatric institute staff members. From these ratings criteria for competence were identified. Patients' tape-recorded responses to the Behaviour

Role-Playing Test are scored on a 0-2 point scale of competence, with two points awarded if all criteria for competence are met for that situation. Inter-rater percentage agreement is reported at 95%. Test-retest reliability data are non-existent as are validation studies of this measure. This is the only published behavioural measure containing items of matched content to those found in a self-report measure of assertiveness.

Although there are many other behavioural measures to be found in the literature, all are similar to the measures described above. As was the case with the self-report measures, many behavioural tests place great emphasis on refusal responses and expressions of negative feelings. With one exception (the revised Behavioural Assertiveness Test), expressions of positive feelings are relatively neglected.

Psychometric evaluation of the behavioural measures is greatly lacking. Test-retest data is virtually non-existent, in part reflecting the difficulty of administering behavioural tests to large samples. In regards to the concurrent validity of the behavioural measures, some correlational studies have demonstrated a moderately high association between behavioural and self-report scales (McFall and Lillesand, 1971; Rathus, 1973a), while others have reported little or no association

between the two (Kazdin, 1974; 1976). The overall low concurrent validity reported is not unexpected since the situations contained in each type of test are not generally comparable. Self-report items are sometimes specific, sometimes general, and often require global ratings of assertiveness and or social anxiety whereas behavioural tasks refer to specific situations and are rated in terms of assertive behaviour, not anxiety. Since assertive behaviour is highly situationally-specific, strong correlations between self-report and behavioural measures of assertiveness would be expected only if both tests involved extremely similar sets of situations. Only Goldsmith and McFall (1975) have designed their behavioural and self-report measures accordingly. However no data has yet been published concerning their interrelatedness.

In summary it would appear that the value of behavioural tests in the measurement of assertiveness depends a great deal on the face validity of the situations enacted. Although the use of naturally occurring problematic interpersonal situations would serve to increase the face validity of behavioural tests, the ethical issues involved and the practical problems entailed are usually considered prohibitive. The physiological correlates of assertive and nonassertive behaviour, as performed within role-played tests have not been investigated. As was the case with the self-report measures, sex differences have been left unexamined.

## MODIFICATION OF ASSERTIVENESS

The originator of assertiveness training, Andrew Salter (1949) believed nonassertiveness to be an important factor in the acquisition and maintenance of many psychological disorders. His training program involved six "excitatory" exercises which required the use of "behavioural psychodrama" in the acquisition of verbal and nonverbal components of assertive behaviour. Examples of the "excitatory" exercises prescribed by Salter include the spontaneous, open and frank expression of likes and dislikes, the deliberate use of the word "I", the ability to contradict and attack and the expression of agreement when praised (Salter, 1949). It should be noted that Salter often equated aggressiveness and assertiveness and therefore much of his work has tended to be ignored (Lange and Jakubowski, 1976).

Wolpe (1958; 1966) provided further clinical evidence attesting to the benefits of assertive training in the treatment of interpersonal problems, depression and sexual dysfunction. A full review of the case studies in this area has been provided by Hersen, Eisler and Miller (1973) and by Rim and Masters (1974). These reviews have demonstrated that most assertive training procedures have emphasized modelling and behavioural rehearsal in the treatment of a wide variety of target problems.

The contribution of assertive training per se is difficult to determine since many of the case studies involve assertive training in combination with a variety of other clinical interventions. An evaluation of the efficacy of assertive training is further complicated by the presence of inappropriate single-subject designs and subjective measures of assertion in the case study literature. However the few informative case studies conducted have demonstrated the benefits of assertive training in the modification of marital problems (Eisler, Hersen and Agras, 1973; Eisler, Miller, Hersen and Alford, 1974), rages and abusive outbursts (Eisler, Hersen and Miller, 1974; Foy et al., 1976; Frederikson et al., 1976) and schizophrenic withdrawal (Edelstein and Eisler, 1976; Hersen, Turner, Edelstein and Pinkston, 1975).

Several controlled between-group studies, conducted with psychiatric patients, have demonstrated significant pre- to post-treatment improvements in self-report and behavioural measures of assertiveness (Eisler, Hersen and Miller, 1973; Goldsmith and McFall, 1975; Goldstein, Martens, Hubben, VanBelle, Schaaf, Wiersman and Goedhart, 1973; Percell, Berwick and Biegel, 1974). In addition studies conducted with college students have demonstrated positive results in the modification of overall assertiveness (eg. Friedman, 1971; Galassi, Galassi and Litz, 1974; Rathus, 1972; Winship and Kelly, 1976; Young et

al., 1973) and in the modification of several specific types of assertive behaviour such as anger expression (Doering et al., 1962), resisting unreasonable demands (McFall and Lillesand, 1971; McFall and Marston, 1970; McFall and Twentyman, 1973) and inadequate heterosexual interactions (Bander, Steinke, Allen and Mosher, 1975; Curran and Gilbert, 1975; Curran, Gilbert and Little, 1976).

Three areas of the assertion training literature were selected for review: the assessment of the efficacy of components of assertive training, the modification of overassertive, aggressive behaviour and the production and assessment of generalization effects.

#### Contribution of the Components of Assertive Training

The major components of assertive training are considered to be behavioural rehearsal, modelling, feedback and focussed instructions. Behavioural rehearsal is almost invariably included in an assertive training program and has been employed to modify the verbal components of assertion (eg. Marzillier et al., 1976; McFall and Lillesand, 1971; Wagner, 1968) and both verbal and nonverbal components of assertiveness (eg. Eisler, Hersen and Miller, 1973; Hersen and Miller, 1973; Rathus, 1972). Several studies conducted with college students have

demonstrated that behavioural rehearsal alone is sufficient to increase assertion (Christensen, Arkowitz and Anderson, 1975; Friedman, 1971; McFall and Marston, 1970; McFall and Twentyman, 1973). The McFall and Marston (1970) study is open to criticism, as behavioural rehearsal included the hierarchical presentation of problematic stimulus situations, operant shaping by the therapist, constructive criticism, role-playing, role-reversal, homework, postural and verbal response analysis and therapist exhortation. As such this treatment incorporates more than simple behavioural rehearsal. The "behavioural rehearsal" group was contrasted with a group receiving the same treatment plus feedback via repeated playbacks of their videotaped responses. Between group differences were not found on either self-report or behavioural pre- to post-measures of assertiveness. This criticism cannot be applied to the McFall and Twentyman (1973) study which was designed to test the relative efficacy of rehearsal alone, rehearsal plus modelling, rehearsal plus coaching, rehearsal plus modelling and coaching, modelling plus coaching, and no-treatment. Results indicated that rehearsal plus coaching and rehearsal plus modelling and coaching, produced significantly superior benefits to those produced by the other tested treatment combinations. All treatments led to significant improvement over no-treatment. It should be noted that increased assertiveness was assessed via a behavioural test of the ability to refuse unreasonable requests.

In a separate experiment, included in the same study, no significant differences were found between covert and overt behavioural rehearsal. Both led to significant improvements over no-treatment. Improvement was again measured via a test of the ability to refuse unreasonable requests.

The Friedman (1971) study employed a broader definition of assertion which emphasized the expression of negative feelings and opinions. A self-report measure of assertiveness failed to yield significant effects for any treatment while the behavioural test indicated significant improvement for the modelling plus role-playing, directed role-playing and improvised role-playing treatments. No improvements were yielded by a placebo treatment.

The Christensen study (Christensen et al., 1975), dealt with assertion in terms of increasing heterosexual interactions and increasing dating behaviours. The behaviours rehearsed included asking a woman for a coffee, date or dance, initiating a conversation and expressing positive feelings and opinions. Results again demonstrated the efficacy of behavioural rehearsal.

The above results notwithstanding, the college student literature dealing with the effectiveness of behavioural

rehearsal in the modification of assertiveness yields surprisingly little of value. The definition of assertiveness varies from study to study as does the definition of behavioural rehearsal. Paper and pencil self-report measures fail to indicate any significant benefits derived from behavioural rehearsal and while behavioural tests do yield significant effects the size of effect is typically only of statistical significance and of little clinical value.

Studies examining the efficacy of behavioural rehearsal as a single means of therapy in the modification of assertiveness in psychiatric patients have demonstrated this technique to be ineffective (Eisler, Hersen and Miller, 1973; Hersen, Eisler and Miller, 1974). In the latter studies assertiveness referred to the expression of both positive and negative feelings and opinions, and was measured via self-report and behavioural tests of assertion. Due to the basic difference in the definition of assertiveness in these studies and those employed in the college student studies it is difficult to determine whether these contradictory findings are attributable to differences in the populations studied or to differences in the responses measured.

Another technique frequently used to teach assertive behaviour is modelling. This approach assumes that observation of the model's assertive behaviour and its consequences, will allow subjects to vicariously learn the assertive response (Bandura, 1969; 1971). Research findings have demonstrated modelling to be an effective, reliable and rapid technique for both the development of new responses and the strengthening or weakening of previously acquired responses (Bandura, Grusec and Menlove, 1967; Lovaas, Freitas, Nelson and Whalen, 1967). Due to several factors the effects of modelling in the modification of assertion are difficult to discern. Firstly the modelling research usually does not refer to simple modelling but rather to modelling plus coaching or instructions (McFall and Twentyman, 1973). Coaching alone has been demonstrated to be a sufficient condition for changes in overall assertiveness (Friedman, 1971; Goldstein et al., 1973), and changes in the separate components of assertive behaviour (Eisler, Miller and Hersen, 1973). Further, several researchers have found coaching to be as effective as modelling (Goldstein et al., 1973; Green and Marlatt, 1972; Rappaport, Gross and Lepper, 1973). These findings therefore indicate the need for caution when assessing the available literature pertaining to the effects of modelling in assertive training.

Another source of confusion, noted by Lange and Jakubowski (1976), is that one therapist's modelling may be another's modelling plus reinforcement. The role of reinforcement as a component of assertive training has not been subjected to much empirical investigation. In a study of a treatment designed to increase the intensity of angry verbalizations (Doering et al., 1962), game points were shown to be effective in increasing appropriate expressions of anger. Elsewhere Doty (1975) has demonstrated that monetary incentives were as effective as role-playing in increasing social interactions in chronic schizophrenics. Furthermore other researchers (Wagner, 1968; Young et al., 1973) have demonstrated that praise contingent on the performance of an assertive response can significantly enhance treatment effects. These findings emphasize the need for precision in published descriptions of modelling techniques used in treatment programs. Such is not the case with the bulk of the assertiveness literature.

Despite the difficulties involved in determining just what modelling includes, Eisler, Hersen and Miller (1973) have reported modelling to be superior to behavioural rehearsal alone. Several researchers have indicated that modelling was an effective technique (eg. Goldstein et al., 1973) and that the combination of modelling, rehearsal and feedback is more effective than no-treatment (Gormally, Hill, Otis, Rainey,

1975; Gutridge, Goldstein and Hunter, 1973). It is of interest to note however, that McFall and Twentyman (1973) reported that the addition of modelling to behavioural rehearsal and coaching did not lead to greater improvement in subjects' abilities to refuse unreasonable requests. They accounted for this failure by hypothesizing that modelling is unnecessary when the modelled response is already in the subjects' repertoire but that modelling may play a more important role in the training of complex social responses. The second part of this hypothesis is supported by Hersen et al. (1973), who reported that the addition of modelling to coaching did not lead to further enhancement of coaching alone effects in establishing appropriate rates of eye contact in nonassertive psychiatric patients. However for more complex responses such as making an appropriate request for new behaviour the combination of modelling and coaching resulted in the most pronounced change.

A third source of confusion related to the question of modelling and reinforcement effects, concerns itself with the efficacy of adding the enactment of likely consequences of the modelled assertive response. Bandura (1969) has stated that although awareness of the consequences of modelled behaviours is not necessary for the learning of a response, it is an important determinant of its performance and therefore modelling techniques should include the enactment of consequences. This

type of modelling is the exception rather than the rule in the assertion literature, with many studies neglecting to state whether or not consequences were enacted. Other studies have emphasized the inclusion of the enactment of consequences as a component not usually found in assertive training programs (Kazdin, 1974; 1975; 1976; Loo, 1971; Marshall, 1976; McFall and Twentyman, 1973). The effects of the enactment of consequences are no less difficult to discern than the effects of modelling. Kazdin's studies involved the use of covert assertion training techniques. Subjects were required to first imagine problematic interpersonal situations and then visualize a model making an appropriately assertive response. Subjects assigned to the consequences group were further required to imagine the positive consequences of the imagined assertive response. Results indicated no significant between groups differences on a behavioural role-played test patterned after that used by McFall and Marston (1970). However the consequences group did demonstrate significantly superior improvement as measured by the Conflict Resolution Inventory (McFall and Lillesand, 1971). These differences were maintained at a three month follow-up assessment.

McFall and Twentyman (1973) combined modelling and coaching with "projected consequences" but there was no way of determining the independent contribution of the latter component. Loo (1971) had previously indicated that "projected consequences" tend to add to the effects of assertive training.

In a study of the modification of assertiveness in young children (Chittenden, 1942), the modelling of cooperative and aggressive responses was followed by the enactment of the probable consequences. This procedure yielded significant improvements in social behaviour. Again the contribution of the enactment of consequences was impossible to determine. In a study conducted with penitentiary inmates, Marshall (1976), failed to demonstrate any beneficial effects resulting from the addition of the enactment of consequences in an assertive training program which included behaviour rehearsal, modelling, coaching, role-playing, feedback and discussion.

These findings lead to several conclusions of interest. The least likely in light of the available evidence is that the importance of the enactment of consequences to the performance of a modelled response has been overestimated. A second conclusion might be that the consequences of the modelled response are so salient as to not require enactment. This conclusion is suspect as therapists typically report that

subjects seeking assertive training often believe that their assertive responses will be punished rather than rewarded (Lange and Jakubowski, 1976; McFall and Twentyman, 1973; Wolpe, 1958; 1966). A third possibility is that the enactment of consequences is often included in assertion training programs without being recognized or described as such.

The final component of assertion training to be considered is feedback. Following behavioural rehearsal, feedback can be provided either by the therapist, other members of the group, videotape or audiotape. There is little evidence that the latter two have superior benefits (Eisler, Miller and Hersen, 1973; Galassi, Galassi and Litz, 1974), however both are frequently used as part of treatment. The above-cited research has demonstrated that feedback is most effective when used in combination with either behavioural rehearsal or modelling.

### Overassertiveness

Overassertiveness or aggression involves the dishonest, inappropriate expression of thoughts, feelings, opinions and personal rights in a way that violates the rights of the other person (Lange and Jakubowski, 1976). It has been previously noted that few measures of assertiveness are capable of measuring this aspect of nonassertiveness, due to the confusion

of aggression with assertion. For example Rathus (1973a,b), Salter (1949) and Wolpe (1958; 1966) have included aggressive behaviours as goals of assertion training. There are, however, published reports dealing specifically with the modification of aggression via assertion training or components thereof.

Chittenden (1942) has demonstrated that modelling was effective in reducing aggressive play in nursery school children as assessed by two behavioural measures. One measure involved a standardized situation where children were placed together with a single valued toy. The other behavioural test required behavioural ratings of the children's school behaviour.

In a study of adaptive responses to frustration in emotionally disturbed boys, Giebink, Stoves and Fahl (1968) furnished instructions for alternative responses, and provided social reinforcement contingent on their performance. Results indicated that only the combination was effective in decreasing maladaptive behaviour as measured by behavioural ratings and a frustration questionnaire. The authors reported that prior to training the boys demonstrated no knowledge of alternative adaptive responses to frustration and the acquisition of such alternatives did not lead to behavioural changes.

Rim, Hill, Brown and Stuart (1974) demonstrated the efficacy of assertion training in the modification of aggressive temper tantrums thrown by male college students. Significant benefits were indicated by a role-played behavioural measure and by self-ratings of anxiety and anger, however self-ratings of confidence in aggravating situations, and self-report measures of assertiveness failed to yield significant pre- to post-treatment changes. These results are consistent with those of an earlier study in which assertion training was shown to be behaviourally effective with adult male psychiatric patients confined as a result of aggressive behaviour (Rim, Keyson, and Hunziker, 1971).

In a study conducted with juveniles confined as a result of aggression, Sarason (1968) contrasted the effects of behavioural rehearsal plus modelling, with coaching and with no-treatment control. Detention home staff ratings and parole board ratings indicated that the combination of rehearsal and modelling led to the greatest improvement in attitude and behaviour. Although general ratings are not considered strong evidence for behavioural change it is important to note that for this population the raters are extremely important to the daily lives and future prospects of the juveniles rated since these ratings are usually assumed to be both valid and reliable, and are used to determine the continuance or discontinuance of the incarceration of members of this population.

Studies employing a multiple baseline design have further demonstrated the control of aggression via assertion training (eg. Eisler, Hersen and Miller, 1974). Frederikson et al., (1976), have demonstrated the efficacy of a combination of behavioural rehearsal, modelling, coaching and feedback in reducing the number of abusive outbursts of two male adult psychiatric patients. Assessments consisted of a role-played behavioural test. Foy et al. (1976) has indicated that these benefits endured for six months without additional training.

The literature dealing with the modification of aggression or overassertiveness has demonstrated that for the most part, only the behavioural measures are sensitive to changes in aggression following assertion training. The inability of the paper-and-pencil self-report measures to detect changes in aggression following treatment is consistent with those results yielded by studies of the modification of underassertiveness, and may be taken as further evidence of their poor concurrent validity.

Interestingly, there are no published reports of the use of assertion training in the modification of aggression in an adult prison population.

### Generalization of Assertion Training Effects

An examination of the available literature reveals that several methods have been employed to study the generalization of assertion training effects. One method of evaluation requires the assessment of pre- to post-treatment change scores on behavioural test items that were not trained (Baer, Wolf and Risley, 1968; Goldsmith and McFall, 1975; Hersen et al., 1974; Kazdin, 1974; 1975; 1976; McFall and Lillesand, 1971; McFall and Marston, 1970; McFall and Twentyman, 1973; Young, Rimm and Kennedy, 1973). It should be noted that most of the untrained items include stimuli and require responses very similar to those found in the trained items. For example the Kazdin and McFall studies were concerned with improving subjects' abilities to refuse unreasonable requests, and the majority of the items used in their behavioural test reflect this interest. Their findings indicated a significant transfer of training to untrained situations requiring a refusal response. However an examination of change scores on untrained items requiring assertive but not refusal responses, revealed that generalization was not produced (Hersen et al., 1974; Kazdin, 1974; 1975; 1976; McFall and Lillesand, 1971; McFall and Marston, 1970; McFall and Twentyman, 1973). Kazdin (1974) has hypothesized that the lack of generalization demonstrated may be due to insufficient training and a lack of positive

reinforcement of subjects' assertive responses. In an attempt to foster generalization Kazdin (1974) has suggested teaching significant others in the subject's life how to respond to the new assertive behaviour.

