

Converting Prosocial Attitude Change
to Behavior Change Through
Self-Management Training

J. Stephen Wormith



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CURRICULUM STUDIORUM

J. Stephen Wormith was born on December 16, 1946, in Sarnia, Ontario. He received the Bachelor of Arts degree in psychology from Brown University in Providence, Rhode Island, in 1969.

The Master of Arts degree in psychology was awarded from Carleton University in Ottawa, Ontario, in 1972. The title of the thesis was "Pure Tone Discrimination in Infants," and was prepared under the supervision of Dr. A.R. Moffitt.

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Abstract

Converting Prosocial Attitude Change to Behavior Change Through Self-Management Training*

J. Stephen Wormith

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The purpose of this study was to investigate a dual treatment approach with incarcerated young adults. Four volunteer programs were combined into treatment regimes to examine 1) the applicability of differential association theory to volunteerism in corrections, 2) the effect of a self-management program with offenders, and 3) the interaction of attitudinally and behaviorally oriented treatment components.

Fifty residents and 63 student volunteers were randomly assigned to one of four treatment groups or a control group. Experimental volunteers were allocated to either their groups' discussion or behavioral activity. Volunteers in two of the Community Group discussions were given information suggesting that they should support the residents' prosocial statements (Trained Groups). Volunteers in the other two discussion groups were given no material (Untrained Groups). The two behavioral activities, which were arranged with Training in a 2x2 factorial design, consisted of two self-management groups (Self-control Groups)

*An overview and Administrative Summary is also presented in an Addendum to the thesis.

and two social-recreational (Recreation) groups. Subjects were pre- and posttested on an attitudinal/personality and behavioral test battery. Process data were collected from the groups using trained observers and participant ratings. Residents' behavior in the natural environment was monitored throughout using unobtrusive and archival measures.

A psychometric examination revealed that 1) the self-report scales were consistently and appropriately related, 2) the validity coefficients of the behavioral measures were moderate to low, 3) the naturalistic measures were appropriate with one possible exception (Canteen Saving), and 4) among the process measures, observational reports were adequately reliable but participant ratings were largely affected by the individual and the context.

Residents were highly different from volunteers during pretesting on the legal attitude, personal adjustment, social orientation, and self-control scales ($p < .001$). Treatment results indicated that there were no consistent main effects due to volunteer training or the self-control program, but there were training-by-self-control interactions on a number of naturalistic measures ($p < .05$). Resident and volunteer participants were affected differently by the program and there was a client-by-treatment interaction on the scale Identification with Criminal Others ($p < .01$). Training did affect the discussion group process ($p < .04$), but only minimally when compared to a program which, by design, was already responding differentially to pro- and antisocial statements ($p < .001$).

The results are discussed with respect to volunteerism, training and a two-factor approach (cognitive and behavioral) to the treatment of criminal behavior.

INTRODUCTION

In listening to the young offender one hears a number of characteristic statements. Two of these are particularly noteworthy. The first concerns expressed disregard for the law, society, and social order. For example, "Sure, if you want something why not steal it? If I can get away with it, I'll do it." The second type of statement deals with concern and remorse for an inability to control one's own behavior. "I don't know why I did it. It just happened, that's all. I didn't think."

There are a number of reasons for focusing on these two kinds of statements. First, they both implicate concepts and traits which have been studied in the psychological literature. For example, the former may be subsumed under interpersonal and attitudinal research, specifically social conscience, moral judgement, and empathy. The latter statement concerns the study of impulsivity and self-control. Secondly, research in these fields suggests that such characteristics, or their behavioral analogues, may be described, measured, and modified. Lastly, these two kinds of statements are of particular interest because of their frequency. Clinical documentation suggests that delinquents are surprisingly consistent in voicing these positions and a number of empirical studies support this contention.

The reason as to why these positions are adopted, and what particular operational mechanisms are involved, remains unclear. The statements might suggest that certain attitudinal and behavioral characteristics are lacking, that there is a deficiency in the offender's personality. Yet by focusing on such statements one need not imply a "deficiency model" to delinquent behavior.

Conditions may simply not have existed for the acquisition of these traits or the expression of their corresponding behaviors. Alternatively, the characteristics may have been acquired, but in a manner consistent with a deviant subculture and therefore inappropriate from a broader societal perspective. The important point is that there are demonstrable inmate-noninmate differences on these concepts and that the corresponding behaviors are amenable to modification techniques (e.g. Andrews, Young, Kouri, Wormith & Searle, 1973).

There are also theoretical reasons for investigating these concepts and their roles in delinquent behavior. It has been suggested that the former statements, acquired through differential association to patterns of criminal behavior, help to provide a rationalization for law violation (Sutherland & Cressey, 1970). If so, changing the association patterns could modify these statements and alter one's delinquent behavior. Others feel that criminal behavior results from a lack of containment either internally or externally imposed (e.g. Reckless, 1970). Self-reports, like those found in the second category of statements, suggest this may be the case. If so, the development of an internal control system might also reduce one's rate of criminal behavior.

These two theoretical positions, their sources of empirical support, and their implications for delinquency prevention and rehabilitation, are not necessarily contradictory or incompatible. The present study attempts to combine these two historically different orientations of criminal behavior into a two-factor theory and develop a mutually supportive, dual-program approach.

There are a number of methodological requirements which should be met in this kind of assessment research. Logan (1972) suggested the following seven minimal criteria for corrections. The program or set of techniques whose effectiveness is being tested must be adequately defined in sufficiently operational, nonspurious terms. The techniques must be capable of routinization, meaning that they are not dependent on a unique administrator but could be implemented by others. There must be some division, preferably random, of the population into different groups for the purpose of contrast or comparison. There must be some evidence that the treatment group is in fact receiving treatment and the control group is not. There should be "before and after" measures collected. The definition of success must be in terms of operational reliable measures that have demonstrable validities to the correction or prevention of criminal behavior. Lastly, there should be some kind of follow-up for all of the groups. Although Logan's criteria involve experimental or quasi-experimental techniques of control, he acknowledges that techniques of statistical control are often appropriate or necessary. Regretably, such guidelines are often overlooked in correctional research (Glaser, 1965).

The present investigation includes a review of the various attempts to operationalize and measure the concepts cited. Treatment attempts, aimed at the modification of related behaviors with delinquents, are discussed. Two specific programs are designed and implemented. Finally, a research strategy is undertaken to assess the process, outcome, and generalization of these programs. Since many of the measures in the program evaluation have not been adequately documented, a research strategy is also designed to examine their psychometric characteristics and investigate the existence of the two target dimensions.

CHAPTER I

LITERATURE REVIEW

Differential Association Theory

The differential association theory originated by Sutherland (1939) is perhaps the most well known theory of criminal behavior (Adams, 1974). Since its origination it has undergone various revisions and reformulations (Adams, 1973; Burgess & Akers, 1966; De Fleur & Quinney, 1966; Glaser, 1960; Short, 1960; Sutherland, 1947). By operationalizing Sutherland's nine original propositions these reformulations have been successful in doing two things. First, the theory is now more in line with the rubric and paradigms of learning theory. Second, it is more readily capable of empirical verification. Nonetheless, there are only a few attempts to provide empirical validation (Adams, 1974; Glaser, 1960; Short, 1957). Systematic programs based on recommendations which may be derived from differential association theory (Cressey, 1955) remain even fewer (Empey & Rabow, 1961; Shulman, 1945; Warren, 1970) particularly at the institutional level (Andrews, Brown & Wormith, 1973). Conceivably, such programs may be of tremendous value in the institutions if, as prisonization theory suggests, one's associations in a correctional setting are almost exclusively within the delinquent population (Clemmer, 1958) and reinforcement schedules are highly contingent upon antisocial statements and behaviors (Buehler, Patterson and Furniss, 1966).

The initial tenets of differential association (Sutherland, 1939) were:

1. The processes which result in systematic criminal behavior are fundamentally the same in form as the processes which result in systematic lawful behavior.
2. Systematic criminal behavior is determined in a process of association with those who commit crimes, just as systematic lawful behavior is determined in a process of association with those who are law-abiding.
3. Differential association is the specific causal process in the development of systematic criminal behavior.
4. The chance that a person will participate in systematic criminal behavior is determined roughly by the frequency and consistency of his contact with patterns of criminal behavior.
5. Individual differences among people in respect to personal characteristics or social situations cause crime only as they affect differential association or frequency and consistency of contacts with criminal patterns.
6. Cultural conflict is the underlying cause of differential association and therefore of systematic criminal behavior.
7. Social disorganization is the basic cause of systematic criminal behavior.

Sutherland's final version (1947) included a number of notable changes. The structural situations, although not rejected, were dropped from the theory. He no longer saw social disorganization and cultural conflicts as part of this exclusively processual or developmentally "genetic" theory. Secondly, the term "learning" was incorporated into a number of statements and two sentences were added stating that criminal behavior is learned. Consequently, parameters of duration, priority and

intensity were cited. Thirdly, direction was focused on the role of "intimate personal groups". Yet the principle of differential association theory as it related to "definitions" of the legal code remained intact. One becomes criminal because his accepted definitions of the law as something to violate are in "excess" of his accepted definitions of the law as something that can, should, or must be obeyed (Akers, 1973).

The theory was left untouched by Cressey through the various revisions of their text (Sutherland & Cressey, 1970) and is presented in the following form.

1. Criminal behavior is learned.
2. Criminal behavior is learned in interaction with other persons in a process of communication.
3. The principal part of the learning of criminal behavior occurs within intimate personal groups.
4. When criminal behavior is learned, the learning includes (a) techniques of committing the crime, which are sometimes very complicated, sometimes very simple; (b) the specific direction of motives, drives, rationalizations, and attitudes.
5. The specific direction of motives and drives is learned from definitions of the legal codes as favorable or unfavorable.
6. A person becomes delinquent because of an excess of definitions favorable to violation of law over definitions unfavorable to violation of law.
7. Differential associations may vary in frequency, duration, priority, and intensity.
8. The process of learning criminal behavior by association with criminal and anti-criminal patterns involves all of the mechanisms that are involved in any other learning.
9. While criminal behavior is an expression of general needs and values, it is not explained by those general needs and values since non-criminal behavior is an expression of the same needs and values.

There were two principal criticisms of this modified version and each was dealt with separately. First, the theory was incapable of validation because it was couched in mentalistic expressions like "definitions favorable to law violation". De Fleur and Quinney (1966) examined the logic of the propositions, found the theory internally consistent, and began to operationalize its terms. They generated a number of testable hypotheses, although not without difficulty, but left the actual learning process to modern reinforcement learning theory which could "handle this problem". Similarly, Short (1957, 1960) attempted to revitalize the theory by providing an empirical refocusing. He rank ordered delinquent acts according to severity and created a list of "association items" (e.g. How well have you known criminals?) which he believed would inhibit or promote delinquency. Using these measures, he then related criminal association to criminality.

A second principal criticism involved the inability of the theory to make implicit the nature of the underlying learning process. This was a severe shortcoming of the theory since its most basic assumption was that criminal behavior is learned. It was not until Jeffery (1965) discussed criminal behavior in terms of learning theory that this problem was challenged. By relying on the concepts of stimulus control and differential reinforcement he provided an explanation for criminal behavior. But Jeffery's use of these concepts was not systematically incorporated into the framework of differential association theory. Instead, they stood independently as an explanation of criminal behavior (Akers, 1973).

Burgess and Akers (1966) felt that Jeffery made an important beginning but that his analysis was incomplete. Drawing on laboratory derived principles of learning, they provided a restatement of the theory which was more amenable to empirical testing. The revision was expressed in a series of

seven statements parallel to Sutherland's (1947) final version. The first and eighth statements on learning were dealt with simultaneously and the ninth statement on "needs" was dropped.

1. Criminal behavior is learned according to the principles of operant conditioning.
2. Criminal behavior is learned both in nonsocial situations that are reinforcing or discriminative and through that social interaction in which the behavior of other persons is reinforcing or discriminative for criminal behavior.
3. The principal part of the learning of criminal behavior occurs in those groups which comprise the individual's major source of reinforcements.
4. The learning of criminal behavior, including specific techniques, attitudes, and avoidance procedures, is a function of the effective and available reinforcers, and the existing reinforcement contingencies.
5. The specific class of behaviors which are learned and their frequency of occurrence are a function of the reinforcers which are effective and available, and the rules or norms by which these reinforcers are applied.
6. Criminal behavior is a function of norms which are discriminative for criminal behavior, the learning of which takes place when such behavior is more highly reinforced than noncriminal behavior.
7. The strength of criminal behavior is a direct function of the amount, frequency, and probability of its reinforcement.
8. (Omit from theory).

Burgess and Akers took Jeffery's beginning and developed a number of important points posing problems as they went. Justifiably, they dissected the broad issue of delinquency by asking "How does one become delinquent? What sustains delinquent behavior? and What sustains its pattern of reinforcement?" The answer, they felt, lay in the principle of differential reinforcement,

the maintenance of behavior through secondary reinforcement, and the role of social approval. Burgess and Akers also suggested some other potentially important variables. They felt that a lack of effective reinforcement for lawful behavior and one's failure, although a reason was not given, to develop a behavioral repertoire which will produce legal reinforcement, were instrumental in producing delinquency.

More recently, Adams (1973) expressed concern over some fundamental oversights on the part of Burgess and Akers (1966). For example, he noted that their propositions are not restricted to observable events. This is a critical violation of learning theory and is characteristic of the many misunderstandings found in the recent attempts to apply the basic principles of applied behavioral analysis to criminology and corrections (Burchard, 1971). Adams attempted to update the propositions with more contemporary terminology (e.g. S^D s, response chains). He also added a nonsocial component to reinforcement by enlargening his focus from behavior in "groups" to "situations". Thus, his third statement reads, "The principal part of the learning of criminal behavior occurs in those situations which comprise the individual's major source of reinforcement" (Adams, 1973). Adams made this change in order to include the material or monetary reinforcement of illegal behavior. Whether or not his reformulation remains a statement of differential association is highly doubtful. But differential association is what Adams really wanted to examine and so the statement itself verges on a self-evident truism by modern learning theory definitions. Concerning the learning process, he combined the fourth and fifth statements attributing the behavior and its frequency to the same factors. Considering modern behavioral analysis, this

is a legitimate, although rather trite modification.

He also included the role of punishment and made various semantic changes in three other statements. They read:

4. The learning of criminal behavior, including its frequency, specific techniques, stimulus and response chains, and avoidance procedures, is a function of the reinforcers and punishers, the existing reinforcement and punishment contingencies, and the S^D s, controlling such behavior.

6. Criminal behavior occurs in situations where the stimuli have greater S^D strength for criminal than for noncriminal behavior, and is learned when the balance of reinforcers and punishments favors such behavior more than noncriminal behavior.

7. The strength of the criminal learning is a direct function of the amount, frequency, and probability of its reinforcement and punishment, and the condition of its state variables.

These last two statements provided the means for including nonsocial contingencies and the state of the organism in explaining criminal behavior.

Field Studies

Attempts to provide empirical validation for differential association theory have been varied. Many investigations were based on earlier versions of the theory. These studies found the mentalistic concepts too difficult to operationalize (Akers, 1973). The basic research strategy was to correlate delinquent behavior with association of delinquent patterns, or more precisely association with other delinquents. Results showed little (Clinard, 1952; Reiss and Rhodes, 1964), to moderate (Ball, 1957; Mathews, 1968; Voss, 1964) to strong (Short, 1957) relationships. Of course, the validities of both

variables are suspect. Typically the investigations relied on police and court records or self-reported indices of criminal behavior. Secondly, according to the theory, the independent variable is not associated with criminals per se, but contact with cultural patterns of behavior regardless of the "character of the person presenting them" (Cressey, 1960). The critical variable is exposure to attitudinal and behavioral patterns of delinquency and not to those people who are characteristically classified as delinquent or nondelinquent. This is an even more difficult concept to quantify and therefore is overlooked in many of these studies (e.g. Clinard, 1952; Voss, 1964).

Nonetheless, a number of earlier investigations proved encouraging. Ball (1957) provided indirect support for differential association when he found that delinquents felt stealing was more prevalent than nondelinquents believed it to be. They also expressed a more positive attitude toward theft and more associations with others who stole.

In a similar style, Short (1957) investigated severity of delinquent behavior among training school adolescents. By investigating characteristics of best friends and developing measures of frequency, intensity, priority, and duration of association with these friends he obtained a composite index of contact with delinquent patterns. This technique produced one of the strongest relationships between differential association and delinquency scores ($r = .679$, $N = 126$, $p < .001$). More recently, these studies have been replicated. Voss (1964) demonstrated that the more delinquent the group, the greater the extent of contact with delinquent friends ($\chi^2 = 22.04$, $df = 2$, $p < .001$). Another study by Mathews (1968) provided further support of this nature. He found the more boys identify with delinquent friends,

the more likely they were to be delinquent themselves. This was seen in the relationship between subjects' and subjects' best friends' scores on Short's (1957) delinquency scale ($r = .44$, $N = 339$, $p < .001$).

Not all studies are supportive of differential association theory. Clinard (1952) in a study on the black market and Lemert (1953) both noticed that check forgers did not appear to have criminal associations. Apparently, they learned their techniques through routine banking procedures. Recently though, Leunes and Christensen (1975) compared check forgers with other offenders. Over eight psychometric tests administered, the groups differed only on the Allport-Vernon-Lindsay Study of Values ($p < .04$). These results may reconcile the earlier observations of check forgers with differential association. If forgers do not associate with other common delinquents, they will not acquire through differential association nor its component, the reinforcement of illegal behavior, the attitudes, values, and definitions of other delinquents. Not having acquired delinquent values, they become delinquent by some other means. Leunes and Christensen (1975) suggest environmental circumstances immediately preceding the crime. Therefore, check forgers may be regarded as a notable exception to the standard process of becoming delinquent.

The nonexperimental studies provided only a very weak ground for differential association theory. The association-delinquency correlations are not surprising. They suggest only that the process of differential association can not be rejected in explaining delinquency. Because more conclusive support was missing a number of related and equally unaccountable theories were advanced (Akers, 1973).

Glaser (1956) draws from reference group theory to identify his empirical referent as 'differential identification', the extent to which one identifies with real or imaginary people and how accepting one feels they are of his criminal behavior. This process includes "differential anticipation" (Glaser, 1960) which is described as the way an individual anticipates his reception in the criminal and noncriminal cultures for his legal and illegal behavior. Glaser feels that this factor is critical for those people who are marginal in criminal identification. Similarly, Naess (1964) employs role theory and suggests that criminal behavior is a function of the degree to which the criminal role has been prescribed. Therefore the data from correlational studies like Mathews' (1968) which operationalized identification as the "criminal index of best friend" support a differential association as well as a differential identification hypothesis.

A problem remained. Empirical tests of these early versions were not capable of providing unequivocal support for the theory because the critical variables as defined in the initial theory, and these reformulations, were too vague for precise quantification. Secondly, the tests, being correlational and nonspecific, simultaneously supported different theories.

Other variations of the theory were advanced by Cressey (1953), Sykes and Matza (1957), and Hartung (1965). They suggested that delinquents have learned neutralization techniques for the "Denial of responsibility, injury, or victim," for the "appeal to higher loyalties" and the "condemnation of the condemners." These rationalizations provide the delinquent with definitions which are favorable to law violation. This "neutralizing" of

antidelinquent definitions renders the delinquent act acceptable and permits one to minimize one's disapproval, therefore maintaining a positive self-image. Hartung (1965) suggested that not only is crime learned through the symbolic communication mechanism of differential association but so is individual acceptance of one's criminal actions and maintenance of self-esteem.

Institutional Studies

A setting in which one is particularly likely to find exposure to patterns of association supportive of law violation is the correctional institution. A number of studies describing the psychological and behavioral effects of incarceration indicate that this is the case. One of the most outstanding studies, a paper by Buehler, Patterson and Furniss (1966), demonstrated the importance of the peer group in shaping and controlling behavior. This study, carried out in an institution for delinquent girls, disclosed that overwhelming amounts of existing reinforcement and punishment, were inconsistent with treatment objectives. By systematically monitoring inmates behavior and the subsequent verbal and nonverbal responses of peers, they found antisocial behavior being reinforced consistently more (seventy percent) than it was punished. Similarly, socially conforming behavior was punished more frequently ($p < .01$)¹ than rewarded. In addition, the majority of this reinforcement (eighty-two percent) was non-verbal. Subsequently, a single-subject investigation on a girl with an acting-out problem demonstrated the inconsistency of the staff. The data indicated that instructors would alternately reward and punish the same behavior.

1. Frequency or percentage was not presented.

This behavioral analytic investigation of "peer group culture" in an institutional setting provided an important contribution. Although seldomly cited in differential association literature, the paper describes in behavioral terms how peer groups achieve the effect which theoreticians have attributed to them for many years. The inmate behavioral system certainly shapes and controls its members and possibly the staff as well.

The net effect of this massive behavioral-association network has been the concern of many sociologists (Clemer, 1958; Wheeler, 1961, 1969; Reckless & Sindwani, 1974; Hood & Sparks, 1971). As the evidence from Buehler, Patterson, and Furniss (1966) suggests the correctional setting provides an ominous site for the mechanisms of differential association. Nowhere else in society are the positive association patterns so conspicuously absent, and the contingency schedules so inappropriately applied.

