

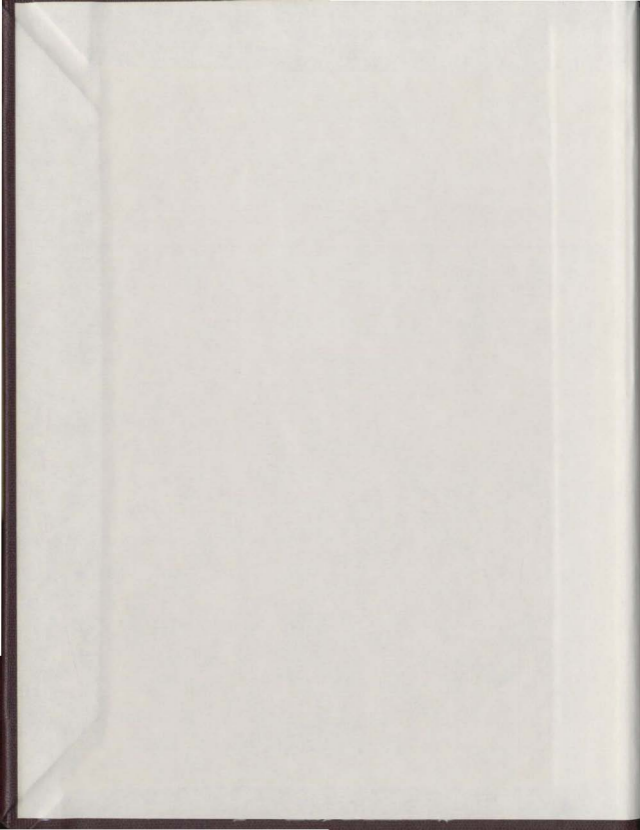
THE EFFECTS OF A SOCIAL SKILLS TRAINING
PROGRAM ON AGGRESSIVE BEHAVIOUR WITH
INSTITUTIONALIZED JUVENILE DELINQUENTS

CENTRE FOR NEWFOUNDLAND STUDIES

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THE EFFECTS OF A SOCIAL
SKILLS TRAINING PROGRAM
ON AGGRESSIVE BEHAVIOUR
WITH INSTITUTIONALIZED
JUVENILE DELINQUENTS

by



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A Thesis submitted in partial
fulfillment of the requirements
for the degree of Master
of Science

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ABSTRACT

Situation-specific behavioural deficits have been found to account for at least some of the aggressive behaviours displayed by juvenile delinquents. The present investigation undertook to evaluate the effectiveness of a social skills training package in achieving a reduction in delinquents' aggressive behaviours. Such a training program offers one procedure through which appropriate responding in social situations can be taught. Previous research had suggested that aggressive behaviour was a relevant target behaviour for this population.

Twenty-four students from a residential training center for juvenile delinquents served as subjects for this investigation. They ranged in age from 14-16 years (mean=15.2). The sex distribution of the subjects reflected their respective proportions in the center's population.

Three measures of verbal and physical aggression were employed to assess the efficacy of the training program: (a) the frequency of fines and warnings issued by the staff members for verbal and physical aggressiveness, (b) in vivo observations of aggressive behaviour during a free-time period, and (c) ratings of social skills in response to provocative situations presented on audiotape.

The students were divided into a treatment group and a control group equated in terms of sex-distribution and pre-treatment level of aggression.

The students in the training group met weekly for eight weeks. During these meetings, the concepts of assertion, aggression and non-assertion were first introduced. A variety of skills for assertively responding to provocations were applied to job interviews and inter-personal problem situations identified by the students. The social skills training included modelling, rehearsal and feedback, coaching, and homework assignments.

The students in the control group were given no treatment in addition to the normal program of the institution.

On all the measures of aggressiveness collected, the training group did not differ significantly from the control group at either the pre-treatment or the post-treatment assessments. Furthermore, the behaviour of the training group did not change significantly over the course of the investigation.

These results indicate that the social skills training package, as presently applied, was not successful in altering the amount of aggressive behaviour displayed by the students.

Difficulties in obtaining accurate data on the students' aggressive behaviour and their implications for conclusions from the study are discussed.

Table of Contents

Abstract.....	i
Table of Contents.....	iv
List of Tables	vii
INTRODUCTION	1
Social Skill Deficits Among Juvenile Delinquents ...	2
Reducing Deficient Social Skills	5
The Socially Skilled Response	6
Social Skills Training Programs	8
Comparative Studies	9
Social Skills Training with Juvenile Delinquents ..	10
Summary	17
The Present Investigation	18
THE SETTING	
Pleasantville School	22
The Levels System	23
School Staff	26
METHOD	
Subjects	27
Apparatus	27
Assessment Measures	27

Naturalistic Observation Measure	28
Behavioural Role-Playing Assertiveness Test..	29
Rating Scale	31
Staff Reports and Institutional Measures	33
Procedure	
Selection of Subjects	33
Therapists	37
Social Skills Training Groups	38
Rating the Assertiveness Test Tapes.....	41
RESULTS	
Subject Attrition	44
Reliability of Measures	
Behavioural Assertiveness Test	44
Naturalistic Observation Measure	45
Staff Observation Measure	45
Behavioural Assertiveness Test	46
Naturalistic Observation Measure	49
Institutional Measure	52
DISCUSSION	
Institutional Measure	58
Observational Measure	60
Behavioural Assertiveness Test	62
The Training Groups	67

REFERENCES	72
APPENDIX A: Definitions of Aggression	75
APPENDIX B: The Vignettes	79
APPENDIX C: The Rating Scale Used to Rate the Students' Responses to The Assert- iveness Test	83
APPENDIX D: Aggressive Behaviours For Which Fines/ Warning Letters Were Issued	86
APPENDIX E: Aggressive Behaviour Recording Form to be Kept by Staff Members	87
APPENDIX F: Pleasantville Social Skills Group Interview Record Form	88
APPENDIX G: Analysis of Variance Tables	91

List of Tables

TABLE 1:	Assertiveness Ratings of Student Responses to the Behavioural Assertiveness Test	47
TABLE 2:	Pre-Treatment to Post-Treatment Changes in Student Response Ratings	48
TABLE 3:	Absolute Deviation from scale point 5 of Post-Treatment Assertiveness Ratings...	50
TABLE 4:	Mean Assertiveness Ratings of Student Responses to the Generalization Scenes of the Behavioural Assertiveness Test	51
TABLE 5:	Mean Aggressions per minute for Subjects Observed in a Social Setting	53
TABLE 6:	Number of Fines/Warning Letters Issued to the Students	54

CHAPTER ONE

At Pleasantville School, a residential training center for juvenile delinquents, many of the inappropriate interpersonal behaviours are aggressive related acts. These acts are subject to punishments in the form of losses of privileges. McNeil (1979) reported that such aggressive acts continue to occur at an uncomfortably high rate. Thus, punishment has only been moderately effective in reducing their occurrence.

Bandura (1968) has indicated that the appearance of appropriate response in an interpersonal interaction may be hindered by the individuals lack of understanding of what constitutes appropriate behaviour in that situation. The acquisition of appropriate interpersonal skills is a learning process to which some individuals may not have been exposed.

The development and maintenance of inappropriate behaviours, such as aggression, also constitutes a learning process. Like other types of behaviour, aggressive acts are maintained in an individual's behavioural repertoire by their consequences. The perceived success of a behaviour

2

in achieving a desired outcome governs the probability that this same behaviour will be repeated at some future time. The appropriateness of the act appears to be irrelevant here. Thus, if a socially appropriate response is not available, and an inappropriate response has succeeded in the past, it will most likely be employed again.

Based on this model, an individual presently displaying inappropriate social behaviour cannot be expected to display appropriate behaviour spontaneously. Thus, punishing inappropriate behaviours could not be expected to extinguish their occurrence, as it does little towards providing a model for achieving positive outcomes based on the performance of socially appropriate behaviours. A method of teaching appropriate social behaviour is required if the performance of such behaviour is to be achieved.

Social Skill Deficits Among Juvenile Delinquents

Freedman, Rosenthal, Donahoe, Schlundt and McFall (1978) have conceptualized delinquent behaviour as a manifestation of situation-specified social-behavioural skill deficits. Their research compared the performance of delinquents and their non-delinquent peers on the Adolescent Problems Inventory (A.P.I.). First developed by Freedman (1974), the A.P.I. is a 44-item role playing test. Each item on the test describes a particular set of events which reflect a problem area relevant to this

population. The subjects' responses to the problems posed by each item are recorded and are graded on a five-point social competence scale.

Freedman et al. (1978) report the results of three investigations utilizing the A.P.I. In one, responses to the problem situations were collected from a sample of institutionalized juvenile delinquents, a sample of non-delinquent, law abiding, mature, high school students, and a sample of high school students who were recognized as student leaders (i.e., they were editors of the school newspaper and yearbook, student senators, class presidents, and star athletes). All subjects were males ranging in age from 14-18 years.

Based on total A.P.I. score obtained, the results of this comparison revealed that the test could reliably differentiate among the three groups of adolescents. The student leaders performed significantly better overall than did the high school student group. The high school group, in turn, performed significantly better overall than did the delinquent sample.

A second study compared the A.P.I. performances of two groups of institutionalized delinquents who were known to differ in their history of disruptive behaviours and rule violations within the institution. One group was comprised of boys whose records indicated that they had

spent more than 25 days during the preceding six months in the institution's security cottage. The second group was made up of boys who had spent less than 5 days during the same period in the security cottage.

The results indicated that the low-disruptive subjects earned significantly higher total scores on the A.P.I. than did the high-disruptive subjects.

In the third study a non-delinquent high school sample and a delinquent sample were administered the A.P.I. in either a 'free-response' or 'multiple-choice' format. In addition, the subjects were asked to give either their 'typical' response, or the 'best' response they could devise.

Those subjects who were asked for their 'best' response performed at a significantly higher level than did those who were asked for their 'typical' response. Those responding in a 'multiple choice' format did better overall than did those who were allowed to respond in a 'free-response' format. The A.P.I. again differentiated between delinquent and non-delinquent subjects (Freedman, et. al., 1978).

Taken as a whole, these findings indicate that the problem areas chosen for inclusion on the A.P.I. do represent relevant areas of concern for adolescent boys (Freedman, 1974). Further, non-delinquent high school students appear to handle these problem areas with much more competence than do delinquent individuals (Freedman, et. al., 1978). The finding that the type of instructions given can affect the

competency of the obtained responses indicates that some measure of caution must be exercised when such role-playing tests are being administered. (Bellack, Hersen and Turner, 1979; Higgins, Alonso and Pendleton, 1979).