Goldsmith and McFall (1975) have demonstrated significant transfer of training effects as measured by contrasting trained and untrained item change scores on the Interpersonal Situation Inventory and the Interpersonal Behaviour Role Playing Test. These authors reported that while generalization reached statistical significance the size of effect was minimal. This pattern of results was taken as support for the situational specificity of assertiveness. An alternative interpretation more directly yielded by the data, would be that assertion training effects are very situationally specific and do not promote generalization.

In a study of college student assertiveness which used a generalization measure similar to McFall and Marston's (1970), and designed specifically to promote generalization, Young et al. (1973,) reported a virtual absence of generalization effects resulting from an assertive training program which utilized to promote generalization.

Another study designed explicitly to enhance generalization effects contrasted rehearsal, rehearsal plus generalization instructions, modelling and coaching, modelling and coaching plus generalization instructions, and no-treatment (Baer et al., 1968). Subjects received the following generalization instructions before and after each treatment session: "Remember what you have learned in the training sessions and apply this to the new situations you will be exposed to. We would like you to continue standing up for your rights and expressing yourself better" (Baer et al., 1968, p. 94). In addition immediately prior to the post-treatment testing session subjects received the following instructions: "In the next ten situations continue standing up for your rights and expressing yourself better. Also let's see if you can stand up for your rights in different situations on and off the ward." (Baer et al., 1968, p. 94). Despite the demand characteristics of such treatment the authors reported a failure to achieve generalization of assertion training effects superior to those resulting from no-treatment. They concur with Eisler, Hersen and Miller (1975) in concluding that it is not likely that therapists can train clients to be more assertive in a general sense, and suggest that the therapist must; (1) ensure that clients be successful for their first steps towards increased assertion, (2) identify specific classes of problematic interpersonal situations for each client and train each class separately, (3) teach clients to identify those situations in which their newly acquired assertiveness will be appropriate.

The evidence for the existence of generalization effects as measured by change scores on untrained behavioural test items is minimal. Suggestions regarding the enhancement of generalization have not been subjected to empirical investigation nor are they likely to be as some researchers view generalization as unlikely in any event (Baer et al., 1968; Eisler, Hersen and Miller, 1975).

A second method of assessing generalization is to construct laboratory situations that impose somewhat different demands on the subject than those experienced during training. An example of this type of test is the Extended Interaction Test in which the antagonist persists in his unreasonable demands until the subject has either refused five times or acquiesced. "This extended interaction differed from the behavioural assessment task and rehearsal training in that it required subjects to persevere beyond one response in order to refuse successfully" (McFall and Lillesand, 1971, p. 316). This measure has been shown to be sensitive to the effects of assertiveness training but it should be noted that the test involves situations very similar to those used during training. In addition, since the training situations were presented via audio-tape and the generalization test situations were presented via the telephone, subjects were never required to deal with a live antagonist. A

more meaningful measure of generalization would require subjects to respond to a live antagonist since "A better test of generalization is assessment by a measure methodologically distant from the previous measures" (Kazdin, 1974, p. 248). Thus the evidence for generalization remains weak.

A third approach for evaluating generalization effects has been the use of tasks conducted without the subject's knowledge, either in or outside of the laboratory. For example at the completion of the post-treatment testing session, Hersen, Eisler and Miller (1974), paid their subjects only one-third the money subjects had expected to collect. Subjects were then rated for number of requests for full payment, demands for explanations and non-verbal components of assertion. The results failed to demonstrate significant transfer of training effects.

Another example of this type of generalization test, used in several reports in the literature (Kazdin, 1974; 1975; 1976; McFall and Lillesand, 1971; McFall and Marston, 1970; McFall and Twentyman, 1973), was developed by McFall and Marston (1970). Subjects in these studies, were contacted by telephone two weeks after their post-treatment testing session, and were subjected to a carefully designed hard-sell sales pitch urging subjects to purchase magazine subscriptions. The telephone call was terminated if the subject agreed to buy, hung up, or if after

five minutes the salesman was unable to make a sale. The telephone calls were tape-recorded and rated for total time of the call, latency to subject's first refusal and general social skill. Interrater reliability for resistance and social skill were .85 and .30 respectively. Due to the reported low reliability of the general social skill ratings this test cannot be considered a valid measure of general social skills.

Although McFall and Marston (1970) reported that this measure was sensitive to the effects of assertion training, subsequent research (Kazdin, 1974; McFall and Lillesand, 1971; McFall and Twentyman, 1973), failed to demonstrate generalization of training effects as assessed by the telephone sales measure.

The telephone test was later modified to conform more closely to college students particular interests (McFall and Twentyman, 1973). The modified test consisted of contacting the subject and making a graded series of seven unreasonable demands pertaining to the borrowing of lecture notes. The telephone test was terminated immediately following the subject's first refusal. The consequences of making an assertive response were therefore more closely akin to those found during training. The results were inconsistent and generally indicated that assertion training produced little generalization.

Kazdin (1974) has suggested that perhaps the all-or-none quality of the measure and its vague relationship to the specific target behaviours modified, account for the failure to find evidence of generalization. It is difficult to understand Kazdin's rationale as the telephone test requires subjects to do exactly what they were trained to do, namely refuse unreasonable requests. Further, follow up questionnaire data revealed that subjects did perceive the telephone requests as unreasonable (McFall and Lillesand, 1971; McFall and Marston, 1970; McFall and Twentyman, 1973).

A second limitation of the telephone type measure of generalization is the ethical problem posed by the use of deception. McFall and Twentyman have proposed the following solution: "If subjects were informed following treatment, that their in vivo behaviour was going to be assessed unobtrusively, this might serve to facilitate the extension of treatment effects to real-life behaviours" (McFall and Twentyman, 1973, p. 215). This suggestion has yet to be empirically tested and in any event would not absolve researchers of their ethical responsibilities since subjects would still not be informed that various problematic interpersonal situations, in which they find themselves, have been carefully engineered and purposely enacted for scientific reasons. It may well be that if subjects were so informed, situations requiring assertion may be perceived

differently thereby making it difficult to determine if assertion training led to generalization or if the latter resulted from changes in social perception.

A third limitation of this type of measure is that it requires only one kind of assertive behaviour. A more meaningful measure of generalization would include tasks designed to elicit the full range of assertive behaviours trained. The McFall group was not interested in assessing the full range of assertion, however for other researchers this generalization measure must be regarded as having only narrow utility.

These limitations notwithstanding it is somewhat surprising that the telephone measure failed to provide other than weak evidence for the existence of the generalization of assertion training effects. This pattern of results is usually taken to show that assertiveness is highly situation specific and that treatment techniques have yet to modify the stimulus control of untrained situations.

A fourth method of assessing generalization requires the recording of naturally occurring events. This method of assessment is difficult as it involves both follow-up, and either the observation of the individual or reliable

self-monitoring. This type of measure was used in the two clinical case studies reported by Frederikson et al. (1976). Results indicated that treatment not only modified aggressive components of assertive behaviour in laboratory role-played behavioural tests, but also reduced abusive verbal outbursts on the ward. Similar results were reported for psychiatric patients referred for social skills training (Marzillier et al., 1976). In terms of ethical considerations and face validity, naturalistic observation with subjects fully informed, would appear to be the measure of choice in the assessment of generalization of assertion training effects (Hersen and Bellack, 1976). The use of this method would side-step many issues regarding the validity and reliability of the current artificial alternatives. Unfortunately few researchers have had the resources enabling them to employ this method of assessment.

A major methodological confusion is revealed by the review of the assertion training generalization literature. There is an extremely close relationship between assessment and treatment in behaviour modification in general and between assessment and treatment in the social skills area in particular. Unlike the elimination of target behaviours such as avoidance behaviour, enuresis, stuttering or other discrete behaviours, assertion training has two goals. The first is the acquisition of social skills, and the second involves the education or re-education of

subjects with regard to what constitutes assertive behaviour and when such behaviour is likely to be appropriate. This difference in goals does not preclude a precise, task-oriented definition of the target behaviours to be modified, nor does it preclude the construction of devices to measure the occurrence or nonoccurrence of the target behaviours. However as demonstrated above, assertiveness researchers have generally failed in this area. Specific components of assertiveness are described on an a priori basis but later dropped if subjects having undergone assertion training fail to demonstrate them significantly more often than untreated subjects. The performance of the new set of component behaviours is then taken to indicate a successful treatment program (Eisler, Miller and Hersen, 1973). The construct validity of many of the self-report and behavioural measures seems to be highly dependent on whether or not they are sensitive to the "effects" of assertion training. As a result the effects of assertion training are difficult to assess and the effects of failing to carefully define and describe what behaviours are to be modified, and what behaviours will be taken to indicate effective treatment are keenly felt. This lack of clarity concerning assessment has retarded understanding of the nature of social skills, as well as the planning and evaluation of treatment (Hersen and Bellack, 1977). The assessment of generalization via non-laboratory tests conducted without subjects knowledge has generated a good number of publications

but little else. Besides the needless use of deception, the construction, interpretation and application of these measures seems not to be governed by the concept of generalization and its definition, or by the efficacy of a particular assertion training program, but rather by the nature of the results obtained. As previously discussed the failure of the McFall and Marston (1970) telephone task to demonstrate generalization effects provided the impetus for the construction of a new measuring device which also failed to demonstrate generalization of assertion training. Interestingly, these results were not interpreted as indicating a need for more effective training procedures. Instead, Kazdin (1974) suggested that the generalization measure used was inappropriate, while other researchers suggested that due to the situational specificity of assertiveness as inferred from these measures, "...it is unlikely that the therapist can train clients to be more assertive in a general sense." (Eisler, Hersen and Miller, 1975, p. 330). It is clear that this approach to the production and assessment of generalization can only impede progress and fails to consider that "...generalization should be programmed rather than expected or lamented." (Baer et al., 1968, p. 95).

These criticisms do not apply to the literature describing the use of naturalistic observations as a measure of generalization, such reports are few in number.

The assessment of generalization via an analysis of untrained item change scores on behavioural tests has the virtue of at least describing generalization in terms of what performance changes are expected. However the reliability and validity of such a procedure is a function of those of the behavioural tests used and the degree to which the behavioural tests approximate conditions found in situations to which generalization is expected. For example while a behavioural test that presents subjects with tape recorded stimuli (eg. McFall and Lillesand, 1971; McFall and Marston, 1970; McFall and Twentyman, 1973) may enjoy a certain degree of validity as an overall measure of assertiveness, as a measure of generalization its use is suspect. Ideally generalization procedures should attempt to closely resemble actual situations subjects are likely to encounter in their daily activities.

In summary the available experimental evidence for generalization is inconsistent, limited and generally weak. The application of assertion training techniques is therefore of greater academic interest than clinical utility if only within-treatment modification can be obtained (Hersen and Bellack, 1977).

Several proposed courses of action designed to promote generalization have been suggested. One is to ensure that the subject receives positive reinforcement for the performance of his assertive behaviour (Baer et al., 1968; Kazdin, 1974). This suggestion has yet to be empirically investigated and it is clear that its implementation would require a great deal of co-operation from the therapist, client and significant others in the clients life. It may well be that the significant others would not care to positively reinforce assertive behaviour (Wolpe, 1958; Wolpe and Lazarus, 1966). A second suggestion recommends training every class of problematic interpersonal situation the subject is likely to encounter (Baer et al., 1968). This suggestion has little to do with promoting generalization per se but rather involves the direct training and acquisition of new behaviours. Although the technique would seem to be of value it is doubtful that every possible social situation requiring enhanced assertion could be isolated let alone included in a training program. A third suggestion involves teaching the client a self-control skill of general applicability (D'Zurilla and Goldfried, 1971). An empirical investigation of this proposal was the purpose of the present study.

## SOCIAL PROBLEM-SOLVING SKILLS

A lack of generalization is not an uncommon finding in the behaviour modification literature, and has provided the impetus for a reevaluation of the importance of the relationship of cognitive factors to effective human functioning (D'Zurilla and Goldfried, 1971; Mahoney, 1974; Meichenbaum, 1973; 1974; 1975; 1976). The particular cognitive factors which have been examined include disorders of input (Ebner and Ritzler, 1969; McReynolds, 1960), deficiencies in thought and language (Maher, 1966; Payne, 1964), and the quantity and content of subjects self-statements (Ellis, 1974; Meichenbaum, 1973; 1974; 1975; 1976). However the role played by effective cognitive functioning in successfully solving life problems and thus in adapting to the social environment has been relatively neglected (D'Zurilla and Goldfried, 1971; Platt and Spivak, 1972; Shure and Spivak, 1974).

As early as 1953 Jahoda suggested that the ability to carry through certain steps in problem solving might serve as a cornerstone of a definition of mental health. Jahoda distinguished efficient problem-solving from adaptation on the basis of a conscious awareness of a problem and an initial intention to deal with it. The focus of Jahoda's interest was on the process of problem-solving and not the end result. In

contrast clinical researchers have concentrated on factors such as anxiety, frustration and depression, which are thought to interfere with the ability to face and resolve real-life problems. This approach assumes that the elimination of the interfering factors will allow subjects to effectively utilize their problem-solving skills. The possibility that maladaptive behaviour and emotion result from poor problem-solving skills has not been explored until relatively recently (D'Zurilla and Goldfried, 1971; Mahoney, 1974; Platt and Spivak, 1972). Equally unexplored is the possibility that the relationship between emotional responses and maladaptive behaviour may be a function of the extent to which specific responses interfere with social problem-solving processes. The purpose of the present section is to examine the recent exploration of these areas.

### Impersonal and Interpersonal Problem-Solving Skills: A Distinction

Although the study of human problem-solving has a long history in psychology (Davis, 1966; Duncan, 1959), few investigators have differentiated processes involved in the solution of impersonal mechanical tasks, such as anagrams and puzzle problems, and those processes involved in the solution of interpersonal social problems. In their state of the art

review of problem-solving thinking, Simon and Newell (1971), did not think interpersonal problem-solving processes worthy of mention. This is somewhat surprising as a task analysis of impersonal and interpersonal problem situations yields at least one major difference. The typical impersonal problem solving task is characterized as having one solution, and is constructed in such a way that subjects can readily perceive whether or not they have been successful in finding the solution either during the task or within a relatively short time period following task completion. Interpersonal problem-solving tasks are not characterized as having one solution but have an almost infinite variety of possible correct solutions. Further, interpersonal problem situations do not readily yield information concerning the probable success or failure of the attempted solution. These differences would seem to indicate that different but not necessarily independent strategies and processes are required to solve each type of problem.

Supporting evidence for the validity of distinguishing between impersonal and interpersonal problem-solving skills has been offered by several researchers. Levinson and Neuringer (1971) contrasted the problem-solving skills of suicidal adolescents, abnormal non-suicidal adolescents and normals and found that while suicidal adolescents were less able than normals to shift to a more efficient method of route-drawing on

a paper-and pencil task, normals and non-suicidal adolescents did not differ on this measure. The investigators did not offer an interpretation of the failure to find a difference between the normal and abnormal but non-suicidal groups. These findings are somewhat limited by the use of less than rigorous ratings used to classify subjects. In a correlational study Muus (1960) reported a significant relationship between I.Q. scores and mechanical causality test scores. No relationship was found between I.Q. scores and social causality test scores. These results were supported by Platt, Spivak and Bloom (1971), who reported consistently low correlations between interpersonal problem-solving test scores, general intelligence test scores and creativity scores. The trend demonstrated in these studies suggests that beyond establishing some minimal requirement of general intellectual performance, competence in solving impersonal tasks is not related to competence in solving interpersonal problems.

Collectively the above-cited findings are consistent with the contention that different but not necessarily independent skills are required to solve impersonal and interpersonal problems.

## MEASUREMENT OF SOCIAL PROBLEM-SOLVING SKILLS

In an attempt to study the relationship of interpersonal problem-solving skills to social adjustment, Spivak and Levine (1963) first introduced the Means-Ends Problem-Solving (MEPS) test. This test was specifically designed to measure an individual's ability to orient himself to, and conceptualize means of moving towards a goal in a social situation. The MEPS test consists of a series of nine story stems portraying social situations in which a need is aroused in the protagonist at the beginning of the story, and is satisfied by him at the end of the story. Subjects are required to complete the story by filling in those events which might have occurred between the arousal and the satisfaction of the hero's need. The test is scored for the number of stated means to the goal, number of stated obstacles, number of enumerations of means and obstacles, and for the number of times the subject refers to the passage of time. The MEPS test was not designed to be a measure of overall adjustment nor of general social problem-solving skills. The test was designed to measure means-ends thinking, operationally defined as the number of means subjects are able to verbalize when dealing with fictitious problematic social situations. This ability is viewed as only one component of social problem-solving skills (Platt, Spivak and Bloom, 1971; Spivak and Levine, 1963). Interrater reliabilities were reported to range

from .77 to .95 across individual stories with a mean of .84 (Platt, Spivak and Bloom, 1971). MEPS scores have been shown to reflect psychiatric patient--non-patient status in adults (Platt and Spivak, 1972), and adolescents (Platt, Spivak, Altman, Altman and Piezer, 1974) as well as heroin addict--non-addict status (Platt, Scura and Hannon, 1973). In addition MEPS scores were found to be significantly related to high or low pre-morbid social competence of psychiatric patients (Platt and Spivak, 1972). Within a group of male psychiatric patients, poor MEPS scorers in contrast to high MEPS scorers were more socially inadequate and emotionally indifferent as measured by subscale scores on the MMPI (Platt and Siegal, 1974). Within a population of 9-12 year old institutionalized emotionally disturbed children MEPS scores were reported to be significantly related to subjects' behavioural adjustment as rated by the institutional staff (Larcen, Spivak and Shure, 1972). I.Q. scores were not related to MEPS scores in this population. These results are consistent with results indicating that among 10-12 year old elementary school children, those classified as behaviourally disturbed by their teachers, exhibited significantly lower MEPS scores, regardless of social class or I.Q. than did children rated as adjusted. Of further interest is the finding that the problem-solving thoughts of the behaviourally disturbed children were reported to be more limited to pragmatic, impulsive and aggressive means. These

studies were taken to demonstrate the construct validity of the MEPS test (Shure and Spivak, 1974). However all are limited by their methodology which involves correlations calculated between MEPS scores and various types of ratings supplied by a variety of professionals and para-professionals. Interrater reliabilities were not provided in any of the studies and therefore only a conservative appraisal of these results can be made. In so doing the construct validity of the MEPS test is not above question.

A second measure of social problem-solving skills was designed to assess subjects' abilities to conceive of alternative courses of action (Spivak, 1973). This measure of optional thinking ability consists of several stories each involving a problematic social situation. Unlike the MEPS test story endings are not provided. Subjects are required to state as many alternative solutions as possible and are scored accordingly. Psychiatric and control subjects were successfully differentiated by scores on the optional thinking test. Control subjects demonstrated knowledge of a significantly greater number of options than did psychiatric subjects. These results were reported among adult subjects (Platt and Spivak, 1973), and among adolescents (Platt et al., 1974). Test-retest reliabilities were not reported.