Clemer (1958) felt that once a person entered the prison population he became assimilated into a homogeneous mass of inmate culture. He believed that prisonization, the effect of the prison culture, forced the inmates attitude to an increasingly antisocial position. Although the results are equivocal (Troyer & Frease, 1975) evidence for the deleterious effects of incarceration is substantial. Wheeler (1961) found a cyclic development. Early in their sentence, inmates were termed prosocial. They progressively became antisocial by midsentence and then more prosocial by the time of their discharge. Atchley and McCabe (1968) found that the prisonization model held only for institutions oriented toward obedience and conformity. When treatment and re-education are stressed, indications of "prisonization" disappear.

These results are consistent with differential association theory. They imply that it is not impossible for institution programs to contravene the effect of incarceration. The assumed existence of prosocial definitions and appropriate reinforcement in these programs presumably provided the mechanism to inhibit the differential association process (Atchley & McCabe, 1968).

Research by Reckless and his co-workers (Reckless & Sindwani, 1974; Eynon, Allen, & Reckless, 1971; Reckless & Shervington 1973; Sandhu 1964) describe the negative impact of institutional stay on inmates and, although not directly dealing with the theory, provide support for the behavioral-differential association effect within a correctional setting. For example, Reckless and Sindwani (1974) examined four institutions in three different cultures; United States, New Zealand and India. Inmate self-report questionnaires were administered upon discharge to assess the effect of institutional stay. Factor analysis had been performed on three-hundred and twenty items to obtain six impact factors on a sixty-item test. Mean scores on the six scales were ranked according to the magnitude of perceived impact in an unfavourable direction. Ranks were summed across the four institutions. Rejection of Institution (6) and Inmate Code (10) were found to be the most unfavourable factors. These were followed by Rejection of Positive Impact (14), Self-labelling (15), Inmate Pressure (17) and Inter-personal Approach (22) factors. The mechanisms responsible for these results were not investigated, but the study, as an index of the outcome of incarceration, supports what one might expect from differential association theory.

Rejection of the institution and the presence of an inmate code were consistently the most unfavourable self-reported perceptions of institutional impact. Conceivably, differential association could have been a crucial mechanism of this effect.

Not all of the investigations with incarcerated delinquents support differential association. A recent study by Adams (1974) based on his own reformulations (Adams, 1973) provided one of the few experimental investigations of the theory. One hundred and thirty male inmates from a state training school were given difficult arithmetic problems and then told to score their answers in the accompaniment of a peer. Cheating behavior was then investigated as a function of monetary (subject paid for cheating) and social (peer paid for subject's cheating) reinforcement conditions. Subjects were randomly assigned to four groups in a 2 x 2 design (no monetary vs monetary reinforcement - by - no social vs social reinforcement). Results demonstrated a monetary effect only ($p < .005$). There was also a slight but interesting tendency for social reinforcement to increase theft behavior in subjects' nonmonetary condition and to decrease it in the monetary condition.

Adams argued that the results of this study are not encouraging for differential association theory. Although he admits that the study is really an investigation of the maintenance, not acquisition, of criminal behavior, he feels that the nonsocial variables function as the critical reinforcers which sustain delinquency. Such a conclusion may be premature for it assumes the monetary reinforcement received by the subject is comparable to the social reinforcement received by the subject when the subject's peer was presented with an equivalent monetary sum. In fact, it was only

assumed and never demonstrated that the subject would be socially reinforced for cheating in the payment-to-peer condition. Since there was no investigation of participants' interpersonal behavior and social reinforcement during or after the experimental condition, the study does not investigate differential association in any meaningful way but simply compares the strength of monetary reinforcement to a situation which possibly contains some amount of peer pressure.

Interestingly, a number of studies in the social psychology of attitude change have found positive results. Social reinforcement has modified ethnic prejudice (Mitnick & McGinnes, 1958), philosophy of education (Hildum & Brown, 1956), attitude toward capital punishment (Ekman, 1958), and opinion of a social festival (Insko, 1965). Although there are competing, and in some cases more compelling theories of attitude change (Wrightsman, 1973), these studies do support the contention that attitudes are changed or at least strengthened, "if the incentives for making a new response are greater than the incentives for making the old response" (Hovland, Janis, & Kelly, 1953).

Applications of Differential Association

It is surprising that the principles of differential association theory, being so popular and well known, are so seldomly applied in any systematic manner in our institutions. Application of these principles to treatment regimes was originally suggested by Cressey (1955). He felt that a diagnosis of criminality should focus on the attitudes, motives, and

rationalizations regarding criminal behavior. Since these characteristics depend upon the groups to which one belongs, it follows that in order to change, one must become a member of an anticriminal group or one's relationship in a procriminal group must be altered. Cressey (1955) presented six principles to guide the specific application of differential association theory to correctional work. Five of the following principles deal with the use of anticriminal groups as media of change and one with the criminal's group becoming the target of change.

1. If criminals are to be changed, they must be assimilated into groups which emphasize values conducive to law-abiding behavior and, concurrently, alienated from groups emphasizing values conducive to criminality.
2. The more relevant the common purpose of the group to the reformation of criminals, the greater will be its influence on the criminal members' attitudes and values.
3. The more cohesive the group, the greater the members' readiness to influence others and the more relevant the problem of conformity to group norms.
4. Both reformers and those to be reformed must achieve status within the group by exhibition of "pro-reform" or anticriminal values and behavior patterns.
5. The most effective mechanism for exerting group pressure on members will be found in groups so organized that criminals are induced to join with noncriminals for the purpose of changing other criminals.
6. When an entire group is the target of change, as in a prison or among delinquent gangs, strong pressure for change can be achieved by convincing the members of the need for a change, thus making the group itself the source of pressure for change.

These directives can lead one to a number of different strategies. Development of community based programs, as an alternative to incarceration, has been a popular means of fostering more appropriate associations.

Perhaps the first community based treatment program which derived its rationale directly from differential association theory was a project by Shulman (1945) . The contribution of this early study should not be overlooked. As an experimental investigation of differential association it stood alone for many years. Although possibly marred by the crude method of data analysis, it contains a number of important characteristics in its design. It employed random assignment to experimental and control groups. Subjects were pre- and posttested and matched on a number of potentially confounding variables. Then upon completion of the experiment, a follow-up investigation examined the possibility of transfer from the experimental situation to the social environment.

The Group Guidance experiment (Shulman, 1945) consisted of controlled activity groups to which both normal and delinquent children were invited. Student leaders provided assistance in the recreational activities and collected data on children's responses. Measures were collected from the classroom, family, and playground as well as in the experimental setting. Experimental and control subjects were matched for age, race, sex, intelligence, achievement, and severity of problem. The program operated for sixty-nine two-hour sessions and was attended twenty and twenty-two times (median) by the delinquent and nondelinquent children respectively. Observational records of twenty delinquent boys indicated that eight improved markedly, seven did not change and five deteriorated.

The evidence for transfer of learning to other social situations was investigated separately. Ratings of classroom behavior indicated that the treated delinquent group decreased its rate of "matured delinquent" behaviors (stealing, truancy) from 24.8 to 18.6% while the untreated group increased 24.8 to 33.3%. But their rate of medium offenses "indicative of emotional disturbance" increased from 43.1 to 50.8% relative to a decrease in offenses by the controls from 40.4 to 38.9%. Social history data obtained from subjects' homes indicated that 72% of the experimental and 33% of the controls showed behavior gains. Societal experiences (clinical examinations, familial pathology and disciplinary action) were investigated to examine the possibility of concomitant beneficent variations. There were no apparent influences in the social environment to account for group differences in improvement.

At least two studies with juvenile offenders suggest that community settings provide a more conducive environment to prosocial change than prison. A program at Pinehills in Provo, Utah, represents a leading example of community treatment (Empey & Rabow, 1961). A principal aspect of the experiment was its "guided group interaction". Although a therapeutic program, it was based on a number of sociological assumptions such as the delinquent value system, the peer group influence, and community adjustment. The delinquents lived and worked in a variety of community settings while daily therapy attempted to develop peer support for prosocial values and deterrents for returning to delinquent behavior.

A follow-up investigation (President's Commission, 1967) revealed that 84% of the delinquents randomly assigned to the Provo group did not recidivate in the six months following program completion. This rate was modestly better than the regular probation rate (77%) and much better than the outcome of incarceration in a state training school (42%).

The Community Treatment Project (Palmer, 1971) developed by the California Youth Authority is a second well known example of the alternatives to incarceration. With its community orientation, the fostering of prosocial associations was anticipated. Although outcome appears to vary with the kind of client, an initial finding suggested that community programs resulted in more success than the traditional program (Warren, 1970). A two year followup revealed that on the whole, adolescents paroled directly back to their known community, were doing better than those institutionalized and then paroled (Palmer, 1971). Specifically, 62% and 38% of the two groups, respectively, were found to be successful, in that they were not in further trouble with the law (Warren, 1970).

The proliferation of the many self-help groups in the last decade, represents a popular approach to Cressey's (1955) suggested applications. The use of the reformed, or almost-reformed, client as an agent of change follows directly from the fifth principle. Community-based self-help organizations can be found dealing with many different problems: alcohol, drugs, cigarette smoking, gambling, obesity, mental health, and criminal behavior (Parlour, 1968, 1975).

Examples can also be found within the correctional institution. The Seventh Step Foundation has been a popular utilization of the Alcoholics Anonymous format. Tryad therapy (Slack & Slack, 1976), with incarcerated

delinquent girls, specifically matches the client with another resident who was previously faced with the presenting problem. The third person, the professional, provides the necessary expertise but is naive with respect to actually having shared the problem. The authors claim that this structure has been effective with delinquents when other approaches have failed.

The Community Groups

The present study and its forerunners empirically examined a number of Cressey's (1955) guidelines in an institution. Recently, Andrews, Brown, and Wormith (1973) used differential association to provide a rationale for the use of volunteers in institution-based programs. Prison studies suggest that the differential associations which occur during incarceration encourage delinquency. Certainly, the socially appropriate reinforcement contingencies of the institution cannot counteract the peer effect (Burgess & Akers, 1966). Policy planners acknowledging this fact are presented with a number of alternatives, one of which is the introduction of community involvement to the correctional setting. This may be through citizen committees, activity groups, recreation events or structured treatment-oriented programs. Only the last mentioned is readily amenable to Cressey's (1955) guidelines for using differential association theory in treatment. The Community Group concept, which places a group of offenders in direct contact with nonoffenders, fits this category and incorporates a number of Cressey's principles.

The Community Groups are a legitimate application of differential association for two reasons. First, they insure that there will be attitudinal differences on a number of socially related variables. Secondly, the

Community Group format insists on a controlled, systematic environment for structured group counselling.

Offender-Nonoffender Differences: According to differential association theory, delinquents should differ from nondelinquents in their "definitions" and attitudes toward the law, judicial system, and social order. Many studies have demonstrated that this is the case on a number of socially important variables which are amenable to treatment. For example, a number of these measures were examined for offender-student differences in previous Community Group research. Offenders scored lower on Attitudes Toward the Law and Judicial Process and Acceptance of Others and higher on Tolerance for Law Violation, Identification with Criminal Others and Alienation ($p < .01$) over six independent studies (Andrews & Daigle-Zinn, 1976; Andrews, Farmer, & Hughes, 1975, 1976; Andrews, Wormith, Daigle-Zinn, in press; Andrews, Young, Wormith, Searle, & Kouri, 1973). The studies also found these attitudinal positions changed with participation in structured group counselling. Kohlberg (1971) found the moral values of teenage felons operating primarily at stage one and two of his six-stage moral judgement levels (Kohlberg, 1969). Interestingly, residents' levels have been modified during their incarceration through educational training programs (Parlett, 1973).

Differences on interpersonal relationship measures have also been obtained. Gough's Socialization scale which was originally designed to discriminate delinquents from nondelinquents, did so in 16 of the 17 studies reviewed by Megargee (1972). Hogan (1969) constructed an Empathy scale and collected norms on eleven different samples. A group of prison inmates ranked tenth and

young delinquents, eleventh. Recently Deardoff, Finch, Kendall Lira, and Indrisano (1975) also found recidivist delinquents scored lower than normals on both the Empathy and Socialization scales.

Although modification of empathy has not been attempted with delinquents, it has been demonstrated with many different groups. The most frequently sampled population has been therapists and therapist trainees (Truax and Carkhuff, 1967) but it has also included prospective teachers (James, 1971), nurses (Kalisch, 1971), and medical corpsmen (Anthony and Wain, 1971). Perhaps similar results might be obtained by training delinquents.

Structured Group Counselling: A program based on differential association should bring delinquents into contact with nondelinquents. The nondelinquents should espouse prosocial statements and the setting should be conducive to such a dialogue (Cressey, 1955). One might then expect the amount of prosocial attitude change, to vary with the amount of appropriate reinforcement and punishment contained in the interaction (cf. Burgess & Akers, 1966).

In the initial Community Group study (Andrews, Young, Wormith, Searle & Kouri, 1973) resident and student volunteers (four to six of each) met in groups for up to eight weekly meetings to participate in structured group discussions. Group leaders were provided with a discussion guide to direct the conversation and insure appropriate input. Topics included the function of rules, regulations, and the law, the chaos which ensues in their absence (e.g. in sports or co-operative living ventures), law and the individual, freedom to the point of interference with others, and the effect of law violation on others. Group cohesion was fostered by describing the event as a learning experience for

all and by deemphasizing the inmate-student roles. Leaders were instructed to provide support for antiscriminal values expressed by the volunteers and residents. Comparisons on pretest attitude scales demonstrated that the offenders were in fact being exposed to a group having a lower tolerance for law violation, less identification with criminal others and a more positive attitude toward the law and judicial process (all p 's $< .01$).

Forty subjects were randomly assigned to an experimental or a delayed treatment control group. The main treatment effect was displayed on a six-item, five point Likert Scale, "Identification With Criminal Others" (e.g. I don't have much in common with people who never break the law). Analysis of variance yielded a highly significant triple interaction ($p < .001$). Both the offender control and volunteer experimental groups increased in self-reported identification with the delinquent subculture over the 10-week period while offender experimental and volunteer control groups decreased in their identification. A similar interaction on the scale "Tolerance for Law Violation" ($p < .05$) was due to an increase by control offenders ($p < .025$) in their acceptance of law breaking behavior (e.g. It's alright for a person to break the law if he doesn't get caught). Treatment effects on other variables only approach significance and did so by inhibiting antisocial changes of experimental residents in relation to their controls. For example, a test of simple effects on Value of Employment (e.g. The more education a person has the better he is able to enjoy life) indicated that control residents decreased over time ($p < .01$).

Aside from the active effect of treatment on Identification With Criminal Others, which apparently reversed the trend attributed to the incarceration process, other results were seen as evidence for the minimization of the incarceration process. Prisonization effects, it seems can be actively

inhibited by following Cressey's (1955) prescription for treatment. It appears that the vital role of the volunteer is one which provides the resident with exposure to prosocial definitions and reinforces him for reiterating them.

A second study (Andrews, Wormith, Kennedy & Daigle-Zinn, in press) was carried out to demonstrate this contention by showing that the change was not simply due to attention and simple association with volunteers. The study was similar to the first with the addition of a recreational group in which members played cards and various board games. The study was carried out in two provincial institutions, one for first incarcerates and one for recidivists.

As many would have predicted (Andrews, Brown & Wormith, 1973; Burgess & Akers, 1966; Cressey, 1955) the results indicated that not only should offenders be induced to join with nonoffenders but the structure of the interaction should be oriented to the reformation of the offenders and conducive to favorable differentials for the expression and reinforcement of antirriminal statements. When compared to the recreation group, discussion group residents demonstrated prosocial changes on the scale "Attitude Toward the Law" (e.g. Nearly all laws deserve our respect) ($p < .05$) in both institutions and on Tolerance for law Violation ($p < .05$) with the first incarcerates. A group of first incarcerate delayed treatment controls were also tested and their Attitude Toward the Law showed a significant decrease (mean change score = -6.8) relative to the discussion group (5.5; $p < .05$) but not to the recreation group (2.9).

There was also a treatment-by-client interaction on a Self-esteem scale (Bennett, Sorenson & Forshay, 1971). Offenders in the recreation condition and those in a delayed treatment control group both displayed an increase in self-esteem while the first incarcerate discussion group offenders did not ($p < .05$). This increase in self-esteem over incarceration time supports those prisonization studies which suggest that a reacquisition of self-esteem follows an initial loss during the judicial process (Gendreau, Gibson, Surridge, and Hug, 1973). The discussion activity may have actively impeded this development.

Clearly, the results of the second study support the notion that a volunteer is most useful when placed in a structured environment. The discussion and recreation conditions had differential effects with both the first offender and recidivist samples. These effects were consistent with Cressey's (1955) principles.

One might question the necessity of the volunteer. Perhaps prosocial changes were found simply because of the discussion curriculum. It is also conceivable that the demand characteristics inherent in the program could effect a prosocial response set. Three further studies examined these possibilities. As predicted, "inmate only" discussion groups were not successful in producing appropriate changes on measures relating to the law, Identification with Criminal Others, and Tolerance for Law Violation (Andrews, Farmer, & Hughes 1975, 1976; Wayne, 1972). Therefore, these studies provided further support for Cressey's (1955) principles. Inclusion into an antiscriminal group and exhibition of "pro-reform" values, or behavior patterns, are both necessary for group reformation of criminals.

There are a number of issues of concern in this body of research. The first involves the utility of the dependent measures. Indeed, although considerable norms, reliabilities and validities have been collected (Andrews, Daigle-Zinn, & Wormith, 1974; Gendreau & Gibson, 1970; Wilkins, 1975) the appropriateness of paper-and-pencil scales still deserves attention (Andrews, Wormith, & Kennedy, 1973). Records of institutional behavior are not included. Follow-up reports of legal, and social adjustment are lacking. In addition, process variables such as content of dialogue, feedback, and interaction rates have not been examined for their contribution to change. The present investigation deals with some of these issues.

Control and Containment Theories

Theories which ascribe crime to a breakdown of behavioral controls represent a leading competitor to differential association (Glaser, 1960). Delinquent impulses are usually conceived as instinctual and the process of control is described in terms of the theorist's orientation. Thus, psychoanalysts refer to ego and superego, while sociologists refer to personal and social controls (Reiss, 1951).

These theories take for granted the nature of man to contravene regulations and therefore concentrate on our social control system which maintains order. Deviance is then attributed to imperfections in the system (Akers, 1973). One version, containment theory, suggests that an individual is "pushed" by internal impulses or drives and "pulled" by "bad" external events. Inner and outer controls usually provide appropriate containment. But when outer containment in the form of supervision or discipline and inner containment in the form of a good self-concept are missing, one is likely to succumb (Reckless, 1970). The role of self-concept provides both the theory's strength and weakness. It has been used to explain the presence of nondelinquents in a highly delinquent area (Reckless and Dinitz, 1970) but the details of its inappropriate acquisition among delinquents have never been adequately described (Tangri and Schwartz, 1967).

Another major version of containment describes social control as a "bond" to conventional groups and institutions (Hirschi, 1969). When these ties are not present one is free to "drift" and is therefore more

likely to violate the law (Matza, 1964). Control is seen as a commitment of conforming to conventional lines of action.

Recently, Akers (1973) examined these theories and concurred that the role of "self-concept" gives the containment theories their unique flavour. Reckless and Dinitz (1970) found evidence which supports the theoretical function of self-concept by demonstrating its presence in nondelinquents who were living in a highly delinquent environment. The methodological shortcomings of this work aside (Tangri and Schwartz, 1967), self-concept still only accounts for outer deviant influences controlled by inner containment and this comprises only one fourth of containment theory.

Akers (1973) sees these theories to be more compatible with social learning theory than they seem at first glance. The family, which provides the principal component of social bonding to conventionality does so through sanctions. This is only implied in the theory and explicit statements about the utility of familial social rewards and punishments could be easily made. In fact, control theory could include the effectiveness of informal and family sanctions as well as those formally imposed by the legal system. It would then include social learning theory to account for the process by which social structures shape individual behavior (Akers, 1973). Similarly, Glaser (1960) suggests that control theorists investigate a theory of differential social control. Such a study would focus on the buildup of direct and indirect delinquent social controls concomitant with a breakdown of nondelinquent controls.

Self-Control

Self-control is the product of those processes which are described in containment theory. It is the term given to that self-regulatory activity which is derived from the accumulation of familial bonds, inner and outer containment, internal and external controls, and social reinforcement and punishment. Its behavioral result is the ability to delay gratification, to postpone the immediate satisfaction of a need for the sake of a larger satisfaction, of the same or different need, at some point in the future.

There are at least four reasons why programs designed to foster self-control deserve particular attention in corrections. They represent a powerful and efficient means of changing a wide range of problem behaviors. They avoid many of the ethical considerations of behavior modification. Their target, lowering impulsivity, is a logical goal with delinquents. Although self-control programs have been successful with similar clientele, they remain largely untried in corrections.

Self-control is seen as a necessity for normal personality development (Mischel, 1966) and socialization (Stumphauzer, 1972). The criminal has been cited as the personification of its absence. According to Shapiro (1965) the psychopath is "the very model of the impulsive style...his aim is the quick and concrete gain (p. 157)." McCord and McCord (1964) see the delinquent as "an infant, absorbed in his own needs, vehemently demanding satisfaction (p.9)." Stumphauzer (1972) suggests that the criminal or psychopathic personality may best typify those who have not learned "to delay immediate gratification in favor of later, more valuable reward."

There is considerable empirical evidence which supports this repudiated lack of self-control. Delinquents are generally more impulsive and less capable of self-regulating their behavior than nondelinquents. This has been shown in large survey studies, like the classic analysis of the Glueck's (1950) and more recently by Ahlstrom and Havinghurst (1971), in the MMPI studies of Hathaway and Monachesi (1953), on behavioral tests measuring foresight in maze solving (Porteus, 1965), and tests of delayed gratification preference with real items (Mischel, 1961) and hypothetical monetary sums (Rosengquist & Megargee, 1969). It follows that the desired translation of prosocial attitude change to effective behavior change would not be realized with many delinquents, the reason being their lack of self-control. Since the principal goal of therapy, especially with delinquents, is behavior change, a program in self-control could be of tremendous "complementary" value in the reformation of an offender.