Based on these findings, Freedman et. al. (1978) conclude that situation-specific social skill deficits do contribute to the interpersonal legal difficulties faced by delinquent adolescents.

Reducing Deficient Social Skills

Freedman's (et. al., 1978) findings correlate social skill deficits and delinquency. If social skill deficits are at least partially responsible for delinquents' interpersonal problems, reducing these deficits should lead to a reduction in their interpersonal difficulties.

Social skills training programs have been developed to deal with an individual's interpersonal problems. These programs attempt to remediate deficiencies by pinpointing those behaviours which contribute to the response's failure. Once these have been identified, specific procedures are invoked to improve the individual's performance of these behaviours.

The Socially Skilled Response: Eisler, Miller and Hensen (1973) employed a series of role-playing situations, and compared the components of assertive behaviour displayed by a group of male psychiatric patients given high global ratings of assertiveness (HA) with that of a group given low ratings (LA). In each role-playing situation, the patients responded to simulated real-life encounters. A description of the situation was followed by a verbal prompt. All responses were videotaped.

The assertiveness of the individual was assessed by carefully examining the verbal and non-verbal components of the behaviour of each subject. Independent judges were employed to assign ratings in each of the nine most frequently occurring behavioural categories.

Eisler, et.al. (1973) found that high assertive (HA) and low assertive (LA) responding individuals could reliably be differentiated on the basis of five of the nine behavioural measures. HA subjects displayed shorter latencies to response, and louder speech volume than did LA subjects. HA responders displayed a trend toward longer response durations. The two groups were not significantly different on the speech fluency measure, the

frequency of smiles, or the duration of looking measure. However, HA subjects were less compliant with the requests of the role model. Further, they made more requests for behaviour change. Finally, HA subjects were rated as displaying more affect than were LA subjects.

These findings provide evidence that certain behavioural characteristics are closely associated with high assertive responses among male psychiatric patients.

The extent to which these behaviours are relevant to non-psychiatric populations depends upon the types of social interactions normally encountered by these individuals. For non-psychiatric populations, the interpersonal difficulties normally encountered might be expected to differ from those presented by Eisler, et. al. (1973). However, the requisite skills for competent responding need not show a corresponding variation. Those social skills training programs which have been developed for a wide variety of client populations (e.g. Lange and Jabubowski, 1976; Liberman, King, DeRisi and McCann, 1976) employ as targets most, if not all, the behaviours examined by Eisler, et. al. (1973). In some cases, however, skills may be re-defined, or other targets chosen, depending upon the specific needs of an individual, or of a population.

Social Skills Training Programs: In the usual sense of the word, 'Assertion Training' refers to a combination of behavioural techniques employed to remediate interpersonal problems (Heimberg, Montgomery, Madsen and Heimberg, 1977). Experimental investigations of the efficacy of social skills training have dealt with identifying those component techniques which are essential to the success of a skills training program. A second series of investigations has attempted to establish the superiority of skills training over other forms of therapy.

Those studies which have sought to identify the essential components of social skills training have dealt mainly with college student or psychiatric populations. The extensive review of these studies by Heimberg, et.al. (1977) indicates that technique effectiveness is directly related to population differences. Based on their review, Heimberg, et.al. (1977) indicate that response rehearsal alone does not appear to be sufficient to modify the non-assertive behaviour of psychiatric patients. However, rehearsal was found to be an effective intervention technique when used with college students.

Heimberg, et.al. (1977) also concluded that the combination of modelling, focused instructions and response

practice appeared to be an effective treatment program for the non-assertive behaviour of psychiatric patients. College students were found to respond best to the combination of rehearsal, coaching and modelling.

A more recent review (Twentyman and Zimering, 1979) has corroborated the findings reported by Heimberg, et.al. (1977). This review also concludes that the use of homework assignments, projected consequences (of assertive behaviour), and cognitive modification techniques will facilitate positive behaviour changes if they are included in a social skills training program made up of the above mentioned techniques. However, the effectiveness of these techniques beyond what can be obtained through the use of the more standard techniques, has yet to be demonstrated (Twentyman and Zimering, 1979). Largely, these techniques are included to facilitate transfer and generalization (Twentyman and Zimering, 1979).

Comparative Studies: Compared to no-treatment, or a placebo treatment, social skills training has been found to be a more effective procedure for teaching specific skill acquisition, or in achieving a reduction of interpersonal anxieties (Twentyman and Zimering, (1979).

However, Twentyman and Zimering (1979) reported that skills training is no more effective than any alternate intervention procedure (e.g. analytic-oriented psychotherapy, discussion therapies, anxiety-reduction therapies, cognitive-based therapies). In all cases, the studies reported in their review indicate that few significant differences were reported among the treatment programs. On the basis of this, Twentyman and Zimering (1979) conclude that more evidence is necessary before behavioural training of social skills can be endorsed as the treatment of choice for interpersonal skill deficits.

Social Skills Training with Juvenile Delinquents: Only a few studies have evaluated the effects of social skills training programs with juvenile delinquent populations. One of the earliest investigations was undertaken by Sarason (1968).

Sarason presented a series of fifteen problem situations to each of two groups of male, institutionalized juvenile delinquents. Each problem situation was chosen on the basis of its relevance to the population under investigation. The subjects' task was to devise, and then role-play, solutions to these problems. For one group, the problem situation, plus some possible solutions, was

first modelled by the experimenters. For the other group, such modelling was not provided. A third group received no exposure to the experimental procedure.

A number of measures were collected from each subject. Included among these was a self-description inventory completed by the students, and a staff-completed rating scale of the student's behaviour. As well, several post-experimental measures were drawn from Review Board decisions which were handed down at the time of the subject's release.

Sarason (1968) found that the subjects in the experimental groups showed more positive changes in their behaviour and attitudes than did the boys who did not participate in the experiment. The results were strongest and most positive for the group who had received exposure to the modelled alternatives.

Sarason's (1968) findings would appear to provide support for the inclusion of modelling as a treatment component when attempting social skills training with delinquents. The superiority of modelling over other techniques was challenged in a study by Sarason and Ganzer (1973).

Sarason and Ganzer (1973) replicated the procedures employed in Sarason's earlier study. In addition, they included a 'discussion' group. This group was presented

with the problem situations. Further, they were provided with information on how to handle these situations. This information was then discussed by all the group members.

The results of this study were essentially the same as those obtained by Sarason (1968). All experimental groups showed greater behavioural and attitudinal changes than did their control group counterparts. However, the differences among the experimental groups was not significant. Thus, the provision of information concerning the handling of particular problem situations is as effective as seeing these response alternatives modelled. The authors suggest that the key factor may be the provision of task-relevant information. The method used to provide that information may be only a secondary concern (Sarason and Ganzer, 1973).

Spence and Marziller (1979) isolated several behavioural deficiencies displayed by each of five institutionalized delinquents. Once isolated, the performance levels of these behaviours was subjected to a detailed assessment procedure. The assessment battery combined a staff questionnaire, a student-completed self-report measure and a behavioural observation measure derived from videotaped conversations.

The training program utilized instructions, modelling, role-playing, videotaped feedback, target setting and social

reinforcement. Each of the five target behaviours were dealt with in a sequential fashion for a maximum of three sessions. The total number of training sessions varied for each subject, but did not exceed a total of ten.

Spence and Marziller (1979) found that training produced uneven changes in the subject's behaviour. Changes in some behaviours were accomplished rather quickly (eye contact, appropriate hand movements). However, other behaviours proved much harder to train (appropriate head movements, verbal acknowledgements, student-produced verbal feedback); where changes were produced, they were maintained at a two-week follow up session.

Ollendick and Hersen (1979) compared the effectiveness of a social skills training program and a discussion group therapy to that of a waiting list control group in effecting positive behaviour changes among a group of institutionalized delinquents. The goal of the program was to help the subjects acquire the skills which were necessary to get along with staff members and peers.

Four instruments were employed to assess the subjects' progress throughout the training program. The Nowicki-Strickland Locus of Control Scale and the Spielberger A-State for Children Scale constituted the self-report measures. The behavioural role playing measure consisted of eight simulated real life encounters which required

assertive responding by the subjects. The final two measures assessed the students' adjustment to the institution's ongoing behaviour modification program. These were the number of points earned by the subject, and the number of instances of disruptive behaviour.

The social skills training group received a program consisting of instructions, rehearsal, feedback, social reinforcement, guided practice and graded homework assignments. The discussion group did not employ any of the behavioural procedures. Instead problem areas were discussed in didactic format. The control group did not meet for weekly sessions.

Ollendick and Hersen (1979) found that both experimental groups showed improvement when compared to the control subjects. The social skills group obtained significantly higher scores on both the self-report measures. This group also earned more points when the records from the behaviour modification system were examined.

The measures drawn from the role-playing test were subdivided into two categories based on the type of assertion required in the situation. On those scenes where negative assertion (appropriate responses to provocations) was appropriate, the social skills group

obtained higher scores on the eye contact measure. They displayed greater decreases in the amount of aggressive content in their speech. Finally, they showed greater increases in the number of requests for new behavior employed. On those scenes where positive assertion (giving compliments, etc.) was appropriate, the social skills group displayed greater eye contact, larger decreases in response latency, and greater increases in the amount of spontaneous positive behaviour emitted.

Both Spence and Marziller (1979) and Ollendick and Hersen (1979) provide supportive evidence for the use of a social skills training program. The finding, by Ollendick and Hersen (1979), that social skills training is superior to a discussion based therapy needs further verification in light of Sarason and Ganzer's (1973) earlier finding. Whereas modelling alone does not constitute a superior treatment approach to a discussion therapy, it is possible that the inclusion of other treatment techniques may enhance the effectiveness of the treatment program and, thus contribute to the success of the skills training method (Sarason and Ganzer, 1973).

A study by Snyder and White (1979) provides

further evidence of the utility of the skills training procedures. These authors employed a cognitive self-instructional procedure on attempting to decrease the interpersonal difficulties encountered by institutionalized delinquents. The effects of cognitive self-instructional training were compared to a contingency awareness program and a waiting-list control group.

Three observational measures served as the assessment devices. These measures were: absence from class, failure to complete social self-care responsibilities, and frequency of impulsive behaviours.

The cognitive self-instructional training consisted of instructions in the concepts and use of private speech and its applications to the subjects' daily lives. Instructions, rehearsal, role playing and homework assignments were used to relate the use of private speech to the target behaviours.

Those subjects in the contingency awareness group discussed with the therapists problems related to the target behaviours. Suggestions for change were proposed by the therapists. The control group did not meet with the therapists.