A third measure of interpersonal problem-solving skills involves the assessment of causal thinking, defined as the ability to think of social situations in cause and effect terms (Spivak, 1973). The test consists of a series of five stories depicting situations in which one person is in a position to explain something to another. For example, when administered to children, one story involves a child with a bloody knee who is talking to his mother. The subject is required to state what he thinks the child is saying. Responses are scored via categories of appropriate responses (Spivak, 1973). Causal thinking scores were successful in differentiating adult psychiatric and control subjects (Platt and Spivak, 1973), but failed to differentiate adolescent psychiatric and control subjects (Platt et al., 1974). Further psychometric evaluation of this measure has not been reported.

Related to causal thinking is a measure of consequential thinking, defined as the the ability to conceive of consequences relative to action (Spivak, 1973). This test consists of a series of five stories depicting situations in which two people are in conflict over possession or use of an object. Each story describes the conflict and the course of action taken by one of the persons to gain possession of the object. Subjects are required to state as many consequences as possible. Responses are scored against a list of appropriate consequences generated

by the author. Consequential thinking scores successfully differentiated adolescent psychiatric and normal subjects (Platt et al., 1974). A complete psychometric evaluation of this measure has not been conducted.

The final measure to be discussed was designed to assess the number of alternative solutions to a given problem, children are capable of generating. The Pre-school Interpersonal Problem Solving (PIPS) test follows a procedure similar to the above described problem-solving skill measures. A child is presented with a story, for example, "Here's Johnny (show photo). Here's Jim (show photo), Johnny has been playing with this bicycle (show photo) and has been for a while. Now Jim wants to play with the bicycle." The subject is then asked what Jim could do or say to have a chance to play with the bicycle (Shure and Spivak, 1974). The child is presented with different variations of the same story until no new responses are elicited. A standardized scoring technique, not described in the literature, is used to quantify the subjects' responses. Test-retest reliability and interrater reliability are not reported. PIPS scores have been demonstrated to be significantly related to social class and to teacher ratings of impatience, emotional control and aggression in four and five year old nursery school children (Shure and Spivak, 1970). Children from poverty areas, as opposed to middle class areas, and behaviour-problem

children, irrespective of social class, were reported to generate a narrower range of alternate solutions, with lower class children giving more aggressive and/or irrelevant solutions.

In a more comprehensive study examining the validity of the problem-solving skills measures and their relationship to behavioural adjustment, Shure, Newman and Silver (1973) examined the responses of 257 Head Start program pre-school children. Measures employed included the PIPS test, the consequential thinking test, the Stanford-Binet I.Q. test and a language test designed to assess childrens' appreciation of the words "and" and "not". The language measure was included to test the assumption that before a child can think of alternate solutions to social problems he must be able to appreciate the linguistic concepts implied. Behavioural adjustment measures consisted of teachers' responses to standardized rating forms of the child's attentiveness in class, class participation, concern for others, popularity, initiative in class activities, ability to work independently, comprehension of class activities and number of irrelevant comments made in class. On the basis of these ratings subjects were classified as either impulsive, inhibited or normal. Results indicated significant between-groups PIPS score differences. A discriminant analysis revealed that PIPS scores best predicted whether or not a subject was classified as

normal or not. The inclusion of the consequential thinking scores provided the necessary information required to predict whether the subject was impulsive or inhibited. Although I.Q. scores were found to be significantly related to PIPS scores and to consequential thinking scores, their inclusion did nothing to add to the power of PIPS scores in predicting behavioural adjustment. The language test scores, although significantly related to behavioural adjustment, failed to increase the predictive power of the PIPS scores.

The above-cited results were taken to indicate that social problem-solving skills are relevant to social adjustment across subjects differing in age, psychiatric classification and socio-economic status, with specific thinking skills differing in their significance for adjustment as a function of the subject's age (Spivak and Shure, 1974). It would appear that the MEPS test, PIPS test and consequential thinking test enjoy some degree of predictive validity. However reliability data concerning these tests and the behavioural ratings is lacking. Construct validity has been minimally demonstrated, allowing only limited interpretation of the role of social problem-solving skills.

Despite these criticisms, the consistent trend demonstrated by these studies suggests that the measures do assess some

aspect of thinking significantly related to behaviour while minimally related to general intelligence. Whether or not these aspects of thinking can best be labelled "social-problem-solving skills" has yet to be firmly established. But it is clear that these assessment techniques yield previously unobtained information and pave the way for further research in a largely unexplored area. Such research would include the use of more rigorous behavioural measures, psychometric construction of new assessment techniques and attempts to demonstrate causal relationships between social problem-solving skills and behaviour.

#### THE MODIFICATION OF SOCIAL PROBLEM-SOLVING SKILLS

While many investigators of treatments designed to modify maladaptive thoughts and behaviours may be said to have implicitly explored the modification of problem-solving skills, few (D'Zurilla and Goldfried, 1971; Mahoney, 1974; Meichenbaum, 1974; Spivak and Shure, 1974) have explicitly set social problem-solving skills as the prime treatment goal.

In a theoretical paper concerning the relationship between problem-solving and behaviour modification techniques, D'Zurilla and Goldfried (1971) viewed maladaptive behaviour as resulting from either: (a) the inhibition of effective

responses for specific problematic situations due to anxiety or some other aversive stimulation; (b) an actual deficit in potentially effective responses; (c) an inhibition of existing cognitive problem-solving operations; (d) a deficit in the problem-solving operations themselves. It was suggested that the appropriate application of skills training techniques and or anxiety reduction procedures is limited to maladaptive behaviour resulting from either anxiety or response deficits as described above. The modification of maladaptive behaviour resulting from problem-solving difficulties, via skills training, was suggested to constitute incomplete treatment, the latter described as failing to yield generalized behaviour changes. Thus for the modification of behaviours viewed as resulting from problem-solving deficits, and for behaviours that do not demonstrate adaptive generalization the authors proposed that "A promising approach to the problem... ..would seem to be one that emphasizes the establishment of learning and behaviour strategies or, in operant terminology, complex response chains with general applicability as opposed to an approach that emphasizes discrete response learning." (D'Zurilla and Goldfried, 1971, p. 408). Problem-solving, defined as a process generating a variety of response alternatives for dealing with problematic situations and which increases the probability of selecting a response which will maximize positive consequences and minimize negative consequences, was considered

to be just such a learning and behavioural strategy (Gagne, 1966). On this basis D'Zurilla and Goldfried (1971) proposed an instructional program designed to enhance problem-solving skills.

The first step of their instructional procedure consisted of an examination of the subject's general orientation to the problematic situation. Several lines of problem-solving research have described the relationship of attitude to problem solution. Lefcourt (1966) and Rotter (1966) both reported that if a subject thought he could cope effectively or had positive expectations regarding the outcome of an event, the probability of actually attempting to cope was increased. Miller, Galanter and Pribram (1960) and Lazarus (1966) found that good problem-solvers recognized the occurrence of a problem as opposed to dwelling on their emotional responses. Further, good problem-solvers inhibited impulsive responses or alternatively inhibited the "do nothing" response (Bloom and Broder, 1950; Dollard and Miller, 1950; Osborne, 1963; Parnes, 1967; Shaftel and Shaftel, 1967). Less successful problem-solvers were described as impulsive, impatient and quick to give up (Bloom and Broder, 1950). These findings are consistent with those of Meichenbaum (1974; 1975; 1976), who has demonstrated the power of task-irrelevant, self-defeating, and irrational self-statements in the disruption of adaptive behaviour.

The second step of the proposed instructional program involved the enhancement of skills needed to define and formulate the problem. Problem formulation was viewed as the operational definition of all aspects of the situation followed by their classification as either relevant or irrelevant to problem solution. The identification of primary and secondary goals was also included as an element of problem formulation. The utility of this process was indicated by the findings of Bloom and Broder (1950), who reported that in stating a problem concretely, subjects may be forced to make relevant what may have at first appeared irrelevant.

The generation of alternative possible solutions via principles yielded by "brainstorming" studies (Clark, 1958; Osborne, 1963; Parnes and Meadow, 1960), constituted the third step of the program. The brainstorming principles state that quantity of alternatives equals quality and that judgement of their possible effectiveness should be delayed until novel alternatives fail to be generated.

Following the brainstorming process the training program suggested instructing subjects in procedures for choosing among possible alternative solutions. The specifics of this procedure were based on Edwards' (1961) Subjectively Expected Utility model, which involves an examination of subjective estimates of the probability that each particular alternative solution will achieve given outcomes each of which is in turn assigned a subjective value.

The final step to the proposed problem-solving instructional program involved a verification process whereby subjects are to focus on the veracity of their expectations concerning actions and outcomes and, if inconsistent, to modify them accordingly.

The D'Zurilla and Goldfried treatment model was based on findings yielded by investigations of the processes involved in the solution of impersonal, mechanical problem tasks. Given the previously cited distinction drawn between processes involved in the solution of impersonal and interpersonal problem tasks, the application of the proposed model to the modification of social problem-solving skills may be quite limited. However since impersonal and interpersonal problem-solving strategies may overlap, and due to the lack of published research findings dealing with interpersonal problem-solving strategies, this

model may be considered a useful prototype. The specific procedures to be used in the application of the model were not described nor was an application of the model empirically tested. To do so was the purpose of the present study.

In another proposed technique designed to enhance social problem-solving skills Meichenbaum (1974) viewed problem-solving as a three-stage process involving comprehension of the situation, production of a solution, and the cognitive mediation of the performance of the solution. Poor problem-solving skills were regarded as resulting primarily from poor cognitive mediation, specifically the occurrence of task-irrelevant, self-defeating and irrational self-statements. It was therefore suggested that enhancement of problem-solving skills could be achieved by self-instructional strategy training. Such training would entail a detailed task analysis of the problem to be solved with the results translated to specific self-statements which would then be modelled by the therapist and overtly and covertly rehearsed by subjects.

That this proposal is limited by its vagueness is clear. Equally clear is the implicit assumption that poor problem-solving performance is the result not of poor problem-solving skills but rather of interfering and self-defeating mediational processes. Thus this procedure would

not be applied in as many cases as would the proposal offered by D'Zurilla and Goldfried (1971). However self-instructional strategy training could easily be included in the D'zurilla and Goldfried procedure and may provide some of the specific techniques for its implementation. An empirical investigation of the Meichenbaum proposal has yet to be reported in the literature.

On the basis of their previously reported results Spivak and Shure (1974) developed a program for children specifically designed to enhance social problem-solving skills. The specifics of the treatment form the basis of their book (Spivak and Shure, 1974) and are too lengthy to enumerate here. The founding principles of the program were:

(1) To teach prerequisite language and thinking skills before training problem-solving strategies. Key skills included appreciation of the words and, or, not, some, same, different, happy, sad, and mad.

(2) To teach new concepts in the context of familiar content.

(3) To base the program on people and interpersonal relations rather than objects and impersonal situations.

(4) To teach concepts rather than grammar.

(5) To teach a habit of seeking solutions and evaluating them on the basis of their potential consequences rather than



the absolute merits of a particular problem-solution. The prerequisite concepts for the acquisition of this habit included maybe-might, why-because and if-then reasoning.

(6) Assuming that a child is more likely to act on a self-generated rather than other-generated solution, the program encouraged the child to create his own ideas and offer them within the context of the problem. (This principle, similar to that implicit in Rhea and Marston's (1968) self-reinforcement therapy in which the therapist never suggests alternative behaviours, is in marked contrast to Meichenbaum's (1974) treatment wherein subjects are taught how and what to think.)

(7) To teach problem-solving skills not as ends but in relation to overt behavioural adjustment.

The training program consisted of twenty minutes of instruction per day, five days a week, for twelve weeks. It is of note that appropriate behaviours or solutions to interpersonal problems were neither modelled, rehearsed nor coached. Treatment subjects consisted of 113 pre-school children selected from nine Philadelphia inner-city nursery schools. The no-treatment children numbered 106 and were selected from the same schools. All subjects were classified as either impulsive, inhibited or adjusted on the basis of behavioural rating scores obtained from rating scales similar to those previously described (Shure et al., 1973).

The results demonstrated several significant between- and within-group differences . Pre- to post-treatment change scores on the PIPS and consequential thinking tests indicated significant improvement only for the trained children. Children originally classified as impulsive or inhibited exhibited significantly greater improvement than adjusted subjects. From the PIPS data, force ratios, or the number of coercive, commanding, hitting solutions offered, were calculated. Change scores demonstrated a significant reduction in force ratios only among the trained children. An examination of PIPS test first responses revealed that among trained subjects, 61% gave a forceful first solution at pre-testing while at post-testing the rate decreased to 35% . For the control group pre- to post-treatment forceful first solutions increased from 48% to 66% . With the assumption that the order of presentation of solutions serves as an index of the solution's priority in the child's mind, Spivak and Shure interpreted the results as indicating a tendency among inner-city pre-schoolers to think in terms of forceful solutions to typical interpersonal problems.

The conclusions drawn by the authors may be somewhat premature. The increase in forceful first responses demonstrated by control subjects may reflect only test--retest effects. The assumption regarding order of solution

presentation and subjective priority is easily replaced by alternative assumptions. It may be that the order of presentation reflects the complexity of the offered solutions, with first presented being the simplest and thus serving as a "warm up" exercise.

An analysis of the behavioural rating scores revealed that regardless of group placement, subjects who were rated as adjusted at the onset of the program were so rated at treatment completion. A significantly greater number of trained versus untrained children originally rated as either impulsive or inhibited were rated as adjusted at post-treatment testing. A six month follow-up indicated that the behavioural ratings of the trained children remained stable and that a significantly greater proportion of control children rated as adjusted at both pre- and post-treatment were reclassified as either impulsive or inhibited after their first six months of public primary school (33% for controls vs 7% for treatment children.) These results were interpreted as showing that control children lacked the necessary coping skills to adapt to school life.

It would appear that the Spivak and Shure program yielded much of significance. However this conclusion is suspect due to methodological errors contained in the study. Pre-treatment between groups differences were not assessed. The failure to do

so leaves open several alternative interpretations of the results. For example, the pre- and post-treatment problem-solving score correlations were not reported thus enabling the contention that scores may have been positively related. As no evidence to the contrary was reported there exists the possibility that the training group children had superior pre-treatment problem-solving skills and consequently were better able to learn from extra-experimental experiences, with such learning resulting in increased problem-solving skills and increases in appropriate behaviour. It would therefore be impossible to determine the effects of the treatment program as these would be confounded by the effects of the regular nursery school program. As such Spivak and Shure's conclusion, that the treatment programme enhanced problem-solving skills which in turn enhanced behavioural adjustment, is unfounded given the data provided.

A second possible confound involves the use and effects of covert rehearsal and conditioning. Children in the treatment program were required to consider various problematic interpersonal situations in terms of possible solutions and their consequences. The derived solutions and predicted consequences were then discussed during treatment and although subjects were never directly told what to think they were encouraged to consider alternative solutions and consequences.

This process may well have promoted a good deal of covert rehearsal and conditioning as each subject visualized his actions and their consequences. Given the demonstrated effects of covert treatment techniques on overt behaviours, (Beck, 1970; Cautela, 1966; 1967; Goldfried and Goldfried, 1975; Kazdin, 1973; 1974; 1975; Ludwig and Lazarus, 1972; Meichenbaum, 1972; 1973), improvements in behavioural adjustment may not have resulted from improved social problem-solving skills as concluded by Spivak and Shure. In summary the investigation of the modification of social problem-solving skills is characterized by methodological shortcomings and optimistic conclusions drawn from data yielded by measures of less than envious psychometric status. This investigation thus provides only preliminary evidence of a tenuous nature regarding the enhancement of problem-solving skills and concomitant behavioural changes.

Although the behavioural effects of social problem-solving skills training are uncertain, there remains the untested contention that in combination with a behaviour modification programme, increased generalization will result. A test of this hypothesis is provided by the present study.

## SOCIAL FEAR HYPOTHESIS

The social fear hypothesis as formulated by its originator, Wolpe (1958), proposed that underassertiveness was attributable to anxiety which may be reciprocally inhibited by the establishment of assertive behaviour. The social fear hypothesis leads to the following predictions :

(1) Social fear measures will be significantly and inversely related to measures of assertiveness.

(2) Increases in assertiveness will yield decrements in social fear.

(3) Decreases in social fear will lead to increases in assertiveness.

Although tests of these predictions appear in the literature, their relevance to Wolpe's hypothesis is somewhat limited due to inconsistent interpretations of the term assertiveness. As defined by Wolpe, "Assertiveness usually involves more or less aggressive behaviour, but it may express friendly, affectionate and other non-anxious feelings." (Wolpe, 1969, p.61). Thus, by definition assertiveness is inversely related to anxiety. Moreover Wolpe cites evidence gathered by

Arnold (1945), Ax (1953) and Siminov (1967) to support the position that there is a physiological antagonism between anger and anxiety and therefore anxiety may be reciprocally inhibited by assertion. Plainly Wolpe equated assertion with aggression. A test of Wolpe's social fear hypothesis would require researchers to investigate the relationship of aggression to anxiety. One aim of the present review was to demonstrate that of the published investigations purporting to test the social fear hypothesis, none is successful in so doing.

#### Descriptive Studies

In a correlational study, Bates and Zimmerman (1971) examined the relationship between assertiveness, as measured by their Constriction Scale, and social fear, as measured by the Fear Inventory and by MMPI subscales. Results indicated a few low significant correlations, but were generally inconsistent. The interpretation of these results is limited as the validity of the Constriction Scale has yet to be demonstrated and neither fear measure can be considered a pure measure of social anxiety.

A moderately strong negative correlation between Taylor Manifest Anxiety scale scores and self-report measures of assertiveness scores has been shown for women but not for men (Percell, Berwick and Biegel, 1974). The authors reported their findings to be counterintuitive as they expected nonassertiveness to be more anxiety provoking for men than for women due to societal expectations that men be the aggressive members of the species. This conclusion would seem unwarranted as studies examining the effects of sex of subject on the reliability and validity of self-report measures of assertiveness have not been conducted and therefore the alternative conclusion that men and women simply differ in the accuracy of their self-reports cannot be precluded. Regarding the social fear hypothesis, these findings are of little consequence due to the absence of psychometric evaluation of the self-report measures employed.

Based on a review of factor analytic studies of fear survey schedules, Morgan (1974) constructed his Social Fear scale. Items selected for inclusion were those that loaded heavily on "social fear" factors but not on others. This scale together with the Rathus Assertiveness paper and pencil measure, was administered to a large sample of college students. Although a significant correlation was obtained, the proportion of common variance was minimal (3% for males, 4% for females). Ten

percent of the sample displayed either high assertiveness and high social fear or low assertiveness and low social fear. Both combinations are contrary to the social fear hypothesis as usually interpreted. Gambrill and Richey (1975) using different paper and pencil measures of assertiveness, reported that 11% of their non-college adult sample reported assertive behaviour in spite of high levels of discomfort. Correlations between the two measures were not reported.