In spite of methodological limitations (Kanfer, 1970; Mahoney, 1972), a number of investigations suggest that self-control of specific behaviors can be achieved through self-management training programs. The literature describes many studies carried out in clinical or educational settings. For example, self-regulation instruction has successfully modified over-eating (Stuart, 1967), performance on a swim team (Mackenzie and Rushall, 1974) and on-task behavior in a classroom (Glynn, Thomas & Shee, 1973). Sadistic fantasy (Davidson, 1968), obsessive-compulsive behavior (Wisocki, 1970), alcohol consumption (Anant, 1967), positive teacher-student contacts

(Gray, Graubard & Rosenberg, 1974) and classroom disruptions (Bolstad & Johnson, 1972) represent behaviors often of concern to the correctional worker. All have been brought under client-control through some means of self-management training.

Self-control programs consist primarily of techniques drawn from applied behavioral analysis. Many of these techniques have been used with delinquents in a wide range of behavior modification studies during the last decade (Davidson 11 & Seedman, 1974). These investigations have used case studies, control groups, and A-B-A designs to modify educational, program, and delinquent behavior. Methods based on the principles of operant conditioning have been most popular. These have included token economies (Tyler, 1967; Phillips, 1968; Fitzen, Phillips & Wolf, 1972; Fineman, 1968; Rice, 1970; Miller, 1971; Ross & McKay, 1975), behavioral contracting (Stuart, 1971; Alexander & Parsons, 1973; Rutherford, 1975) negative verbal feedback (Fodor, 1972), and time out (Burchard & Tyler, 1965; Tyler & Brown, 1967; Brown & Tyler, 1968; Burchard & Barren, 1972). Related procedures using modeling (Sarason, 1968, 1973; Stumphauzer, 1972) and Wolpeian or classical conditioning techniques (Cheek & Mendelson, 1973) have also been employed. Generally, these programs have been successful although definitive statements would be premature because of the various methodological complications in many of them (Davidson 11 & Seidman, 1974).

Recently, a number of issues concerning the ethical, moral, and legal aspects of standard behavior modification programs with institutionalized patients have been raised (Barrish, 1974; Stuart, 1972). They include the questions of manipulation, control, and the inability to obtain a truly

volunteer subject. By simply training clients to utilize the behavior change procedures, such a program, not only teaches clients to cope with a variety of potential problems, but it avoids many of the ethical considerations of control and involuntary clientele. The subject is free to initiate or withdraw from a program which he has designed to deal with whatever problem or behavior he feels deserves attention. Yet this is not to say that training persons to use behavioral technology is free of ethical issues such as true volunteerism and excessive therapeutic promises (Karoly, 1975).

Results of self-regulation training with similar clientele are encouraging. "Incorrigible" students (Gray, Graubard & Rosenberg, 1974), hospitalized addicts (Cheek & Mendelson, 1973), and impulsive children (Meichenbaum and Goodman, 1971) have all demonstrated improvements.

In spite of the extensive application of applied behavior analysis to problems of delinquency and the increasing interest in self-control procedures (Foster, 1974; Goldiamond, 1965; Mahoney & Thoresen, 1974; Thoresen & Mahoney, 1974; Watson & Tharp, 1972) the application of these techniques in a self-control paradigm has not been widely attempted in corrections. One study, by Clements and McKee (1968) did find encouraging results. Following a baseline phase in which educational performance was monitored, institutional delinquents were reinforced for performance meeting a self-determined criterion of improvement relative to baseline and then a staff-determined criterion of 20% improvement. Both phases caused a significant increase in educational performance.

Three experimental studies found modeling successfully increased self-control. One investigation (Sperr, 1973) examined the effect of modeling

and vicarious reinforcement on a task requiring behavioral self-control. Incarcerated delinquents were administered the Porteus Maze test, a measure of impulsivity, before and after viewing a videotape. There were three conditions; modeling plus vicarious social reinforcement, where a confederate inmate was socially reinforced for performing the maze task carefully; modeling only; and a no model control condition. The results indicated that modeling of a specific task can reduce the carelessness and impulsivity of inmates' subsequent performance on that task. The addition of vicarious social reinforcement further improved the performances of psychopathic, but not neurotic subjects.

A popular measure of self-control is delay of gratification preference (Mischel, 1961). Stumphauzer (1970, 1972) experimentally increased the rate of delinquents' delayed responses using social reinforcement and a peer model. Thelan and Fryrear (1971) used modeling to train delinquent girls in the appropriate use of self-reward as a behavioral self-control strategy. Although the applicability of these findings to the field setting has yet to be assessed, they are encouraging for the development of self-control via behavioral techniques.

The long term success of the self-control movement may not come through treatment of only specific problems. Instead, it has been suggested that clients be taught a general strategy for controlling behavior problems (Jeffrey, 1974). The programming of self-regulation for complex problems is evidenced by Patterson, Ray and Shaw (1968) who proposed a problem solving model for clients' presenting and possible future problems, and by Krumboltz and Thoresen (1969) who advocated training in general decision making skills.

A related advantage of general strategy training is the increased likelihood of treatment generalization to different settings and times. The generalization phenomenon, so well known in the laboratory, is now getting the attention it deserves in the field (Baer, Wolf & Risley, 1968; Levine & Fasnacht, 1974). Behavior modification studies are expanding into the natural environment (Tharp & Wetzel, 1969), facing methodological issues of naturalistic observation (Johnson & Bolstad, 1972), and monitoring behavior for treatment generalization (Tracy, Briddel & Wilson, 1974). Others (Walker & Buckley, 1972) are even programming generalization into the treatment modality.

One particular four-week program for drug addicts (Cheek & Mendelson, 1973) employed a variety of behavior modification techniques but was particularly characterized by an emphasis on self-control. Relaxation, assertive training, behavioral analysis, and control were taught through lectures, discussions, and role-playing. This academic-clinical mixture, oriented to learning self-management solutions, was designed to enhance the generalization of positive treatment results. The test data demonstrated reduced anxiety, improved self-image, more appropriate assertiveness, and increased inner control. A six-month follow-up found the treatment group had a better community adjustment than another group treated routinely at the hospital. Clientele have since expanded to include psychiatric patients and children. Interestingly, the program began to use volunteers because of a manpower shortage and found that treatment effectiveness was maintained. Its authors concluded that the "goal of increasing the patients' ability to function independently in the community may be attained at relatively little expense." In part, these tactics represent the strategy of the present investigation.

Use of Volunteers

The use of volunteers as paraprofessionals in a helping role is becoming increasingly popular (Karlsruher, 1974). Although various problems must be overcome in utilizing this largely untapped reserve of manpower (Durlak, 1973), volunteer services are becoming increasingly accepted in mental health, retardation, education, and corrections. Delinquency prevention and rehabilitation is one field which has begun to realize this potential (Schwartz, 1970). This has particularly been the case for probation (Case & Henderson, 1973; Horejsi, 1972) and after-care (Barr, 1971). According to the director of the National Information Centre on Volunteers in Courts there are some fifty-thousand volunteers in one-thousand U.S. court and probation settings (Scheier, 1970). When institutional and parole programs (e.g. Berman, 1975) are included it is estimated that the number of volunteers is probably doubled (Scheier, 1970).

Kelley (1972) outlined five reasons for using student volunteers in corrections. The delinquent may feel that professionals are helping because they are paid but volunteers clearly are not paid and really want to help. This proves to the offender that someone on the outside cares, that the whole world is not against him. The volunteer is not identified as a correctional official and this may lessen the danger of reinforcing one's delinquent self-concept. Volunteers may be more likely to have experienced similar problem situations at home, on the job, or with finances and they may be more familiar with folkways, values and language, especially if the age differential is low, compared to the professionals.

The contribution of volunteers as participants in structured group counselling with delinquents has recently been examined. Andrews, Farmer and Hughes (1975, 1976) compared typical Community Groups to Resident Only groups (Andrews, Brown, & Wormith 1973) in two medium security penitentiaries to determine first, if the Community Group program was feasible with older, established career offenders serving longer sentences and second, if positive results can be obtained without volunteers partaking in the program. Residents were randomly assigned to groups and the same person, a non-resident, led all groups. The first measure investigated was attendance. Because the techniques of initiating and maintaining a client's interest in correctional programs are of obvious importance (Schwitzgebel, 1969), attendance is a concern, not only for the progress of an individual, but for the continuity and success of the group program itself. In one study frequency of attendance was higher ($p < .05$) for the Community than Resident Only Groups (Andrews, Farmer & Hughes, 1976).

Numerous investigations have suggested that the quality of interpersonal relationships within groups is critical for positive counselling outcome (Rogers, 1957; Carkhuff, 1969). Therefore, subject-reported therapeutic conditions were obtained (Andrews, Farmer & Hughes, 1975, 1976). In one institution, residents reported that the communication was significantly more open and genuine in the Community Group ($p < .05$). Finally, the effect of volunteers' participation was assessed in relation to residents' procriminal arguments in the groups and attitude change upon completion of the groups. Volunteers were less procriminal than residents but residents in Community Groups expressed significantly less ($p < .001$)

pro-criminal arguments over three hypothetical violations (illegal parking, breaking and entering, and armed robbery). In one institution they also displayed a greater change On Attitude Toward the Law and Judicial Process ($p < .05$) than those in 'Resident Only' groups.

A Two-Factor Theory

It is the contention of this thesis that delinquency prevention is a two-factor process, consisting of a prosocial attitude structure and an adequate self-control system. Both are necessary, neither is sufficient. The adolescent who has been exposed to an excess of favourable definitions of the law (e.g. an appropriate balance of reinforced prosocial attitudes and behaviors) may not have developed the internal controls to avoid anti-social behavior when coaxed by friends or enticed by an inviting opportunity. On the other hand the individual with adequate controls but lacking in a prosocial disposition would have no desire to utilize his control system when given the opportunity to behave in a delinquent manner. Quite the contrary, his personal control system would be used in conjunction with his antisocial attitudinal and value structure, thus enabling him to wait for the most opportune moment before engaging in the antisocial activity. Interestingly, although results are equivocal, one study has found that pure psychopaths (MMPI Pd) displayed significantly more potential for behavioral control (Porteus Q score) than prison normals or incarcerated antisocial psychotics (Sutker, Moan, & Swanson, 1972). It is suggested that the prison normal or "common delinquent" lacks both inhibitory systems, and therefore populates our correctional facilities.

This is not to suggest that man is necessarily evil, bad, or predisposed by nature to behave in an antisocial way. Nor is it to say that some people have an innate deficit with respect to these attributes. Social learning theory has been adequately applied to both constructs as a behavioral-environmental cause of their development. What is being proposed is that these inhibitory systems provide simply the insulation, or resistive protection, from certain environmental events which otherwise could elicit antisocial or delinquent behavior.

The practical implications of the present contention are obvious. The most appropriate treatment regime will focus on both the social-attitudinal and personal control systems of the delinquent. A partial program affecting only one of these targets can only anticipate limited success.

This is not the first attempt to reconcile differential association and containment theory. Voss (1969) assimilated the two theories with common data by suggesting that one's self-concept, which is central to containment theory explanations, develops through the process of differential association. The study was not an experimental investigation nor did it attempt to integrate the theories into a unified treatment regime.

The present contention does bear some resemblance to Hogan's (1973) perspective of moral conduct. He suggested that two independent aspects of moral development, socialization and empathy, interact to produce four characterological implications. The morally mature and "moral realist" would be high on socialization but differ, high and low respectively, on empathy. Those who are low on Socialization would be characterized as the

emancipated "chic type" or delinquent depending on their level of empathy. Recently, Deardorff, Finch, Kendall, Lira, and Indrisano (1975) provided empirical support for Hogan's conceptualization. They found recidivists lower than normals on both Empathy and Socialization scales. Because they did not find differences between first offenders and nonoffenders, they suggest the theory is incomplete.

Consider the following. Socialization shares more items than any other of the seventeen major scales on the California Psychological Inventory, and correlates .45 to .52, with self-control (Gough, 1969). Secondly, both philosophers (Baier, 1965) and psychologists (Hogan, 1973) have claimed that empathy or role-taking ability is needed for one to accept our social rules (e.g., acquire prosocial definitions of the law and legal structure). Therefore there are some, but only superficial, parallels between the two theories. Hogan's is concerned with psychological constructs while the present theory deals with their behavioral analogues and causal processes.

The present two-factor theory has three unique and important aspects which may account for previous difficulties in discriminating first offenders, recidivists and nonoffenders. First, it adds a self-control component giving it a critical role in the prevention or treatment of delinquency. Such a position is supported by the findings of Roberts, Erikson, Riddle and Bacon (1974). They found that the Porteus Maze Q score, a behavioral measure of impulsivity, was better than seven other predictors of recidivism. Second, it reallocates the traits socialization and empathy to new factors. Empathy or the capacity to "put oneself in another's shoes" is important for the development of prosocial attitudes.

Socialization, a trait which itself is very complicated, is most likely important to both one's attitudinal system and self-control ability. Third, it proposes a process, social learning theory, to be responsible for the acquisition of these traits. Because the constructs may be sufficiently operationalized and the mechanism for development is hypothesized, the theory may therefore be experimentally investigated.

The Present Study

The Community Group format was used to investigate a two-factor, attitudinal-behavioral perspective of delinquency. Specifically, the implications which such a framework has for treatment were examined. This was done by manipulating various program regimes.

Offenders and student volunteers were first compared on a wide range of characteristics. The test battery included two kinds of measures. Paper-and-pencil questionnaires were used to obtain data on attitudinal and personality scales. Behavioral tests were used to obtain observable measures of the constructs investigated.

Subjects were assigned to five groups, one of which was a delayed treatment control. The four experimental groups participated in an eight week Community Group program similar to the one described previously. There was one principal exception. Midway through the program, volunteers in two of the groups were given material designed to improve their functioning as differential social reinforcers. Two groups, factorially arranged, also participated in a behavioral self-control program while the remaining two groups were exposed to a control activity (recreation). The volunteers allocated to each group were divided in half, each subgroup only attending one of that particular group's two activities.

Data were collected on a number of process measures during the program. This was done to investigate in detail the Community Group mechanism and to examine the effectiveness of the manipulations. The attitude/personality and behavioral test battery was administered following program completion to obtain measures of treatment outcome. In addition, data were collected on residents' behavior in the institution to investigate the possibility of treatment generalization. Since a number of the variables are novel, poorly described, or particular to the setting, a portion of the Results section is devoted to an analysis of their psychometric attributes.

Dependent Measures

The dependent variables are presented throughout in four groups. The first portion of the test battery consisted of attitudinal and personality measures. A series of "behavioral" tests comprised the remainder of the battery. Both parts of the battery were administered together in a routine pre-post fashion to evaluate client differences and program effects. A group of process measures was employed to investigate the more intricate aspects of program activity. They consisted primarily of observational data and volunteer ratings. Institutional measures were obtained by monitoring various resident activities in the institution. They were designed to unobtrusively determine the degree of treatment generalization in the residents' natural environment. Following is a description of the variables which may be found in previous studies.

Attitude/Personality Battery: Twelve questionnaires comprised the paper-and-pencil portion of the battery. None of the scales was original although minor revisions were made occasionally to facilitate their administration to an institutionalized delinquent sample (Andrews, Daigle-Zinn, & Wormith, 1974; Gendreau & Gibson, 1970). The psychometric characteristics of these measures have been assessed for their reliability (Stockton & Hogan, 1974),

relation to association with criminal patterns (Wilkins, 1975), faking (Keohane, 1974), and volunteer effects (Stockton & Hogan, 1974). They have also been found to consistently discriminate delinquents from non-delinquents and demonstrate change emanating from program participation (Andrews et al., 1973; Andrews et al., 1975; Andrews et al., 1976 a, b, c; Andrews et al., in press).

The scales were combined into a total of twelve questionnaires. The first (CU.1) included the measures Attitude Toward the Law and Judicial System, Identification with Criminal Others, Tolerance for Law Violation and Awareness of Limited Opportunity. They contained 25, 6, 10, and 8 items respectively. Each item was scored on a 5-point Likert Scale ranging from "strongly agree" to "strongly disagree". Sample items of these four dimensions follow: "You can't get justice in court; I don't have much in common with people who never break the law; A hungry man has the right to steal; and Most people are better off than I am."

The scales were constructed by the Research Branch of the Ontario Ministry of Correctional Services (Gendreau & Gibson, 1970) following a survey of measures used in North American prisons. The intercorrelations between the first three variables have been consistent. Correlations in the order of $-.22$ to $-.40$ ($N = 86$), $-.36$ to $-.59$ ($N = 100$) and $-.48$ to $-.73$ ($N = 58$) were found for university students (Andrews et al., 1976; Stockton & Hogan, 1974; Wilkins, 1975) and $-.42$ to $.63$ ($N = 75$) for offenders.

Attitude Toward the Law and Judicial System was comprised of three subscales: Law, Police, and Courts. These subscales displayed intercorrelations of $.55$ to $.60$ ($N=75$) for offenders and $.33$ to $.57$ ($N=86$) for nonoffenders.

Stockton & Hogan (1974) found test-retest reliabilities of .59 to .84 ($N = 40$) over a one week interval on the four scales. Correlations with age were found on Attitude Toward the Law and Judicial Process (.38) and Tolerance for Law Violation (-.31). Student volunteers did not differ from student nonvolunteers and males scored higher than females on Awareness of Limited Opportunity ($p < .01$). Wilkins (1975) reported that, among 100 students, all four variables showed modest correlations (-.22 to -.32) with a total differential association scale (Short, 1957). Inmate-noninmate differences ($p < .01$) on all four scales have been found consistently and changes due to treatment are reported (Andrews et al., 1973, Andrews et al., in press).

Two questionnaires (CU8A, CU8B) were based on Berger's (1952, 1955) Expressed Acceptance of Self and Expressed Acceptance of Others. Acceptance of Others was reduced from the original 28 item measure to 14 items and scored on a five-point Likert Scale. It was designed to measure one's ability to take an interest in others and accept their rights. "I am easily irritated by people who argue with me," is a sample item. Berger (1952) reported matched-half reliabilities of .78 to .88 ($N=200$) when corrected by the Spearman-Brown formula. Stockton and Hogan (1974) found a one week test-retest correlation of .63, a correlation of -.31 with age, and a difference between volunteer and nonvolunteer students. Wilkins found Acceptance of Others was correlated positively (.41) with an Empathy scale (Hogan, 1969)

and negatively with Tolerance for Law Violation (-.35) and Alienation (-.42) on 100 students. The scale was not related to self-reported differential association.

Andrews et al., (1976) found Acceptance of Others correlated -.47 and -.54 with Tolerance for Law Violation and -.21 and -.02 with Identification with Criminal Others on 75 offenders and 86 students. They also found negative correlations (-.25 to -.41 and -.27 to -.34) with three Alienation variables and a positive correlation (.56 and .26) with Socialization. Offenders scored repeatedly lower than volunteers ($p < .01$; Andrews et al., 1976; Andrews et al., in press) and these differences were not ameliorated by discussion group programs.

Bennett's (1971, 1974) Self-esteem scale which was devised for correctional settings was used to measure Acceptance of Self. The scale is based on Coopersmith's (1967) definition, the "evaluation which the individual makes and customarily maintains with regard to himself expressed in the attitudes the individual holds toward himself." The fifty-item scale was presented in a five-point Likert form. A sample item is "I am pretty sure of myself." Bennett claimed the scale is not affected by age or intelligence but it is related to socioeconomic status and educational level. Split-half reliability was reported at .80 and test-retest correlations of .77, .80 and .60 ($N = .76$) for one, two, and three weeks, respectively. Stockton and Hogan (1974) report a test-retest correlation of .85 over one week and a correlation with age of .35. Andrews et al., (1976) reported Self-esteem correlations with Alienation scales of -.44 to -.56 and with Socialization

of .60 and .22 for inmates (N = 75) and volunteers (N = 86) respectively.

Incarcerated delinquents scored lower than volunteers ($p < .01$) in two separate studies (Andrews et al., 1976; Andrew et al., in press). In one study (Andrews et al., in press) self-esteem increased ($p < .05$) with participation in a recreation program which included a group of volunteers. Daigle and Andrews (1974) demonstrated that role playing various interpersonal situations produced an increase ($p < .01$) on Self-esteem, whereas a didactic discussion program and a control condition did not.

The relationship between Acceptance of Self, or Self-esteem, and Acceptance of Others was proposed by Berger (1952, 1955). He found correlations of .35 to .69 for various groups including a coefficient of .55 for 33 prisoners. He also found that Acceptance of Self and Others correlated significantly ($-.22$ to $-.63$; $N = 109$) with seven and five of the MMPI scales respectively (Berger, 1955). Using 55 students, Stockton and Hogan (1974) found a correlation of .53 between these scales. Wilkins (1975) reported a coefficient of .43 ($N = 86$) with volunteers and .36 ($N = 75$) for offenders.

The fourth questionnaire (CU 12) measured Alienation (Andrews et al., 1974). It was composed of three subscales, Feelings of Isolation, Normlessness, and Powerlessness, having nine, ten, and nine items respectively, on a 5-point Likert Scale. A sample item is "The only way to get along is not to trust anyone."