The results obtained by Snyder and White (1979) indicate that the group receiving cognitive self-

instructional training had fewer class absences, engaged in fewer impulsive behaviours and showed fewer failures to complete social and self-care responsibilities than did either of the other groups. These results were either maintained or enhanced at a six-week follow up evaluation.

Although somewhat different in focus, the Snyder and White (1979) study appears to corroborate the findings of Ollendick and Hersen (1979) in that social skills training procedures produce greater positive changes in behaviour than do either a discussion-based therapy or a waiting-list control group. However, the superiority of cognitive procedures over standard skills training programs is not dealt with here. Such superiority has yet to be convincingly demonstrated (Twentyman and Zimering, 1979).

Summary: From the available evidence, several conclusions can be drawn. The data appears to support the utility of the treatment techniques collectively referred to as social skills training programs. As Twentyman and Zimering (1979) indicate, while these techniques may not be of particular usefulness when applied in isolation, their usefulness increases dramatically when they are part of a package of techniques.

The application of these techniques to social skills deficits and excesses will lead to more positive changes in the behaviour of delinquents than if a placebo is employed, or placement on a waiting list. This is consistent with the findings of other investigations which have studied other populations (Twentyman and Zimering, 1979).

The superiority of the skills training program over other forms of therapy remains to be convincingly demonstrated. Although some support is available from the study by Ollendick and Hersen (1979), the general body of literature has not supported their claims (Twentyman and Zimering, 1979; Heimberg, et. al., 1977).

The Present Investigation

During the course of a study on social skills training with institutionalized juvenile delinquents at Pleasantville School (Crewe, in preparation), it became apparent that a high proportion of their interpersonal interactions were aggressive. McNeil (1979) has indicated that most of these aggressive episodes occurred in situations which were unobserved by the staff members of the institution. Therefore, there was little chance that the existing contingency management system could completely control such inappropriate behaviour.

These observations reflect the prevalence of aggression among juvenile delinquents (e.g. Leyton, 1979).

As Bandura (1968) has suggested, an individual may behave inappropriately because of a lack of knowledge as to what constitutes socially appropriate behaviour in that situation. The unavailability of opportunities to learn socially appropriate behaviour ensures their non-performance in inter-personal inter-actions.

Although a number of factors including peer pressure, motivation and strength of competing responses mediate performance of a behaviour, it is reasonable to expect that social skills training will result in improved social behaviour. Heimberg et. al. (1977), and Twentyman and Zimering (1979) have indicated that such training is a useful procedure. Others (e.g. Spence and Marziller (1979); Ollendick and Hersen (1979) have extended the usefulness of this procedure with juvenile delinquents.

Despite its potential usefulness, social skills training has not been widely employed in dealing with

inappropriate behaviours among juvenile delinquents. More often, a punishment-based method is imposed. At Pleasantville School, for example, maladaptive behaviours such as aggression are handled within the context of the ongoing token economy program. A response cost format attaches 'fines' or 'warning letters' to the performance of such behaviours.

Based on Bandura's (1968) reasoning, this procedure will only achieve a partial reduction in the amount of aggressive behaviour displayed by the students at Pleasantville School. Response cost procedures by themselves do little towards teaching the students alternate socially appropriate behaviours. Thus, their performance will remain at low levels.

Social skills training, however, would provide direct tuition in those aspects of behaviour which are relevant to appropriate expression in social situations. Thus, the individual would be provided with a repertoire of socially appropriate alternative behaviours for many social situations which have been problematic.

As McNeil (1979) has indicated, many of the aggressive behaviours performed by the students of Pleasantville School occur unobserved by the staff members. In these situations, the response cost 'fines'

system will not be effective as staff are not present to enforce the system. Social skills training, however, would provide the students with a method of handling interpersonal conflicts which is entirely self-managed, thus making it a more versatile, portable and useful procedure.

The present investigation seeks to evaluate the effectiveness of a social skills training package in achieving a reduction of the amounts of aggressive behaviour displayed by a group of juvenile delinquents. This program will be compared to the reductions in aggressive behavioural output which can be achieved with an ongoing response-cost-based token economy. Such an investigation should help to clarify the usefulness of social skills training in achieving behavioural changes among juvenile delinquents.

CHAPTER TWO

THE SETTING

Pleasantville School: The subjects for the present investigation were drawn from the student population of Pleasantville School in St. John's, Newfoundland.

Pleasantville School is a residential and educational training center for delinquent adolescents. It is operated by the Department of Social Services of the Province of Newfoundland.

All the students in residence at Pleasantville School have been referred to that institution by the Unified Family Court of the Province of Newfoundland. Most have been charged under Section IV of the Welfare of Children's Act as being "beyond parental control". Some have been charged with other offences including break and enter, theft, etc. A large proportion of the students at the school have a history of contact with legal authorities prior to their placement in this institution.

Both male and female adolescents reside at Pleasantville School. At the time this study was begun, there were 30 students (20 female; 10 male) living in the school's

residential center. This two-storey structure serves as the focal point for all the residents' non-academic activities. The main floor of this building houses the dining room, staff offices, detention center, T.V. and recreational rooms, and a laundry room. The top floor contains all of the students' bedrooms; one section for boys and one section for girls.

For the most part, the educational and residential centers at Pleasantville School function independently. However, communication concerning individual students is frequent. The present research was conducted within the residential center only.

The Levels System: Within the school, the rules and regulations governing student behaviour are detailed in a token economy program known as the 'levels' system. Within this system, a student may progress through four 'levels' dependant upon the degree of appropriate behaviour which is exhibited.

All students enter the institution at Level One. Few privileges are attached to this designation. However, the student may earn points for punctuality, appropriate table manners, neat and appropriate appearance, as well as for the completion of assigned household chores. These points are exchangeable for privileges on a weekly basis. These privileges include the making of one local

and one long distance telephone call, staying up late at night and access to cigarettes. The student on level one can lose points for such inappropriate behaviours as lying, behaving aggressively (verbal and/or physical), swearing, stealing, running away - or threatening to do so, and behaving dishonestly.

Progression through the four levels of this system is governed by the number of points earned. When the students on level one, have accumulated 12 out of 20 days during which no points were lost and at least 42 points were earned, they are promoted to level two.

This promotion increases the number and type of privileges which are available to the students. Some of the privileges available to level two students include the freedom to leave the residence unescorted, spend weekends at home, and join community groups. Level two students earn and lose points as do level one students. Should any student on level two lose all their points, they are demoted to level one.

The students can advance to level three if they accumulate 25 out of 30 days in which no points were lost, and at least 42 points were earned.

On level three, the students are no longer given or fined points. Instead, students are issued a four dollar per week allowance. Privileges offered to level three students include attendance at movie theatres, dances and community groups without supervision. The privileges normally accorded to level two students are available to level three students. In addition, level three students receive access to a television lounge from which students at the lower levels are excluded. If a student on level three behaves inappropriately, a warning letter is issued. In this letter, the nature of the offense is clearly indicated. If three such letters are issued within a one-month period, demotion to level two follows. Level three students can progress to level four if no warning letters are issued for 42 consecutive days.

A student on level four receives a five dollar per week allowance. Privileges include permission to stay out until 10:30 p.m. on weekends, to accompany level one and two students to outside appointments. The student is also expected to help staff when requested to do so. Students on this level who break rules are referred to a committee consisting of chief supervisors. There, appropriate punishment is decided upon.

School Staff: The staff of the residential center at Pleasantville School consists of 12 juvenile guidance officers and five chief supervisors. The staff are divided into three shifts. The night shift (12 a.m. - 8 a.m.) which is permanent, and the two day shifts (8 a.m. - 1 p.m.; 4 p.m. - 12 a.m.) which rotate on a weekly basis. Each day shift consists of four juvenile guidance officers (supervisors), and one chief supervisor. Their duties are to enforce the levels system, and to provide supervision and guidance services to the students.

CHAPTER THREE

METHOD

Subjects

Twenty-four volunteers from the school served as subjects for the present experiment. There were sixteen female students in this group and eight males. They ranged in age from 13-16 years. The mean age of the group was 15.2 years.

Apparatus

Two Sony TC-110A cassette tape recorders were used to record and play back the vignettes of the assertiveness test. A Sony F-27S microphone secured on a Shure S39A microphone stand was used to record the vignettes onto the tapes, and to record the subjects' responses. The vignettes and the responses were recorded on Sony LNX60 cassettes. A Sony RM-15 Remote Control switch was used to cue one of the tape recorders.

A bead counter (McNeil, 1979) hidden in the observer's pocket was used to unobtrusively count incidents of aggressive behaviour.

Assessment Measures

Four measures were used to assess the levels of aggressiveness of each of the subjects. These included a behavioural role-playing assertiveness test, a naturalistic

observation measure, and staff recorded observations of the subject's behaviour. As well, the institution's records of fines and warnings issued to the students during the assessment and training periods, were included in the data collection procedures.

Naturalistic Observation Measure. The observation measure employed in the present study was a variation of the method developed by McNeil (1979). His measure involved the recording of the number of instances of physical and verbal aggression (see Appendix A) displayed by each subject during a five-minute observation period.

In the present study, the observations were made during a two-hour free-time period (3-5 pm.) after school hours. The students were normally restricted to three rooms in the residential centre (tv room; rec. room; level three room) during this period. All observations were carried out in these rooms.

All instances of aggression were counted on the bead counter which was hidden in the observer's pocket. The observer seated himself in one of the rooms and awaited the entrance of four of the subjects. When four subjects were present, a five-minute observation period began. All observed instances of aggression were then recorded on the bead counter, separately for each subject.

During the observation period, the observer maintained minimal contact with the students in the room.

At the end of the five-minute period, the observer left the room and unobtrusively tabulated his data. He then moved to another of the observation rooms and repeated the procedure with another quartet of subjects.

Four such observation sessions were normally carried out each day. Three to four days per week were normally required to collect the planned number of 64 observations per week.

Reliability of this measure was established with the aid of a second observer. The second observer was one of four staff members employed at the institution. Following a brief description of the experiment, each observer was trained in the application of the measure until a criterion of 100% agreement with the observer was realized.

Data collection with two observers repeated the single observer method. However, students to be measured were agreed upon prior to entering the observation room.

The total number of observations collected by the two observers equalled one-quarter of the total number collected during that week. All students in the institution were included in the reliability check population.

The number of aggressions displayed by the subjects per observation minute was determined by dividing the total number of aggressions by the total number of minutes the subject was observed.

Behavioural Role-Playing Assertiveness test. The behavioural role-playing assertiveness test employed in the

present study is a variation of similar tests which have been applied by other investigators (Freedman, et al., 1978; McNeil, 1979; Ollendick and Hersen, 1979).