In a correlational study which measured assertiveness via the adult version of the College Self-Expression Scale (Gay, Hollandsworth and Galassi, 1975) and which measured anxiety via Morgan's Social Fear scale, Hollandsworth (1976) reported a significantly higher relationship than that reported by Morgan (1974), although the samples were comparable. Whether these findings have more to do with the particular measures used or some version of the social fear hypothesis is unclear.

In two studies where social anxiety scores were used as the criterion for the establishment of extreme groups, between groups behavioural differences were not found (Borkovec et al., 1974; Clark and Arkowitz, 1975). However Gambrill and Richey (1975) found that while women participating in an assertion training program did not differ from normative samples on self-report measures of assertiveness, self-report scores of discomfort in social situations were significantly higher.

The above findings are either equivocal or fail to address themselves to the point in question. The general use of paper and pencil measures which for the most part lack psychometric evaluation, prevent the conclusion that social fear is or is not related to assertiveness. The conclusion finding the most support from the studies cited above is that assessment procedures of limited reliability and untested validity do not correlate with each other.

#### The Effect of Assertion Training on Social Fear

Contrary to predictions derived from the social fear hypothesis, McFall and Marston (1970) reported that while assertion training proved effective in increasing self-report and behavioural ratings of assertiveness, it was ineffective in decreasing scores on the Taylor Manifest Anxiety Scale. In a partial replication Friedman (1971) reported similar findings for self-report measures of anxiety.

Rathus (1972a) reported that assertion training did reduce total scores on the Temple Fear Survey Inventory but not on the "fear of social criticism" and "fear of social incompetence" factors as derived from the inventory. In a replication, consistently negative results were reported (Rathus, 1973b).

These findings are of particular relevance to Wolpe's hypothesis as Rathus, like Wolpe and Salter, equated assertion and aggression. Other investigations have provided marginal evidence that social anxiety decreased as a function of increased assertion (Bander et al., 1975; Christensen et al., 1975; Galassi et al., 1974; Gambrill and Richey, 1975; MacDonald, Linguist, Kramer, McGrath and Rhyne, 1973; Percell et al., 1974).

#### The Effect of Fear Reduction on Assertiveness

Research into the effects of fear reduction on assertiveness is based on a prediction said to be derived from the social fear hypothesis. However the prediction that decreases in anxiety will be associated with increases in assertiveness is a non sequitur. Wolpe's premise stated that a low level of anxiety is necessary for the performance of assertive behaviours. Low levels of anxiety were not viewed as a necessarily sufficient condition for the performance of assertive behaviours. Nevertheless this prediction, regardless of its derivation, is of clinical significance as treatment selection would be facilitated by an understanding of the effects of fear reduction on assertive behaviour.

In the treatment of dating anxiety, Curran (1975) and Curran and Gilbert (1975), demonstrated systematic desensitization to be equivalent to social skills training in both reducing anxiety and increasing dating behaviours. Further, while desensitization has not proven effective in the modification of the verbal performance of subjects treated for interpersonal anxiety, self-report measures of anxiety indicated some improvement (DiLoretto, 1971; Wright, 1976). That desensitization fails to change behaviours while leading to improvements on self-report measures of the target behaviour, is not uncommon (Marshall, Stoian and Andrews, 1977), and may reflect either a need for follow-up studies assessing possible lag effects or a need for response modality specific treatment programs.

In summary it would appear that the reduction of social fear has not been demonstrated effective in the enhancement of assertiveness. It would also appear that since the relationship of aggression and anxiety remains unexplored, Wolpe's Social Fear hypothesis has yet to be tested.

## THE STUDY

### Modification of Assertiveness and Social Problem-Solving Skills

#### Aims and Hypotheses

A social skills training program was designed so that the contribution of social problem-solving skills training in the modification of assertiveness could be assessed. One of the two treatment groups received assertion training, consisting of behavioural rehearsal, modelling, feedback, discussion, coaching, plus training in problem-solving skills. The second treatment group received the same treatment minus the problem-solving skills training component.

Hypothesis I: "The combination of assertion training and social problem-solving skills training will yield significantly greater improvement in social problem-solving skills than will standard assertion training alone."

Hypothesis II: "Social problem-solving skills training will enhance the effectiveness of assertiveness training."

Hypothesis III: "Generalization of assertion training effects to items having different situational characteristics than those used during training, will be enhanced by social problem-solving skills training."

From the social fear hypothesis the following prediction was also tested:

Hypothesis IV: "Subjects demonstrating increased assertiveness will show a reduction in social fear."

### Subjects

Thirty male penitentiary inmates from a medium-security institution volunteered to take part in the assertive training program. The inmates treated were all federal offenders incarcerated for either crimes of violence or property destruction. There were three sources of referral:

(1) Classification officers in response to a memo sent from the psychology department (Appendix A).

(2) The psychology staff referred those subjects they felt could benefit from assertion training.

(3) Self-referral by inmates who had heard of the program and wished to participate.

The following criteria were used to determine subject suitability:

(1) Subject was not receiving treatment from either the psychology or psychiatric staff.

(2) Subject indicated that nonassertion was a problem in his everyday life.

(3) Nonassertiveness was demonstrated by the practical assessments, described below. Subjects were not accepted if their Total Deviation scores were below fourteen. This measure, the sum of the absolute value of scores on the Social Response Inventory and Social Response Behavioural test, was chosen as the criterion variable since both intentions and behaviour were seen as clinically relevant.

(4) Subject expressed a willingness to attend eight group treatment sessions.

## Assessment

### 1. Measures of Assertiveness

(a) Behavioural: Social Response Behavioural Test (SRBT).

The SRBT is the only behavioural test, sensitive to both over- and underassertiveness, that was specifically designed for use with penitentiary inmates (Marshall, 1976). This test,

designed by Marshall, Marshall and Keltner (1976), contains 18 dual-role situations. One role was enacted by an independent experimenter and the other, (requiring a single response), was played by the subject. The subjects' responses were tape recorded and later scored according to the following scale:

- 2 Extremely underassertive
- 1 Underassertive
- 0 Appropriately assertive
- +1 Overassertive
- +2 Extremely overassertive

Positive scores indicate overassertive responses with negative scores reflecting underassertive behaviour. Each subject's response was scored by the independent experimenter and a second independent rater. Thus for each subject two ratings were obtained. The Pearson product-moment correlation between the two sets of scores was .86 .

To facilitate the assessment of generalization the test contains items which present situations that could: only take place within a penitentiary; occur inside or outside the penitentiary; and only arise outside the penitentiary. The items, listed in Appendix B, include situations involving asserting rights, resisting demands, expressing negative affect, expressing opinions, social approach, requesting information and

terminating social interactions. Subjects were asked to respond to the presented situation as if it were actually occurring and were informed their tape-recorded responses would be kept strictly confidential.

(b) Self-Report Measure: Social Response Inventory (SRI).

This rating scale, designed for use within a penitentiary population (Marshall, Marshall and Keltner, 1976), contains a list of 18 situations of matched content to those in the Social Response Behavioural test. Each situation was accompanied by five alternative responses, representing a range from extremely underassertive to extremely overassertive, with order of presentation randomized to avoid response bias effects (see Appendix C).

Subjects were instructed to indicate which of the possible responses best described what they would actually do in each situation. Scoring procedures matched those used for the behavioural test.

2. Expressed/Social Fear Measure (SF).

The ten-item scale developed by Morgan (1974) was used to assess each subject's expressed social fear (see Appendix D).

Subjects were instructed to indicate the degree of fear aroused by each of the ten items, using the following five point scale:

1. No fear at all
2. A little fear
3. A fair amount of fear
4. Much fear
5. Very much fear

Each subject's score was derived by summing across the ten scale items.

3. Measure of Social Problem-Solving Skills: Means-Ends Problem Solving Procedure (MEPS).

This testing procedure developed by Spivak and Levine (1963), was designed to measure one dimension of social problem solving skills, means-ends thinking.

Administered by an independent examiner, the test was presented as a means of assessing imagination. Each subject was instructed to listen to the beginning and the end of a story and to provide the middle. The examiner then read the first story. The subject's response was tape recorded, and upon completion

the remaining stories were successively presented. The test administration procedure, subjects instructions, and the MEPS stories, are presented in Appendix E. Subjects tape-recorded responses were scored by the independent examiner and a second independent rater for the number of relevant and irrelevant means and for no means. Two sets of ratings were therefore obtained. The Pearson product moment correlation between ratings was .83 . Scoring categories are presented in Appendix F.

### Procedure

The SRI, SBBI, SP and MEPS tests were administered to each subject during the week preceeding treatment and one week following treatment termination. These evaluations were conducted by an independent experimenter and a second independent rater. Both were unaware of the group to which a subject had been assigned.

Three groups were established: assertion training combined with social problem solving skills training (PSAT), assertion training only (AT), and a no-treatment control (NT). Twenty subjects met the preliminary selection criteria and were assigned to groups in such a way as to minimize pre-treatment between-group differences. Seven subjects were assigned to each of the two assertion training groups, six to the no-treatment group.

## Treatments

Treatment sessions were conducted by the author who had received instruction in assertion training. Treatment subjects were seen in their respective groups, each meeting for a total of eight ninety-minute sessions over a four week period. Following post-treatment assessment, subjects were informed of the nature of study and offered further individual treatment upon request. There were three conditions in the group training sessions.

### (1) Problem-Solving-Assertion Training (PSAT)

The rationale offered to subjects was that assertion training involves increasing effectiveness in social situations but does not guarantee goal attainment. Social problem-solving skills were presented as the ability to generate strategies that minimize the probability of negative consequences while maximizing the probability of positive consequences (goal attainment) in social interactions. Effective interpersonal social behaviour was therefore presented as resulting from the ability to think through the interpersonal problem and the ability to perform the required appropriate behaviours. No reference was made to moral issues. The subjects were informed

that given full participation this established treatment procedure would lead to substantial changes in their interpersonal social behaviour.

Six interpersonal situations were used during therapy, three selected from the SRBT and three from the SRI. All the training items dealt with penitentiary specific situations (see Appendices B and C). At the completion of therapy each of the training situations had been used three times.

The assertion training portion of the program consisted of the following components:

(a) Description of a situation and assignment of roles to group members.

(b) Role-playing. Individual group members were instructed and encouraged to act as if the situation were actually occurring while the other group members observed. Role-playing was terminated when the situation appeared to have reached its conclusion. At that point another group member was assigned the same role and the process repeated.

(c) Feedback and discussion. The group members who had not enacted the role were the first to provide feedback concerning the effectiveness of the subjects' behaviour. The therapist and all group members then discussed the overall effectiveness of the subjects response and offered specific criticisms,

compliments, and improvements. Time was spent focussing on the specific behavioural components that might have been deficient. The components requiring improvement may have been either verbal (eg. compliance, requests for new behaviour, statements of feelings, verbal attacks), or non-verbal (eg. affect, loudness of speech, eye contact, gestures).

(d) Role-reversal and modelling. On the basis of the feedback and discussion given, the therapist modelled an alternative, more assertive response to the situation.

(e) Feedback and discussion.

(f) Behavioural rehearsal. The group members took turns practicing the modelled response while the therapist and other group members provided coaching and instructions to facilitate the shaping of the assertive response.

(g) The sequence of modelling, feedback and discussion, coaching and behavioural rehearsal was repeated until all group members demonstrated an appropriately assertive response to the training situation. Praise and encouragement were used extensively throughout treatment.

(h) Overview of assertive behaviour as an effective means to solving interpersonal problem situations. At the beginning and end of each treatment session, and at various points throughout treatment, assertive behaviour as a means to an end was reviewed. The discussion consisted of a problem-solving analysis of each training situation. The components of the problem-solving analysis were:

I. An examination of each subjects' general orientation to the situation at hand, with the focus on the elimination of irrelevant, irrational and self-defeating thoughts and feelings, and the acquisition of adaptive self-statements and attitudes.

II. Problem definition and goal setting. Each subject was required to elucidate the problem presented and to define, in behavioural terms, his specific goal for each interaction. The desired goal included a description of the behaviour of both parties to the situation. If the subjects goals and attitudes were inconsistent, then each was reviewed and challenged by the therapist and other group members. The subject was then urged to alter his general orientation such that his set and goals be consistent. The general goal in all situations was social effectiveness.

III. Generation of alternatives. Following goal setting subjects were required to generate at least three alternative courses of action leading to goal attainment. Assertive behaviour was one of the main alternatives considered.

IV. Decision rule. Each alternative course of action was discussed in terms of the likelihood of its performance and the probability of positive and negative consequences. Subjects were instructed and rehearsed in the construction and use of a pay-off matrix to determine the relative merits, in terms of consequences, of each alternative. That alternative having the greatest likelihood of maximizing positive consequences and

minimizing negative consequences, while having a good likelihood of performance, was considered the best choice. In many cases the best choice proved to be an assertive behaviour.

V. Role-playing, feedback, instruction, role-reversal and modelling. These components were administered as in assertion training with subjects required to role-play and master the assertive response and, if different, the best choice response yielded by the pay-off matrix.

The components of the problem-solving analysis were not necessarily dealt with in the order described above. In many instances a subjects' set and goal became clear only during the construction of the pay-off matrix used for decision making or, for example, while generating possible alternative courses of action. Thus the various stages led into one another but not necessarily in the order described above.

Problem-solving skills training was not presented as separate discrete treatment but was applied most frequently during the feedback and discussion phases of assertion training as well as at the beginning and end of each treatment session. As therapy progressed subjects were required to verbalize their problem solving analysis of each training situation. In addition subjects were required to assume increasing responsibility for evaluating their own behaviour. A great deal of repetition was used to impress subjects that problem-solving assertive training can teach a general coping skill leading to increased social effectiveness.

## (2) Assertion Training (AT)

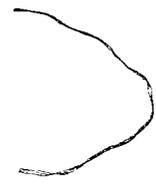
Treatment proceeded in the same manner as for the PSAT group except that no mention of the problem-solving analysis was included. The rationale presented was that assertiveness leads to increased social effectiveness and competence. The stated goal of therapy was to expand subjects behavioural repertoires by the inclusion of assertive responses. Subjects were informed that this was an established technique and given full participation they might expect substantial changes in their interpersonal behaviour.

### (3) No Treatment (NT)

Subjects were told that too few therapists were available to treat all suitable candidates, and therefore several names had been chosen at random to have treatment postponed for a month.

### RESULTS

Six of the twenty subjects accepted for treatment failed to complete the program. One subject had been assigned to the PSAT group while another had been assigned to the AT group. The four other drop-outs had been assigned to the NT group. Due to the small number of suitable volunteers obtained for the study, the NT group data discussed below was taken from a similar assertion training program conducted the year before in the same institution under similar conditions (Marshall, 1976). As the penitentiary had undergone only minor cosmetic changes it was assumed that the populations from which samples were drawn were not significantly different. All groups contained 6 subjects.



### Outcome Measures

There were five dependent measures of interest:

SRBT Deviation (SRBT-Dev)

SRI Deviation (SRI-Dev)

Total Deviation (TOT-Dev)

Expressed Social Fear (SF)

Means Ends Problem-Solving (MEPS)

Deviation scores were used to provide for the possibility that subjects may be overassertive in some situations and underassertive in others. In the present study, 11 of the 12 subjects assigned to the two assertion training groups demonstrated both over- and underassertive behaviours. Similar data for the NT subjects was not obtained. Deviation scores were derived by ignoring the algebraic sign of the score and summing across all items of the respective measure. Total Deviation scores were calculated by summing SRBT-Dev and SRI-Dev scores.

The mean and standard deviations of the pre- and post-treatment and derived change scores for the outcome measures are presented in Table 1. Pre- and post-treatment group means are displayed graphically in Figures 1 and 2, while derived change score data is presented in Figures 3 and 4 .

With the exception of the MEPS data all change scores were derived by subtracting post- from pre-treatment scores. Thus for the assertiveness measures positive change scores signify increased assertion and for the SF measure positive change scores reflect decrements of social fear. So that all positive change scores may reflect a change in the desired direction, the MEPS change scores were derived by subtracting pre- from post-treatment assessment scores. Thus for the MEPS measure positive change scores indicate an increase in the number of "relevant means" generated.

#### Treatment Effects

As shown in Table 2 a single-factor analysis of variance applied to the pre-treatment scores indicated that there were no significant between-groups differences on any of the outcome measures, demonstrating that matching was successful.

The experiment was designed to permit a single-factor analysis of variance to be applied to the change scores for all measures. The underlying assumptions of normality and homogeneity of variance were not tested. Tests for the latter have "...rather limited practical utility, and modern opinion holds that the analysis of variance can and should be carried on without a preliminary test of variances, especially in

situations where the number of cases in the various samples can be made equal." (Hays, 1963, p. 381). The normality assumption was considered "...unnecessary, since the distribution of the ratio of mean squares seems little affected by departures from normality." (Myers, 1972, p. 71).

A difference between groups was considered significant if the maximum probability of obtaining the result by chance was .05 . As shown in Table 3, significant between-groups treatment effects were indicated by the TOT-Dev, SRBT-Dev, SRI-Dev and Meps' change scores, but not by the SF change scores.

Tukey's multiple contrast method (Myers, 1972) was used to conduct a further analysis of the significant treatment effects observed. Due to the design of the present study these comparisons, although directly relevant to an examination of the hypotheses, were not independent. However as stated by Winer, "whether these comparisons are orthogonal or not makes little or no difference." (Winer, 1962, p. 69), and the lack of independence was not considered crucial.

The analysis of the TOT-Dev change scores (see Table 4) and of the SRBT-Dev scores (See Table 4) indicated that the PSAT and AT treatments did not significantly differ from one another but did produce significantly greater benefits than the NT group.

As shown in Table 4, the analysis of the SRI-Dev scores revealed that the PSAT and AT groups did not differ significantly, but that only the AT treatment led to significantly greater benefits than did no treatment. The analysis of the MEPS data revealed that the PSAT treatment produced significantly greater enhancement of means-ends thinking than did the AT treatment.

### Generalization

As significant treatment effects had been demonstrated for the SRBT, this measure was subdivided to enable the assessment of transfer of training effects to specific classes of situations. The derived generalization measures were:

Penitentiary-Trained (PenTr): the total deviation scores for the three items peculiar to the penitentiary that had been used as training situations.

Penitentiary-Untrained (PenUT): the total deviation scores for the three items peculiar to the penitentiary that had not been used during training.

Global: the total deviation scores for the four untrained items that could occur either inside or outside a penitentiary.

Non-penitentiary (NonPen): the total deviation scores for the eight untrained items peculiar to non-penitentiary environments.