The subscales intercorrelated .55 to .67 ($N = 75$) and .53 to .63 ($N = 86$) for residents and volunteers respectively (Andrews et al., 1976). Offenders scored higher than nonoffenders ($p < .01$) and discussion versus recreation programs were found to have differential effects (Andrews et al., in press). Wilkins (1975) found Alienation to be negatively correlated with Self-esteem (-.56) and Acceptance of Others (-.42), and positively with Neuroticism (.56) and Anxiety (.57).

Inclusion of the Alienation Scale was based on the McDavid and McCandless (1963) contention that anticipated acceptance by a social group increases the likelihood of social influence by that group.

The fifth questionnaire contained five scales in a true/false format. Forty of the 54 items in Gough's (1969) Socialization (So) measures were taken from the California Psychological Inventory (Gough, 1969). This scale is perhaps the most popular of the test's 17 major scales. Gough (1969) reports .80 test-retest reliability over four weeks with 200 prisoners. Stockton & Hogan (1974) report a coefficient of .86 over one week with 40 students. Internal consistency measures, KR21 and KR20, report coefficients of .68 (Megargee, 1972) for 3,572 high school males, and .78 (Hase & Goldberg, 1967) for 179 freshmen women. Split-half reliability was .72 (.83 corrected) for 500 men and women (Megargee, 1972). Gough reports the scale correlated .45 for men and .52 for women ($N = 9000$) with self-control (Sc of CPI). Positive correlations were also found with Sense of Wellbeing, Responsibility Tolerance, Good Impression, and Achievement Via Conformance.

Megargee (1972) described 17 studies in the U.S. and other countries which compared delinquents and nondelinquents. Only one found nonsignificant differences. Within delinquent samples only one of seven studies did not differentiate different classifications of delinquents and all eight studies with nondelinquent samples showed differences between groups.

Two studies by Andrews (Andrews et al., 1975, 1976) also found highly significant ($p < .001$) offender-nonoffender differences. These studies also reported positive correlations with the Acceptance (.56 to .60) and Judicial variables (.36 to .47) and negative correlations with the Criminal (-.44) and Alienation (-.46 to -.63) variables on 75 offenders. These relationships were similar, but not as strong, for the volunteers. Socialization did not respond to change in the program environment.

In addition Megargee, Parker and Levine (1971) claim to provide construct validity for the scale in that they show its relationship to family composition, milieu, and divorce. Using 40 students Stockton and Hogan (1974) found a correlation of .37 with age but no sex or volunteer-nonvolunteer differences.

The remaining scales came from Gough's more recent attempt to differentiate delinquents from nondelinquents. Originally, this was the purpose of the present Socialization scale but because of its general applicability, it was modified for the total population. The five delinquency scales were devised to empirically differentiate delinquents from normals. (Peterson, Quay & Cameron, 1959; Gough & Peterson, 1952). Quay and Peterson (1958) report a 67% hit rate on such classifications. The five scales and number of items are: Psychopathy (25), Neuroticism (27), Scholastic

Maladjustment (10), Inadequacy (9), and Family Dissention (11).

All of these scales correlated negatively with Socialization, $-.40$ to $-.73$, in Wilkins (1975) study of 100 students. She also found that these scales, which were designed to identify the predispositional factors of delinquency, correlated negatively (mean $r = -.35$) with the students' differential association scores. Except for Family Dissention-Inadequacy, the intercorrelations between the scales were also high (mean $r = .52$). Because the scale items were largely social historical, scores were not expected to vary, nor did they, with program involvement.

The sixth questionnaire (CU 19) was Bendig's (1954) Anxiety measure, a short form of the Taylor Manifest Anxiety (Taylor, 1953) scale. Taylor's original version of 50 MMPI items was designed to differentiate psychiatric patients from a normal sample and had a test-retest reliability of $.88$ over four weeks. Bendig's (1954 b) shorter version (At-s) of 20 items correlated $.96$ with the original. A sample item is, "I sometimes feel that I am about to go to pieces." In a recent examination by Stockton and Hogan (1974) it had a test-retest reliability of $.82$, a negative correlation ($-.32$) with age, and no sex or volunteer-nonvolunteer differences. Wilkins (1975) found anxiety to be positively correlated with Alienation and two measures of Neuroticism (Quay & Peterson, 1958; Eysenck & Eysenck, 1963). A study by Andrews et al., (1976) found differential treatment effects when offenders were divided according to their Anxiety scores and placed in group discussions with high and low interpersonal functioning (Goodman, 1970) volunteers.

The seventh questionnaire (CU 26) was taken directly from Coffey, Chance and Judson's (1949) Positive Malinger (Mp). The scale consisted of 33 MMPI items in a true/false format. An example is, "I am entirely self-confident." This particular "faking" measure was used because of its superior ability to discriminate honest from faked responses among incarcerated delinquents (Gendreau, Irvin, & Knight, 1973) and students (Keohane, 1974). The former study found a 92% success rate in discriminating faking good adjustment from honest responses. This was higher than a variety of similar scales including L, F, K, F-K dissimulation, and DS. Wilkins (1975) found the Mp scale correlated with Self-esteem .31 and Anxiety -.33 but had no relation to sex or age. Two studies (Andrews et al., 1975; Andrews et al., 1976) report that offenders scored higher than nonoffenders ($p < .05$) and that correlations with an Empathy scale (Hogan, 1969) were considerably higher for the inmate sample (.87 vs .23).

The eighth questionnaire (CU 27) was comprised of two 16 PF scales. Factor C of the 16 PF, Form A (ego strength), measures what psychoanalysts have called ego strength and weakness. It is characterized by the emotionally mature, stable, calm, unruffled individual who is constant in his interests, as opposed to the easily perturbed, worrisome sort who gets emotional when frustrated. Those who score high are frequently leaders. Low scores represent the most general pathological contributor to many disorders including neurotics, psychotics, alcoholics, and drug addicts (Cattell, Eber, & Tatsuoka, 1970). Scores on Factor C have improved as a result of successful lobotomy (Petrie, 1952) and psychotherapy while low scores correlate with neurotic behavior during childhood and the onset of neurotic

symptoms due to stress (Cattell, 1957). An example of the 13, three-point items is, "I can find enough energy to face my difficulties."

Factor G of the 16 PF, Form A (Superego Strength), is similar to Factor C in that they both contribute to "self-controlled behavior and regard for others as opposed to emotional and impulsive behavior" (Cattell et al., 1970). But it also is characterized by moral concerns for right and wrong and persistence of effort, or the psychoanalytic concept of superego strength. Factor G discriminates the conscientious, persistent individual who is concerned about moral standards and values from the fickle, frivolous, self-indulgent person who is undependable and disregards obligations to other people. Objective tests indicate that this factor is related to persistence and good organization of thinking. Leaders and airline pilots are among those who score highly while psychopaths, criminals, and "radical" types score below average (Cattell et al., 1970). One of the ten, three-point items is "I always make it a point, in deciding anything, to refer to basic values of right and wrong."

There are a number of criticisms of the superego strength scale which necessitate its cautious interpretation. A relationship with faking has been found. Criminals seeking parole tend to use this scale to be seen in good light. Those who are persistent, but to a radical cause, may still obtain a low score. Moral values may vary across time and place. Those in an "adolescent revolt" may not admit to moral standards when, in fact, they are practised. Also, the modesty of a truly moral person may cause him to underestimate his own moral standard (Cattell et al., 1970).

The 23 pairs of statements in Rotter's (1966) Locus of Control (Internal-External) scale comprised the ninth questionnaire (CU 28). In this measure subjects are asked to choose in each pair, the statement which they feel is more accurate. Responses are scored for frequency of external choices. An example is (a) "Many of the unhappy things in peoples' lives are partly due to bad luck. (b) Peoples' misfortunes result from the mistakes they make."

Locus of Control has been examined with respect to many different constructs in a wide range of settings (Rotter, 1966; Lefcourt, 1966). A number of studies are of particular interest to the present investigation in that they indicate delinquent-nondelinquent differences and a relationship with self-control. Emotionally disturbed, externally controlled children were found more impulsive than their internal counterparts. They responded more quickly, and made more errors on a behavioral test (Finch, Kendall, Deardorff, Anderson, & Sitarz, 1975). Hersch and Scheibe (1967) report a significant correlation ($-.20, p < .01$) with Gough's (1969) self-control scale. External college students were also more alienated ($r = .59, p < .001$) than internals (Tolor & LeBlanc, 1971). Examining the moral development stage (Rest, Cooper, Coder, Masanz, & Anderson, 1974) of 53 students, Boomberg (1974) found that internals as defined by a median split, showed a greater amount of Kolhberg's (1969) Stage 6, the highest level, thinking ($p < .05$). Inmates who chose to live in a special cottage for education, and hence delayed their discharge, were more internally controlled ($p < .05$) than control cottage inmates (Erikson & Roberts, 1971).

Both theoretical and empirical relationships between locus of control and treatment outcome have been presented. Lefcourt (1972, 1973) has suggested that the very goal of psychotherapy is to have the patient develop a belief that he controls his own destiny, that although freedom and control are illusions, one's locus of control has many consequences. Masters (1970) reports a single subject case of increased internal control and subsequent adjustment following discussion and behavioral assignments relating to locus of control. Delinquent boys have shown increases on internal control following participation in a token economy (Eltzan, 1974) while Tuft and Dana (1973) found that performance on a combination of five behaviors in a similar program predicted the locus of control scores ($p < .05$) of 81 incarcerated delinquents.

Psychometric characteristics of the scale include reported reliabilities of .49 to .83 (Rotter, 1966; Hersch & Scheibe, 1967) depending on the interval of delay. Also, the scale does not appear to be affected by age or drug use (Strassberg & Robinson, 1974).

The tenth questionnaire (CU 32) was taken from Hogan's (1969) Empathy scale. This construct, when interpreted according to role-taking theory, concerns the ability to "shift over, to take another person's view." Examining the conceptual validity on the scale, Grief and Hogan (1973) claim that "empathic persons are characterized by a patient and forbearing nature, by affiliative but socially assentent tendencies and by liberal and humanistic political and religious attitudes."

Sixty-one of the original 62 items measured in a true/false format (e.g., I am a good mixer) were employed. Hogan (1973) reports a .84 test-retest reliability over a three month period. Although it is highly correlated with Sociability, Social Adequacy and Self-Acceptance of the CPI, three scales from which many of its items were taken, Hogan (1973) claims the scale is not correlated with Socialization, Self-control, or scholastic aptitude. Of eleven populations sampled, inmates and delinquents scored tenth and eleventh, respectively.

Stockton & Hogan (1974) report that volunteers scored higher than nonvolunteers ($p < .05$), the scale does correlate with age (.34), but there are not any sex differences ($N = 100$). They also found Empathy correlated with Berger's (1952) Acceptance of Others (.51) and Self-esteem (.32). Wilkins (1975) obtained a correlation of .41 with Acceptance of Others ($N = 100$) but no relationship with Mo. Andrews found a large group of incarcerated delinquents differed from student volunteers ($p < .001$, $N = 161$; Andrews et al., 1976) but a small number of penitentiary inmates did not ($N = 26$; Andrews et al., 1975). This suggests more validation is needed.

The eleventh questionnaire (CU 13-32) was comprised of the Self-Control (Sc) items from Gough's (1969) California Psychological Inventory. Content of the 50 items deal with generalized restraint of irrational behavior. Many items reflect a self-effacing modesty and social inhibition (Megargee, 1972). Gough (1969) reported test-retest reliability of .86 over four weeks with 200 prisoners. Megargee (1972) cited internal consistencies of .82 (KR 21) on 4,056 high school girls and .77 (split-half;

.87 when corrected) on 500 men and women. The scale correlates with a number of the CPI measures, particularly Good Impression (.72 to .78) with which it shares 13 items, Achievement via Conformance (.60 to .62) and Sense of Wellbeing (.57 to .66).

The scale shows differences on extreme groups of boys and girls which have been rated as most and least impulsive by their high school principals. Low but significant correlations (.21 to .34) were found with staff ratings of impulsivity (Gough, 1969) for three separate samples. Acting out military offenders scored lower than normals but did not differ from a sample of withdrawn subjects (Hirt and Cook, 1962). There was also a tendency for assaultive criminals to have higher Sc scores than non-criminals and criminals of other offenses (Megargee & Mendelsohn, 1962; Megargee, 1966).

Lastly, the Money Saving Measure (Stumphauzer, 1972), which is a measure of hypothetical choice to a series of delayed gratification questions concerning money saving behavior, is described later with its parallel behavioral measure, the Choice Lists (Stumphauzer, 1972) because they were developed and administered together. The latter is classified as a behavioral choice because an actual choice, with material pay off, is involved.

Behavioral Tests: The test battery also contained four behavioral measures. The Cold Pressor Test (Kanfer & Goldfoot, 1966) was used as a behavioral self-control index of pain tolerance. This laboratory based measure provides a simple and harmless index of one's ability to withstand a controlled, aversive stimulus. The test procedure was similar to that devised by Hilgard, Ruch, Lange, Lenoy, Morgan, and Sachs (1974) for the investigation of pain

control. Subjects were simply asked to immerse their hand for as long as they could in circulating ice water.

Pain control studies which used the Cold Pressor test, have found a variety of successful techniques. They include hypnosis (Hilgard, Morgan & Macdonald, 1975) and the cognitive strategies of diversion or distraction (Kanfer & Goldfoot, 1966), with and without rationale (Melzack, Weisz & Sprague, 1963). In addition, some investigators (Bowers, 1968) have found that perceived control is a critical component of self-control when coping with stress or aversive stimulation.

Yet Meichenbaum and Turk (1975) are cautious. They suggest that, although these and other studies (Barber & Cooper, 1972; Bobey & Davidson, 1970), attest to the effectiveness of distraction and coping techniques, design and methodological issues remain. This is largely because the coping strategies, in spite of instructions, are ultimately unobservable, and covert responses.

Two measures of interpersonal space (Sommer, 1969) were collected. The first, a Proxemics Test, was a modification of the version used by Newman 11 and Pollack (1973). In their study, distance was systematically varied in a laboratory setting with 60 male high school students. The distance at which subjective discomfort was felt resulting from a violation of personal space was recorded. Those in a class for deviant conduct had a greater proxemics area than those in a class for academic underachievement ($p < .05$). There was an increase in distance from front to rear ($p < .001$) but this increase was no different between groups.

Using a similar procedure Kinzel (1970) found violent prisoners had a larger personal space than nonviolent prisoners and that their greatest distance was to the rear. With nonviolent prisoners the greatest distance was to the front. But there were other differences between groups. The violent offenders were also heavier, less intelligent, and had longer sentences. Weekly recordings over 11 weeks caused decreases in personal space for both types of offenders.

Elsewhere, personal space has been related to the nature of the interaction (Dosey & Miesels, 1969), the degree of acquaintance and friendship (Little, 1965), mental health (Horowitz, 1968), fear induction (Feshbach & Feshbach, 1963), stress (Leipold, 1963), cultural background (Little, 1968; Sommer, 1959), age, and sex (Lomranz, Shapiro, Choresch, and Gilat, 1975).

The second measure of interpersonal space, the discussion group Seating Score, is presented as a process measure.

The third behavioral measure in the test battery was the Porteus Maze test. Porteus, who devised this test over 60 years ago (Porteus, 1915) to assess mental defectives, soon noticed that delinquents also responded differently than normals (Porteus, 1917). He then devised a qualitative (Q) score to supplement the original Mental Age, or Years, Score. Mental age was standardized in typical IQ fashion to provide a test quotient (TQ). According to Porteus, the qualitative score is distinct from mental age in that it was intended to reveal haphazard, impulsive habits and a disregard for values. Q scores are based on errors in drawing or execution rather than planning (Porteus, 1965). Eight different kinds of qualitative errors

were defined and weighted from one to three. The weights, based on the comparative performance of delinquents, were designed to maximally discriminate them from normals.

The test can be scored reliably although judgement decisions are required on some of the qualitative subscales. Docter and Winder (1954) report a .98 reliability correlation as do Fooks and Thomas (1957). Sperr (1973) obtained an interscorer reliability coefficient of .99 and Roberts and Erikson (1968) report virtually no disagreement between raters.

The relationship between TQ and Q scores is less clear. Roberts and Erikson (1968) reported a nonsignificant relationship ($r = -.20$, $N = 50$) in one study but cite a correlation of $-.58$ ($N = 68$, $p < .01$) in a subsequent investigation (Roberts, Erikson, Riddle, and Bacon, 1974). Similarly, Fooks and Thomas (1957) report correlations of $-.03$ to $-.44$ ($p < .06$) and $-.004$ to $-.39$ ($p < .01$) for delinquents and normals respectively. Sperr (1973) found a correlation of $-.65$ ($p < .07$). Kainer (1965) found that TQ scores also correlated with a behavioral measure of delayed gratification and suggests that this indicates it measures a nonintellective component of intelligence, specifically the ability to use reason to temporarily inhibit action.

In addition to the Vineland Revision edition of the test, there is also an Extension Series. The Extension is more difficult and was designed to control for testing effects when administered in a pre-post fashion (Porteus, 1965). In a study by Sperr (1973) 16 incarcerated delinquents were tested as controls, and a one week test-retest reliability coefficient of .93 was obtained.

Many studies support the claim that delinquents have more qualitative errors than normals. This was found in studies of "conduct disorder" and socially maladjusted children, among Californian and Hawaiian delinquents, and in a series of studies reported by Porteus (1942) comparing delinquents, criminals, and unsatisfactory students to normal students and various other samples. Docter and Winder (1954) found highly significant ($p < .001$) differences. Seventy percent of the delinquents and only 30% of the non-delinquents had Q scores above 29. They also found that Porteus' original weights added little to the test's discrimination ability.

More recently, a number of studies have discovered that the Porteus Maze also discriminates delinquent subtypes. Sperr (1973) found that Psychopathic delinquents tend to have higher Q scores ($p < .10$) than neurotic delinquents. Sutker Moan, and Swanson (1972) found it was the best of six discriminators of prison normals, pure sociopaths, and antisocial psychotics ($p < .05$). Roberts, Erikson, Riddle and Bacon (1974) found Q scores better than five other demographic and test predictors of recidivism ($p < .01$) in one experiment and better than eight other measures in a replication study ($p < .001$). They also provided validity for the scale showing correlations of $-.35$ ($p < .01$) to $-.55$ ($p < .001$) with behavior ratings by principals and psychologists (Roberts, Erikson, Riddle & Bacon, 1974), with behavioral and verbal measures ($r = -.47, -.52, p < .01$) of delayed gratification, and with staff ratings ($r = -.58, p < .01$; Roberts & Erikson, 1968).

Two studies are particularly important to the present investigation in that they found the Maze Test sensitive to treatment manipulation. The first examined performance differences following training in self-directed verbal commands. Palkes, Stewart, and Kahana (1968) taught hyperactive

children of normal intelligence to verbalize a set of self-directed commands when presented with a task. The treatment was successful and the Maze test, particularly the Q score, was sensitive ($p < .001$) to the technique's capacity for modifying the hyperactive, impulsive behavior displayed by these children.

The second study used the Porteus Maze Test to evaluate the effect of modeling and vicarious reinforcement on incarcerated delinquents' impulse control (Sperr, 1973). Modeling alone was sufficient to significantly decrease both neurotic and psychopathic delinquents' Q scores on the Mazes ($p < .01$).

Self-reported, paper-and-pencil measures of delayed gratification preference are presented in the Choice Lists and Money Saving Measure. The versions used in the present study were those adapted by Stumphauzer (1972) from previously constructed scales. The four Choice Lists (A,B,C and D) were modifications of earlier measures of delayed orientation (Mischel, 1961; Rosenquist & Megargee, 1969). Half of the 14 choices on each list were monetary (e.g. 35¢ now or 50¢ in 1 week) and half were material (e.g. a small candy bar now or a large candy bar in one week). Cross-correlations of delayed choices on the four lists ranged from .87 to .94 ($p < .001$). Because subjects are told that they will actually be given their choice on one of the items yet to be determined, the measure is regarded as a behavioral test choice.

Stumphauzer's (1972) Money Saving Measure is a forced choice modification of Rosengquist and Megargee's (1969) open ended hypothetical questions. Subjects are asked how much of 25¢, 50¢, and \$20. they would save

if these amounts were placed in their accounts. Both the Choice Lists (Mischel, 1961; Stumphauzer, 1969) and the Money Saving Measure (Rosengquist & Megargee, 1969) have demonstrated that delinquents are more immediate in their gratification orientation.

It is also important to know that responses on these measures can be successfully manipulated. When delinquents were exposed to high delay model peers, they showed more delayed behavior on the Choice Lists and this delay orientation generalized across task, to the Money Saving Measure, and across time to a period four weeks later (Stumphauzer, 1972). Using a single subject reversal design, Stumphauzer (1970) also found that social reinforcement can effectively increase delayed gratification preference on the Choice Lists with incarcerated delinquents.

Process Measures: Three kinds of measures were collected from actual program sessions. A modified version of Goodman's (1970) Group Assessment of Interpersonal Traits (GAIT) was used to obtain self-reported and resident evaluations of volunteers' Facilitative Interpersonal Functioning (FIF) in all groups. The measure was initially devised as a technique to systematically select those with psychotherapeutic talent. The requisite interpersonal skills were scored by participant-observers after observing the interpersonal behavior of one another in a structured, small group exercise. The GAIT was included among the process measures because of findings by Truax (Truax, 1961; Truax & Mitchell, 1971; Truax, Wargo, and Volksdorf, 1970)

which suggested that the interpersonal skill level of the helper was important in the reformation of delinquent clients.