In its present form, the assertiveness test was composed of ten vignettes recorded on audiotape. Six of these were pre/post treatment measures. The remainder were employed to assess generalization of treatment effects to non-test situations.

The situational descriptions of the ten vignettes were gleaned from Freedman et al. (1978) and McNeil (1979). The scenes were rewritten, as necessary, to emphasize their aggressive elements, and their relevance to the target population. In some cases, original material was used to supplement the acquired descriptions.

The vignettes required the subject to respond to provoking exchanges with peers, parents, staff members and teachers. Each scene was first described by a narrator. Where a second role model was required, a sex-appropriate role model was employed. Complete transcripts of the vignettes employed are provided in Appendix B.

The subjects were seen individually. Each student was told to listen to the scene as it was described, and then, to respond to the situation as if faced with the circumstances described. Two modelling vignettes were first presented. After each, the experimenter offered examples of possible responses. Following this, two rehearsal vignettes were

then presented. After each, the subject was asked to offer possible responses. These responses were not included as part of the data. When it was clear that the subject understood the procedure, the remaining vignettes were presented. If the subjects indicated they did not understand, this introductory procedure was repeated.

The assertiveness test was administered twice. The pre-treatment administration was made up of six vignettes. The post-treatment administration of the test included the six vignettes previously administered plus the four additional vignettes to assess generalization.

Rating Scale: A nine-point rating scale was devised to assess the subjects' responses to the vignettes of the assertiveness test.

The development of this scale drew largely on the work of MacDonald (1974). She outlined six of the most common categories into which behaviour normally requiring an assertive response can be differentiated. Using college females as a subject population, MacDonald developed scales to rate the obtained responses in each of these categories.

The categories developed by MacDonald (1974) were first reworded to apply to the population under investigation. Each vignette of the assertiveness test was then classified into one of the six categories.

The results of this classification indicated that the ten vignettes which had been chosen only fit four of MacDonald's categories. The rating scales for these categories were then combined to produce a single nine-point scale.

This scale ranged from the most aggressive response which could be given in a particular situation (1) through the most assertive response which could be given (5), to the most non-assertive (submissive) response (9) to the presented environmental circumstances. Descriptions of each point on the scale were drawn directly from the re-worded descriptions of MacDonald. Specific situational examples were also provided.

In order to objectively assess the accuracy and clarity of the scale, a random assortment of these descriptions were presented to two clinical psychologists and one graduate student in clinical psychology. All had experience with assertiveness training and were familiar with the clinical implications of the terms used. They were asked to rank the descriptions from most aggressive to most non-assertive as indicated above.

The final revision of the rating scale incorporated the rankings provided by these independent judges. Their comments and criticisms were also included in the final version of the scale (see Appendix C).

Staff Reports and Institutional Measures:

The behaviour modification system at Pleasantville School deals with inappropriate behaviour in two ways. For students at either level one or two, fines are imposed for the fifteen categories of rule violations. Fineable infractions include lying, stealing, swearing, disobedience, etc. Students on levels three and four receive warning letters for the same violations (see Appendix D).

The institution's records of inappropriate behaviour were scrutinized on a weekly basis and the number of fines or warning letters issued were recorded.

An aggressive-behaviour recording form was also developed. This was a staff-completed measure which required each staff member to indicate whether he/she had to speak to, warn or fine a subject for aggressive behaviour during their shift. No details of this reprimand were required, nor was any indication of further action taken against the student. (See Appendix E).

Procedure

Selection of Subjects: Initially each student at Pleasantville School was interviewed in order to obtain informed consent for the training procedures. In

addition, individual assessments were obtained during this interview. These interviews were carried out over a four day period.

During this interview, the nature and purpose of the social skills training group was explained to each student. The students were informed that the group would concern itself with those problems that students can expect in getting along with staff members, teachers, parents and other students. Each student was then asked if students at Pleasantville School encounter difficulties when they deal with these other individuals. The interviewer then elicited examples of these problematic interactions.

A second series of questions dealt with those problems that the student, personally, might have had in getting along with staff members, teachers, parents, and other students. Again, situational examples were elicited. (See Appendix F).

In the concluding phase of the interview, the goals of the social skills training groups were re-stated. Also, particulars of the group meetings (time, place) were also explained. The students were then asked if they wished to participate in this type of group.

Prior to terminating the interview, those students who expressed an interest in the group were informed that

group selection would be made in some random fashion (out of a hat) because of the expected large numbers. Those who were not chosen would be included in a later series of groups.

This interview produced 24 interested students. Each was seen individually over the next week, and was administered the behavioural role-playing assertiveness test (see description in Assessment Measures section). Also during that week, the volunteers were observed for five non-consecutive five-minute observation periods (see description of this measure in Assessment Measures section) in order to establish the number of aggressions per minute displayed by each individual. An additional week was required to complete this data collection procedure.

Twelve subjects were then assigned to the control group and the remaining twelve were included in the experimental group. On the basis of previous experience with social skills training groups with this population, six subjects per group seemed optimum. Therefore, two experimental groups were chosen. The assignment of student volunteers to subject groups proceeded as follows:

Male and female subjects were assigned to groups separately to ensure balance. Six of the female volunteers were included in the training group because of a previous commitment. Two other females' names were randomly chosen from the list of 10 remaining volunteers. The remaining names constituted the female subjects of the control group.

Each of the male volunteers was randomly assigned to one of two groups of four subjects. One of these groups was randomly assigned to the training condition. The other made up the male contingent of the control group.

The average number of aggressions per minute was calculated for each group. An observed imbalance was corrected by exchanging two members of the experimental group who displayed the highest levels of aggression for two members of the control group who were lowest on this measure.

The experimental group was then subdivided into two groups of six subjects (four female, two male) each. The availability of a particular student on a particular evening governed this designation. One experimental group was exchanged with a control group member because.

she was unavailable on either night the groups were to be held. This exchange did not alter the mean number of aggressions per minute significantly.

Therapists: The three therapists for the group sessions had each had some experience with both social skills training and juvenile delinquent populations.

The experimenter, a graduate student in clinical psychology, coordinated the group sessions. His prior experience with social skills training had been mainly as that of an assistant therapist with both chronic and acute psychiatric inpatient groups. These groups had been conducted during a two-month internship placement. In addition, he had served as counsellor and caretaker for institutionalized juvenile delinquents in full-time employment for six months.

One of the co-therapists was a clinical psychologist. She has had considerable group work experience, having coordinated an assertiveness training program over a four month period, for chronic psychiatric patients. Recently, she has begun such work with physically disabled patients. Her master's thesis dealt with the application of anger control techniques to juvenile delinquent populations (Crewe, in preparation).

The second co-therapist was a chief supervisor

from Pleasantville School. She has been in the employ of this institution for six years. She had participated in a previous series of social skills training sessions as a co-therapist in connection with the Master's thesis of the other co-therapist.

Social Skills Training Groups: Each of the social skills training groups met once per week for eight weeks. These sessions were led by the experimenter and one of the co-therapists. A graduate student in nursing also attended several of the group meetings, largely as an observer.

The group meetings were held in a group meeting room in the University's Counselling Centre. The students particularly enjoyed getting away from the school, so this meeting place served to reinforce their participation. This room was furnished with large, comfortable couches and chairs. These were placed in a circle in the center of the room. A single floor lamp placed in a far corner of the room provided diffuse lighting of medium intensity.

Each weekly session was usually of one to two hours duration. The actual length of the sessions varied according to the amount of material to be presented, and the amount of discussion generated by that material. Each session was always divided into two segments, of approximately equal length, separated by a 15 to 20 minute break.

The content of the group sessions was as follows:

- Session 1 - Discussion of course details, and introduction to topic areas
- differentiation of assertive, aggressive, and non-assertive (submissive) behaviour
 - Role-play by group leaders to give examples of these terms
 - Discussion with examples of non-verbal aspects of behaviour
 - Role-play by students of inane topics exercise (Lange and Jakubowski, 1976)
 - Homework required the observation of the behaviour of their peers. Report three examples of assertive, aggressive and non-assertive behaviour.
- Session 2 - Discussion. Review assertion, aggression and non-assertion. Report on homework observations
- Discrimination test (Lange and Jakubowski, 1976) for assertive, aggressive and non-assertive behaviour (videotape presentation)
 - Discussion on initial phase of job interview
 - Role-play of initiating conversation in a job interview
 - Homework: repeat previous assignment. This time they were to report specifically on their own behaviour.
- Session 3. - Discussion of homework assignment
- Discussion of material covered on job interviews in previous session. This topic was continued by discussing making a positive self statement, a request, and a compliment. How to receive a compliment was also discussed.

- Role-playing concentrated on having the students perform the above acts in the context of a job interview
 - Homework assignment involved repeating the previous week's work.
- Session 4
- Discussion on how to deal assertively with provoking situations. The concept of providing clear and honest communication (Strayhorn, 1977) of wants, needs or feelings was introduced with examples.
 - Role-play involved having the students generate provoking situations and assertive responses based on above principle. These were role-played and discussed by all.
 - Homework required students to bring a problem in getting along with others to next week's session for discussion.
- Session 5
- Discussion of problems collected as part of homework assignment. Suggestions on dealing with them based on clear communication principle provided. Also, principle of repeated assertion (Bower and Bower, 1979) was introduced and applied to some of the situations. Suggestions for its use were also provided.
 - Role-play involved practising repeated assertion in various situations
 - Homework involved applying these principles, as necessary, with each other. Specific examples were requested for the next session.
- Session 6
- Discussion of previous weeks homework assignment and its successful, or unsuccessful outcomes. Suggestions for more effective use of the principles were provided. Also, principles of "fogging" and developing a workable compromise (Smith, 1975) were introduced. Examples of their application were provided

- Role-play involved practising the workable compromise and "fogging" principles in student-derived situations.
 - Homework for this week was a repetition of the previous week's homework. Students were paired off and asked to practise assertive principles with each other. Specific examples were requested for the next session.
- Session 7 - Discussion centered around group problem solving and developing compromises when differences existed. Assertive communication was stressed. 9
- Role-play involved practising group problem solving. Students were assigned role of assessor and aggressor in trying to reach a solution to a simple problem. These roles were alternated so as to allow all students to have all roles. No homework was assigned.
- Session 8 - Each group was asked, prior to session, where they would like to go. One group chose a trip to McDonald's and the other went to a movie. No formal treatment session was held.

The group meetings were scheduled over a nine-week period. The students' Easter break occurred between sessions 5 and 6. Since many of the students were scheduled to return to their homes for this break, no group meetings were planned.

Rating the Assertiveness Test Tapes: The recorded Assertiveness Test responses were prepared for rating by transcribing all of them on a master tape. For each vignette, the sequence of students and the order of presentation of pre-treatment or post-treatment recordings were determined using random number tables (Cox, 1958). Three such sequences were

made in order to prevent the judges recognizing the students' voices.