The means and standard deviations of the pre- and post-treatment and derived change scores for the generalization measures are given in Table 5 . Pre- and post-treatment group means are displayed graphically in Figure 5, while change score group means are displayed in Figure 6 . All generalization measure change scores were derived by subtracting post- from pre-treatment deviation scores. Thus positive change scores reflect increased assertiveness.

As shown in Table 6 a single-factor analysis of variance applied to the pre-treatment generalization measures indicated significant between-groups differences on the PenUT and NonPen measures, demonstrating that treatment groups were successfully matched only on the PenTr and Global generalization measures. To provide statistical control for the effects of initial group differences an analysis of covariance was considered. The two assumptions made when applying an analysis of covariance are that the overall regression of the covariate on the dependent measure is linear and that the group regressions are homogeneous (Winer, 1962, p. 586). Tests of these assumptions were applied to the PenUT and NonPen data (Table 7). The correlations between pre- and post-treatment measures failed to reach significance indicating a violation of the linearity assumption for both sets of data. For the NonPen data the requirement of

homogeneity of within class regression was met using the suggested minimum probability level of .10 (Winer, 1962, p. 591), for the PenUT data this requirement was not satisfied. Since "...little is known about the effects of violations of assumptions on inferences based on the covariance procedure." (Winer, 1972, p. 327), the procedure was rejected and a single-factor analysis of variance was applied to the generalization change scores. A difference between groups was considered significant if the maximum probability of obtaining the result by chance was .05. As shown in Table 8 significant between groups treatment effects were found on all but the PenUT measure.

Tukey's multiple contrast method was used to conduct a further analysis of the treatment effects observed. The analysis of the PenTr change scores (see Table 9) and of the Global change scores (Table 9) indicate that only the PSAT treatment produced significant benefits over the NT group. The analysis of the NonPen change scores shown in Table 9, revealed that both the PSAT and At treatment groups provided significant benefits over No-treatment. No significant difference between the PSAT and AT groups was indicated on this measure.

### Correlational Analysis

Pearson product-moment correlations between the SF change scores and change scores on all the measures of assertiveness are shown in Table 10 . Due to incomplete data all correlations, with the exception of those involving Tot-Dev, SRBT-Dev, and SRI-Dev were calculated using data obtained from both treatment groups. Correlations between SF and Tot-Dev, SRBT-Dev, and SRI-Dev change scores were derived from data yielded by the two treatment groups and the no-treatment group. A significant positive correlation ( $r = .633$ ,  $df = 34$ ,  $p < .01$ ), was found between SRI and SRBT total deviation scores. Underassertiveness scores on these two measures were significantly related ( $r = .6286$ ,  $df = 22$ ,  $p < .01$ ), while overassertion scores were not ( $r = .384$ ,  $df = 22$ ,  $.05 < p < .10$ ) . It is of interest to note that the pre-treatment correlation between the SRI and SRBT overassertion scores was .31, ( $df = 22$ ,  $p > .05$ ), while at post-treatment the correlation was  $-.20$ , ( $df = 22$ ,  $p > .05$ ). At post-treatment inmates' self-reports consistently indicated a lack of aggressive intentions while the behavioural test demonstrated aggression in excess of the stated intentions.

## DISCUSSION

Limitations of the Clinical Study

The present study was limited by the use of a laboratory role-played behavioural test of assertiveness and would have benefited from the use of *in vivo* measures of assertiveness. However the use of contrived situations would have incurred serious ethical problems which most probably would have jeopardized the credibility of the psychology personnel. Since credibility is extremely difficult to establish with both the inmates and the security personnel, and as it is a prerequisite for the continuation of any psychology program within a penitentiary, the use of *in vivo* measures was viewed as undesirable. Although naturalistic observation of inmates social skills by either classification officers, work supervisors or security personnel would have provided an alternate means of assessment, this would have involved training a large number of staff and informing inmates that their behaviour was to be subjected to even closer scrutiny. It is doubtful that sufficient co-operation could have been secured from the staff involved, and it is unlikely that under these conditions inmates would have volunteered for the program. Another alternate measure of social skills could have been to determine whether or not subjects achieved goals viewed as

requiring assertive behaviour. Within a penitentiary environment such goals as avoiding institutional charges, obtaining passes, paroles, work changes and permission to attend school are described by the administration as being contingent on the appropriateness of the inmate's behaviour. The classification of assertiveness as behaviour appropriate to these goals may be an error. It has been the experience of the present author that blacks and sexual offenders are more likely to be punished than rewarded for "appropriate" assertive behaviour. Therefore a measure of goal attainment may well reflect social skills other than assertiveness. In summary, although in vivo measures are important and desirable, it is difficult to devise an acceptable, practical and valid form of assessment in a penitentiary setting given the present state of staff non--co-operation, unclear penitentiary program goals and inconsistent methods of reinforcement.

The present study was further limited in that the assessment of the durability of treatment effects was precluded by the absence of follow-up data. Several inmates were released or transferred shortly after treatment completion, and due to the small size of the original sample further reduction of group sizes would have prevented appropriate statistical analyses. A follow-up study would be of particular importance with inmates as this would provide information concerning the reinforcement

of assertive behaviour within a penitentiary setting and the utility of limiting social skills programs to assertiveness training.

A third limitation of the study involves the use of a single experimenter, the present author, as sole therapist. The use of several experimenter-therapists would have provided control for experimenter expectancy effects (Rosenthal, 1968). The possibility of getting several experimenters into the institution with permission to see groups of inmates without being observed by security staff is viewed as remote. Further, since experimenter expectancy effects have been demonstrated to be a function of the degree to which experimenters fail to follow the prescribed treatment procedures (Barber, 1976), the use of several therapists would have required monitoring to assess the extent to which therapists deviate from the prescribed procedures. In this light the multi-experimenter design may be seen to introduce complications having effects more serious than that for which the design is intended to control. In the present study experimenter expectancy concerned the generalization of assertive training effects to items having different situational characteristics than those used during training. The generalization items were not discussed or mentioned by the therapist in either treatment group, thereby minimizing the therapist's opportunities to communicate the

experimental expectancies, and to gather data relevant to the experimental hypotheses. Thus feedback serving to modify treatment procedures to ensure positive results was not obtained. As both the opportunity to communicate experimental expectancies and the opportunity for early data return have been demonstrated to be causally related to experimenter expectancy effects (Barber, 1976), the design of the present study is viewed as providing some degree of control for these effects.

### Treatment Effects

The aim of the present study was to examine four hypotheses concerning the differential effects of standard assertion training and social problem solving assertion training in the modification of assertiveness and social problem-solving skills.

### Social Problem-Solving Skills

An examination of the MEPS data revealed that the social problem-solving assertion training program produced significantly greater improvement in means-ends thinking than did standard assertion training. The first hypothesis was therefore supported. Of interest is the finding that subjects assigned to the standard assertion training program demonstrated a decrease in means-ends thinking as assessed by the MEPS

procedure. This decrease may reflect random sampling error, test-retest effects or may indicate that assertion training not only fails to enhance, but rather limits the acquisition of adaptive cognitive strategies and skills. Standard assertion training procedures emphasize discrete response training with the rationale that assertiveness is a highly effective social skill. Alternate adaptive social responses are neither discussed nor rehearsed. One effect of this procedure may well be to limit subjects abilities to generate alternatives for dealing with problematic situations and cause subjects to view assertiveness as the only appropriate response to such social situations. In environments where assertiveness is punished rather than rewarded assertion would be highly inappropriate and maladaptive. This interpretation of assertive training effects is problematic in that assertion training is generally viewed as enhancing rather than decreasing subjects social skills. The implications of this interpretation are discussed below.

### Assertiveness

The second hypothesis, that social problem-solving skills training would enhance the effectiveness of standard assertion training, was not supported by the assertiveness data. There were no significant differences between assertion training alone and assertiveness plus social problem-solving skills training on

any of the assertion measures. Both treatments produced significant improvements over no-treatment on the Social Response Behavioural test and the Total Deviation measures. The Social Response Inventory data revealed that only standard assertiveness training produced benefits greater than No-treatment. The finding that paper and pencil reports of assertiveness failed to demonstrate improvement following treatment is consistent with results reviewed earlier (Eisler, Hersen and Miller, 1973; Hersen and Miller, 1976; Marzillier et al., 1976; McFall and Lillesand, 1971; Rathus, 1972). The present findings are taken to indicate that both treatment programs were successful in the enhancement of assertiveness.

The correlational analysis of the behavioural and self-report measures of assertion indicated that what subjects do is significantly related to what subjects say they do. In most studies the relationship between behavioural and self-report measures of assertiveness, if mentioned at all, is reportedly small. The present findings are therefore inconsistent with those usually reported (Kazdin, 1974; 1976) but do support the findings of the originator of the SRI and SRBT assessment techniques (Marshall et al., 1976). In the construction of the SRBT and SRI the characteristics of the situations were matched so that the only difference between the measures was response modality. This procedure may be responsible for the enhanced predictive validity of the self-report measure.

The rationale for the second hypothesis was that assertion training effects have been demonstrated to be enhanced by the inclusion of the discussion and enactment of the consequences of assertive behaviour (Kazdin, 1974; 1975; 1976; Loo, 1971). In the present study a major portion of the PSAT program was concerned with the consequences of assertive behaviour while standard assertion training excluded such discussion. It was predicted that this procedural difference would reflect itself in the data. The failure to demonstrate differential treatment effects in the predicted direction may indicate that although standard assertion training, in the present study, excluded the overt consideration of consequences, subjects assigned to this group were nevertheless highly concerned and involved with the consequences of social behaviours including assertiveness. Given that subjects were penitentiary inmates incarcerated for not less than two years as a consequence of their social behaviour, this possibility does not seem unlikely. Inmates in the AT program may therefore have been highly dissimilar to subjects in Kazdin's (1974; 1975; 1976) "no-consequences" condition in which the immediate changes that might be expected to follow an assertive response were not considered. It is of note that Kazdin employed covert rehearsal of assertive behaviour and covert enactment of consequences to enhance covert assertiveness training effects. This procedure underscores the

effects of subjects covert activities and provides the rationale for the post-hoc hypothesis that since treatment procedures were inadequate in controlling subjects considerations of consequences, treatments were not effectively different in the manipulation of this independent variable. Therefore differential treatment effects were not demonstrated.

#### Generalization of Treatment Effects

The generalization of treatment effects would be of particular importance for inmates whose lack of adaptive social skills had led to incarceration. Generalization, as defined in Hypothesis III, referred to the transfer of assertion training effects to items having different situational characteristics than those used during training. The analysis of the pre-treatment generalization data indicated initial between groups equivalence on only two of the four subscales of the SRBT measure. Pre-treatment differences were found between the PSAT and No-treatment subjects on the PenUT items with the latter group demonstrating significantly greater nonassertiveness. The pre-treatment Non-Pen scores indicated that AT subjects demonstrated greater nonassertion than subjects in either the PSAT or No-treatment groups. An examination of scores on these two measures reveals that the greatest number of nonassertive responses was given to the Non-Pen items while the lowest number

was elicited by the PenUT items. Although these findings are somewhat troublesome for the interpretation of the pre- to post-treatment generalization data it should be noted that no other study using this type of generalization measure has reported the results of a pre-treatment test of between groups equivalence. McFall and Twentyman (1971) have reported a study in which treatment groups differed significantly at pre-treatment on measures of overall assertiveness. The authors reported that due to the presence of only very low correlations between pre- and post-treatment measures of assertiveness, an analysis of covariance was considered inappropriate. Instead an analysis of variance was applied to the change scores with results interpreted in light of initial group differences. The generalization data of the present study was treated in a similar fashion for the same reasons.

Analysis of the pre- to post-treatment change scores revealed that behaviour changed in role-played situations that could occur in non-penitentiary situations as well as situations that could occur either inside or outside a penitentiary environment. Although no significant between-treatment-group differences were indicated, simple assertion training produced generalization effects which differed from No-treatment only in situations that could occur in non-penitentiary situations. The social problem-solving assertion training program produced

transfer effects differing significantly from No-treatment in situations that could occur in penitentiary or non-penitentiary settings. Across all generalization measures social problem-solving assertion training tended to produce superior reductions in nonassertiveness. Hypothesis III, that "generalization of assertion training effects, to items having different situational characteristics than those used during training, will be enhanced by social problem-solving skills training.", was therefore only partially supported.

Subjects in the social problem-solving assertion training program received instruction aimed at facilitating generalization, and were rehearsed in the use of a model that stressed the development and application of an active problem-solving strategy. In contrast, standard assertion training emphasized the teaching of specific responses to specific situations. Yet increased generalization effects resulting from PSAT were minimal at best. These findings lead to several possible interpretations. It may be that PSAT failed to enhance social problem-solving skills. However the MEPS data indicated that PSAT subjects had significantly improved at least one aspect of their social problem-solving skills, means-ends thinking. Therefore the present results, contrary to those reported by Spivak and Shure (1974), may be taken to indicate that the causal relationship between cognitive social

problem-solving skills and behavioural adjustment has yet to be empirically demonstrated. However given the nature and scope of the behavioural measures used in the present study it is clear that only one aspect of behavioural adjustment, assertiveness, was assessed, thereby limiting conclusions concerning the relationship between social problem-solving skills and general behavioural adjustment.

Another interpretation is that contrary to the model proposed by D'Zurilla and Goldfried (1971), the use of a general problem-solving strategy has yet to demonstrate itself effective in the production of generalization. This interpretation, based on the present findings, is not entirely warranted. The generalization measure used in the present study consisted of contrasting trained and untrained role-played assertive performances. Standard assertion training alone produced effects which generalized to a greater degree than that which is usually reported in the literature (Baer et al., 1968; Eisler, Hersen and Miller, 1975; Hersen et al., 1974; Kazdin, 1974; McFall and Twentyman, 1973; Young et al., 1973). Thus the role-played procedure may have lacked the necessary components to allow the assessment of differential generalization effects. Secondly, the present findings have demonstrated that PSAT was effective in the enhancement of only one aspect of social problem-solving skills, means-ends thinking. According to the

model proposed by D'Zurilla and Goldfried and further elucidated by Goldfried and Goldstein (1975), the role of means-ends thinking in the acquisition of a general coping skill leading to the enhancement of generalization is relatively unexplored, as are procedures designed to enhance and evaluate problem-solving skills. Thus it would be unwarranted to conclude from the present findings that the enhancement of social problem-solving skills failed to increase the generalization of assertion training effects.

Alternatively, if the problem-solving treatment was effective in increasing subjects' abilities to focus on the problem at hand, generate alternative behavioural solutions, consider consequences and respond in accordance to the problem-solving analysis, the result need not necessarily be assertive behaviour. As stated by D'Zurilla and Goldfried (1971), the goal of the problem-solving approach is to teach subjects a behavioural process which makes available a variety of response alternatives for dealing with problematic situations and which increases the probability of selecting the most effective response from the generated alternatives. The proposed result of this process is the acquisition of self-control, defined as a personal decision arrived at through conscious deliberation, for the purpose of integrating behaviour which is designed to achieve certain desired outcomes, as

determined by the individual himself (Kanfer and Philips, 1970). Subjects in the PSAT program were repeatedly presented with this rationale and the program emphasized that it was the subject's responsibility to determine the appropriateness of an assertive response. Consistent with the acquisition of self-control is the possibility that subjects in the PSAT group did not perceive untrained items of the SRBT as appropriate stimuli for an assertive response. The failure of the present study to assess or control for this possibility prevents an evaluation of this hypothesis. Therefore the conclusions drawn from the generalization data must be limited to the statement that subjects trained via PSAT failed to demonstrate significantly more assertive behaviour to generalization items than did subjects trained via standard assertion training.

No significant generalization to untrained penitentiary SRBT items was found for any treatment group. This is attributed to a basement effect as very low levels of nonassertiveness were elicited by these situations at both pre- and post-treatment assessment. No-treatment subjects responded with approximately the same number of nonassertive responses to PenTr and PenUT items at pre-treatment assessment. However subjects in the AT group gave twice as many nonassertive responses to the PenTr items. Subjects in the PSAT group gave more than three times as many nonassertive responses to PenTr

versus PenUT items at pre-treatment assessment. This pattern of responses may be taken to indicate that the PenUT items referred to situations in which subjects were able to respond assertively prior to the onset of treatment, thereby precluding the transfer of treatment effects to these items.

The nature of the experimental design used in the present study did not allow the independent contribution of the social problem-solving skills training component to be assessed.

#### Social Fear Hypothesis

Wolpe (1958) hypothesized a causal relationship between social fear and nonassertion and proposed that assertive responses inhibit social fear. Consequently, if assertion training can increase assertive behaviour a reduction in fear will also be demonstrated (Hypothesis IV). Contrary to this hypothesis, it was found that although assertion training was effective in increasing assertion, concomitant decrements in social fear were not demonstrated. The correlational analysis indicated that for inmates changes in nonassertiveness were not significantly related to changes in social fear. These findings are consistent with those of others (Bander et al., 1975; Christensen et al., 1975; Friedman, 1971; Galassi et al., 1974; McFall and Marston, 1970; Rathus, 1973b), who have failed to demonstrate that increased assertion produced decreased social anxiety.

As previously discussed Wolpe's (1958) social fear hypothesis is more accurately interpreted as concerning the relationship between social fear and aggression. Interestingly the present correlational data indicated a sizeable relationship between increments in social fear and decrements in aggression as measured by the SRI. No relationship was found between social fear and aggression assessed via the SRBT. Inmates were consistently less accurate in predicting their aggressive behaviour than their passive behaviour. Their predicted aggression reliably fell short of demonstrated aggressive behaviour. These findings suggest that as inmates increasingly underestimate their aggressive behaviour, stated social fear increases.

It is concluded that Wolpe's hypothesis, as a general statement of the role of social fear in assertion is not supported. However the relationship between social fear, predicted aggression and actual aggression, as yet relatively unexplored, seems consistent with the Social Fear hypothesis. Further investigation of this relationship would seem warranted.

### Clinical Implications

The results yielded by the SRI, SRBT and Social Fear measures would appear to indicate that nonassertion in a penitentiary population is attributable to the individual's learning experiences and not to response inhibition. The modification of nonassertiveness should therefore concentrate on social skills training rather than anxiety reduction.

When dealing with a penitentiary population several environmental factors must be considered in the selection of the particular social skills to be trained. The power structure of both staff and inmates within a penitentiary does not encourage independent, assertive behaviour, and the lack of consistency in the granting of privileges makes it difficult to predict the outcome of assertive behaviour. The training of assertiveness has traditionally assumed that assertion is a very effective response in problematic social situations. The possibility that assertion does not always result in positive reinforcement has been recognized by Hersen and Eisler who state that, " .. the therapist must ensure that his patient will experience success when he first practices his new response in his natural environment... . If recidivism occurs, booster treatment, aimed at both restructuring social skills and furthering environmental manipulation is warranted." (Hersen and Eisler,

1977, p. 21). This goal is practically impossible to attain in present penitentiary settings. The practice of training a discrete response, assertiveness, may therefore be seen as somewhat futile given first that assertiveness may be inappropriate in many penitentiary situations, and secondly that the durability of any derived benefits may be short-lived due to existing reinforcement contingencies.