D'Augelli (1973 a, b) examined the GAIT psychometrically and defined eight different scales. In two separate studies (N = 75, 60) he calculated peer-rated split-half reliabilities which were as follows: Empathic Understanding (.57, .61), Blue, Sad, Discontent (.61, .70), Honest, Frank, Emotionally Open (.56, .48), Mild, Reserved, Quiet (.82, .17), Warm, Patient, Accepting (.66, .35), Set in his Ways (.47, .32), Relaxed and Easy Going (.71, .51) and Talks about Personally Meaningful Material (.52, .66). Interrater reliabilities of trained observers were in the order of .64 to .78. Observer-peer correlations were fair (.20, .35), peer-self correlations were lower, and observer-self were nonexistent, suggesting that accurate self-assessment of interpersonal skills is difficult.

D'Augelli (1973 b) also determined that the test, designed to assess interpersonal performance of therapists, did so. High therapeutic talent subjects, as defined by the sum of three GAIT measures, engaged in more self-disclosure and personal feedback than those with low therapeutic talent when actual group discussions were studied. Interestingly, D'Augelli (1974) also found that training enhanced subjects' amount of personal discussion and feedback and that cognitive training without practice was more appropriate than with practice. This was particularly so for high therapeutic talent subjects. Training, it should be noted, simply consisted of an orientation to sensitivity groups, their description, purpose, and techniques.

Recently, a study (Andrews et al., 1976) examined the differential effectiveness of high and low functioning volunteers, with anxious and non-anxious (Bendig, 1954 a, b) offenders. Volunteers (N = 60) level of functioning was determined from a revised version of the GAIT scales. The original measure consisted of 8,6-point ratingscales,with one item per scale. Andrews et al. (1976), using the same procedure,devised an eight scale assessment, each having four,6-point items. The scales were also based on Truax (1961) and Carkhuff's (1971) work on therapeutic process and facilitative interpersonal functioning. The scales were Understanding (Empathy), Openness, Warmth, Specificity of Expression, Assumed Similarity, Flexibility, Tension, Responsibility, and an Overall Evaluation.

The psychometric characteristics of the revised scales were similar to those of D'Augelli (1973 a, b). Internal consistency measures were high. Split-half correlations corrected by the Spearman-Brown prophesy formula for the mean FIF rating was .87 and on the three major scales, Openness, Warmth, and Understanding, was .62, .76, and .81 respectively. Interrater reliabilities on FIF were .41 for peer and .52 for observer evaluations. Peer-self and peer-observer scores were related (.30 and .32) but self-observer ratings were independent. Part-whole correlations, FIF with Openness, Warmth, and Understanding, were .70, .62, and .71.

In addition, FIF correlated with all of the remaining process measures (Assumed Similarity .42, Specificity of Expression .36, Flexibility .32, Responsivity .27, and Tension -.29) except the Overall Evaluation.

When high and low anxious offenders were placed in groups with high and low FIF volunteers, some support for differential treatment was obtained. Both volunteers and residents reported more interpersonal Openness in the groups with high FIF volunteers. There was an FIF-by-Anxiety interaction on residents' perceived Trust ($p < .02$), the low anxious residents rating the high FIF groups more positively than high anxious residents. Analysis of outcome suggested that there was an overall effect supporting the value of high FIF volunteers on the target attitudes ($p < .02$). This was particularly the case for low anxious offenders. In the low FIF groups, high anxious offenders demonstrated more prosocial change than low anxious offenders.

The present GAIT version included further modifications. In light of suggestions by Truax (1966), the Openness scale was subdivided into Openness-genuine and Openness-disclosure to obtain measures of sincerity (e.g. Seemed to put on an act) and self-revelment (e.g. Let me know how he felt). A measure of Influence was added to assess the self-reported effect that volunteers had on residents' attitudes (e.g. Did not change any of my thoughts or ideas). The six-point scale was maintained but items were added to some scales so that each scale contained four items and was balanced for direction. Two versions (CU 15 - R, CU 15 - V) were devised. The former was constructed for residents' evaluation of each volunteer. Necessary semantic changes were made to the latter enabling its use for volunteer self-evaluation with respect to each resident.

Two other process measures were devised specifically for the Community Group discussions. Discussion group seating patterns were used as an unobtrusive measure of group integration. Aggregation (Campbell, Kruskal & Wallace, 1965), or voluntary clustering by volunteers and residents, was

anticipated at the outset of the program. Since group cohesion and assimilation were encouraged, an individual seating score was devised to measure physical integration through subjects' free choice of seating arrangement. The measure was obtained by simply recording one's adjacencies to members of the opposite group when seated in a circular array. For example, a resident's score varied from zero to two depending on the number of volunteers he was sitting beside. This kind of index has an advantage over tests and questionnaires in that it is unobtrusive and nonreactive. As a naturalistic measure of behavior, it is not subject to weakness of voluntary or nonvoluntary distortion, self-consciousness, or awkward administration (Webb, Campbell, Schwartz & Sechrest, 1966). It is, admittedly, a simplistic and inexact construction in that the probability of a high score varies with the resident-volunteer ratio which may not remain constant.

Seating choice adjacencies have been used previously as an index of attitude. In a study by Campbell, Kruskal, and Wallace (1965), the number of adjacencies was tested against the expected frequency in a random seating arrangement. The two groups were blacks and whites as seated in classrooms at three different universities. One school was sampled twice with a 12 year interval. All four "aggregation indices" were negative indicating fewer adjacencies than expected by chance ($p < .01$). Indices also differed by school ($p < .02$) in accordance with their liberal reputation on the race issue. Elsewhere, clustering has been used as an index of political interaction. Alger (1965) monitored location and exchange among representatives of the United Nations General Assembly and was able to define clusters of interacting nations.

The third process measure monitored verbal behavior in the Community Group discussions. In particular, it was designed to record the frequency of pro and antisocial statements in relation to subsequent feedback (reinforcement and punishment). The measure was adapted for the discussion groups from a rating scheme devised by Good and Brophy (1973) to monitor classroom behavior of children and their teacher. Having no research history, the index is described in the methodology.

Institutional Measures: Five measures were based on residents' institutional behavior. Three of these were modifications of variables used previously in corrections.

The Cigarette Interest Coupon was a behavioral-naturalistic measure of delayed gratification. In an earlier study, Roberts and Erikson (1968) presented coupons to training school boys 9 days prior to their transfer. It read "While staying in the receiving unit this coupon is good for one (1) cigarette upon presentation to a Receiving Supervisor. If held until transfer to a lodge, this coupon is worth one (1) package of cigarettes." Twenty-three of 50 boys waited at least nine days for a package. Coupon saving correlated .58 with a verbal measure of delayed gratification obtained from an essay writing task. It showed significant ethnic effects for delayers and gratifiers ($p < .02$) while the verbal reports did not. On the Porteus Maze (Porteus, 1965) delayers had higher test quotients ($r = .25$, $p < .05$) and lower qualitative scores ($r = -.47$, $p < .01$)

indicating that they had more foresight and were less impulsive than gratifiers.

The Cigarette Interest Coupon used in the present study read, "The value of this ticket increases by 1 cigarette each day. This ticket buys you 1 cigarette today...OR up to 20 cigarettes in 19 days from now. Good only for the above name. Ticket is not replaced if lost." A behavioral measure of delayed gratification was obtained by recording the number of days to full maturity at the time of coupon redemption. A three month time limit was imposed following the full maturity date. Therefore, the measure was not in terms of a simple two-point scale but scores were free to vary from -19 to 90.

The Officer Rating measure devised by Daigle and Andrews (1974) was used to obtain officer and instructor-ratings of participating residents. The questionnaire was composed of 58 items in a four-choice format. It was derived from previous research on the Youngster Behavior Inventory (Palmer, 1970) and the Guelph Inventory (Gendreau & Gibson, 1970). The measure referred to traits like spontaneity, openness, showing-off, and general sociability. It was composed of three subscales, Behavior towards Peers (18 items), Behavior towards Staff (19 items), and Behavior towards Others in General (21 items).

The questionnaire has been used previously with two different populations. Inter-rater reliabilities with first offenders (N = 16) and recidivists (N = 10), were obtained on the three scales, Behavior Toward Officers (.19, .60), Peers (.53, .45), and Others (.95, .70). Also,

the measure differentiated between treatment effects due to role-playing versus didactic counselling (Daigle & Andrews, 1974).

Disciplinary reports represent a third institutional measure which has been used previously in correctional settings (e.g., Sutker & Moan, 1973). Two previous studies in the present institution employed frequency of misconduct reports as a test of the generalization of treatment effects. Typical institutional offenses were fighting, insolence, and possession of contraband. Andrews and Young (1974) found that more reports ($p < .02$) had been written up on 16 and 17 year old incarcerated delinquents than on 18 and 21 year olds. In a five week period they found fewer reports on those who had participated in a two-session group counselling program which focused on institutional conduct. The effect was significant ($p < .05$) for the young offenders only.

A second study (Marquis, Cousins, Graham, Wormith & Gendreau, 1974) used disciplinary charges to investigate the effect of a token economy on residents' behavior in the institution. Inmates' monthly reports showed a significant decrement ($p < .01$) upon initiation of contingent reinforcement for work output.

Two unobtrusive institutional measures were original and are described in the methodology. They were the Letter Record, a scheme devised to monitor frequency of forethought and planning, and Canteen Spending, a naturalistic measure of saving behavior.

CHAPTER 11

METHODOLOGY

Subjects

Fifty incarcerated offenders, sixty-three student volunteers and seven group leaders participated in the study. The offenders were male residents of a minimum security correctional centre in the Province of Ontario's Ministry of Correctional Services. They were solicited by announcement and bulletin to take part in a research project concerning group discussions with student volunteers. Volunteer residents were told that they would be given a battery of tests and questionnaires before the program began and again after its completion, that the program would be monitored, and that both sources of individual data were confidential and unavailable to the institutional staff. Residents whose discharge date was prior to the projected program completion date were not eligible.

Residents ranged in age from 16.25 to 40.83 years with a mean of 20.82 (S.D. = 4.22) years. They had been sentenced to an average of 14.78 (S.D. = 8.07) months. Residents had already been incarcerated in the present institution for an average of 2.98 (S.D. = 4.50) months at the time of program enrollment. A breakdown of offense frequency is presented in Table 1. In the case of multiple offenders, the most severely dealt with charge was recorded.

TABLE 1

A FREQUENCY DISTRIBUTION
of RESIDENTS' OFFENSES

<u>Sentence</u>	<u>Frequency</u>	<u>Total</u>
Breaking and Entering: and Theft	15	
with Intent	1	16
Robbery: Unarmed	4	
Armed	1	5
Theft: over \$200.00	5	
Auto	3	
under \$200.00	1	9
Drug Offences: Traffic	2	
Conspire to Traffic	1	
Federal Drug Act	1	
Breach Narcotic Control Act	1	5
Fraud and Forgery: Fraud	2	
Forgery	1	3
Driving Offences: Dangerous Driving	1	
Breach Highway Traffic Act	1	2
Assault:	2	2
Negligence:	2	2
Arson:	1	1

Student volunteer subjects were solicited primarily from undergraduate courses having some relevance to the orientation of the project (psychology, sociology and criminology). Some subjects (24%) were from other disciplines, had heard of the program from friends and enrolled on their own initiative. This was not discouraged. In fact maintenance of the volunteer program in this institution has depended largely on "word of mouth" publicity. The mean age of the volunteers was 24.97 (S.D. = 6.81) years. The high variability in age (17.67 to 47.91 years) was due to the number of evening or "mature" students in the university population. Seventeen volunteers (27%) were male. Twenty (32%) were fulfilling partial course requirements through their involvement in the present study.

Four senior undergraduate students were selected as Community Group leaders. All were female and had experience with offenders, either through practicum courses, or previous Community Groups. Two senior undergraduate males with similar experience were selected to organize recreation groups. A male graduate student, the author, was responsible for leading a program on self-control. The group leaders ranged in age from 19.25 to 28.47 years with a mean of 23.81 (S.D. = 3.46) years.

Four male graduate students (mean age = 28.34 years) with no previous experience in corrections were solicited to assist the group leaders. These "coleaders" were unfamiliar with the Community Group research and were given specific instructions prior to the program. Both leaders and coleaders were fulfilling course requirements to participate in field work.

Design

The overall experimental design of the study consisted of four treatment regimes in 2 x 2 factorial design. An additional fifth group was composed of subjects in a delayed treatment control condition. The resident groups were composed of the following program combinations:

1. Community Group Discussion sessions with trained volunteers and a behavioral Self-control training program.
2. Community Group Discussion sessions with trained volunteers and a Recreational exposure control program.
3. Community Group Discussion sessions with untrained volunteers and a Recreational exposure control program.
4. Community Group Discussion sessions with untrained volunteers and a behavioral Self-control training program.
5. A delayed treatment control group.

Except for two limitations resident subjects were randomly assigned to groups. Subjects whose discharge would render them unavailable for a future group were not allocated to the delayed treatment condition. Because the study was carried out at two different times in the year, allocation was restricted to the groups available at the time of volunteering. Three groups and three quarters of the controls were run in late winter and the fourth group and remaining controls in early summer. Previous research (Andrews, et al., 1973); Andrews et al., 1976) indicated that neither the measures nor the manipulation was seasonally affected.

It should be noted that for each of the four resident treatment groups, there were two sets of actual field programs each with its own collection of volunteers. Therefore, the design for the volunteers consisted of eight treatment and two control groups in a 5×2 arrangement. There were five levels of treatment; trained discussion, untrained discussion, behavioral self-control, recreation, and control groups. There was a replication factor with each group being repeated a second time.

Volunteers were assigned to groups randomly with two limitations. Volunteers were given an opportunity to state which day, Monday or Thursday, was more convenient. Students who were not psychology majors or were not taking a behavioral analysis course were screened out of the self-control program.

In sum, the residents were allocated to one of the four treatment groups (program regimes) or a control condition in an incomplete factorial (2×2 plus-one) design. Volunteers were assigned to one of four programs or a control condition. Since there was a replication of the five volunteer conditions, a 5×2 design describes the volunteer cells.

Four sets of dependent measures were used. They included the attitudinal/personality and behavioral test batteries which were presented in a pre-and posttest fashion, the process measures which were collected during the actual group sessions, and the institutional measures which were collected on residents only, for three (pre, during, and post) 2 month periods.

Orientation and Pretesting

All subjects were given an orientation and testing session one to two weeks prior to the program commencement. Orientation for volunteer subjects included a description of the institution's history, security classification, general population characteristics, the role of the volunteer as a nonprofessional, the background of the project and the role of the group leader. The issue of confidentiality, rules governing the conduct of volunteers, and limitation of volunteer-resident association to the group situation were discussed with volunteers and residents in their respective orientation meetings.

The test battery consisted of eleven questionnaires, containing 20 attitude and personality scales, and four behavioral measures; the Porteus Maze, Cold Pressor, Proxemics Test and Choice Lists. Subjects responded to the questionnaires in a group of 3 to 6 and were individually called for the behavioral tests.¹

Questionnaires: The following scales (Andrews, Daigle-Zinn, & Wormith, 1974) were included in the paper-and-pencil test battery:

<u>CU 1</u> (Rev)	Attitude Towards the Law, and Judicial System (Gendreau & Gibson, 1970)
	Identification with Criminal Others
	Tolerance for Law Violations
	Awareness of Limited Opportunity

1. A list of all measures included in this study is presented in Appendix F. Variables are listed by method of measurement and include all abbreviations employed.

- CU 8A (Rev) Acceptance of Others (Berger, 1952)
- CU 8B (Rev) Acceptance of Self (Self-Esteem; Bennett, 1971)
- CU 12 Alienation (Andrews et al., 1974)
- CU 13 Socialization (So scale of CPI; Gough, 1969)
 Psychopathy (Delinquency Scales; Gough, 1969)
 Neuroticism
 Scholastic maladjustment
 Inadequacy
 Family Dissention
- CU 19 Anxiety (At-s, short form of TMA scale of MMPI; Bendig, 1954)
- CU 26 Positive malingering (Mb scale of MMPI; Coffey et al., 1949)
- CU 27 Ego Strength (16 PF Factor C Cattell et al., 1970)
 Superego Strength (16 PF Factor G)
- CU 28 External control (Locus of Control; Rotter, 1966)
- CU 32 Empathy (Hogan; 1969)
- CU 13-32 Self-Control (Sc scale of CPI; Gough, 1969)
- Hypothetical Money Saving Measure (Stumphauzer, 1972)

Behavioral Tests: The Porteus Maze was administered as directed in the manual (Porteus, 1965) with the introductory comment: "This is a maze test". The tester was one of two trained male examiners seated at a desk opposite the subject. Subjects were given a straight pen (medium point) instead of a pencil to insure a permanent record for future "blind" scorers. The only scoring

done during administration was "Lift Pencil" which the examiner recorded on the test protocol at the appropriate spot. A Mental age, or Years score, and a Quality score were obtained (Porteus, 1965).

The Cold Pressor (Hilgard, Ruch, Lange, Lenox, Morgan & Sachs, 1974) was administered by one of five trained female examiners. Subjects were escorted to a separate room, seated and given the following instructions. "This is called the Cold Pressor Test. It is simply a measure of pain tolerance. When I say 'Go,' place your hand in here (pointing) so that your fingers just come to the bottom and your hand is completely immersed. Try not to move your hand and keep it in the water for as long as you can. Okay. Go." The apparatus was an aluminum container 20" x 12" x 10" with a wire screen placed in the middle. One half was filled with ice and the examiner circulated the water by constantly stirring. Water temperature was monitored throughout and kept at $20^{\circ}\text{C} \pm 1$. The examiner did not converse with subjects or respond to any questions. Immersion time, subjects' comments, and air temperature were all recorded.

Subjects were escorted individually to a small empty classroom for the Proxemics Test (Newman 11, & Pollack, 1973). Six examiners were trained and the sex of the examiner was always matched to that of the subject. Two footprints were drawn in a one foot square in the centre of the room and the floor was gridded into one foot blocks in four different directions. Subjects were told: "This is called the Proxemics Test. It is simply a measure of personal space, or the area around us. I am going to approach you very slowly from a number of different directions. When I get to the point where

you feel uncomfortable about my closeness or feel that if I come any closer you will be uncomfortable simply say 'stop' or 'okay' and I will go back and begin from another position." The examiner began six feet directly in front of the subject and approached the subject in the following manner: Look at floor position, move left foot forward 6", bring right foot up to left foot, look up at subject, count subvocally to three while maintaining an expressionless face and waiting for a signal, and look back down to floor to make next step. When the subject signaled, the examiner recorded his position and moved to the left of the subject. The complete order of approach was front, left, behind, right, right, behind, left and front.

Subjects were also given two of Stuphauzers (1972) Choice Lists (either A and B or C and D) and a Money Saving Measure. Each list was comprised of fourteen pairs of items. Subjects were instructed, "Choose the item in each pair which you actually prefer. One item will be randomly chosen from each of the two lists and your choices will be given to you." Each pair consisted of a small item immediately available and a larger item available some time in the future (eg. 2 cigars today vs 4 cigars in 2 weeks).

Process Measures

Measures of process and affiliation were collected during the Community Groups. Five graduate or senior undergraduate students were trained as group observers to classify statements according to the Discussion Group Rating Code (Appendix C). The rating code was a modification of Good and Brophy's (1973) classroom observation scheme. Statements were rated on two five-point scales, Social Quality and Feedback. Three observers were randomly assigned to 3 groups. There were three twenty-minute observation periods or

segments, for each session. The three observers, assigned to groups 1, 2 and 3 initially, were rotated after each segment. Each subsequent week they were randomly assigned to an initial group and again rotated. Two observers rated Group 4 exclusively. All raters were graduate or senior undergraduate students fulfilling a course requirement, trained in behavioral observation, and blind to the experimental condition. Audio tapes were also made of the discussion groups. Subjects were informed that the tapes were strictly confidential and not available to the institution. The tapes were used to "back-up" the live recording and to assist group leaders in their review of the sessions.

Each week observers recorded the seating pattern of the four groups. In all cases seating configuration consisted of a circular array around a central table. Subjects were presented with a free choice situation and except for the occasional and spontaneous suggestion by the leaders to "mix around", no attention was given to the seating configuration. Neither the project personnel nor the subjects were aware that seating patterns were being monitored. Individual seating integration scores ranged from 0 to 2 depending on whether a subject was seated between two participants of his own affiliation, one from his own and one from the other, or two from the other group. Weekly integration scores, as well as mean and total scores over the eight sessions were calculated for all subjects.

Following the last session of each group, volunteer evaluation forms were distributed. This was a revised version (Andrews et al., 1976) of the Group Assessment of Interpersonal Traits (GAIT: Goodman, 1970). Each

resident was requested to rate every volunteer with respect to their specific interaction. Each volunteer was asked to self-evaluate his interaction with each resident. Parallel forms of the questionnaire were used for the two kinds of assessment.

These evaluations were collected to obtain four different measures. Two were volunteer scores (volunteer's mean self-evaluation and the residents' mean evaluation of a volunteer) and two were resident scores (the mean volunteer score assigned by a resident and volunteers' mean self-rating score with respect to a particular resident).

GAIT evaluations were also carried out on volunteers in the self-control and recreation groups. Therefore, experimental residents were asked to evaluate two different groups of volunteers since they participated in two separate programs.

Institutional Measures

Residents were monitored on a number of institutional variables throughout the program. Any disciplinary incident involving a formal complaint (charge) was monitored as Frequency of Charges during three, two month periods; pre-, during, and posttreatment. These data were also scored for Severity which was operationalized by the disposition of the levied sentence. Seven degrees of sentence were used and they ranged from a warning to a loss of five days statutory remission.