Two graduate students in clinical psychology were employed to judge the taped responses, and rate them on the nine-point scale. These judges were trained in a single training session during which the rating scale was discussed at length.

A random assortment of responses taken from the tapes collected for an earlier investigation were used to assess the judges rating ability. After hearing a response, both judges and the experimenter rated the response according to the rating scale. These ratings were then compared and discussed among the raters.

Twenty such responses were rated by the judges. Two checks on inter-judge reliability were made. When the criterion of greater than 95% agreement among all three raters was reached, training was suspended.

The judges were each given a copy of the tapes and asked to rate all the responses. The experimenter rated all responses as well.

The ratings of one of the judges were randomly selected as data for the present experiment. One of the remaining two sets of ratings was randomly chosen to provide a reliability check on the judge's ratings.

CHAPTER FOUR

RESULTS

Subject Attrition

One student who had been assigned to the control group was released from the school during the study, and a second was unavailable during the day as she held a full-time job. All of their data have been excluded from the analysis. A third subject in the control group refused to participate in the post-treatment Assertiveness Test. His data have been excluded from all analyses involving that measure. Data analyses represent 12 subjects in the training group for all measures, and 10 subjects in the control group except for the Assertiveness Test measure for which there were 9 subjects.

Reliability of Measures

Behavioural Assertiveness Test: The response ratings made by the graduate student designated as judge were checked for reliability against those ratings made by the experimenter. This reliability score was in the form of a percent agreement score (calculated by dividing the number of agreements by the number of agreements plus disagreements multiplied by 100). An agreement was defined as those responses to which the judge and the experimenter assigned the same score.

The percentage agreement score between the two raters was 78.87% (based on the complete sample of 336 paired ratings).

Naturalistic Observation Measure: A sample equal to one quarter of the total of observation periods was collected and served as the reliability check sample. This proportion of paired observations was maintained on a weekly basis and varied according to the number of data observations made during that week. Over the 14 weeks of the study, 152 paired observations were made (range=6-29 per week). The reliability score was determined by a percentage difference method. This was calculated by dividing the smaller number of aggressions observed during the observation period (per individual) by the larger number of observations made during the same observation period. This ratio was multiplied by 100 to give the percentage agreement score. The overall percentage agreement score of the reliability observations was 90.93% (range=74%-97%).

Staff Observation Measure

The results of the staff recording measure, which required the staff members to record the number of verbal warnings issued to the students for aggressive

behaviour are not reported here. The majority of the staff members did not consistently complete the forms. Most (80%) of the forms that were completed were done so by staff members on the night shift. During this period of time (12 a.m. - 8 a.m.), few fines or warnings were issued.

Behavioural Assertiveness Test

Mean assertiveness ratings were obtained for each subject during both the pre-treatment and post-treatment assessments (see Table 1). The training and control groups were not differentiated on ratings of assertiveness, either at pre-treatment ($F=0.009$; $df=1,19$), or at post-treatment ($F=0.034$; $df=1,19$). No changes in the assertiveness ratings from pre-treatment to post-treatment were found for either the training group ($F=0.098$; $df=1,8$). Scenes x subjects analysis of variance was carried out for both groups' data in order to assess the effects of scenes (see Table 2). There were no significant effects of scenes for either the training group ($F=2.677$; $df=5,55$), or for the control group ($F=2.394$; $df=5,40$).

Because of bipolar rating scale was used, previous analysis may have been insensitive to combinations of positive and negative changes. As a rough check, the average deviation from the mid-rating (5) were computed for each subject (Table 3). The two groups formed by a median split of those scores were not differentiated ($F=43.35$; $df=1,19$).

TABLE 1
Assertiveness Ratings of Student Responses to the Behavioural Assertiveness Test

Subject		GROUP									
		TRAINING			CONTROL						
		Pre-Treatment		Post-Treatment		Pre-Treatment		Post-Treatment			
Mean		S.D.		Mean		S.D.		Mean		S.D.	
1	2.50	1.38	0.41	4.83	0.41	3.50	1.22	3.67	1.63		
2	4.17	2.86	2.04	5.17	2.04	2.50	0.84	2.83	1.33		
3	5.00	0.00	1.51	4.67	1.51	3.00	1.41	3.17	1.60		
4	3.67	1.21	3.00	3.00	2.10	5.00	2.19	4.33	2.01		
5	3.17	1.60	4.00	4.00	1.55	4.50	0.84	4.67	0.82		
6	4.50	1.22	5.00	5.00	1.26	5.00	2.76	4.83	1.60		
7	4.50	1.22	3.83	3.83	1.83	3.67	0.82	4.50	2.51		
8	3.50	1.97	2.67	2.67	1.37	3.83	1.60	3.00	1.79		
9	4.67	0.82	5.33	5.33	0.82	3.83	2.40	4.33	1.03		
10	3.67	1.97	2.67	2.67	1.37						
11	4.67	1.51	4.67	4.67	2.23						
12	2.83	1.33	2.10	4.00	2.10						

TABLE 2
Pre-Treatment to Post-Treatment Changes in Student Response Ratings

		TRAINING						CONTROL										
		Score						Score										
Subject		1	2	3	4	5	6	1	2	3	4	5	6	Mean	S.D.	Subject	Mean	S.D.
1		3	2	4	0	2	3	0	0	0	2	-1	0	0.17	0.98	1	0.17	0.98
2		-2	1	3	-4	4	4	1	0	0	2	-1	0	0.33	1.03	2	0.33	1.03
3		-2	-2	0	-2	0	0	1	0	0	0	0	0	0.17	0.11	3	0.17	0.11
4		-2	0	-1	0	-3	-2	0	0	-2	2	0	0	0.00	1.26	4	0.00	1.26
5		0	1	3	0	0	1	0	0	0	0	0	1	0.17	0.41	5	0.17	0.41
6		-2	0	0	-2	-3	0	3	0	-3	0	3	4	1.17	2.64	6	1.17	2.64
7		0	0	0	0	-1	-3	1	0	-2	2	-1	1	0.17	1.47	7	0.17	1.47
8		-2	-2	0	-3	2	0	1	-2	-4	0	0	0	-0.83	1.83	8	-0.83	1.83
9		0	0	0	-2	0	2	0	0	4	0	2	3	1.26	0.52	9	1.26	0.52
10		0	-1	0	0	-1	0	0	0	0	4	0	2	-0.33	0.52		-0.33	0.52
11		0	2	-2	-1	0	0	0	0	0	0	2	3	0.50	1.52		0.50	1.52
12		0	0	0	0	0	3	0	0	0	0	0	3	0.50	1.22		0.50	1.22

To test for a differential effect on variation of the change scores, the standard deviations of the mean change scores were compared. The difference was not significant ($F=0.215$; $df=1,19$).

Mean assertiveness ratings were obtained for each subject from four vignettes administered during the post-treatment assessments only, the generalization scenes (see Table 4). The training and control groups were not differentiated on ratings of assertiveness on these scenes ($F=3.123$; $df=1,19$). The main assertiveness ratings of the generalization scenes were not significantly different from those of the remaining post-treatment scenes for either the training group ($F=1.383$; $df=1,11$), or for the control group ($F=11.490$; $df=1,8$). These results indicate that the training and control groups were not differentiated at either the pre-treatment or post-treatment assessments. Also, no significant differences were found within each group over the course of the investigation.

Naturalistic Observation Measure

The number of aggressions per minute displayed by each subject was obtained during the pre-treatment and

TABLE 4

Mean Assertiveness Ratings of Student Responses to the Generalization
Scenes of the Behavioural Assertiveness Test

GROUP					
TRAINING			CONTROL		
Subject	Mean	S.D.	Subject	Mean	S.D.
1	5.00	0.00	1	5.50	2.52
2	4.25	2.50	2	4.00	1.16
3	6.25	1.89	3	6.00	3.46
4	5.25	2.63	4	5.50	2.52
5	4.00	1.15	5	4.75	1.26
6	4.75	1.26	6	7.00	2.83
7	4.50	1.00	7	3.50	1.92
8	4.75	0.50	8	6.50	3.00
9	3.00	1.63	9	7.00	2.31
10	4.25	2.22			
11	4.00	2.58			
12	5.50	1.00			

post-treatment assessments (see Table 5). The training and control groups were not differentiated on the number of aggressions displayed at either the pre-treatment ($F=0.057$; $df=1, 20$), or at the post-treatment ($F=1.788$; $df=1, 20$). The number of aggressions displayed by each subject did not change significantly from pre-treatment to post-treatment for either the training group ($F=0.336$; $df=1, 11$), or for the control group ($F=1.441$; $df=1, 9$). Taken together, the results indicate that no significant differences were found within either the training group, or the control group over the course of the investigation. Also, the two groups were not differentiated at either the pre-treatment or post-treatment assessments on this measure.

Institutional Measure

The number of fines and official warning letters issued to each student was obtained from the institution's records (see Table 6). The training and control groups were not differentiated by the number of fines/warnings issued either at pre-treatment ($F=0.784$; $df=1, 20$), or at post-treatment ($F=8.598$; $df=1, 20$). The number of fines/warnings issued at the pre-treatment and post-treatment assessments was not significantly different for either the training group ($F=0.710$; $df=1, 11$), or for the control group ($F=6.126$; $df=1, 9$). As with the other

TABLE 5

Mean Aggressions per minute for Subjects Observed in a Social Setting

GROUP					
TRAINING			CONTROL		
Subject	Pre-Treatment	Post-Treatment	Subject	Pre-Treatment	Post-Treatment
1	.12	.28	1	.04	.08
2	.08	.08	2	.56	.32
3	.40	.16	3	.40	.08
4	.60	.40	4	.00	.00
5	.36	.16	5	.08	.00
6	.04	.12	6	.12	.00
7	.00	.08	7	.00	.12
8	.00	.24	8	.24	.36
9	.12	.16	9	.24	.12
10	.04	.08	10	.08	.12
11	.04	.20			
12	.08	.24			

TABLE 6
 Number of Fines/Warning Letters Issued to the Students

GROUP						
TRAINING			CONTROL			
Subject	Pre-Treatment	Post-Treatment	Subject _n	Pre-Treatment	Post-Treatment	Post-Treatment
1	1	1	1	0	0	0
2	1	0	2	4	1	1
3	5	2	3	1	0	0
4	2	0	4	2	0	0
5	0	1	5	5	1	1
6	2	1	6	0	0	0
7	1	1	7	7	0	0
8	1	1	8	0	0	0
9	0	1	9	0	1	0
10	0	1	10	0	0	0
11	2	1	11	1	0	0
12	1	1	12	1	0	0

measures, these results indicate that the training and control groups were not differentiated at either the pre-treatment or the post-treatment assessments. Also, no significant differences were found within either group over the course of the investigation.