Alternatively, " A promising approach to the problem of limited behaviour change would seem to be one that emphasizes the establishment of learning and behaviour strategies or, in operant terminology, complex response chains with general applicability, as opposed to an approach that emphasizes discrete response learning" (Leff, 1968, p. 408). Problem-solving, whose major focus is the identification of the most effective response, is viewed as just such a complex response chain or learning process (Gagne, 1966). Problem-solving is also considered a form of self-control, described as a process in which a subject effectively influences the variables, external or internal, which control his behaviour (Skinner, 1953). The PSAT program of the present study was designed with these principles in mind. As demonstrated, PSAT subjects fared no worse than AT subjects despite treatment procedures which allowed PSAT subjects less time to concentrate on assertiveness per se. However PSAT subjects did demonstrate

a trend towards greater generalization of treatment effects. This is of particular importance within a penitentiary population as many inmates are unwilling to describe specific situations in which nonassertion is a problem, thereby preventing standard assertion training to these situations and full evaluation of treatment effects. Secondly the use of the problem-solving strategy precludes impulsive behaviour. Given the impulsive nature of many of the criminal acts committed by this population, the modification of impulsivity is seen as a worthwhile goal. Although no formal measures of impulsivity were collected, four of the six PSAT subjects reported greater facility in restraining impulsive behaviour and in "thinking things through" following treatment. In contrast AT subjects expressed some anger that their assertive responses were not effective and in fact resulted in greater punishment than did their previously practiced passive behaviours.

Another possible advantage of the PSAT program concerns self-reinforcement. As stated by Bandura "... people typically set themselves certain standards of behaviour and self-administer rewarding or punishing consequences depending on whether their performance fell short of, matched or exceeded their prescribed demands" (Bandura, 1969, p. 32). With standard assertion training inmates are required to modify their overt behaviour in ways that receive minimal overt or covert positive

reinforcement. In contrast social problem-solving assertion training provides inmates with choice regarding overt behaviour and provides a covert strategy that inmates may find rewarding in and of itself. The resultant effect may be that inmates' self-reinforcement contingencies become less strongly tied to proven maladaptive behaviour and become increasingly associated with more adaptive covert behaviour, consequently overt behaviour may be more readily modified. This contention receives some support from the data as Between-groups behavioural changes were roughly equivalent even though PSAT subjects engaged in far less behavioural rehearsal during treatment. This suggests that with a population demonstrated to be highly resistant to behavioural change, effective social skills training must take into consideration schedules of self-reinforcement.

Another possible benefit of a problem-solving approach to social skills training concerns the relationship between treatment and the behaviour to be modified. Assertion training programs have recently enjoyed a fair degree of popularity within the penitentiary service. The underlying rationale is that social skills deficits are a contributing factor in the maintenance of criminal behaviour and an obstacle to successful rehabilitation. The validity of this contention aside, it would seem that a more direct approach would be to describe criminal

behaviour as a function of a lack of self-control resulting in the performance of immediately gratifying acts regardless of the potential long-term negative consequences. In short, criminals are not incarcerated because of their lack of assertiveness but rather because they cannot control themselves to the degree required by society. In this framework a valid treatment program should address itself to the acquisition of self-control. Standard assertion training only incidently and accidentally concerns itself with self-control, while the social problem-solving assertion training approach is almost entirely geared to the acquisition of self-control strategies and increased appropriate social behaviour.

Of further clinical interest is the finding that both over- and underassertiveness constituted target behaviours to be modified. Even though the majority of the nonassertive responses were underassertive, the small proportion of aggressive behaviour is of great importance. For inmates inside the penitentiary or for those out on parole, appropriate or inappropriate aggressive behaviour, verbal or otherwise, can lead to conflict with social and legal norms and result in severe consequences. Most studies of assertiveness deal with only one extreme of the over- to underassertiveness continuum, with the majority involved in the measurement and modification of underassertiveness. The present study has demonstrated that social skills training can be broadened to include the measurement and modification of both over- and underassertiveness.

The above notwithstanding, the present study did not distinguish between over- and underassertiveness when assessing the efficacy of the training programs. Data from the pre-treatment assessment did not support the stereotype of the inmate as an individual who uses aggression as a means to achieve social goals. Therefore scores of under- and overassertiveness were summed to provide an index of nonassertion. It should be noted that all assertiveness assessments focussed entirely on the subjects first response. This practice is not uncommon in the literature, (McFall and Twentyman, 1971). A more precise interpretation of the present data is that inmates do not tend to be aggressive in their initial response to situations involving assertion. It is possible that the incidence of aggression would be increased in prolonged interactions involving expectations or the occurrence of, frustration and provocation. To date no empirical investigation of the difference between assertive ratings involving a single response, and those based on a prolonged interaction, within a clinical population has been reported. Thus the effects of the assertion training programs employed in the present study should be interpreted as limited to the effects on subjects' first responses to problematic social situations.

### Implications for Future Research

The validity of the assumption underlying the use of social skills training programs in penitentiaries, namely that social skills deficits are a contributing factor in the maintenance of criminal behaviour and an obstacle to successful rehabilitation, is in need of empirical verification. There are a number of possible studies which could test the validity of this assumption. These could include studies of the relationship between ratings of physical and verbal aggression, recidivism rates, the ratio of successful to unsuccessful parole periods, and the total time successfully served under parole. From the present study it would be predicted that assertiveness per se will account for only a small percentage of the variation in the dependent measures. Assertiveness training further relies upon another as-yet untested assumption that assertion is generally a most effective social response. A functional analysis of the relationship between assertion and contingent self-reinforcement and externally delivered reinforced schedules within clinical settings and within-subjects' normal social settings would serve to test this assumption, and to delineate those aspects of the social environment to be modified in order to ensure that subjects not be punished for the use of their newly acquired assertive skills.

A third aspect of assertiveness worthy of further exploration concerns the effects of assertion training. Positive results are typically interpreted as indicating an improvement in social skills as adaptive assertive responses have replaced maladaptive nonassertive responses. This interpretation depends on the untested assumption that assertion is both effective and appropriate, and as such is viewed as somewhat premature. Assertion training effects are typically analysed only in terms of self-reports and behavioural ratings of assertiveness. Subjects' abilities to generate alternative social responses, to determine the probable effectiveness of each alternative and to verify the accuracy of their social perception are not examined as products of assertion training. Although these abilities are not targeted for modification via assertion training it is suggested that the unintended modification of these abilities should be assessed in determining the beneficial effects of assertion training. Despite the great emphasis placed on the the efficacy of assertiveness in many problematic social situations the possibility that assertion training serves to decrease subjects social skills repertoires should be investigated. Since as stated by Wolpe, " There are circumstances in which direct assertion is inappropriate, but in which it is nevertheless desirable for the patient to achieve some kind of control." (Wolpe, 1958, p. 70), future research should concern itself with the assessment of assertion training effects with regard to a wider range of social skills than simply that of assertiveness.

Although assertion training procedures have been subjected to much empirical research, assertion measures require further investigation. Test-re-test reliability data is missing for many of the self-report and behavioural measures. The relationship of self-report and role-played behavioural ratings to in vivo behaviour have been relatively unexplored. Because typical assertion measures assess only the subjects first response to the problematic interpersonal situation, future research should concern itself with responses made when first responses fail to achieve desired ends. Extended interaction investigations have thus far limited themselves to testing the ability to refuse unreasonable requests (McFall and Twentyman, 1971), and have demonstrated assertion training to be generally ineffective. It would be of interest to compare the benefits of a social problem-solving skills assertion training program tested under similar conditions.

Prior to the present study, the use of a social problem-solving skills training program for the purpose of teaching coping strategies to facilitate the generalization of treatment effects has not been subjected to empirical investigation within a clinical population. To this end it is suggested that future research first concentrate on the refinement and evaluation of the components of problem-solving

skills training. The problem-solving model could be translated to a series of appropriate self-statements leading to successful completion of the social problem-solving analysis. Subjects could then select those self-statements they feel best suit them and then could overtly rehearse their use in reference to a subject-selected problematic situation. During treatment subjects would be presented with novel problematic situations and required to overtly demonstrate their use of the problem-solving coping self-statements. Subjects' progress would be monitored via a checklist containing a list of appropriate self-statements, as determined by the therapist and subjects. Treatment procedures should also include modelling, coaching and feedback.

Secondly before the generalization of problem-solving assertion training effects can be assessed, further research must be conducted to determine the clinical utility of limiting appropriate behaviour to assertiveness within the situations used during training and testing. It is suggested that subjects test responses be scored in terms of appropriately assertive, appropriately other, and inappropriately over- and underassertive. Post-treatment assessment would include paper and pencil, role-played and in vivo situation measures. Some situations should be engineered to follow the standard procedure used in assertion training research (that is, subjects' first

responses would be met with either success or no comment). Other situations would involve frustration and would be designed to assess treatment effects in extended interactions. A between-groups design would allow the independent contribution of social-problem-solving skills training to be determined. It is predicted that the problem-solving approach would produce superior enhancement of appropriate interpersonal behaviour, assertive or otherwise, and that treatment effects will generalize to a greater degree than those of assertion training.

## APPENDIX A:

## Memorandum Sent to Classification Officers

MEMO

TO: All Classification Officers

FROM: Michael Stoian, Psychology Department,  
Joyceville Institution.

The psychology department is offering an assertive training programme designed to help inmates increase their ability to deal effectively and appropriately with social situations. The programme will focus on situations involving anger or frustration and will deal with both overaggressive and hostile behaviour and with underassertive, timid behaviour. If you wish to refer inmates or would like more information please contact me at extension 169.

## APPENDIX B:

## Social Response Behavioural Test

Items that were used in assertive training are marked with an asterisk.

## Asserting Rights:

(1) You are trying to get some important work done that requires a great deal of concentration. A friend comes in and starts talking and distracting you.

Friend: "You don't mind if I talk to you for awhile, do you?"

(2) You are returning a pair of new shoes to the salesman because you found one of the soles was loose. You ask him to give you another pair.

Salesman: "I'm sorry, we can't exchange them - all sales are final."

(3) You take your car to a service station to have a grease job and the oil changed. The mechanic tells you that your car will be ready in an hour. When you return you find they have also done a major tune-up without asking you.

Manager: "We've fixed your car, that will be \$215 dollars."

\*(4) You are having an interview with your classification officer and you ask him to support your application for a pass. He previously promised to do so. He now refuses without giving a clear explanation.

Classification Officer: "You get nothing."

\*(5) You are in your cell and as usual your neighbour is excessively noisy at 2 a.m. and you can't sleep even though you are very tired. What action would you take?

\*(6) You are at your work station when suddenly you are requested by security to leave your place of work against your wishes and contrary to your prescribed duties. You do not have a valid pass.

Guard: "Hey - get over to \_\_\_\_\_ and clean the stairs, get moving!"

Resisting Demands:

(7) It is your only day off and you need your car to run some errands. Your neighbour comes over and asks to borrow your car to do some shopping as his has broken down.

Neighbour: "Can I borrow your car for the morning, please."

(8) You are out with a group of friends and they want to go on to a party. You want to go home but they are urging you to go with them.

Friend: "Come on, you'll enjoy it once you get there."

Expressing Negative Affect:

(9) You are annoyed with a friend because he borrowed your car without asking and you needed it yourself.

Friend: "I just borrowed your car for awhile; you don't mind do you?"

(10) You have lent a record you really like to someone. When he returns it you notice it is badly scratched.

Friend: "Thanks for the loan of the record."

Expressing Opinions:

(11) You have a close friend whom others dislike and criticize. Another friend says to you:

"I don't know why you like him, he's an idiot."

(12) You are in front of the parole board. This is an important moment in your attempt to uncomplicate or shorten your sentence. You are asked the following question.

"Please explain to us why you should be granted a parole."

Social Approach:

(13) An attractive woman you would like to know better comes and sits next to you as you are finishing your coffee in a restaurant.

Woman: "Hello."

(14) A friend tells you he is going out for the evening. You would like to go with him.

Friend: "I think I'll go out this evening."

(15) You need some money and you know that a friend could afford to lend it to you. You meet him one morning.

Friend: "Hi there."

Requesting Information:

(16) You have requested an interview with legal aid to ask if there are any grounds for appealing either your conviction or length of sentence.

Legal Aid Officer: "What can I do for you?"

(17) You are called before the inmate training board and you are refused a long awaited pass which to the best of your knowledge you should deserve. The reasons given are unacceptable. You are told;

"Your behaviour in the institution disqualifies you for a pass."

Terminating Social Interactions:

(18) A close friend has come to stay with you and has overstayed his welcome.

Friend: "I'd like to stay for a few more days. You don't mind, do you."

## APPENDIX C:

## Social Response Inventory

## Scoring:

- 2 Extremely underassertive
- 1 Underassertive
- 0 Appropriately Assertive
- +1 Overassertive
- +2 Extremely Overassertive

## Instructions:

In each of the following items a social situation is described together with a number of possible responses. Please place an X beside the response you consider you would most likely make. If none of the alternatives seems exactly appropriate for you, check the one that is the closest to your likely response. Remember we are not interested in which response you think you ought to make but rather which response you think you would make in the situation described.

Items that were used during training are marked with an asterisk.

Asserting Rights:

(1) You are in the middle of eating supper when a person comes to the door to ask you questions about the television programmes you watch, would you:

-1 A. Ask them in and answer the questions while you finish eating.

-2 B. Answer all their questions immediately leaving your supper to get cold.

+1 C. Tell them without giving any explanation that you will not answer their questions.

+2 D. Angrily tell them to go away and slam the door in their face.

0 E. Explain that it is not a convenient time and politely tell them you will not answer the questions.

(2) If a friend who has borrowed some money from you seemed to have forgotten about repaying it, would you:

+2 A. Demand the money back and threaten to strike them if they denied borrowing it.

0 B. Ask for the money back and insist that they did borrow it if they denied doing so.

-2 C. Say nothing to avoid the possible trouble or embarrassment.

+1 D. Ask for the money back and become angry if they denied borrowing it.

-1 E. Ask if they could return the money but drop the matter if they denied borrowing it.

(3) If after leaving a store you realize you have been short- changed, would you:

0 A. Return and ask for the correct change and if necessary complain to the manager.

+1 B. Return and tell the salesperson they short-changed you and become abusive if they do not give you the change owing.

-1 C. Go back and request the correct change but drop the matter if the salesperson says it is too late to do anything about it.

-2 D. Forget the matter rather than face possible trouble or embarrassment.

+2 E. Go back and demand that they give you the change owing immediately and become threatening or physically violent if they refuse.

(4) If you lived in an apartment and the owner failed to make certain necessary repairs after promising many times to do so, would you:

-2 A. Say nothing to avoid possible embarrassment or trouble.

-1 B. Nervously ask them if they would get the repairs done.

+1 C. Angrily demand that the repairs are done immediately.

+2 D. Threaten to fix them if they don't get the repairs done immediately.

0 E. Firmly state that it is their responsibility to see that the repairs are carried out and insist that they are done quickly.

(5) You are returning to your range one minute late for supper and are told you will get no food, would you:

-1 A. Ask once and if refused accept it.

+2 B. At once accuse the person handling the food of cheating, threaten him in a loud, aggressive voice and become physically aggressive.

-2 C. Do and say nothing.

0 D. Insist politely but firmly that if food is available you are entitled to some.

+1 E. Accuse the person handling the food of favouritism in a loud and angry voice.

\* (6) You are in front of the disciplinary board and are accused of an illegal act which to the best of your knowledge, you are innocent of, would you:

0 A. Defend yourself by politely but firmly presenting your case and insist on a not guilty verdict.

+2 B. At once become verbally abusive and leave the room without permission.

+1 C. Shout angrily at the chairman that you are innocent.

-2 D. Remain silent and accept a guilty verdict.

-1 E. Go to the extent of saying you are innocent but no more.

Resisting Demands:

(7) A friend asks to borrow some money and you definitely do not want to lend it to him, would you:

-2 A. Lend them the money anyway.

0 B. say no, and stick to your decision even if your friend pleaded with you.

-1 C. Say no at first, but if they pleaded lend them the money.

+2 D. Angrily tell them no and become abusive if they asked again.

+1 E. Abruptly tell them no, and show your annoyance if they asked again.

(8) A guard on your range demands that you strip on the spot for a body search for no apparent reason, would you:

-2 A. Submit without question.

+2 B. Refuse, and at once become verbally aggressive and if necessary defend yourself physically.

-1 C. Submit but ask him once why this is necessary.

+1 D. Refuse without saying anything.

0 E. Submit but insist on a reasonable explanation.

Expressing Negative Affect:

(9) If someone made fun of you to the point where it became annoying, would you:

+1 A. Show your anger and be abusive to them.

-2 B. Say nothing to avoid a possible scene.

-1 C. Ask them to stop but say nothing more if they persisted.

0 D. Express your annoyance firmly and ask them to stop.

+2 E. Become violent and try to strike them.

(10) If you had told a friend something in confidence and find out that they have told it to someone else, would you:

0 A. Tell them you are upset.

+2 B. Become abusive and threatening.

-2 C. Say nothing about it and continue to be friendly to them.

-1 D. Say nothing but be cold to your friend for awhile.

+1 E. Become verbally abusive and tell them that they are no longer your friend.

Expressing Opinions:

(11) If you were with a group of people you did not know very well and they were discussing a topic you were interested in, would you:

0 A. Have no difficulty expressing any opinion you might have, and in turn, allow other people to have their say.

+1 B. Tend to dominate the discussion.

-1 C. Nervously express your opinion only if you felt very strongly about it.

-2 D. Always keep your opinions to yourself however strongly you felt about the matter being discussed.

+2 E. Expect to be viewed as the leader and expect others to keep quiet and listen only to your point of view.

\*(12) You are in front of the parole board and you are asked: "What have you done for yourself since you've been in the institution?", would you:

+2 A. Aggressively tell them that it is their action of keeping people in that prevents any rehabilitation and demand to be released at once.

+1 B. Tell them in no uncertain terms that this place exaggerates s you may have.

-2 C. Say little in reply.

0 D. Politely and enthusiastically explain that you feel you have indeed succeeded in achieving many things.

-1 E. Try to explain how difficult it is to do anything much here.

## Social Approach:

(13) You would like to go out with a person you know fairly well, but have never dated them before, would you:

- 0 A. Ask them for a date and accept it if they refused.
- 2 B. Find it impossible to ask.
- +2 C. Ask them for a date and become angry or abusive if they refused.
- 1 D. Find it difficult to ask them.
- +1 E. Ask them for a date and if they refused keep on asking them to try to make them change their mind.