Information was collected from residents' financial accounts during the three phases of the program. In particular, their use of weekly allowance in the institution's canteen was investigated. Weekly canteen spending was monitored for the pre-, during, and posttreatment phases. Scales were created to record Amount Spent, Weekly Balance, and the Spent-Received Ratio. Mean scores during each of the three phases were calculated.

Data were also collected through the institution's mail censoring system during the treatment phase. All residents were told upon admission to the correctional centre that any correspondence must go through institutional channels and that all mail is screened for a variety of security precautions. Institution Staff responsible for such screening were trained to classify letters according to the Letter Record Coding System (Appendix E). Planning behavior was scored for the Process involved (Seeking Information, Seeking Advice, Making an Application, and Making a Decision) for Content (Employment, Education, Parole/Probation, Residence, Nonrehabilitative and Other) and for Correspondent (Relative, Male Friend, Female Friend, and Business Acquaintance). This information was available only to the research team and not accessible to institutional staff or used in any decisions concerning the inmate. On the other hand, actual letters were not available to those solely involved in the research program. Censors were blind to the experimental condition of subjects.

Two institutional measures were administered in a pre-post fashion. Upon completion of orientation and testing, which took not less than one and a half hours, resident subjects were given a Cigarette Interest Coupon (Roberts

& Erikson, 1968). The Coupon was used to obtain a behavioral measure of delayed gratification preference. Residents were told that it was worth one commercial cigarette immediately and increased in value by increments of one per day. The Coupon reached full maturity in 19 days at which time it was redeemable for a package of 20 cigarettes. Coupons were signed and dated upon issue and were redeemable in the security office at all times.

One week before the treatment programs began, officers and instructors were asked to fill out questionnaires pertaining to the residents' behavior. The questionnaires include three scales: Behavior Towards Peers, Staff, and Others (Daigle & Andrews, 1974). Two officers and one instructor were asked to respond on each resident. Staff members were told that their assessments were for research purposes only and would not be used by the institution.

Procedure

Community Groups: Four groups of residents participated in a series of weekly discussion groups. The sessions lasted for one hour and a half followed by a half-hour coffee break and were held on eight consecutive Monday evenings. Four randomly assigned female leaders were trained to guide the discussion in accordance with their weekly outlines. The program focused on concepts such as responsibility and the social implications of one's own behavior in an attempt to foster respect and concern for law and social order. The eight weekly topics, derived from Andrews, Brown, and Wormith (1974) were as follows:

1. Introduction and Overview.
2. Freedom, Control, and the Individual.
3. Rules, Regulations, and Responsibility.
4. The Law as a System of Rules.
5. Responsibility Versus Rationalization for Law Violation.
6. Responsibility and Interpersonal Styles; conscience.
7. Goal Setting, Planning and the Individual; family school, and employment.
8. Freedom of Choice and Realization of Goals.

A detailed description of the Community Group Discussion Guide and samples of discussion content are presented in Appendix A.

Volunteer Training: The first experimental factor examined the importance of information and rationale to volunteers' effective performance in a structured group counselling program. Each discussion group had a coleader whose task it was to assist the leader with the conversation. Three of the four coleaders were male clinical graduate students. The fourth was a male senior undergraduate student about to enter a graduate program in Criminology. Coleaders were randomly assigned to the four discussion groups. Two coleaders (Groups 1 and 2) were trained in evaluation of prosocial statements and were instructed to provide verbal reinforcement when such statements were emitted by a resident if not already done so by another group member. Two coleaders (Group 3 and 4) were instructed simply to be open, warm, and accepting. All coleaders were given readings which provided a rationale for their specific role in the group (e.g. Buehler, Patterson and Furniss, 1966, vs Truax and Carkhuff, 1967). After four sessions information concerning

their role and value was delivered to volunteer subjects in Groups 1 and 2. The theoretical rationale for their involvement and supportive empirical data were presented to them (Appendix B). They were asked not to discuss this information with volunteers in other groups.

Self-Control: The second experimental factor concerned a behavioral self-control program. Operating concurrently with the first program, residents returned on eight consecutive Thursday evenings for their second meeting of the week, this time with a different group of volunteers. Here, they participated in either a self-control program (Groups 1 and 4) or a recreational activity (Groups 2 and 3). The self-control program followed an academic course curriculum of behavioral analysis and self-management. The major focus was on teaching and training self-regulation techniques with an emphasis on simple examples, laboratory work, and out-of-class assignments. Each session included a brief talk or lecture, a discussion, an in-class problem done in small groups, and usually some kind of home assignment. A Ph.D. student, the author, was the leader in both groups. The program was developed by the author and included the following eight weekly topics:

1. The Scientific Method and Applications to Human Behavior.
2. Observational Techniques.
3. Self-observation and Self-control.
4. Operant Conditioning; changing your own behavior with self-reward systems.
5. Stimulus Control; changing your own behavior by the use of cues.
6. Classical Conditioning; changing your own behavior with relaxation techniques.
7. Generalization and Coping with problems; techniques.
8. Case Studies and Summary.

A detailed description of the Self-control Group curriculum and examples of data collected are presented in Appendix D.

Volunteer subjects were given a number of articles on behavioral analysis and self-control during orientation and in the first four weeks of the program (e.g. Bishop, 1973; Mahoney & Thoresen, 1974; Thoresen & Mahoney, 1974). The role of volunteer subjects was emphasized and their enthusiasm was solicited. They were requested to function as "experimenters" in the group "labs". As discussants they were encouraged to describe the psychological principles as laymen, in lay terms. They also participated as models by doing the exercises and relating the derived benefit from their own experience. Volunteers were encouraged to reinforce participation in the program. Prior to each session the leader met with the volunteers for a half-hour to describe the weekly project to them and discuss progress.

Recreation: The Recreation program was included as a control for the additional volunteer exposure which residents in the self-control program received. It was similar to that carried out by Andrews, Wormith, Kennedy, and Daigle-Zinn, (in press). Residents and volunteers participated in various games such as Cribbage, Hearts, Monopoly, and Clue. The leaders of each Recreation Group were male senior undergraduate students with previous experience in corrections. The leaders' role was likened to that of a coordinator at a social gathering, organizing activities and encouraging social interaction. These groups met simultaneously with the Self-control Group on eight consecutive Thursday evenings. This portion of the meetings lasted for $1\frac{1}{2}$ hours and was followed by a half-hour coffee break. Because the Self-control program included self-reinforcement with "goodies" provided by the institution (see Appendix D), candies and cigarettes were distributed noncontingently to participants of the recreation programs after the corresponding sessions.

Posttest and Debriefing

One-to-three weeks after completion of the eight week programs all subjects were given the test battery for a second time. The pre- and posttest batteries were identical with two exceptions. Two different versions, or parallel forms, of the Choice Lists (C and D or A and B) and the Extension Series of the Porteus Maze, were used during posttesting. One week following program completion, staff members were asked again to fill out behavior ratings on resident subjects. Two officers and one instructor were requested to rate each subject. Following their participation in the research, all control subjects were given the opportunity to participate in an additional Community Group as a service to the institution.

Psychometric Objectives.

Little is known about many of the dependent measures. They are either novel, inadequately described, or of unknown relationship to other theoretically related variables. In attempt to render greater understanding to the program evaluation, a psychometric analysis is designed to provide information on the following issues of reliability and validity. Conflicting studies exist on scale correlations of the Porteus Maze. There are no reliabilities on Personal Space. Little is known about environmental influences on the Cold Pressor. Item analysis has not been performed on the Choice Lists. The institutional measures (Charges, Canteen Spending, and Letters) are idiosyncratic to the setting and require empirical support of their face validity. The process variables (Discussion Group Observations and GAIT) differ extensively from their predecessors and therefore merit further investigation. Lastly, validity data on the existence of two independent target dimensions (social-interpersonal orientation and self-control) are anticipated.

Program Evaluation Hypotheses

It is hypothesized that offenders differ from student volunteer non-offenders on a wide range of attitudinal, personality, and behavioral variables. Specifically, variables were chosen which pertain to societal attitudes and personality characteristics involving social conscience and control.

It is hypothesized that the program will differentially affect residents and volunteers. There will be a treatment-by-client interaction on scales related to criminal behavior and the legal structure. Participating residents will become more prosocial in their attitudinal and personality traits relative to their no treatment counterparts while volunteers will become less prosocial in their attitudes. There are two corollary hypotheses to this condition. The first is that institutionalization has a negative effect over time. According to prisonization theory, residents will show an overall antisocial development over time when compared to the nonincarcerated volunteers. Collapsing across the two treatment conditions, there will be main effects on the factor Client for test battery change scores. Secondly, the content of the volunteer program activities should have an overall positive effect. Collapsing across Clients, there will be main effects on the factor Treatment.

It is hypothesized that training volunteers in the Community Group discussions will effect greater resident prosocial change. There will be a training effect among the experimental residents. The training is based on a differential association and reinforcement theory. It assumes that information training improves the effectiveness of volunteers through the feedback received by residents during their discussions and that this more appropriate feedback, or differential reinforcement of pro- and antisocial statements, will effect greater prosocial attitude change.

This hypothesis and its two assumptions are investigated individually. First, there will be main effects on the factor Training in the Training-by-Self-Control analyses of experimental residents' outcome

variables. Second, there will be differences in the quality of feedback which residents receive in the trained group when compared to the untrained group. Third, change on the test battery will be related to the relative amounts of appropriate and inappropriate feedback.

It is hypothesized that a self-control program will increase self-reported and behavioral measures of self-control and decrease measures of impulsivity for residents and volunteers. In addition, greater participation will result in greater increases in self-control.

It is hypothesized that participating in discussion groups with trained volunteers, and learning self-control techniques are both required to improve residents' institutional behavior and control. There will be a treatment (Community Group-by-Self-Control) interaction on the behavioral and naturalistic variables.

Statistical Analysis

Correlation techniques are the principal means of investigating the psychometric attributes of the dependent variables. Reliability coefficients include test-retest, interrater, part-whole and inter-item correlations. Concurrent validities are obtained on prescores using a multi-method approach (Campbell & Fiske, 1959) which includes paper-and-pencil self-reports, behavioral tests, and naturalistic observations as data sources. When correlations for residents differ from those of volunteers, the significance of the difference between correlations for independent samples is reported (Kirk, 1968). Resident-volunteer differences are assessed on the pretest battery using univariate comparisons

(unadjusted and covaried for age and sex) and discriminant function analysis. Orthogonal factor analyses are also employed to compare the resident and volunteer samples and to provide empirical configurations of test battery variables.

Experimental and control subjects are compared on all dependent variable prescores using t-tests to assess the randomness of subject allocation. Pooled and separate variance estimates are used for homogeneous and heterogeneous samples (Welch, 1949).

Analyses of variance and covariance on difference and adjusted post-scores are the principal means of investigating program effects on test battery and institutional measures. Both modes of analysis are used to increase confidence in any treatment effects by showing convergent results (Kenny, 1975). The comparisons are done separately for residents and volunteers. Two-way analyses of variance are used to assess the effect of treatment regime or program combination (trained versus untrained discussion group-by-self-control versus recreation) on experimental residents. All reported interactions are also analyzed for significance of simple effects (Winer, 1962). Experimental volunteers are compared by treating the five possible volunteer assignments as five levels of a one-way analysis of variance. All subjects are then collapsed across treatment groups to perform a two-way analysis of variance (experimental versus control-by-residents versus volunteers). Discriminant function analyses are used to make multivariate comparisons. Simple correlations are used to investigate the attendance effects within treatment cells.

Frequency counts, t-tests, analyses of variance, and multiple

regressions are used to examine various process measures collected on experimental subjects. Rates of positive and negative statements are presented by client and session.

Chi-square analyses are preformed to examine the possibility of differential reinforcement of pro- and antisocial statements overall, in the trained and untrained groups, and in the first and last half of the program. T-tests and analyses of covariance are used to examine changes in the appropriateness of feedback. Frequencies of positive statements and appropriate feedback for the trained and control coleaders are also reported.

The ability of prescore test data to predict attendance is determined by calculating multiple regression equations. The number of variables selected in the multiple regression equations is determined by the potential subject-to-variable ratio (Kerlinger & Pedhazer, 1973). In order to maintain the stability of the equation, but permit as many scales as possible, a 7:1 subject-to-variable ratio is the selected 'cut-off' for the number of variables used. All multiple R's are corrected for inadequate N (McNemar, 1962)

Zero-order and partial (controlling for attendance) correlations are calculated between frequency of positive/negative statements and change on the test battery scales to examine the relationship between verbal behavior and demonstrable change. The amount of inter-client integration is examined by calculating a three-way analysis of variance (client-by-group-by-weeks) on seating scores and trends are examined over sessions.

Differences in volunteer ratings (GAIT) are compared by using multiple regression analyses. Volunteer self-ratings are regressed

separately on the dummy variable Community Group Training (training versus no training) and Self-control (self-control versus recreation). Zero-order and multiple correlations are also presented. These analyses are repeated for the resident ratings of the volunteers.

CHAPTER III

RESULTS AND INTERPRETATION

The results of the present study are presented in two major sections. The first contains a psychometric analysis of all dependent variables investigated. Specifically, test characteristics (reliabilities and validities) and support for a two-factor theory of delinquency (factor analysis and resident-volunteer differences) are examined. The second section concerns the effects of treatment manipulation. Using program evaluation techniques, an experimental investigation of the two-factor approach is carried out. Treatment outcome (change on the attitude/personality and behavioral measures), generalization to the naturalistic setting (change on the institutional measures), and aspects of treatment process (manipulation checks and subject evaluations) are examined separately. Due to the magnitude of results, a statistical summary is presented in Appendix G.

A. PSYCHOMETRIC ANALYSIS

1. Reliability

Psychometric information on many of the present variables is incomplete. This is the case for various reasons. Some measures are modifications of previously used variables (e.g. the process measures) or are inadequately described in their previous use (e.g. all of the behavioral measures). Others were unique to this study (e.g. the letter record) or particular to the research setting (e.g. frequency of disciplinary charges). Only the attitude and personality scales have been investigated appropriately and they were described in a previous section. Results pertaining to the reliability and validity of the remaining

measures are presented below. Frequency distributions and other descriptive statistics are presented in Appendix J.

Behavior Test Battery

Porteus Maze Test. There is still some skepticism over the reliability of the Porteus Maze as well as conflict over the relationship between TQ and Q scores. Two scorers were trained according to the manual's scoring system (Porteus, 1965) on both the Vineland Revision and the Extension Series. The latter, according to Porteus, being more difficult, is designed to control for practice effects when the test is given in a pre-post fashion. After reviewing the criteria for scoring, comparisons were made on ten trial protocols and the correlations computed for the quantitative score, the qualitative score and the eight qualitative component scores. This was followed by further training, corroboration and a second trial comparison. Subjects' mazes were then scored in a blind fashion by the scorers. Thirty Vineland Revision and thirty Extension Series protocols were randomly selected for rescoring by the second scorer. Fifteen of each test were residents' and fifteen were volunteers'. Again, correlation coefficients were calculated to obtain final interrater reliability measures on the data used in the present study. These coefficients compare well with previous studies (Docter & Winder, 1954; Fooks & Thomas, 1957; Sperr, 1973) which cited inter-scorer reliabilities of .98 to .99. Although Porteus (1965) himself was cautious of such high coefficients, calling them "almost incredibly high . . . considering the rather subjective nature of 'Wavy Lines'(WL)," they are not at all unreasonable. This is so because the variance of Q scores, relative to WL scores, is considerable (S.D. = 20.32 vs 1.73 for residents' and 16.49 vs 2.18 for volunteers' prescores). The inter rater reliability coefficients for all scales obtained in the current study are presented in Table 2.

TABLE 2

Interrater Reliability of Porteus Maze Scores.

Pearson r's for training session

Training	N*	Quality Subscales									YR7
		$\frac{TQ}{Yrs}$	$\frac{Q}{Qual.}$	FT	LT	CC	CL	LP	WL	WD	
1	10	.875	.890	.806	.889	.940	.974	.985	.826	.090	
2	10	1.000	.974	.836	.745	.997	.978	.974	.782	.452	

* $r = .63, p < .05$; $r = .76, p < .01$; $r = .87, p < .001$

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Pearson r's for test scores

Series	N*	Quality Subscales									
		$\frac{TQ}{Yrs}$	$\frac{Q}{Qual.}$	FT	LT	CC	CL	LP	WL	WD	YR7
Vineland	30	.993	.987	.909	.858	.962	.97 ^a	.993	.717	.586	.938
Extension	30	.999	.973	.970	.436	.977	.971	.960	.619	.066	.873

* $r = .30$, $p < .05$; $r = .46$, $p < .01$, $r = .57$, $p < .001$

In addition, Vineland Revision interscale correlation matrices are presented in Table 3 for residents and volunteers. The eight component quality subscales combine in a predetermined weighting scheme (Porteus, 1965) to produce the Quality Score. The Years Score is a function of the number of attempts required to successfully complete the series of eight mazes and often is used to obtain a Test Quotient (TQ). The present investigation supports those studies (e.g. Roberts, Erikson, Riddle and Bacon, 1974; Sperr, 1973) which indicated a negative relationship between TQ and Q scores. Coefficients of $-.50$ and $-.43$ were obtained for residents and volunteers respectively. The mean inter-scale correlation for the eight quality subscales was only $.098$ for residents and $.139$ for the volunteers, although the mean part-whole correlation for Q scores was $.399$ and $.466$ for residents and volunteers respectively.

Personal Space. A standard, reliable method of measuring Personal Space has not been agreed upon. During pre- and posttesting the test-retest reliabilities for the two measures taken from the Front, Left, Behind and Right positions were calculated for residents and for volunteers. The mean overall Test 1-Test 2 correlation for residents and volunteers in pre and post conditions for all four directions was $.886$. A breakdown by subject, testing, and direction is presented in Table 4.

Proxemic distances to the Left and Right were consistently the most highly correlated of the four directions while the Front and Behind directions were the least correlated. This was the case for both residents and volunteers in the pre- and posttesting (Table 5) conditions.

The two compound scores, Total and Area, were also compared. It was found that the Total Score, the algebraic sum of the four component mean directional scores, correlated consistently higher with the component scores (Table 6) than did the Area score, $(\bar{X} \text{ Front} + \bar{X} \text{ Behind}) \cdot (\bar{X} \text{ Left} + \bar{X} \text{ Right})/2$.

TABLE 3

A Correlation Matrix of the

Porteus Maze Component and Composite Scales

for Residents' and Volunteers' Prescores.

Residents (N = 50)*										
	Yr.	Q1	FT	LT	CC	CL	LP	WL	WD	Yr7
Year		-50	-79	-56	-08	-10	-43	-07	08	-10
Quality	-43		27	58	44	62	79	33	-07	23
First Third	-76	42		26	-07	-06	23	16	-20	-09
Last Third	-70	32	35		27	38	40	18	01	22
Cut Corner	-62	62	52	34		32	11	28	-04	-05
Cross Line	-15	57	-01	14	34		16	23	03	-02
Lift Pencil	-15	71	26	18	13	19		-05	-09	23
Wavy Line	-03	42	00	03	23	21	04		-06	-03
Wrong Direction	-03	42	00	-02	04	06	13	03		07
Year Seven	01	25	03	-04	-02	09	23	24	20	

*r = .28, $p < .05$; r = .36, $p < .01$; r = .45, $p < .001$ ' r = .25, $p < .05$; r = .32, $p < .01$; r = .41, $p < .001$

Volunteers (N = 63)

TABLE 4

Immediate Test-Retest Reliability of the Personal
Space Measures for Residents and Volunteers
in Four Directions.

<u>measure 1 - measure 2</u>	<u>Residents</u>		<u>Volunteers</u>		
	<u>prescores</u>	<u>postscore</u>	<u>prescore</u>	<u>postscore</u>	
Front 1 with Front 2	95	96	75	93	
Left 1 with Left 2	94	96	82	92	
Behind 1 with Behind 2	93	95	68	65	
Right 1 with Right 2	97	98	70	96	
N	(49)	(44)*	(63)'	(60)	$\bar{r} = .886$

* $r = .39$, $p < .01$; $r = .48$, $p < .001$

' $r = .33$, $p < .01$, $r = .41$, $p < .001$

TABLE 5

Inter-direction Correlations of the Mean
 Personal Space Measures for Residents' and Volunteers'
 Pre and Post Scores

Pre-test

	F-L	F-B	F-R	L-B	L-R	B-R	N
Residents	.82	.67	.83	.80	.97	.81	49
Volunteers	.69	.47	.70	.64	.95	.62	63

Post-test

Residents	.95	.74	.94	.82	.98	.83	44
Volunteers	.77	.48	.77	.60	.93	.54	60

$$\bar{X} = .76$$

Cold Pressor Test. An investigation of the Cold Pressor Test was undertaken to examine the influence of environmental factors and subjects' spontaneous verbalizations.

Correlations of a number of Cold Pressor variables were calculated to determine the relationship between test conditions and test outcome. Air Temperature tended to be negatively related to Immersion Time. Coefficients of $-.36$ ($N = 50$) and $.06$ ($N = 63$) were found in the pre-condition and $-.15$ ($N = 44$) and $-.35$ ($N = 60$) during posttesting for Residents and Volunteers, respectively.

There were no consistent relations between Immersion time and Water Temperature upon immersion or upon withdrawal but moderate relationships were found with water temperature change during immersion. Coefficients of $.17$ and $.36$ were found in the pretest condition and $.29$ and $.27$ during posttesting for residents and volunteers, respectively.