CHAPTER 5

DISCUSSION

Taken together, the results obtained indicate that the social skills training package applied in the present investigation did not significantly reduce the aggressive behaviour of the training group members.

The performance of these students on each of the assessment measures did not significantly vary from that of their control group counterparts. Two consistent findings on each of the three measures serve as the basis for this conclusion. First, on each assessment measure, the scores obtained by the members of the training group at termination of treatment did not significantly differ from those obtained by the control group members. Second, the scores obtained by the training group members did not change significantly from the pre-treatment to the post-treatment assessment phases of the investigation. Since neither inter-group, or intra-group variations occurred, the social skills training package applied appears to have been an ineffective procedure for reducing interpersonal aggression among this population.

While it does seem clear that the expected changes

in the aggressive behaviour of the students did not occur, the social skills training package should not be considered an ineffective intervention technique. The possibility remains that the training package may have effected changes in other behaviours displayed by the students. The present investigation was designed to assess the effects of social skills training on the aggressive behavioural output of the students. The assessment measures employed concentrated to a large degree on aggressive behaviour. Both the naturalistic observation measure, and the measure taken from the institution's inappropriate behaviour records were concerned exclusively with aggressive behaviour. Changes on these measures would only indicate that a student's output of aggressive behaviour had changed. Only the behavioural assertiveness test was in any way sensitive to changes of assertiveness in the students' behaviour. On this measure, assertive changes in the students' behaviour could be directly observed.

The social skills training may, then, have had some positive effects on the assertive behavioural output of the students. However, since the focus of the investigation was primarily upon measuring reductions in aggressiveness, as opposed to increases in assertiveness,

it may not have been very sensitive to possible increases in any of the students' assertive behaviour. One staff member indicated that such unmeasured changes may have taken place. She reported that participation in the group sessions appeared to facilitate the expression of positive social behaviours of one student who had formerly been very quiet, unexpressive and unassertive. Clearly future investigations of this type should include several measures which can more completely assess students' expression of positive, assertive behaviours.

The conclusions which may be drawn from the present investigation are somewhat limited in their generalizability. There appears to be features of each of the assessment measures, or their application, which limit their usefulness. Each assessment measure will be considered separately.

Institutional Measure

McNeil (1979) has observed that much of the aggressive behaviour displayed by the students of Pleasantville School occurred in situations which were unobserved by the staff members of the institution. As a result, much of the aggressive behaviour displayed by the students was not subject to fines or warning letters. Since the institution's records reflect only

the aggressive behaviour which is observed and recorded by the staff, much of the aggressive interpersonal behaviours of the students would not be subject to fines. Thus, the records of fines and warning letters issued may not accurately reflect the actual aggressive behaviour rate of the students. Also, such records would not accurately reflect changes which might result from an intervention procedure.

To some degree, those behaviours which are subject to fines or warning letters are objectively defined. Others, however, are left to the individual staff member's subjective interpretation. In a number of cases, mood fluctuations and individual tolerance limits, both among various staff members, and within a given member, resulted in inconsistent applications of the response cost contingencies. For example, one staff member tolerated a face-slapping incident that occurred between two students. He acknowledged the incident as "fun". Later that same day, a fine was immediately issued to two other students for engaging in a similar incident. On another occasion, a too loud radio drew a request to turn it down from one staff member, but a demand (with a threat of a fine

attached) from another. Such inconsistencies were often observed by the experimenter. Thus, it would be reasonable to assume that these inconsistencies were also part of issued fines and warning letters.

These findings are consistent with the non-significant changes in disruptive behaviour (on a similar measure of aggressiveness) collected by Ollendick and Hersen (1979). While no relationship between the studies can be assumed, the correspondence between them suggests that the utilization of institutional records to assess delinquents' disruptive behaviours may be inadequate to infer the effects of training programs.

Observational Measure

The surreptitious observations of the students' aggressive behaviour took place during a free time period between the end of the school day (3 p.m.) and the beginning of the evening meal (5 p.m.). This period was chosen as it represented the longest continuous period during a week-day that all the students would be together in the same area of the institution.

While some students talked or did homework during this period, many watched one of the two television sets

available to the students. During the latter hour of the observation period, most (85-90%) of the students watched a popular day time soap opera. Many staff also watched this program.

The number of observations collected during each observation period were approximately equally divided among each of the two designated hours. Therefore, approximately 50% of each day's observations were collected during the hour that most of the students were watching television.

The experimenter observed that aggressive behaviours were infrequently displayed during the latter of the two observation hours. Aggressiveness during that hour was generally limited to strong requests or mild demands for other to "Please be quiet." Many staff members also watched this program. The presence of staff seemed to further inhibit aggressive behaviour among the students.

The inhibiting effect of this television program on the students' aggressive behaviour may have rendered the observations collected somewhat insensitive to any positive changes which may have occurred. In order to detect change adequately, the observations would have to be made during a period of high provocation frequency.

McNeil's (1979) application of this observational procedure did not encounter this problem. He collected all his observations of aggressive behaviour during the first half hour following the students' return from school. However, this procedure did not allow him enough time to collect data on individual subjects. Future investigations may require more tailor-made procedures of observation if data, which is a more accurate reflection of individual students' actual aggressive behaviour, is to be collected.

Behavioural Assertiveness Test

It was initially hypothesized that the students' high level of aggressiveness would be reduced following a social skills training program. The results indicated that, although the mean aggression levels of both groups were fairly low after training ceased, these levels were not very high prior to the introduction of the training sessions. These findings suggest that, on the average, the aggression levels of these students may be low, and present no major problem for them in the institution as was initially assumed. The extent to which this is true requires further clarification.

Both versions of the assertiveness test were administered by the experimenter. This introduces the possibility that the students' responses might have been affected by their familiarity with the experimenter.

Observations made during the administration of both the pre-treatment and post-treatment assertiveness tests support this hypothesis. On many occasions, during the administration of the pre-treatment assertiveness test, the students indicated that they could not give the same response they might normally emit. The reason for this was that their 'normal' response contained 'swear' words. The speaking of such words in the institution normally resulted in the issuance of a fine or warning letter. It was their impression that the experimenter was capable of issuing such fines. Constant reassurance was necessary to convince the students that the experimenter could not issue fines or warning letters. However, it took several weeks before the students came to completely realize that the experimenter was not about to fine them for such behaviour.

However, observations made during the post-treatment administration of the assertiveness test suggest that these same inhibiting factors were not present. This time the students appeared to be quite comfortable

and relaxed in the presence of the experimenter. Further, no fears of reprimand were ever expressed.

The marked differences in the students' behaviour during the two administrations of the test indicate that their familiarity with the experimenter may have affected the aggressive content of their responses on one or the other administrations of the assertiveness test. Clearly, such a problem could have been avoided if independent persons administered the pre-treatment and post-treatment versions of the test. In the present case, however, no alternate administrators were available. Future investigations should make every effort to ensure that such assistance is available.

On the more general issues, recent evidence has brought into question the validity of the role-playing form of assessing social skills. The currently available evidence (see Bellack, 1979 for a review) suggests that the assertiveness role-playing test may not be a valid indicator of the true behaviour of the subject. Higgins, Alonso and Pendleton (1979) found that individuals who perceived an interpersonal encounter to be a staged, role-playing exercise behaved more assertively than those who perceived the situation to be an actual encounter. The knowledge that the encounter

was a role-playing exercise appeared to enhance assertiveness ratings on several observational rating scales.

Most role-playing tests are administered in such a manner that the subject is well aware of the staged nature of the exercise. The findings of Higgins, et.al. (1979) suggest that this knowledge will result in subjects behaving more assertively than their actual, in-vivo, behaviour would reflect.

In another study, Bellack, Hersen and Turner (1979) compared the role-playing behaviour of chronic psychiatric patients to their behaviour in on-unit, staged, in-vivo encounters. They found that the subjects' behaviour during the role-play test was not highly related to their behaviour during the in-vivo encounters. Also, there was a greater correspondence between interview responses and in-vivo behaviour than between interviewed responses and role play behaviour. Thus, the behaviour of the individual in a role play encounter does not appear to be highly related to the same individual's in-vivo behaviour.

Such role-playing measures are a common form of the behavioural assertiveness tests. These and other investigations suggest that these tests may not be valid measures of assertiveness (Bellack, 1979).

Although they are somewhat related, the behavioural assertiveness test employed in the present investigation was not a role playing test of the type used by Bellack, et.al. (1979), or Higgins, et.al. (1979). The critical differences relate to the response format required of the subjects. In both the studies described previously, the subjects were asked to respond to the presenting circumstances in the same manner that they would if they were faced with these circumstances in their normal environment. The manner of presentation was as important as the content of the reply. The assertiveness test employed in the present investigation required the subjects to give verbal responses only. They were asked to tell the experimenter what their responses to the described situations would contain. Here, only the content of the reply was relevant.

Having the subject tell the experimenter how they would respond as compared to actually acting out what their response would be, is more than a technical difference. This difference also indicates that different features of the response itself are important to each of the measures. For example, latency to response, and louder speech volume - two behaviours found to be important components of assertion

(Eisler, Miller and Hersen, 1973), would not be assessed by the assertiveness test employed here. These response components would have been more reflective of the subjects' reaction to the experimenter than they would be of their reaction to the described situation.

The differences between these two tests would appear to distinguish the assertiveness test employed in the present investigation from role playing tests of assertion. Thus, the presently applied assertiveness test would not be subject to the criticisms levelled against the validity of role-playing tests by Bellack, et.al. (1979) and Higgins, et.al. (1979). However, despite its form, this measure is still a self-report type of test and may be subject to other weaknesses. Further research concerning the usefulness of this type of measure is required.

The Training Groups

One aspect of the present investigation which remains to be examined is the behaviour of the subjects during the training group sessions. One of the largest problems encountered during the training sessions involved encouraging the students to practise their newly-acquired assertive behaviours outside of the training environment. Assigned in-vivo practise of

assertive skills was rarely attempted by the students. The most frequently received explanation for this was related to the physical retaliation, ridicule by peers, or embarrassment which they believed would surely be consequences of their assertive behaviour. In those few cases where assertive behaviours were attempted, the reported outcomes often confirmed the fears expressed by the group members. These reports served to reinforce their unwillingness to attempt any further practice. Since no guarantees regarding cessation of the expected humiliation or aggression could be given, the students were unlikely to undertake any practice.