(14) If you had arrived late for a meeting and the speaker had already begun to talk, would you:

- +1 A. Go to an empty chair even if it meant disturbing people.
- 0 B. Go to an empty chair provided you could do so without disrupting the meeting.
- 2 C. Stand at the back even if there was an empty chair near the front.
- 1 D. Go cautiously to an empty chair feeling embarrassed about disturbing the meeting.
- +2 E. Go to an empty chair even if it meant disrupting the whole meeting.

(15) If you wanted to borrow your friend's car and were not sure how they would respond, would you:

- 2 A. Not ask to avoid possible embarrassment.
- +1 B. Ask and become annoyed if they say no.
- +2 C. Ask and become abusive and threatening if they say no.
- 0 D. Ask and accept it if they say no.
- 1 E. Nervously ask them.

Requesting Information:

(16) You are having an interview with the director. You have requested this in order to clarify certain questions regarding your status. The director says: "What can I do for you?", would you:

- +1 A. If you do not get satisfaction verbally attack him and demand immediate action in your case.
- 1 B. Say that your problem is not very important but that you would like to discuss it if he has the time.
- 0 C. Speak frankly and clearly and politely but firmly explain your complaint.
- +2 D. Verbally attack the director at once and storm from his office, threatening legal action.
- 2 E. Say that you really have no serious problems and that you feel there is no longer any need for the interview.

\*(17) You are having an interview with representatives of the John Howard Society. You have been waiting for a long time and you want to know about your community assessment, would you:

-1 A. Ask once about their report to the administration but drop the matter if they did not answer your queries adequately.

-2 B. Ask no questions about the report.

+2 C. Become verbally aggressive and threaten them that they had better give you a good report.

0 D. Clearly, firmly and politely voice all the questions on your mind regarding their report and insist on clear answers without becoming offensive or rude.

+1 E. Tell them in no uncertain terms that they had better give you a good report.

Terminating Social Interaction:

(18) If you had decided that you no longer want to date someone, would you:

0 A. Gently but clearly explain that you changed feelings towards them.

-2 B. Avoid telling them and go in as though nothing is wrong.

+2 C. Abruptly tell them you are sick of them and can't stand the sight of them anymore.

-1 D. Avoid telling them but be cold and distant to them.

+1 E. Tell them you do not want to see them anymore but refuse to explain why.

## APPENDIX D:

## Social Fear Scale

The items in this questionnaire refer to things that may arouse fear in you. Rate each item on the five point scale to indicate how much fear it arouses in you.

- (1) None at all.
- (2) A little.
- (3) A fair amount.
- (4) Much.
- (5) Very much.

Angry People

Being Criticised

Being Ignored

Being Self-Conscious

Failure

Feeling Disapproved Of

Feeling Rejected By Others

Looking Foolish

Making Mistakes

Meeting Someone For The First Time

## APPENDIX E:

## The Means-Ends-Problem-Solving Procedure

## Administration

The MEPS may be either administered by an examiner or self-administered depending upon the educational level of the subject. In both cases the subject is read the standard instructions (see below). In the case of examiner administration, before the first story is read, it is important that the examiner be certain that the subject clearly understands the instructions. It is obvious that there must be no prompting on the part of the examiner if the test results are to be valid. The stories (see below) are each read to the subject once and his response is transcribed verbatim by the examiner directly in the test booklet. The instructions are not repeated before succeeding stories unless it becomes obvious that the subject has misunderstood them.

The instructions read by the subject are identical when the test is self-administered. The examiner must, however, ascertain whether or not the subject has sufficient reading facility to correctly understand the stories.

### Instructions to Subjects

In this procedure we are interested in your imagination. You are to make up some stories. For each story you will be given the beginning of the story and how the story ends. Your job is to make up a story that connects the beginning that is given to you with the ending given you. In other words, you will make up the middle of the story.

### Means-Ends Stories (Male Form)

1. Mr. A. was listening to the people speak at a meeting about how to make things better in his neighborhood. He wanted to say something and have a chance to be a leader too. The story ends with him being elected leader and presenting a speech. You begin the story at the meeting where he wanted to have a chance to be a leader.

2. H. loved his girl friend very much, but they had many arguments. One day she left him. H. wanted things to be better. The story ends with everything fine between him and his girlfriend. You begin the story with his girlfriend leaving him after an argument.

3. Mr. P. came home after shopping and found that he had lost his watch. He was very upset about it. The story ends with Mr. P. finding his watch and feeling good about it. You begin the story where Mr. P. found that he had lost his watch.

4. Mr. C. had just moved in that day and didn't know anyone. Mr. C. wanted to have friends in the neighborhood. The story ends with Mr. C. having many good friends and feeling at home in the neighborhood. You begin the story with Mr. C. in his room immediately after arriving in the neighborhood.

5. During the Nazi occupation a man's wife and children were viciously tortured and killed by an SS trooper, and the man swore revenge. The story begins one day after the war, when the man enters a restaurant and sees the ex-SS trooper. The story ends with the man killing the SS trooper. You begin when he sees the SS trooper.

6. One day Al saw a beautiful girl he had never seen before while eating in a restaurant. He was immediately attracted to her. The story ends when they get married. You begin when Al first notices the girl in the restaurant.

7. Bob needed money badly. The story begins one day when he notices a valuable diamond in a shop window. Bob decides to steal it. The story ends when he succeeds in stealing the diamond. You begin when he sees the diamond.

8. John noticed that his friends seemed to be avoiding him. John wanted to have friends and be liked. The story ends when John's friends like him again. You begin where he first notices his friends avoiding him.

9. One day George was standing around with some other people when one of them said something very nasty to George. George got very mad. George got so mad that he decided to get even with the other person. The story ends with George happy because he got even. You begin the story when George decided to get even.

## APPENDIX F:

## MEPS Scoring Categories

## Relevant Means

An individual means is scored for each discrete step which is effective in enabling the hero of the story to reach the resolution of the story or to overcome obstacles preventing goal attainment.

## Irrelevant Means

An irrelevant means is scored for a response which includes only steps which are not effective within the context of the story. Such steps, however, would be effective if the ending of the story were different.

An irrelevant means is also scored if the subject provides steps which lack the appropriate foundation upon which the middle and end of the story should be built. The underlying means, or first step, is left out.

### No-Means

A no-means is scored for a response which fails to provide the steps necessary to reach the goal. This type of response may either be a value judgement, a repetition of the story or, may not provide sufficient detail how the goal was reached.

### No Response

If the subject fails to respond to a particular story or if his response is not story directed, he is given a score of one no-response for that story.

## APPENDIX G:

## Tables

Table I. Group data for outcome measures

Group		Measure				
		TotDev	SRBTDev	SRIDev	SF	MEPS
Problem-Solving	X	23.66	13.50	10.17	26.33	12.67
Assertion Training	SD	5.01	2.17	5.19	8.07	7.47
Assertion Training	X	31.50	17.67	15.67	30.17	16.17
	SD	12.34	4.80	6.92	9.30	4.88
No-Treatment	X	28.00	14.50	11.83	28.50	NA
	SD	9.48	4.64	4.36	8.89	NA

Table I. Group data for outcome measures (cont.)

Group		Measure				
		Post-treatment Scores				
		TotDev	SRBTDev	SRIDev	SF	MEPS
Problem-Solving	X	8.67	5.50	3.83	25.50	20.00
Assertion Training	SD	3.61	2.43	2.40	8.50	3.03
Assertive Training	X	14.83	11.17	5.50	27.50	15.67
	SD	10.26	3.18	5.96	8.69	1.63
No-Treatment	X	23.83	13.00	8.50	26.00	NA
	SD	10.59	6.04	4.76	10.90	NA

Table I. Group data for outcome measures (cont.)

Group		Measure				
		TotDev	SRBTDev	SRIDev	SP	MEPS
Problem-Solving	X	15.00	8.67	6.33	0.83	7.33
Assertive Training	SD	7.27	4.18	4.32	7.44	5.89
Assertive Training	X	16.67	6.50	10.17	2.67	-0.50
	SD	4.80	3.83	1.94	3.27	4.14
No-Treatment	X	4.83	1.50	3.33	2.50	NA
	SD	2.04	1.05	1.75	11.84	NA

Table II. Summary of the Analysis of Variance with Pre-treatment Outcome Scores as the Dependent Variable

Measures	Sources of Variance	Sums of Squares	df	Mean Squares	F Ratio	p value
TotDev	Between	184.78	2	92.89	1.04	>.05
	Within	1336.83	15	89.12		
SRBTDev	Between	56.78	2	28.39	1.73	>.05
	Within	246.33	15	16.42		
SRIDev	Between	95.45	2	47.73	1.53	>.05
	Within	468.99	15	31.27		
SF	Between	44.34	2	22.17	0.29	>.05
	Within	1153.66	15	76.91		
MEPS	Between	36.76	1	36.76	0.92	>.05
	Within	398.16	10	39.82		

Table III. Summary of the Analysis of Variance with Change Scores as the Dependent Variable

Measures	Sources of Variance	Sums of Squares	df	Mean	F Ratio	p value
				Squares		
TotDev	Between	492.34	2	246.17	9.23	<.05
	Within	400.16	15	26.68		
SRBTDev	Between	162.11	2	81.06	7.32	<.05
	Within	166.33	15	11.08		
SRIDev	Between	140.79	2	70.39	8.28	<.05
	Within	127.49	15	8.50		
SF	Between	12.39	2	6.20	0.09	>.05
	Within	1031.61	15	68.77		
MEPS	Between	184.09	1	184.09	7.11	<.05
	Within	258.83	10	25.88		

Table IV. Summary of the Planned Contrasts of Group Means  
for Assertion Data

Measure	Contrasts		
	PSAT vs AT	AT vs NT	PSAT vs NT
TotDev	Q= 0.79	Q= 5.62	Q= 4.82
Change Score	p >.05	p <.05	p <.05
SRBTDev	Q= 1.60	Q= 3.68	Q= 5.28
Change Score	p >.05	p <.05	p <.05
SRIDev	Q= 3.33	Q= 5.75	Q= 2.52
Change Score	p >.05	p <.05	p >.05

For each contrast df = 3, 15

Table V. Generalization Data

Group		Measure			
		Pre-Treatment Scores			
		PenTr	PenUT	Global	NonPen
Problem-Solving	X	3.33	1.00	3.50	6.00
Assertive Training	SD	1.03	0.89	1.05	1.26
Assertive Training	X	3.33	1.83	4.50	8.00
	SD	1.37	1.17	1.52	1.41
No-Treatment	X	2.83	3.00	3.00	5.67
	SD	1.33	1.55	1.26	1.37

Table V. Generalization Data (cont.)

Group		Measure			
		Post-Treatment Scores			
		PenTr	PenUT	Global	NonPen
Problem-solving	X	0.83	0.50	1.33	2.83
Assertive Training	SD	0.98	0.55	0.52	1.47
Assertive Training	X	1.83	2.00	3.00	4.33
	SD	1.17	0.63	0.89	1.37
No-Treatment	X	2.33	2.33	2.67	5.67
	SD	1.37	1.37	1.63	1.75

Table V. Generalization Data (cont.)

Group		Measure			
		Change Scores			
		PenTr	PenUT	Global	NonPen
Problem-Solving	X	2.50	0.50	2.17	3.17
Assertive Training	SD	1.22	1.04	1.17	2.48
Assertive Training	X	1.50	-.16	1.50	3.67
	SD	1.04	1.60	1.05	1.75
No-Treatment	X	0.50	0.67	0.33	0.00
	SD	0.84	1.21	0.82	1.41

Table VI. Summary of the Analysis of Variance with  
Pre-treatment Generalization Scores as  
the Dependent Variable

Measures	Sources of Variance	Sums of Squares	df	Mean Squares	F Ratio	p value
PenTr	Between	1.01	2	0.51	0.32	>.05
	Within	23.49	15	1.57		
PenUT	Between	12.11	2	6.06	3.97	<.05
	Within	22.83	15	1.52		
Global	Between	7.00	2	3.50	2.10	>.05
	Within	25.00	15	1.67		
NonPen	Between	19.11	2	9.55	5.24	<.05
	Within	27.33	15	1.82		

Table VII. Summary of the Tests for Linearity of Overall Regression and Homogeneity of Within-Class Regression for Post-Treatment Measures

Group	Linearity of Overall Regression				Homogeneity of Within-Class Regression		
	Regression Coefficients	F Ratio	df	p value	F Ratio	df	p value
PenTR	0.14	0.58	1,14	>.05	4.67	2,12	<.10
NonPen	0.12	1.52	1,14	>.05	2.48	2,12	>.10

Table VIII. Summary of the Analysis of Variance with  
Generalization Change Scores as the  
Dependent Variable

Measures	Sources of Variance	Sums of Squares	df	Mean Squares	F Ratio	P value
PenTr	Between	12.00	2	6.00	5.45	<.05
	Within	16.50	15	1.70		
PenUT	Between	2.34	2	1.17	0.68	>.05
	Within	25.66	15	1.71		
Global	Between	10.34	2	5.17	4.95	<.05
	Within	15.66	15	1.04		
NonPen	Between	47.45	2	23.72	6.34	<.05
	Within	56.16	15	3.74		

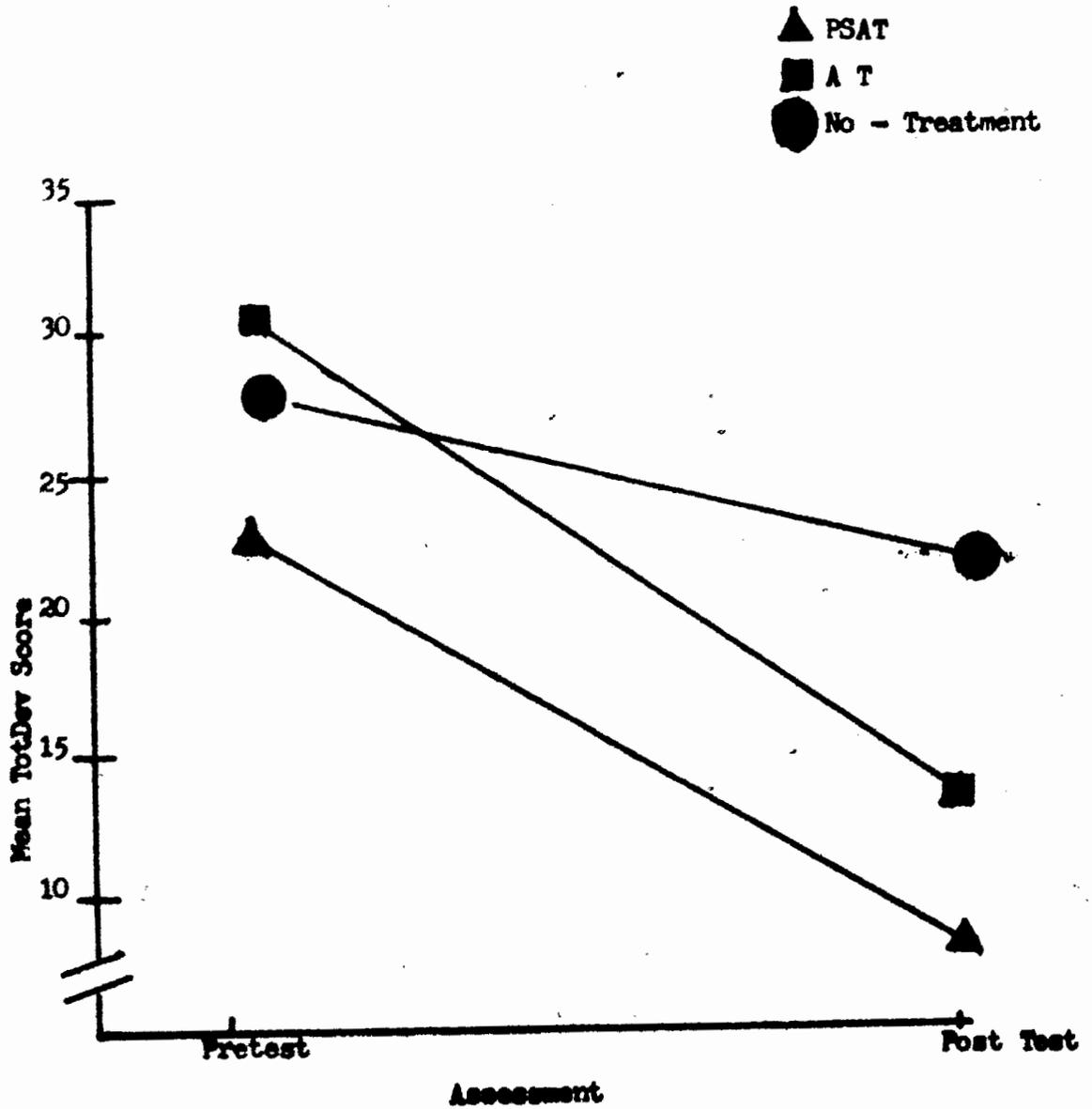
Table IX. Summary of the Planned Contrasts of Group Means  
for Generalization Data

Measure	Contrasts		
	PSAT vs AT	AT vs NT	PSAT vs NT
PenTr	Q= 1.87	Q= 1.87	Q= 3.75
Change Score	p >.05	p >.05	p <.05
Global	Q= 1.61	Q= 2.81	Q= 4.42
Change Score	p >.05	p >.05	p <.05
NonPen	Q= 0.63	Q= 4.64	Q= 4.02
Change Score	p >.05	p <.05	p <.05

Table X. Pearson Product-Moment Correlations Between  
Social Fear Change Scores and Assertion  
Measure Change Scores

Measures	r coefficient	degrees of freedom	p value
TotDev	-0.16	16	>.10
ToT Under	-0.13	10	>.10
Tot Over	-0.09	10	>.10
SRBTDev	-0.15	16	>.10
SRBT Under	-0.28	10	>.10
SRBT Over	0.13	10	>.10
SRIDev	-0.20	16	>.10
SRI Under	0.13	10	>.10
SRI Over	-0.36	10	>.10