Water temperature ($2^{\circ} \text{C} \pm 2$), although having little variability, was highly correlated for Start to Finish measurements. Coefficients of $.66$ and $.91$ were found in the pre-condition and then $.86$ and $.83$ in the post-condition for residents and volunteers, respectively.

In addition, the longer subjects left their hands immersed in ice water, the more spontaneous verbalizations they emitted. Immersion time and number of words Spoken during immersion correlated $.59$ for residents and $.54$ for volunteers during pretesting and $.54$ for residents and $.52$ for volunteers during posttesting (Table 7).

Delayed Gratification. The Choice Lists were investigated for their reliability and internal consistency. Subjects were administered either

TABLE 6

Correlation Matrices on
 Personal Space Variables
 for Residents' and Volunteers'
 Prescores

<u>Prescores</u>	Residents (N = 49)*					
	$\bar{X}F$	$\bar{X}L$	$\bar{X}B$	$\bar{X}R$	Total	Area
$\bar{X}$ Front		82	67	83	89	84
$\bar{X}$ Left	69		80	97	96	91
$\bar{X}$ Behind	47	64		80	88	80
$\bar{X}$ Right	70	95	62		97	95
Total	82	95	76	94		94
Area	58	71	56	70	73	

Volunteers (N = 63)'

* $r = .46, p < .001$

' $r = .41, p < .001$

TABLE 7

A Correlation Matrix on the
Cold Pressor Variables for Residents'
and Volunteers' Prescores

Residents (N = 50) *

	Time	Air	Water (S)	Water (F)	Water (C)	Words
Time		-36	.06	.09	17	59
Air Temperature	06		17	08	-11	-17
Water Temperature (Start)	26	-13		66	-41	01
Water Temperature (Finish)	41	-14	91		41	17
Water Change	36	00	-24	17		20
Words	54	-13	10	25	36	

Volunteers (N = 63) '

$r = .28, \underline{p} < .05$; $r = .36, \underline{p} < .01$; $r = .45, \underline{p} < .001$
 $r = .25, \underline{p} < .05$; $r = .33, \underline{p} < .01$; $r = .40, \underline{p} < .001$

Forms A and B or C and D as part of the pretest battery. Item analyses were performed on data from twenty-eight residents who had been administered Forms A and B during pretesting. The analyses were carried out with all twenty-eight items, the eight well-defined material items found in the two lists, and the fourteen monetary items. Well-defined items were ones which had been described numerically (1 vs 3) instead of relatively (small vs large). The distribution of scores appears to have a "U-shaped" function. This is particularly evident when fewer items are used.

Delayed responses were scored "1" on each item and the resulting frequency distributions are presented in Table 8. In addition, the point-biserial, part-whole correlation is presented for each item in relation to the total score as calculated when using all items, the eight well-defined material items, and the fourteen monetary items. An inter-correlation matrix of the twenty-eight items is presented in Table 9. The mean inter-item tetrachoric correlation, the average 2×2 correlation from this matrix, was .53. In the eight and fourteen item analyses, the coefficients were .55 and .68, respectively. Internal consistency was measured using the Kuder-Richardson Formula 8 and yielded coefficients of .97, .93, and .97, respectively.

Each subject completed two Choice Lists. The mean Choice List score was obtained by calculating the average score on the two Lists. Therefore, the inter-scale correlation, in effect, represents a split-half reliability coefficient. This correlation may be corrected for the actual test length (28 items instead of 14) using the Spearman-Brown prophecy formula. These data, as well as part-whole coefficients, are presented in Table 10.

TABLE 8

A Frequency Distribution and Point Biserial Correlations
of Test Items on Choice Lists A and B (N = 28)

<u>Sum of Choice Lists</u> <u>A and B (28 Items)</u>			<u>Well Defined</u> <u>material Items (8 Items)</u>		<u>Monetary measures</u> <u>only (14 Items)</u>	
<u>Score/Item</u>	<u>Frequency</u>	<u>Point</u> <u>Biserial</u>	<u>Frequency</u>	<u>Point</u> <u>Biserial</u>	<u>Frequency</u>	<u>Point</u> <u>Biserial</u>
0	4		6		6	
1		.63	1	.66		.68
2		.61	2	.82		.83
3		.57	2	.70	1	.84
4		.83	1	.88		.90
5	3	.70	4	.67	1	.83
6		.83	2	.84	2	.79
7		.59	4	.78	2	.87
8		.90	6	.81	1	.88
9		.61				.86
10	1	.81				.85
11		.61				.87
12	1	.75			2	.79
13		.79			3	.86
14		.86			10	.85
15	2	.86				
16		.67				
17	1	.81				
18		.62				
19		.83				
20	2	.77				
21	2	.83				
22		.69				
23		.74				
24	2	.78				
25	1	.85				
26	4	.56				
27	3	.84				
28	2	.83				

$r = .49, p < .01; r = .60, p < .001$

TABLE 9
An Inter-Item Correlation Matrix of Items
from Choice Lists A and B

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1																												
2	56																											
3	43	43																										
4	56	71	52																									
5	43	X	X	60																								
6	49	64	57	92	54																							
7	X	X	50	60	41	49																						
8	56	56	52	84	60	92	43																					
9	49	46	X	65	43	60	X	65																				
10	49	64	39	60	54	51	49	60	44																			
11	X	X	57	44	54	51	66	60	X	X																		
12	50	50	39	65	50	74	X	80	37	59	43																	
13	49	X	X	62	80	54	55	62	55	70	39	57																
14	59	57	44	68	47	75	X	85	55	75	41	68	62															
15	49	49	X	77	51	70	55	77	55	70	39	57	70	79														
16	X	X	X	47	66	39	55	47	40	54	39	X	70	46	70													
17	41	56	52	53	45	60	X	69	X	76	44	65	47	68	62	47												
18	40	40	X	45	X	40	X	45	49	55	X	X	50	51	65	50	45											
19	X	49	X	62	51	54	55	62	40	86	39	57	70	62	85	70	77	65										
20	56	41	52	53	75	60	X	69	49	60	44	65	77	68	47	47	69	X	47									
21	58	58	X	75	43	69	41	75	43	69	38	64	51	63	80	51	75	66	80	45								
22	63	X	47	62	X	70	38	77	40	39	54	72	40	62	55	X	47	X	40	47	66							
23	50	X	X	50	X	59	X	65	X	59	X	71	57	68	72	42	65	60	72	50	79	57						
24	X	X	X	47	51	54	38	62	40	54	39	42	70	62	70	70	62	65	70	62	66	55	72					
25	49	49	57	60	54	67	X	76	44	67	51	59	54	75	70	54	92	40	70	76	69	54	59	70				
26	X	X	52	X	X	X	43	38	X	44	44	X	47	52	47	62	53	X	47	53	X	X	X	62	60			
27	41	41	44	52	47	58	X	68	39	75	41	52	62	82	79	62	85	51	79	68	63	46	68	79	92	68		
28	41	41	52	69	75	76	43	84	49	60	76	65	62	68	62	47	69	45	62	69	60	62	50	62	76	38	68	

$r = x$ $p > .10$
 $r = .31$ $p < .10$
 $r = .37$ $p < .05$
 $r = .49$ $p < .01$
 $r = .62$ $p < .001$ (N = 28)
 $\bar{X}$ Correlation = .53

TABLE 10

A Correlation Matrix of Uncorrected (and Corrected)
Reliability Coefficients on
the Four Choice Lists for Residents' and
Volunteers' Prescores.

Residents					
	A	B	C	D	$\bar{X}$ (N)
A		85(92)	X	X	96 28 *
B	95(97)		X	X	97 28
C	X	X		95(97)	99 20 **
D	X	X	77(81)		99 20
$\bar{X}$	99	98	94	94	
(N)	15	15	12	12	

Volunteers

* $r = .60$, $p < .001$

** $r = .68$, $p < .001$

' $r = .76$, $p < .001$

'' $r = .82$, $p < .001$

Institutional Measures

Disciplinary Offenses. The data collection of the institutional variables was straight forward and primarily archival. All discipline charges in the institution are routinely reported in a central institutional file. The number of charges laid on each resident was recorded separately for the pre-, during, and posttreatment phases. In addition each charge was scored for the severity of the disposition which resulted. This was based on a seven-point scale which was created by rank ordering the seven degrees of punishment employed. They ranged from Warning (1) to Loss of Five Days Earned Remission Time (7). The correlation between residents' Frequency and Severity of Charge was .63 ($N = 50$).

Canteen Spending. In these analyses, two weeks from each of the three phases were sampled for Allowance Received and Spent. These were one month prior to the program and immediately before the program began for the pre-condition, midway and immediately upon program completion for the during condition and one and two months following program completion for the post-condition. Absolute amount Spent, the Spent-Received Ratio, and Account Balance after spending were all obtained and averaged for each phase. These data were collected unobtrusively from the institution's record of each resident's financial account.

Of particular interest here are the moderate correlations that Mean Amount Received displayed with Mean Amount Spent (.55) and Mean Balance (.30) but not with the Mean Spent-Received Ratio (.03). Mean Spending on the other hand did not correlate with Mean Balance (-.01) but did with the Mean Spent-Received Ratio (.82). This suggests that spending is largely a function of the residents' canteen allotment which varied from \$1.25 to \$3.80 ($X = \$2.49$, $SD = .61$) per week in the pre condition. In addition, Amount Received increased as a function

of time in the institution (during $\bar{X} = \$2.82$, $SD = .30$; post $\bar{X} = \$3.79$, $SD = 1.05$) because eligibility to obtain an increase in one's 'Incentive Allowance' occurs only at fixed intervals of time. It therefore appears that the Mean Spent-Received Ratio is a much better indication of saving behavior since it shows no relation to Mean Amount Received in spite of its high correlation with Mean Amount Spent (Table 11).

Letter Record. Residents are routinely informed upon admission that all written correspondence must go through the institution, that such correspondence is routinely screened by staff for security measures, and that a record is kept of all incoming and outgoing mail. The Letter Record was an attempt to utilize this procedure in the institution and gain an unobtrusive measure of Residents' behavior. Reliabilities and interscale relationships are presented below.

Permission was obtained from the administration to have the staff, who were responsible for the institution's "Mail Book", categorize letters on a number of dimensions. Staff members were trained to use a Daily Letter Record in conjunction with the routine screening of mail. The Letter Record Code Description (Appendix E) was used with a variety of examples to clarify the classification system. Officers were briefed as to the purpose of the Letter Record but were "blind" with respect to the allocation of residents to treatment condition. In fact they were asked to monitor all residents in the institution and no reference was made to those formally taking part in the research. After scoring a day's letters, the institution and research records were separated. The latter were retained for members of the research team and were unavailable to the institution. With three exceptions, those involved solely in the research never saw the residents' actual letters. The exceptions occurred on three randomly

TABLE 11

A Correlation Matrix of
Institutional Canteen Scales
for Residents' Mean Prescores (N = 47)

	$\bar{X}$ <u>Rec</u>	$\bar{X}$ <u>Spent</u>	$\bar{X}$ <u>Bal.</u>	$\bar{X}$ <u>S/R</u>
Mean Amount Received				
Mean Amount Spent	55			
Mean Balance	30	-.01		
Mean Spent/Received	03	82	-18	

$r = .29, p < .05; r = .37, p < .01; r = .47, p < .001$

selected days when institution staff, who were also assisting with the project, rated letters in order to obtain a reliability check.

Letters sent and received were scored in the same fashion. There were four categories of Correspondent; Relative, Male Friend, Female Friend and Business/Official Acquaintance. All planning behavior was scored for the Process (Nature) involved. Processes included Seeking Information, Seeking Advice, Making Application, and Making Decision. Content of plans, or the area in which plans were being made, included Parole/Probation, Education, Employment, Residence and Other. In addition, Total Letters, Total Plans, the frequency of letters showing No Plans and those indicating 'Non-Rehabilitative' plans or intentions (drug use, antisocial, or illegal activities) were also scored. Frequencies were summed separately for Letters Received and Sent during the two-month program period.

An interrater reliability check sampled 7.4% of the letters received. Reliability of the classification system was generally good, particularly for the total or more global categories. Raters agreed on the Correspondent classification on 91% of the ratings and on Total Plans, Any versus No Plans, 82% of the time. The Nature and Content Subscales, requiring finer discriminations, showed somewhat less agreement (73%). This is typically the case as classification becomes finer and more specific.

The Letter Record was not done daily but as often as possible by the institution's custodial staff. Routine functions precluded ratings on 28% of the days. In two months, of the 44 days sampled, an average of 2.90 (S.D. = 4.50) letters were sent. Subject variability was considerable, ranging from 0 to 22. Mean frequency of Plans was .58 (S.D. = .91, range 0 to 3). Although, almost the same number of Letters

was received, 2.96 (S.D. = 3.31, range 0 to 15), they contained an average of .84 (S.D. = 1.43, range 0 to 7) indications that some planning activity had occurred. Residents may have initiated these plans through other means such as phone messages or visits.

Correlations on the various Letter Record subscales were calculated. Part-whole correlations on the component subscales are reported. These coefficients largely reflect the frequency of letters allocated to the different subscales. For example, there was considerably more correspondence with Female Friends ($\bar{X} = 1.5$) than with a Business Acquaintance ($\bar{X} = .08$) as is suggested from the part-whole correlations (Table 12).

The Process of plans being made varied considerably and was often related to the Content of the plan. This is seen in the process-content matrix for Letters Sent (Table 13). For example, the frequency of plans concerning Education or Employment correlated highly with Making Decisions, while those concerning Parole or Probation were highly related to Seeking Information, and those about Residence, almost exclusively with Seeking Advice.

The number of Plans in the different Process and Content categories when correlated with the number of letters to and from the different correspondents reflected further interesting relationships (Table 14). For example, on Letters Sent the number of times advice was sought was related to frequency of Letters written to a Relative. Letters with No Plans were highly related to letters to Female Friends. There were also tendencies for Plans concerning Education and Parole or Probation to be written to Business or Official offices, Employment to a Male Friend; Residence to a Relative, and Non-rehabilitative, or antisocial intentions, to Male and Female Friends. Letters received by Residents reflected similar patterns.

TABLE 12

Part-Whole Correlations for
Residents' Letter Record (N = 50)

<u>Letters</u> <u>Sent/Received</u>	<u>Correspondent Subscales</u>			
<u>Total Letters</u>	<u>Relative</u>	<u>Male Friend</u>	<u>Female Friend</u>	<u>Acquaintance/Business</u>
Sent	.68	.42	.94	-.06
Received	.71	.55	.78	.14

Nature of Plans Subscales

<u>Number of</u> <u>Plans in</u>	<u>Seek Info.</u>	<u>Seek Advice</u>	<u>Make Application</u>	<u>Make Decision</u>
Letters Sent	.66	.07	.07	.86
Letters Received	.48	.17	.78	.89

Content of Plans Subscales

<u>Number of</u> <u>Plans in</u>	<u>Education</u>	<u>Employment</u>	<u>Parole/Probation</u>	<u>Residence</u>	<u>Other</u>
Letters Sent	.34	.49	.33	.07	.75
Letters Received	.25	.64	.13	.78	.94

$r = .28, p < .05$; $r = .36, p < .01$; $r = .45, p < .001$

TABLE 13

Intercorrelation Matrix for
Nature and Content of Plans for
Letter Sent (N = 50)

<u>Nature of</u>	<u>Education</u>	<u>Employment</u>	<u>Parole/Probation</u>	<u>Residence</u>	<u>Other</u>	<u>Total</u>	<u>Non-Rehab.</u>
Plans (SI) Seek Information	.15	.17	.59	-.06	.41	.54	.14
(SA) Seek Advice	-.03	-.05	-.03	.99	-.08	.07	.13
(MA) Make Application	-.03	-.05	-.03	-.02	.14	.07	-.06
<u>(MD) Make Decision</u>	.34	.60	.14	-.08	.60	.75	.02
(TP) Total Positive	.32	.53	.38	.07	.67	.86	.10
(NP) No Plans	.19	.05	.02	.15	.03	.14	.69

$r = .28, p < .05; r = .36, p < .01; r = .45, p < .001$

TABLE 14

Intercorrelation Matrix for
Nature and Content of Plans with
Correspondent (N = 50)

	<u>NATURE</u>						<u>CONTENT</u>					
	<u>SI</u>	<u>SA</u>	<u>MA</u>	<u>MD</u>	<u>TP</u>	<u>NP</u>	<u>Ed.</u>	<u>Emp.</u>	<u>Par/Pro.</u>	<u>Res.</u>	<u>Other</u>	<u>Non-Rehab.</u>
<u>Sent to</u>												
Relative	06	54	00	17	24	64	26	17	04	54	14	30
Male Friend	02	12	-05	13	12	40	-07	28	-09	12	02	65
Female Friend	01	-07	-02	04	02	94	22	05	11	-07	14	65
Business/Official	22	-04	-04	17	22	-10	32	-10	37	-04	-05	-02
<u>Received From</u>												
Relative	23	03	58	35	50	65	-07	24	-09	42	57	-11
Male Friend	04	-09	19	38	30	52	-09	35	-06	20	26	06
Female Friend	26	-03	35	49	48	73	10	29	-11	44	39	43
Business/Official	51	11	00	13	19	06	28	-07	90	-02	16	-07

$r = .28, p < .05; r = .36, p < .01; r = .45, p < .001$

The relationship between Letters Sent and Received was also examined. Generally, correlations on the different subscales were good. On twenty of these scales, eleven had coefficients of .47 to .63. As one would expect, the content and correspondent associated with Letters Sent was similar to that for Letters Received. This similarity or consistency (Table 15) provides additional reliability to the Letter Classification Scheme. The subscales which showed no relation between Letters Sent and Received (To/From Business, Seek Information, Seek Advice, Make Application, Content Parole, and Content Residence) were also the scales which were used less frequently in the Letter Classification Code. Over 20 scales Sent-Received scores differed on only 2 scales, make Application ($t(48) = -2.87, p < .01$) and Content Residence ($t(48) = -2.45, p < .02$; all p levels are two-tailed).

Staff Ratings. Institutional staff were asked to rate residents on a 59-item Behavior Rating Scale. Residents were rated on four-point items from "very much like him" to "not at all like him." The test was comprised of three subscales, Behavior toward Staff, Behavior toward Peers, and Behavior toward Others. Residents are assigned to a classroom or work setting by the institution and the instructor in each setting was responsible for rating those subjects in his jurisdiction. Officers were selected who were familiar with the residents. Interofficer reliabilities were obtained on 47 residents. Correlation coefficients of .57, .49, and .56 were found on scores for Behavior toward Staff, Peers, and Others, respectively. Since the Officer rating data were obtained by taking the average of two staff members' ratings, these correlations represent split-half reliabilities and may be corrected using the Spearman-Brown formula. The corrected coefficients were .73, .66, and .72. Correlations between Officers' and Instructors' ratings were lower (.32 to .50). These coefficients, with the interscale correlations (.72 to .88), are presented in the following section (Table 24).

TABLE 15
 Correlations Between Letters
 Sent and Received on the Letter
 Classification Subscales (N = 50)

Letters		
Letter Classification	Sent with Received	
Total Number	50	
Total Pages	53	
Mean Pages	57	
Correspondent: Relative	22	
Male	58	
Female	63	
Business	04	
Nature: Seek Information	-01	
Seek Advice	-03	
Make Application	-07	
Make Decision	54	
None	59	
Content: Education	48	
Employment	48	
Parole/Probation	01	
Residence	-02	
Other	47	$r = .28, p < .05$
Total Positive	37	$r = .36, p < .01$
Nonrehabilitative	18	$r = .45, p < .001$

Process Measures

Discussion Group Observations. These data were inspected for observer reliability and drift, intra- and interscale relationships, and temporal consistency.

All of the observers were graduate or senior undergraduate students fulfilling requirements in methodology or practicum courses. Videotapes of discussion groups from previous studies were used for training. Once a statement was scored for social quality it was also scored for feedback if any member of the group subsequently made a comment which reinforced or punished that statement. These subsequent statements were also treated as separate events and scored accordingly. Both scoring schemes were on a five-point scale. The Discussion Group Coding Guide, used for categorizing statements on the quality and feedback dimensions, is presented in Appendix C.

Observers rated the statements under "live" conditions and were responsible for coding the speaker of each statement. They were not blind to the origin of each statement and therefore knew if it was made by a resident or volunteer. They were blind to the experimental condition of each of the groups and were unaware of any manipulation or hypothesis.

In order to assess observer agreement once the program began, and to check for the possibility of inadvertent modifications in each rater's scoring scheme, all raters scored two, ten-minute segments of a previously videotaped Community Group. Each rater scored both segments midway through the program and then again upon its completion.

The mean percentage of statements rated identically on the two occasions for all five raters was 69.7%, while 93.7% of the ratings were within one category of agreement on the five-point rating scale. The two taped segments contained 21 and 25 statements available for rating. The test-retest agreement rates of the five observers are presented in Table 16.

TABLE 16

Observers Percentage Agreement Rates
Midway and upon Completion of the Program on Two
Video Taped Discussion Groups

	Rater 1,	Rater 2,	Rater 3,	Rater 4,	Rater 5,
Tape 1, perfect agreement	75	59	76	71	67
within 1	85	88	88	100	100
Tape 2, perfect agreement	67	52	67	85	78
within 1	100	90	86	100	100

Groups One, Two, and Three were carried out prior to the fourth group. In the first three groups, three raters each rated one of the three segments of each session. Observer scores were then totaled for each session. Two different raters, rated all three weekly segments for Group Four and the mean observers' scores were used. Therefore, the possibility of differences between groups being a function of the latter observers' ratings was investigated. Using the weighted, five-points, Quality Scoring System described previously, the mean quality of the statements in each of the ten-minute tapes was calculated according to the raters' classification of the statements. The averages of Raters One, Two, and Three were then compared to Raters Four and Five since, in actuality, the mean Quality Score ratings for each session for all four groups was calculated in this manner. The tapes had been picked at random and assurance was only made that the audio and visual qualities of the segments were satisfactory. The mean Quality rating of the average statement was .205 and .141 on Tape One and -.138 and -.179 on Tape Two, for Raters One, Two, and Three and Raters Four and Five, respectively. This suggests that the two combinations of raters were quite similar (certainly more so than the content of two randomly selected tapes).