Thus, it is probable that the refusal of the training group members to practice newly learned behaviours in-vivo contributed to the lack of treatment effect.

As the students expressed their concerns regarding the practice of assertive skills in-vivo, the following general procedure was employed to try to convince them that assertive behaviour was, in the long run, a more desired goal. First, the students' claims that assertive behaviour was not going to work were challenged. The students were asked to give specific

examples of how assertive behaviour had been applied and observed to have failed. Each situational example was then examined in detail in order to ensure that the subject had behaved assertively. In most cases, it was found that the students had not employed assertive behaviour. This was explained to the students, and more assertive alternatives, often proposed by the group, were presented to the subjects. These were usually practiced in the group. Finally, the subjects were asked to practice these responses in-vivo.

As stated above, practice of the assertive responses did not often occur. This unwillingness to practice suggests that the students must be reassured that no such loss of face, or physical retaliation will result from their assertive behaviour. Many assertiveness training programs deal with this issue by stressing that observable benefits of assertion training will only be realized if assertiveness skills are consistently and persistently applied. This approach did not seem to be a viable alternative with this population. The experimenter almost felt obliged to present tangible proof that the use of such skills would reap more benefit than the use of aggressiveness. Since he could not present that proof, the experimenter

felt he had not convinced the students of the merits of assertiveness.

Further investigations might consider the need to include other procedures to demonstrate or persuade the students that the benefits of assertive behaviour outweigh the feared costs. Increased emphasis on the need for in-vivo practice might be stressed during the group sessions. The present investigation did require the subjects to practice some behaviours in-vivo with training group members. This could be extended to having training group members practice specific assertive responses with other students who were not members of the group. Further, these students may, or may not, be made aware of the type of behaviours the training group member is attempting to practice. Alternately, staff members could also be employed to assist in facilitating the training group member's practice. Again, the staff member may, or may not, be made aware of the type of behaviours the training group member is attempting to practice. In this way, a more detailed picture of the circumstances surrounding the students' refusal to practise assertive skills could be developed. Clearly, much more has to be known about the interpersonal relationships of institutionalized juvenile delinquents before any definitive statements can be made regarding the relevance of assertiveness-

related skills to their lives.

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APPENDIX A

Definitions of Aggression

Aggressiveness during the observation periods was defined in the following manner.

Physical Aggression

Any of the behaviours listed below were considered acts of physical aggression if:

- (a) another person is hurt. That is:
 - (i) the person complains of being hurt by intensely or emphatically howling, swearing, or is otherwise verbally aggressive (see definition); or
 - (ii) the person is clearly injured (bleeding, bruised, etc.)

Accidents do happen. If the persons involved agree that they were merely playing when someone got hurt, we can accept that it was an accident - except in the case of a physically weak person suffering at the hands of a physically strong person. This excuse can only be accepted if the injury occurs in an organized game.

- OR (b) the aggressed person immediately retaliates with a response which fits one of the criteria for Verbal or Physical Aggression.
- OR (c) the aggressive behaviour is directed at a person who the aggressor has been recently (i.e. during the same day) fined for aggressing (either verbal or physical).
- OR (d) the person aggressed makes repeated (two or more) efforts to carry on with another activity, or makes repeated (two or more) requests for the aggressor to stop the aggressive behaviour.
- OR (e) the aggressive behaviour is repeated (three or more times).

Examples of Physically Aggressive Behaviour include:

1. Punching
Slapping
Pushing
Kicking
Biting
Throwing an object
2. Spitting on another person
3. Pulling the chair from under another person so as to cause that person to lose balance or fall.
4. Throwing food at another person.
5. Table Slapping in order to highlight a statement, demand, etc., was not considered an act of physical aggression.

Verbal Aggression

1. Any of the words or phrases listed below will be considered as verbal aggression if:
 - (a) the aggressor is not smiling (cheeks not raised, teeth not showing) when he says the word(s), phrases, or combination of words or phrases.
 - OR (b) the word(s), phrases, or combination of words or phrases is/are directed toward another person or group of people repeatedly (more than once) within one minute.
 - OR (c) the words, phrases, or combination of words or phrases directed toward another person or group of people is used in a harsh tone (i.e., putting emphasis on each word and saying each word loud and distinctly at the same time looking directly at the person addressed.)
 - OR (d) the words are directed at a person whom the aggressor has been recently (within one hour) fined for aggressing whether or not the manner of speaking to them fits criteria (b) or (c) above.

2. Any student who refused in a loud voice to obey rules.
3. Making rude gestures (i.e., making faces, sticking out tongue) if they provoke someone into retaliating with verbal or physical aggression or make the rude gestures repeatedly.

Examples of Verbal Aggressiveness include:

1. Name calling: (a) calling someone a name using a derogatory word, i.e., "fucker", "sucker", "bastard", "cunt", etc. (b) calling someone by a name that the person has expressed prior disapproval of, i.e., "queer", "duck", "puller", etc.
2. screw off
3. fuck off
4. F-off
5. frig
6. mind your own business
7. I hate you
8. Your mother is a whore.
9. Your father is a drunk.
10. Jesus Christ
11. You're a prostitute.
12. Stick it
13. Ding-bat
14. shut up
15. get out
16. pack off
17. damn you

18. You make me sick.
19. shag off
20. up yours
21. Goddamn
22. piss off
23. piss on it
24. Any other comment, statement, etc., which encourages another to behave in an aggressive manner.

APPENDIX B

The VignettesInstructions to Students

On the tape, I have recorded some situations with which you may be familiar. I am going to let you hear each situation - one at a time. What I would like you to do is to listen to each description carefully, and then when I turn on the second recorder, I'd like you to tell me exactly what you would do if you were faced with this situation. Please don't feel shy. No staff member will hear this tape. Just say exactly what you would do or say if you were in that situation. Any questions?

Let me give you a couple of examples (play modelling scenes).
 O.K., do you understand how this works?
 (answer any questions and play remaining scenes).

Modelling Scenes

1. You're helping to unload some groceries that have just arrived. You're carrying two big buckets, one in each hand. They are very heavy. As you head towards the kitchen, a voice behind you yells:
 "Hey, I got a heavy box here. Could you help me?"
 What do you do?

Sample answers: "I'd say 'wait a minute', 'I'll help you as soon as I take my load in.'"

2. You're sitting in the rec room listening to your favourite record. A friend comes up and says:
 "Hey, can you put 'Dream of a Child' on?"
 What do you do?

Sample answers: "I'd say, 'I'll do it when my song is over.'" "Wait until I'm finished, O.K.?"
 etc.

Rehearsal Scenes

1. You're walking along Water Street, doing some window shopping. A group of other kids are walking toward you. They are about your age. As they are passing you, one of them deliberately bumps into you, and nearly knocks you over. What do you do?
2. What if the person who deliberately bumped into you said, "look where you're going, stupid." What do you do?

Scenes Used for Data Collection

1. Someone in the school has recently been writing obscene words all over the bathroom walls with a black marker. One of your teachers in school always seems to have it in for you. Today she calls you out of your math class, into the hall, and says: "O.K. you, we know you're the one who wrote all over the bathroom walls. I recognized your writing. You didn't even have brains enough to disguise it!!" You know you didn't do it, and you're furious at her for accusing you. What do you do?
2. You're watching T.V. in the T.V. room on Saturday afternoon, and one of the staff members comes in, looking mad. She says: "Your room has been looking like a pigpen all week. I'm getting sick and tired of it. You know, if you ever plan on getting out of here before you reach seventeen, you'll have to learn that you have certain responsibilities and duties around here. I want you to get up there right this minute and clean up that room; and this time, do it right!" What do you do?
3. It's 7:30 on a Saturday evening, and you ask your mother if you can go out with some friends. She asks what you'll be doing. You say: "Oh, just driving around." She is angry, and yells: "Nothing doing! You know what happens when you go driving around with those kids. You can stay at home tonight with the family, and watch T.V.!" What do you do?
4. Your father has been hassling you for several months now about getting home by eleven o'clock, and sometimes that is a real drag because none of your friends have to be in before midnight. It makes you feel like an idiot always having to leave places early.

One night you walk into the house at 1:30 in the morning. Your father is sitting in the front room in his robe and slippers. He yells "And where the hell have you been? Do you have any idea what time it is? Don't you kind know how to read a clock anymore?" What do you do?

5. It's recess, and you're having a game of pool with a friend. Suddenly, one of the other kids, a real pest comes over and grabs the pool cue away from you, and pushes you away. What do you do?
6. You're in the T.V. room watching 'Happy Days' which is your favourite program. She knows it's your favourite program, but she wants to change the channel. She says "You wouldn't mind if we watched 'Newsmagazine', would you?" What do you do?
7. It's time to do your homework. You go upstairs to your bedroom here at the Home, and you notice that your pencil is missing. You recall putting it on your bed earlier in the evening. You look over at your roommate's bed. You see your pencil lying there. You've repeatedly asked your roommate not to take your pencil without asking you first. Just then, your roommate walks in. What do you do?
8. There are a few kids in school who have been hassling you for the past two weeks. One person in particular has been a real nuisance. Every time she sees you, she can't go by without saying: "Hi Queer!!!" You're in the schoolyard now, and there aren't too many other people around. You see her coming along, and, as always, she says: "Hi Queer!!!" What do you do?
9. You're regular teacher has been off sick, and for the past week you've had a substitute teacher. You've been giving her a real hard time by making noise, throwing paper airplanes and spitballs, and not doing your homework. All week you've been doing this, and all week she's been sending you to the principal's office. It's been sort of fun, because it's so easy to make her lose her cool. When you get to the principal's office this time, he meets you at the door, and says: "This is the third time you've been

sent up here this week. I'm suspending you this time. What do you think about that?"
What do you do?

10. The school has put on a dance. You're in a real good mood, and you feel like dancing up a storm. You see this one student that you really like, and you ask for a dance. The answer is "yes", and away you go. You're really getting into it, and you feel your partner is also enjoying it. The dance is over, and as you leave the floor, your partner turns to you, and says: "Not only do you look like a cow, but you dance like one too!:" What do you do?

NOTE: Scenes 2, 3, 5, 6, 8, 9 were administered during both the pre-treatment and post-treatment assessments. Scenes 1, 4, 7, 10 were administered during the latter assessment only.

APPENDIX C

The Rating Scale Used to Rate The Students' Responses to
The Assertiveness Test

1. The student's response to the provocation describes the use of, or intent to use, physical abuse. The student may threaten another, or may simply describe use of same to the interviewer.

Examples: "Look my son, I'll boot you where it hurts."
"I'd boot him where it hurts."