Figure - 1  
Mean TotDev Data



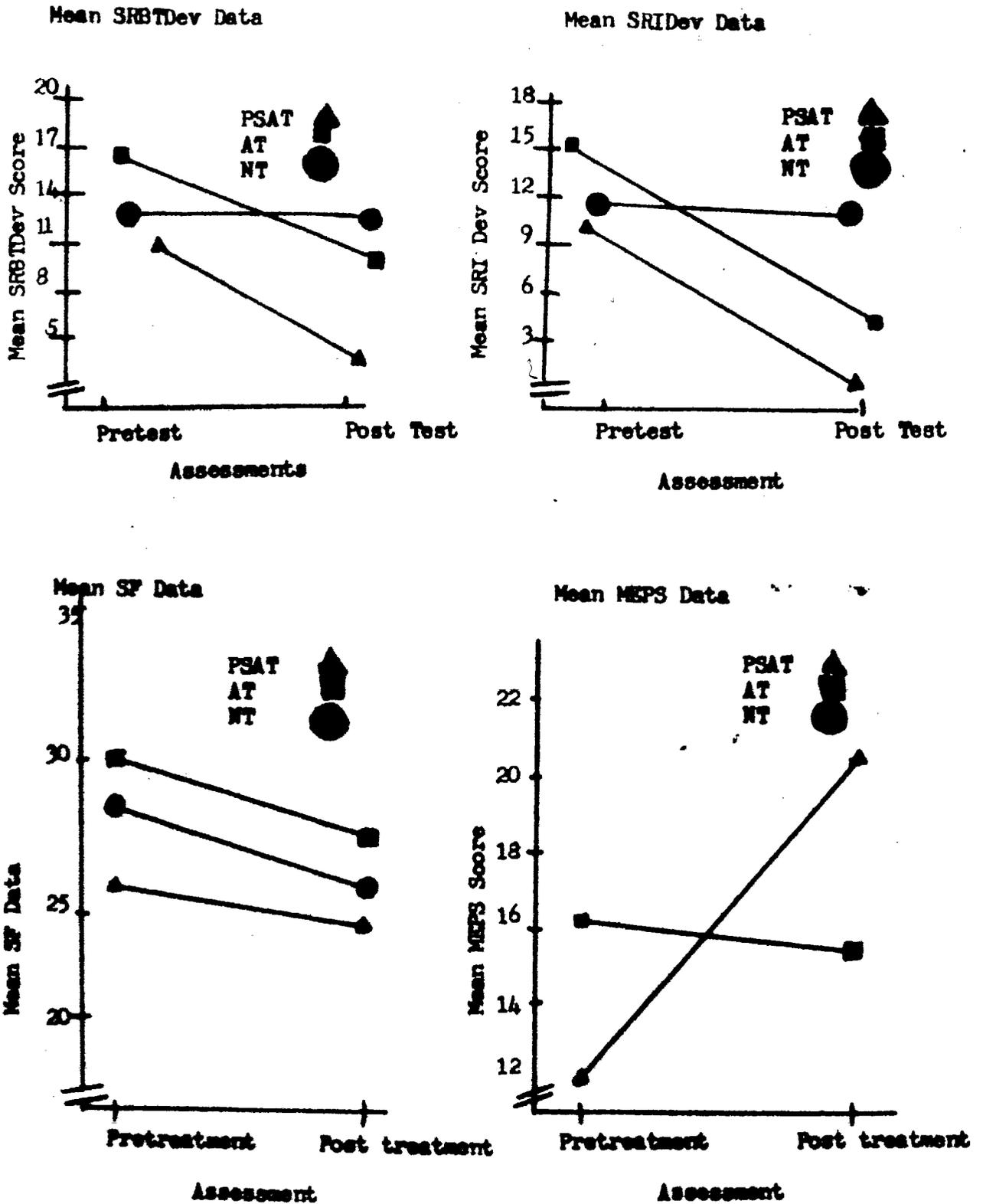


Figure - 3

Mean TotDev Change Score Data

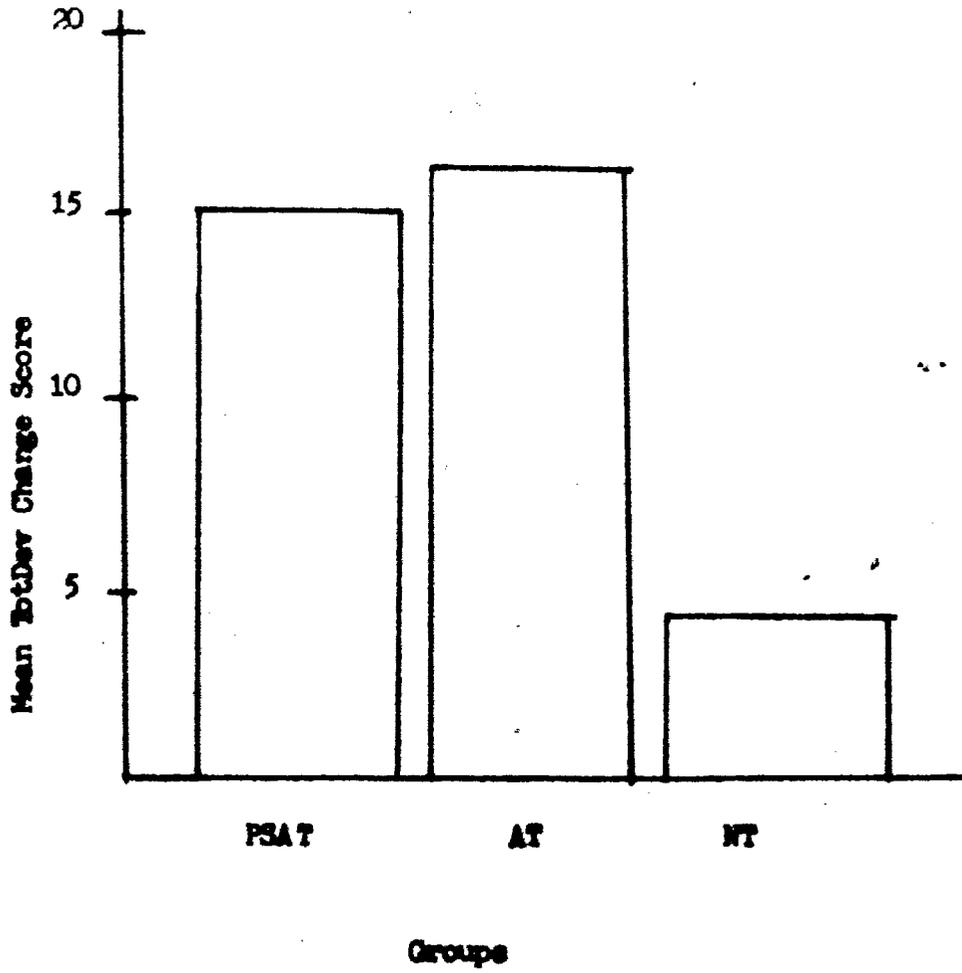
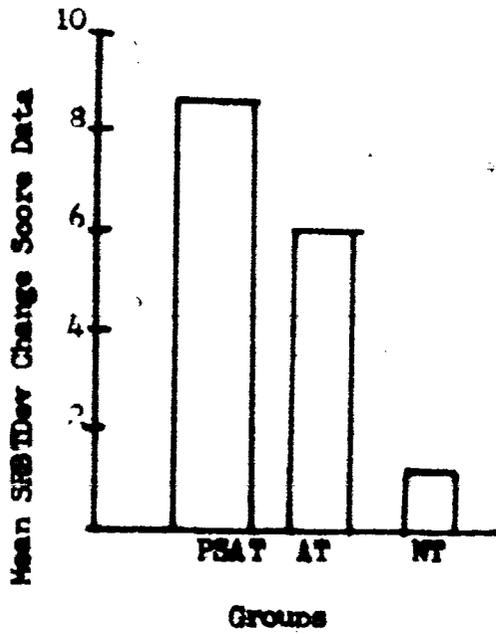
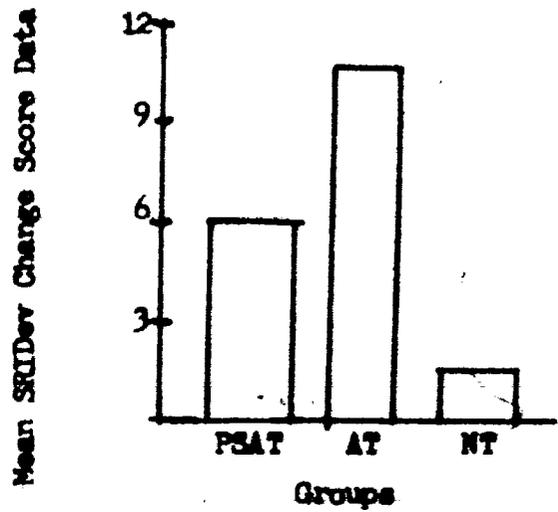


Figure - 4

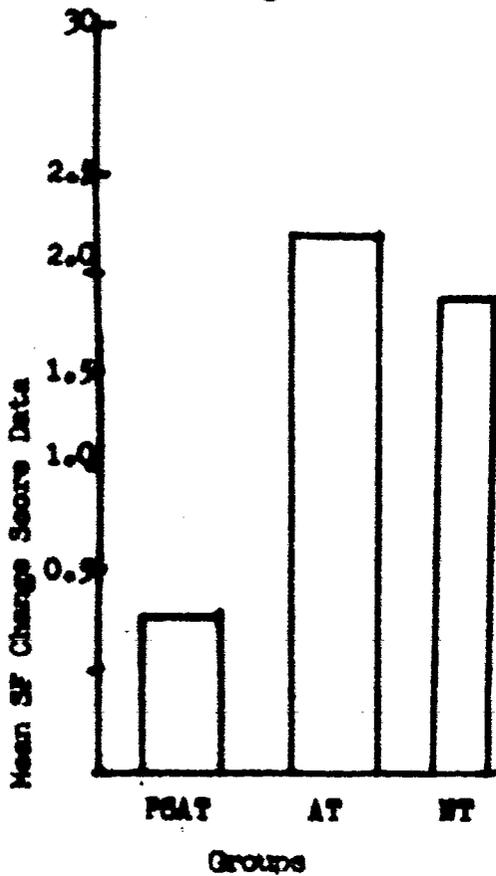
Mean SSBTDev Change Score Data



Mean SRTDev Change Score Data



Mean ST Change Score Data



Mean MEPS Change Score Data

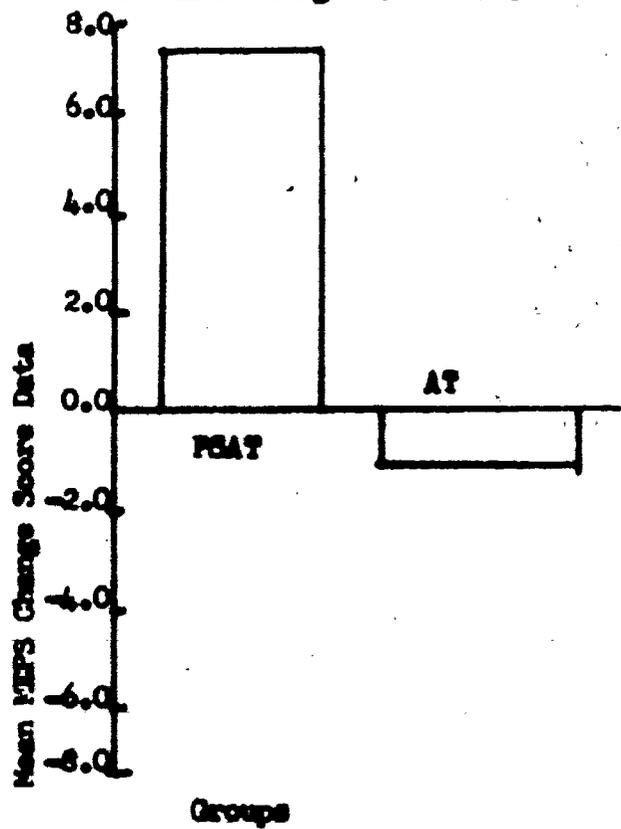


Figure - 5

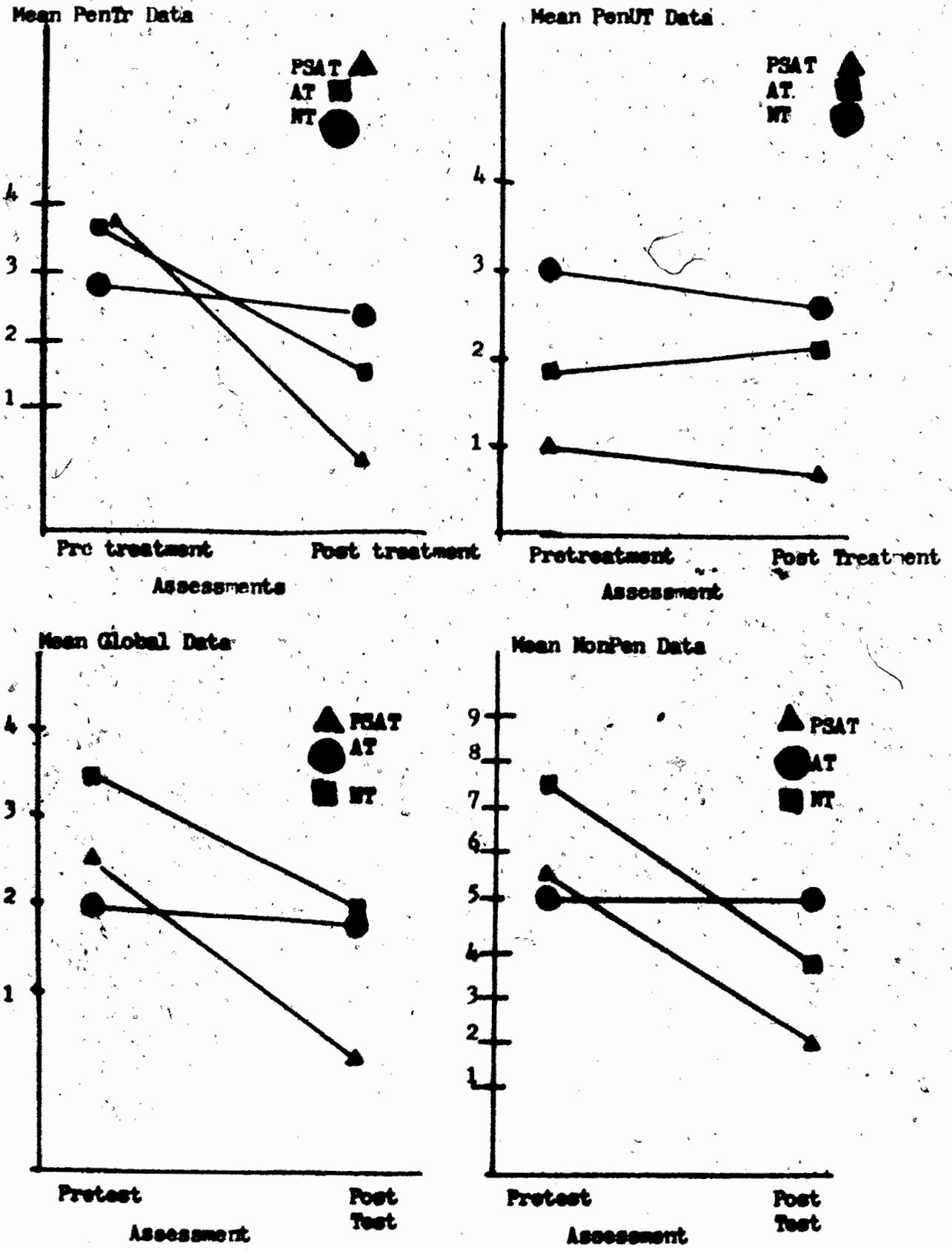
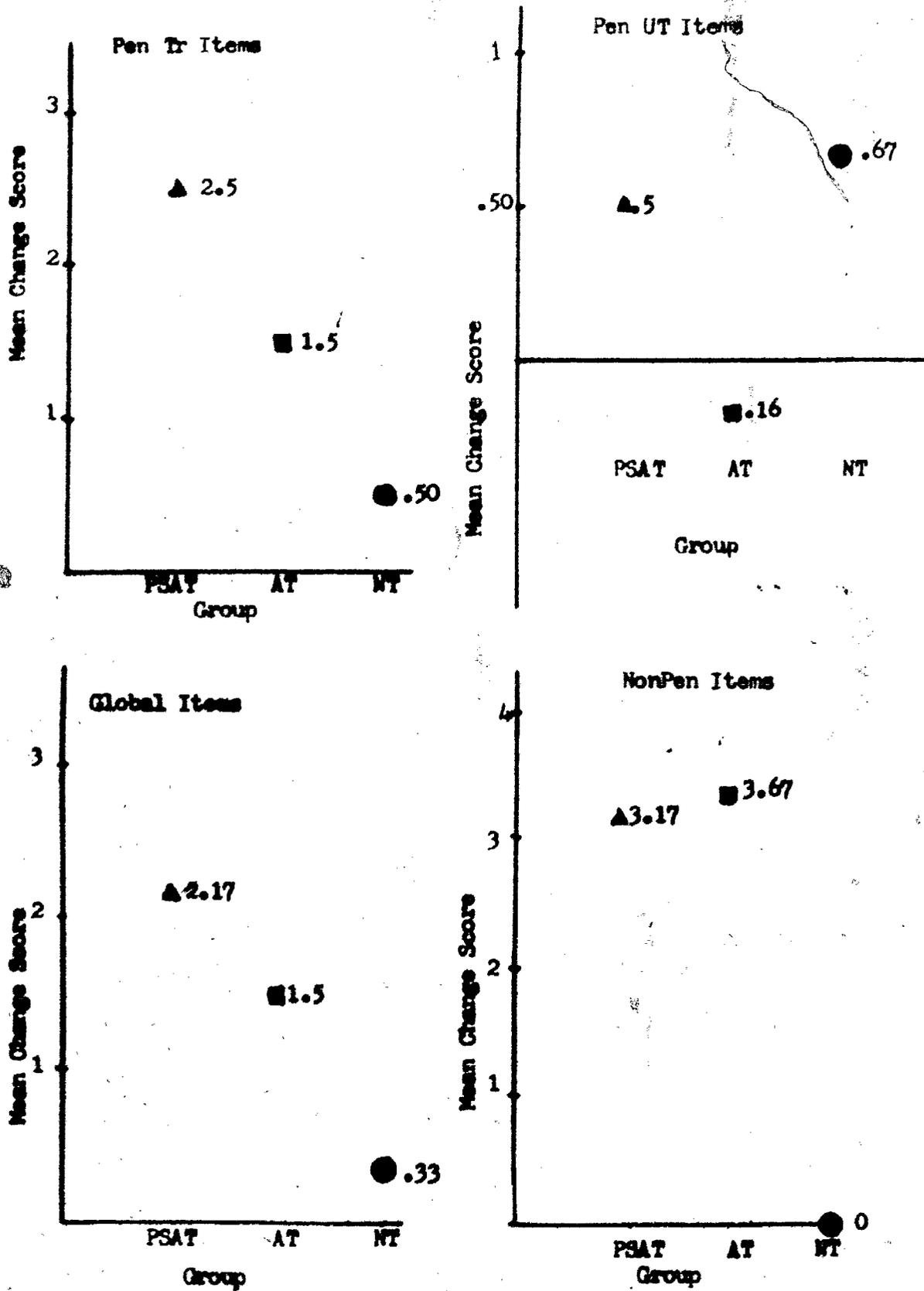


Figure - 6

Mean Generalization Change Score Data



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