2. The student's response to the provocation demonstrates, or describes, a strong expression of personal rights, with no concern for the rights of others. This includes the use of verbal insults, verbal abuse, threats or reprisal, etc. The threat may be explicit or implicit.

Examples: "Fuck-off!"
"Asshole; Cocksucker, Shithead; Fucker; etc.; etc.."
"You don't have to yell, and if you do it again, you're going to get it!"

3. The student's response to the provocation demonstrates, or describes, a strong expression of personal rights, with little, or no concern for the rights of others. The student may demand that the effects of the insult, provocation, etc., be removed (i.e., take back illegitimate implications; or make up for an earlier slight; or discontinue the insulting or provoking behavior). By itself, the demand might be considered an assertive response. Non-verbal aspects, however, could make the demand aggressive. Also included are those responses which demonstrate insolence without abusiveness; what is commonly termed sauciness or impertinence; mildly abusive language.

Examples: "I was going to shoot. Gimme the pool cue back."
"I can go out if I want to!"
"You're the stupid one, not me!"

4. The student's response contains an explicit or implicit suggestion that the other person is being offensive,

expressed in an emotional manner. The response may take the form of a strong disclaimer of responsibility without further explanation, except one of annoyance for being implicated in the first place. Use of sarcasm is included here.

Examples: "I didn't do it."
 "It wasn't my fault."
 "I didn't take it."

5. The student's response is the most socially appropriate response which can be made under the prevailing circumstances. This response may be in the form of a request to another that the ill effects of the offending behaviour be removed (i.e., take back illegitimate implications; make up for earlier slight; or discontinue insulting or provoking behaviour). Alternately, this response may be in the form of a refusal (on the part of the student) to meet the demand or request of another person. In refusing, the student may simply decline; honestly state that he/she is unable to meet the request. An explanation is not necessarily given. No lies are told. Alternately, the student may directly confront the other person. That is, the student may ask why, or why not, a particular act was, or was not, carried out. An attempt to negotiate a workable compromise, or seek aid from an appropriate authority is also included.

Examples: "Yes, I would mind. I was watching Happy Days, and I would like to see the end of it."
 "I would appreciate it if you would ask before taking pencil."

6. The student's response is to apologize to the other person for his/her position on the matter at hand. The apology may be implicit, and may take the form of an explanation or self-defense to the other person for their position. An implication, as opposed to a direct request for change.

Examples: "I'm sorry but I really have to go."
 "I'm sorry but I really don't want to lend you my jeans."

7. The student deals with the situation indirectly by postponing immediate action directed at the other

person, and instead remarks about his/her displeasure to bystanders, to themselves, or inaudibly. Alternately, the student may deal with the situation indirectly by expressing displeasure merely through a facial expression, or some other physical movement. In order to get out of a situation, a fictional prior commitment may be concocted, or a lie is told.

Examples: "Oh no, not news again!"
A facial grimace or other
expression of scorn.
Any lie to "get out of it."

8. The student deals with the situation indirectly by giggling inappropriately at the other person(s) involved. The student appears to reach a compromise with the other(s) involved. However, this compromise is reached against the true wishes of the individual. Alternately, the student may attempt to change the subject, or ask an irrelevant question. The response may contain prolonged pauses.

Examples: "Huh?"; "What's going on?"; etc.
"I'll go, but only for five minutes."
"I shouldn't, but I'll lend you
my jeans."

9. The student makes no verbal or physical response, or says: 'I don't know', etc. The student complies with the request without question.

Examples: Student says: "I wouldn't do anything"; or doesn't do anything.

APPENDIX D

Aggressive Behaviours For Which Fines/Warning Letters Were Issued

1. Lying
2. Disobedience
3. Threatening to run away
4. Speaking to staff in a loud voice - demanding rather than asking
5. Aggressive Language (subjectively determined)
6. Swearing
7. Aggressive Behaviour (subjectively determined).

APPENDIX E

Aggressive Behaviour Recording Form to be Kept by Staff Members.

NOTE: To all Staff Members

Please complete this form at the end of your shift.

Would you please indicate below (Yes () ; No (X)) whether or not each of the following students had to be spoken to, cautioned, warned, or fined for behaving aggressively - either verbal or physical - during your shift.

Angela	Marie
Corrina	Marilyn
Donna	Pam
Effie	Paul
Frank	Roger
Gary	Stan
Geraldine	Thelma
Gertrude	Theresa
Gilbert	Tim
Ida	Wanda
Kevin	Wendy
Kris	

Name: _____

Shift: Day () ; Evening () ; Night ()

Date: _____

Thank you very much

APPENDIX F

PLEASANTVILLE SOCIAL SKILLS GROUP
INTERVIEW RECORD FORM

Name _____

Age _____

Sex _____

How long in
Pleasantville School? _____General Information

Describe your purpose in conducting the interview. You are going to be running a social skills group similar to those which have been run before. This time the main purpose is to help residents learn better ways of getting on with supervisors, teachers, parents and other students.

The best way of putting yourself across in a job interview will also be part of the course. Do you think that there is a need for a course like this for students here?

1. Examples of (a), (b), (c) which student feels other students might have been able to handle better?

(a) Student-Supervisor Interactions

(b) Student-Teacher Interactions

(c) Student-Student Interaction

2. Examples of the kinds of things that students wish to communicate to (a) and (b).

(a) To Supervisors

(b) To Teachers

3. If students were more skillful, could they get on better with supervisors and teachers?

_____ Explain.

4. Do students get angry with supervisors and teachers? _____ Explain.

Personal Information

1. Do you ever get angry with (a) or (b)? Give some examples (i.e., What happened to make you angry? What did you do when this happened? How did this make you feel?

(a) With Supervisors?

(b) With Teachers?

(c) With Other Students?

APPENDIX G

Analysis of Variance Tables

1. Mean Assertiveness Rating Scores on Assertiveness Test Data.

(a) Training vs Control Groups (pre-treatment)

<u>Source</u>	<u>DF</u>	<u>Sum of Squares</u>	<u>Mean Square</u>	<u>F</u>
Treatments	1	0.0060	0.0060	0.009
Error	19	12.8567	0.6767	
Total	20	12.8627		

(b) Training vs Control Groups (post-treatment)

<u>Source</u>	<u>DF</u>	<u>Sum of Squares</u>	<u>Mean Square</u>	<u>F</u>
Treatments	1	0.2668	0.2668	0.344
Error	19	14.7315	0.7753	
Total	20	14.9983		

2. Mean Change in Assertiveness Rating Scores from Pre- to Post-Assessments.

(a) Training Group

<u>Source</u>	<u>DF</u>	<u>Sum of Squares</u>	<u>Mean Square</u>	<u>F</u>
Between Subjects	11	11.5397	1.0491	
Within Subjects	12	5.9340	0.4945	
Treatments	1	0.3725	0.3725	0.737
Residual	11	5.5616	0.5056	
Total	23	17.4737		

(b) Control Group

<u>Source</u>	<u>DF</u>	<u>Sum of Squares</u>	<u>Mean Square</u>	<u>F</u>
Between Subjects	8	9.3503	1.1688	
Within Subjects	9	1.1506	0.1278	
Treatments	1	0.0139	0.0139	0.098
Residual	8	1.1367	0.1421	
Total	17	10.5009		

3. Scenes x Subjects (2 x 2) ANOVA on-Change Score Data of Assertiveness Test.

(a) Training Group

<u>Source</u>	<u>DF</u>	<u>Sum of Squares</u>	<u>Mean Square</u>	<u>F</u>
Between Subjects	11	77.4861	7.0442	
Within Subjects	60	146.8330	2.4472	
Treatments	5	28.7361	5.7472	2.677
Residual	55	118.0970	2.1472	
Total	71	224.3190		

(b) Control Group

<u>Source</u>	<u>DF</u>	<u>Sum of Squares</u>	<u>Mean Square</u>	<u>F</u>
Between Subjects	8	21.8148	2.7269	
Within Subjects	45	97.8333	2.1741	
Treatments	5	22.5370	4.5074	2.394
Residual	40	75.2963	1.8824	
Total	53	119.6480		

4. Mean Assertiveness Rating Scores on Generalization Scenes: Training vs Control Group.

<u>Source</u>	<u>DF</u>	<u>Sum of Squares</u>	<u>Mean Square</u>	<u>F</u>
Treatments	1	3.6915	3.6915	3.423
Error	19	20.4930	1.0786	
Total	20	24.1845		

5. Mean Assertiveness Rating Scores: Post-Treatment vs Generalization Scenes, for:

(a) Training Group

<u>Source</u>	<u>DF</u>	<u>Sum of Squares</u>	<u>Mean Square</u>	<u>F</u>
Between Subjects	11	7.0833	0.6439	
Within Subjects	12	11.9481	0.9957	
Treatments	1	1.3348	1.3348	1.383
Residual	11	10.6133	0.9464	
Total	23	19.0314		

(b) Control Group

<u>Source</u>	<u>DF</u>	<u>Sum of Squares</u>	<u>Mean Square</u>	<u>F</u>
Between Subjects	8	9.7351	1.1544	
Within Subjects	9	19.5949	2.1772	
Treatment	1	11.5520	11.5520	11.490
Residual	8	8.0429	1.0054	
Total	17	28.8300		

6. Average Deviation from Assertiveness rating (5) for high assertive vs low assertive students (groups formed on basis of median split)

<u>Source</u>	<u>DF</u>	<u>Sum of Squares</u>	<u>Mean Square</u>	<u>F</u>
Treatment	1	7.4274	7.4274	43.352
Error	19	3.2552	0.1713	
Total	20	10.6827		

7. Change in Aggressive Output on Observational Measure: Pre- vs Post-Assessment.

(a) Training Group

<u>Source</u>	<u>DF</u>	<u>Sum of Squares</u>	<u>Mean Square</u>	<u>F</u>
Between Subjects	11	0.3624	0.0319	
Within Subjects	12	0.1440	0.0120	
Treatments	1	0.0043	0.0043	0.336
Residual	11	0.1357	0.0127	
Total	23	0.5064		

(b) Control Group

<u>Source</u>	<u>DF</u>	<u>Sum of Squares</u>	<u>Mean Square</u>	<u>F</u>
Between Subjects	9	0.3539	0.0393	
Within Subjects	10	0.1136	0.0114	
Treatments	1	0.0157	0.0157	1.441
Residual	9	0.0979	0.0109	
Total	19	0.1675		

8. Aggressive Output on Observational Measure. Training vs Control Groups at

(a) Pre-Treatment

<u>Source</u>	<u>DF</u>	<u>Sum of Squares</u>	<u>Mean Square</u>	<u>F</u>
Treatments	1	0.0020	0.0020	0.057
Error	20	0.7093	0.0355	
Total	21	0.7113		