In addition the variance of observers' ratings for each of the twenty-one statements on the first tape and twenty-five statements on the second tape was obtained. Although all five raters attempted to rate each statement on both occasions, the average number of ratings per statement was 9.6. The mean variance of the 46 statements rated seven to ten times ($\bar{x} = 9.6$) by five different observers on a five-point scale was .36 (.41 and .35 on the two separate tapes). This suggests that there was little observation or error (observer plus session) variance. Regrettably, statement variance of mean

quality ratings on the 46 statements was also small (.33).

When the five raters were grouped and the two ratings compared, there was no difference between the first and second rating ($F(1,37) = .03$, ns.). Observers' ratings of the two tapes collapsing across five observers and two ratings were also compared. The two tapes had mean statement ratings of .161 and -.160 which did approach significance ($F(1,37) = 3.28$, $p < .10$). These data suggest that, overall, the classification scoring system was not inadvertently altered over time and that it was sensitive enough to discriminate between two randomly selected conversations of the same Community Group. There was also a tendency for observers to differ ($F(4,37) = 2.25$, $p < .10$) but this was of no consequence since the groups were observed by two or three observers on all occasions and the appropriate observer combinations (One, Two and Three vs Four and Five) did not differ (.037 vs -.056, $t(45) = .79$, n.s.).

Two raters simultaneously observed the fourth discussion group for seven of the eight sessions. Interrater reliability scores were obtained on the observation scheme. The correlation for the total number of resident and volunteer statements recorded by the observers over the seven sessions was .96 ($N = 14$, $p < .001$). The correlation between observers' scores for frequency of positive and negative statements by residents and volunteers was .65 ($N = 28$, $p < .001$). Percentage agreement rates (Bijou, Peterson & Auld, 1968) were also calculated. The mean agreement rate (average of 14 frequency counts for residents and volunteers during the last seven sessions) was 89% on total statements recorded, 56% on positive statements and 48% on negative statements.

In order to assess observer agreement during the "live" groups when the feedback condition was included, the data from the two observers of

Group 4 were compared. The correlation between raters' frequency count scores on the allocation of responses with feedback over the complete twenty-five category system, five levels of response by five levels of feedback, yielded a coefficient of .97 ($N = 25$). It should be pointed out that the reason for such a high correlation was partially because, under the present classification scheme, a disproportionate number of statements were "centrally located" being neutral and/or having no feedback, a fact with which both observers obviously agreed. Nonetheless, these data, particularly for Group Four, represent the scores actually used in subsequent analyses. They therefore necessitate reporting such a measure of agreement. Mean rate of agreement for all 25 cells in the matrix for the two observers was 69%

Response-Feedback data were also analyzed by individual subject. For the purpose of these analyses, neutral statements were discarded. Statement and Feedback categories were also collapsed across degree. This resulted in positive and negative statements categorized in conjunction with reinforcement, neutral or no feedback, and punishment, totalling six Discussion Component scales. These scales were combined in such a fashion as to obtain each resident's frequency of Appropriate and Inappropriate feedback as well as total Positive and Negative statements.

The different response-feedback classification scales were correlated for the complete program and again for the first and second four sessions. These correlation matrices are presented in Tables 17 and 18. The latter table also presents correlations representing "split program" coefficients or consistency measures for each of the six component and four compound statement classification variables. The mean correlations were .42 on the component variables, .42 on Total Appropriateness and Inappropriateness of feedback and .71 on the Total

TABLE 17
A Correlation Matrix of the Statement-Feedback
Classification of Residents' Responses in
Community Group Discussions
over Eight Sessions (N = 35).

<u>Statement</u> → <u>Feedback</u>	PP	NN	PN	NP	PO	NO	Ap	In	TP	TN
Positive → Positive										
Negative → Negative	65									
Positive → Negative	66	79								
Negative → Positive	57	62	37							
Positive → 0	64	71	56	67						
Negative → 0	54	73	41	70	91					
Statement with										
App. Feedback	83	96	82	65	74	71				
with Inap. Feedback	74	83	77	88	74	69	87			
Total Pos. State.	75	77	67	68	98	87	82	81		
Total Neg. State.	59	80	49	74	91	99	78	76	89	

($\bar{X}$ = .64)

$r = .33, p < .05$; $r = .42, p < .01$; $r = .52, p < .001$

TABLE 18

A Correlation Matrix of the Statement-Feedback
Classification of Residents' Responses
in the Community Group Discussions
For the First and Last Four Sessions (N = 35).

		<u>First Four Sessions</u>								
<u>Statement</u> → <u>Feedback</u>	PP	NN	PN	NP	PQ	NQ	Ap	In	TP	TN
Positive → Positive		60	65	68	63	67	80	84	76	74
Negative → Negative	28		79	26	57	57	96	62	68	67
Positive → Negative	65	51		23	45	35	83	71	62	46
Negative → Positive	19	73	67		54	70	43	85	58	74
Positive → 0	56	71	78	65		87	64	64	97	88
Negative → 0	34	72	49	73	76		65	70	86	98
Appropriate	68	89	68	62	79	69		76	77	75
Inappropriate	67	54	97	74	80	59	71		76	79
Total Positive	54	75	99	68	99	79	81	80		89
Total Negative	35	78	52	76	78	99	73	61	81	

		<u>Last Four Sessions</u>								
<u>Last Four Sessions</u>	<u>First Four Sessions</u>									
Positive → Positive	<u>29</u>	24	11	31	21	30	27	28	24	33
Negative → Negative	<u>86</u>	<u>35</u>	42	78	76	72	56	79	80	76
Positive → Negative	34	<u>-09</u>	<u>-05</u>	36	34	29	04	23	32	27
Negative → Positive	51	<u>-01</u>	<u>-06</u>	<u>54</u>	60	54	16	36	54	52
Positive → 0	51	11	10	<u>56</u>	<u>59</u>	61	25	46	56	57
Negative → 0	50	32	14	56	80	<u>78</u>	40	48	72	76
Appropriate	81	40	41	72	67	68	<u>58</u>	74	73	73
Inappropriate	36	<u>-08</u>	<u>-08</u>	42	38	35	<u>06</u>	<u>26</u>	34	33
Total Positive	58	18	15	61	64	67	32	<u>52</u>	<u>62</u>	64
Total Negative	56	33	17	61	81	80	43	53	<u>75</u>	<u>79</u>

$r = .33, p < .05; r = .42, p < .01; r = .52, p < .001$

positive and negative statements. The high correlation between the Total Positive and Total Negative Statements ($r = .89$, $N = 35$) is also noteworthy. This correlation suggests that residents were more or less verbal and not pro or antisocial.

Group Assessment of Interpersonal Traits. Upon conclusion of the last session each volunteer was asked to rate himself with respect to each resident in the group. Each resident was asked to evaluate each volunteer with respect to his interaction during the program. Having participated in two programs, residents rated the volunteers of both groups. The measure was a modified version of Goodman's (1972) Group Assessment of Interpersonal Traits (GAIT). Of the ten original scales, Openness was subdivided into Openness-disclosure and Openness-genuine. A twelfth scale, Influence, was added. Appropriate semantic changes were made for the Resident Rating and the Volunteer Self-evaluation Forms. Individual test scores were combined to produce the mean and standard deviation of Volunteers' Self-ratings, Volunteers' scores as rated by Residents, Residents' scores as they rated Volunteers in the two separate programs, and Residents' Scores as Volunteers saw themselves interacting with Residents in the two different groups.

Correlation matrices are constructed to examine theoretically related variables. Measures of facilitative interpersonal functioning (Empathy, Openness, and Warmth) should be positively related, and Tension negatively related, to the remaining scales if the test is to be useful in group process analyses.

Correlation matrices for mean Volunteer-Self and Resident-Rated GAIT scales are presented in Table 19. The mean intercorrelations were .38 and .32 when the directionality of Tension (Relaxation) was reversed. Correlation matrices for mean Resident scores received in Volunteers' Self-evaluation are presented separately for the two evenings in Table 20, the mean coefficients being .44 and .45, as are mean Resident ratings of Volunteers which displayed average correlations of .51 and .55 for the Monday and Thursday groups, respectively.

TABLE 19

Correlation Matrices of GAIT Scales
for Volunteers' Self-Ratings and Residents' Evaluations

Mean Volunteers' Self-Evaluation (N = 35)

	E	Od	Og	W	C	AS	F	R	T	I	Ap	OE
Emp.		51	42	66	22	61	43	38	-37	44	39	38
Open-d	40		74	53	44	37	58	61	-37	33	33	33
Open-g	46	57		58	37	29	52	60	-35	35	37	48
Warmth	58	43	61		11	52	52	37	-34	49	45	58
Conc.	25	63	44	42		11	27	44	00	11	10	-07
Ass. Sim.	10	25	28	38	33		28	35	-25	43	42	31
Flex.	10	-01	18	35	08	08		61	-57	24	39	28
Resp.	23	44	53	30	35	21	21		-38	42	35	29
Tension	-09	-27	-35	-39	-38	-38	-38	-41		-22	-26	-26
Influence	64	51	55	46	44	06	06	43	-21		34	26
Approach	18	23	28	39	37	11	11	11	-23	36		40
Overall E.	48	28	43	41	18	15	15	08	-13	63	57	$\bar{X} = .38$
												$\bar{X} = .32$

Mean Volunteers' Scores as Rated by Residents

$r = .33, p < .05$; $r = .42, p < .01$; $r = .52, p < .001$

TABLE 20

Correlation Matrices on GAIT Scales
for Residents' Rating of Volunteers and on the
Resident Received Score from Volunteer Self-Evaluation in Two Programs

Mean Resident Score Given on Volunteer's Self-Evaluation (Mon.) (N = 24)

	E	Od	Og	W	C	AS	F	R	T	I	Ap	OE
Emp.		78	82	86	56	74	35	56	-29	59	34	66
Open-d	80		67	58	46	59	09	50	-28	57	17	38
Open-g	65	75		77	46	57	48	69	-23	45	20	76
Warmth	89	79	74		59	69	50	63	-39	50	40	55
Conc.	69	78	61	65		45	33	65	-41	18	23	39
Ass. Sim.	58	53	42	62	12		37	48	-53	38	47	47
Flex.	60	55	55	70	27	40		54	-47	01	11	30
Resp.	52	75	61	60	46	41	44		-40	21	23	50
Tension	-26	-28	-13	-35	-06	-27	-63	-23		10	-28	03
Influence	66	76	59	59	39	77	31	60	-13		23	37
Approach	23	24	25	41	18	25	29	33	-06	11		36
Overall E.	48	43	60	43	40	35	21	24	18	39	41	$\bar{X} = 44$
											$\bar{X} = 45$	

Mean Resident Score Given On Volunteers' Self-Evaluation (Thurs.) (N = 23)*

Mean Resident Rating of Volunteers (Mon.) (N = 26)

		81	20	82	57	48	47	76	-42	70	74	80
Emp.												
Open-d	65		47	84	68	27	57	66	-46	55	66	86
Open-g	53	83		32	25	16	54	-02	-11	-25	17	51
Warmth	61	65	67		60	45	64	72	-37	66	66	88
Conc.	57	63	51	44		23	56	53	-58	45	43	56
Ass. Sim.	72	60	65	78	61		16	25	-11	39	46	24
Flex.	34	51	59	60	22	38		43	-33	19	36	62
Resp.	65	67	51	45	76	53	95		-38	79	63	66
Tension	-61	-45	-49	-64	-37	-58	-57	-39		-25	-26	-28
Influence	80	56	46	71	63	78	25	53	-52		55	50
Approach	55	54	59	45	56	46	37	57	-49	52		80
Overall E.	67	45	52	70	52	83	13	23	-53	84	55	$\bar{X} = 51$
											$\bar{X} = 55$	

Mean Resident Rating of Volunteers (Thurs.) (N = 25)

* $r = .43$, $p < .05$; $r = .53$, $p < .01$; $r = .65$, $p < .001$

Seating. Residents' and volunteers' weekly Seating scores were examined for their consistency and their relationship with a Total Seating score. Mean Seating scores were also calculated and their characteristics were compared to the Total score.

There was no consistent session-to-session relationship in the residents' seating behavior. The mean inter-session correlation was $-.02$. Yet there was some internal consistency shown in the part-whole correlations. The mean correlation between weekly Seating and Total score was $.23$. Since the Total score was largely affected by the number of sessions attended ($r = .94$), properties of a mean Seating score, the average across only those sessions for which a subject is in attendance, were assessed. The mean Seating score was more consistently related to the weekly scores ($r = .44$) and since it avoided the problem of a variable maximum score, it was decidedly more appropriate than the Total score (Table 21).

Summary

Overall, reliability was generally good. Due to the nature of their scoring, one behavioral test (Porteus Maze), one process measure (Group Observations), and two institutional variables (Staff Ratings and Letter Record) required interrater agreement checks. High rates of agreement were found on Staff Ratings of resident behavior ($.54$, $.70$ corrected), the Letter Record (73% to 91%), and discussion Group Statements (52% to 85% on tapes; 58% to 89% on live groups).

Internal consistency was examined by calculating subscale, parallel forms, part-whole, split-half, and inter-item correlations. Among the behavior tests, the Choice Lists and Proxemics Test demonstrated high rates of agreement ($.76$ to $.86$). The Porteus Maze subscales were not related ($.10$, $.14$). The Cold Pressor was not comprised of subscales although there was some relationship between test conditions and outcome score ($.01$ to $.41$).

Table 21

Intercorrelation Matrix for Residents
 Weekly, Total and Average Seating Score
 and Attendance in Community Group
 Discussions

		Att- Tot. end.	$\bar{X}$	1	2	3	4	5	6	7	8	
Total Seat. Score												
Sessions Attend.	94											
Mean Seat. Score	62	45										
Seat Score-Week	1	14	-02	46								
	2	39	26	59	-24							
	3	-04	-38	49	-01	24						
	4	46	40	34	-42	40	-07					
	5	43	45	46	12	09	-11	07				
	6	18	09	31	06	-50	20	-07	-56			
	7	20	-14	54	26	-27	46	02	-34	14		
	8	02	-13	29	-12	48	-10	33	-32	-30	-11	($\bar{X} = -.02$)
	N	35*	35	35	24	22	21	20	17	18	16	17
Mean	$\bar{X}$	23	07	44								

* $r = .33$, $p < .05$; $r = .42$, $p < .01$; $r = .52$, $p < .001$

' $r = .50$, $p < .05$; $r = .62$, $p < .01$; $r = .74$, $p < .001$

Subscale relationships varied over the different institutional measures. Interscale correlations were high on Staff ratings (.72 to .88) but quite variable on the Canteen (-.01 to .82) and Letter Record (-.11 to .65) scales. The latter results were not unexpected since the wide variety of subscales included in these measures precluded many strong relationships.

Among the process measures, the correlations for positive and negative statements between the first and second half of the Discussion Group Program were .62 and .79. The mean intercorrelation for the six statement-feedback categories was also high (.64). Percentage agreement between two raters in the "live" groups was high for total statements (89%) but low for positive (56%) and negative statements (48%). Yet the correlation between raters' frequency counts of statements in the different categories yielded a high degree of agreement (.97). Discussion Group Seating showed no intersession relationship but there was some correlation between residents' weekly seating scores and their average score (.44).

The interscale GAIT correlations were moderate for the volunteers' mean score when self-rated ($\bar{X} = .32$) and when evaluated by residents ($\bar{X} = .38$). As expected, the Facilitative Interpersonal Functioning Scales (FIF; Empathy, Openness-disclosure, Openness-genuine, and Warmth) were particularly related (.57, .51).

2. Validity

Concurrent validities were examined by investigating particular correlations between measures over various methods of data collection. The three kinds of measurement were questionnaires, behavior tests, and naturalistic observations. The questionnaires consisted of both attitudinal and personality measures. The observation technique included both process and institutional measures.

Two general constructs or traits were used to align variables across the different measurement methods. They were the concepts of social-interpersonal orientation and self-control. Although a discreet dichotomization would be impossible (some variables have intuitive or empirical relations with both concepts), validity coefficients are presented, whenever possible, in accordance with these two categories.

Social-Interpersonal Orientation

A number of social-interpersonal variables were included in the list of variables because of their behavioral or unobtrusive design. Yet their validity, being of a face or intuitive nature, remains untested. Therefore, subjects' prescores on the behavioral and naturalistic measures of interpersonal behavior were compared with prescores on the Attitude/Personality measures. This was done separately for residents and volunteers.

Personal Space. The Personal Space variables displayed a number of moderate correlations with scales from the test battery. Most relationships were in an expected direction and tended to be greater for residents than volunteers. On occasion, correlations were in opposite directions for the two samples. Total Distance and Area were compared for similarities. Properties of the component dimension, Behind, were also inspected since it is considered by some (Kinzel, 1970) to be of special interest in corrections.

Total Distance and Area increased with residents' (N=49), but not volunteers' (N=63), Alienation scores and decreased with high Empathy scores of both groups (Table 22). Area was also inversely related to Self-esteem among both groups. Personal Space-Behind correlated positively with residents' Alienation, Psychopathy, and Tolerance for Law Violation and negatively with their Self-control. Personal Space-Total correlated in opposite directions with Positive Malingering (significance of difference, $p < .05$) as did Personal Space-Behind ($p < .02$), while Personal Space-Area correlated differently with Superego Strength ($p < .05$) for residents and volunteers.

Generally these correlations provide support for the concurrent validity of the Attitude/Personality scales by demonstrating a relation to a behavioral, interpersonal variable and to the behavioral dimension of Personal Space in its relation to accepted psychometric scales. They also support the contention that there is a positive relationship between criminality and personal space. This hypothesis is supported by resident-volunteer differences which are reported in a later section.

Interestingly, some correlations were in opposite directions, suggesting that the demand characteristics of the test may be different for the two groups. Residents with high scores on the Positive Malingering scale tended to report a smaller Personal Space (Total, Area, and Behind) while the reverse was true for volunteers. Perhaps willingness to please causes some residents to suppress the "stop" command. This might be expected if subjects felt closeness was a measure of "goodness." On the other hand, volunteers with a desire to do well may pay closer attention to their body signals and respond to the first hint of anxiety. In addition, Superego Strength, which correlated with Mp .28 and .25 for residents and volunteers, displayed a similar differential relationship. High Superego Strength was negatively related to Personal Space for residents and positively for volunteers.

Seating. Group seating behavior during the Community Groups was regarded

TABLE 22

A Correlation Matrix of Interpersonal
Behavior (Personal Space) and Process (Seating)
Variables with the Attitude/Personality Scales

	Personal Space				Seating			
	Total		Area		Behind		Residents	
	Res	Vol	Res	Vol	Res	Vol	Total	Mean
Attitude toward Jud. System	-11	17	-11	19	-17	13	-01	02
Identification Crim. Others	13	-08	13	-05	13	07	-19	-15
Tolerance Law Viol.	12	10	07	10	26	04	26	06
Awareness Lim. Opp.	14	08	16	-03	08	02	07	27
Acceptance Others	-16	-03	-15	03	-12	-06	-00	-27
Self-esteem	-19	-28	-23	-20	-11	-19	-39	-55
Alienation	22	10	26	-02	23	-00	03	25
Socialization	-06	02	-14	03	-07	01	01	-20
Psychopathy	14	12	16	06	24	08	-06	04
Neuroticism	08	12	12	03	12	00	08	18
Scholastic Maladjust.	06	01	-00	-03	14	05	-24	-40
Inadequacy	04	07	04	-02	13	09	-05	01
Family Diss.	03	13	03	18	12	03	11	34
Positive Malinger.	-21	21	-15	19	-21	25	-19	-04
Ego Strength	-16	-07	-14	00	-10	-03	-20	-08
Superego Strength	-17	15	-25	17	-17	06	-24	-45
Internal External	05	13	05	01	07	-03	-18	-07
Empathy	-25	-19	-40	-15	-09	00	-20	-09
Self Control	-19	-08	-10	09	-25	-03	-29	-11
Anxiety	-05	24	-03	13	06	03	07	25

(N) 49* 63⁺ 49 63 49 63 35 35⁰

* $r = .28, p < .05$

⁺ $r = .25, p < .05$

⁰ $r = .32, p < .05$

$r = .37, p < .01$

$r = .32, p < .01$

$r = .42, p < .01$

$r = .45, p < .001$

$r = .41, p < .001$

$r = .52, p < .001$

as a social-interpersonal variable and a number of test battery scales showed significant correlations with the seating data. Experimental residents' (N = 35) Mean Seating score was positively related to Family Dissention (.34) and the Choice Lists (.35) and negatively related to Self-esteem (-.55), Scholastic Maladjustment (-.40), and Superego Strength (-.45). Total Seating score was also positively related to Porteus - Years (.43) and negatively to Self-esteem (-.39). These negative correlations most likely reflect the institution's subcultural demands of pride, camaraderie, and machismo. Residents who felt this influence tended not to sit amongst the volunteers. The positive relationships tended to suggest that those capable of delaying gratification were more likely to sit with volunteers (Table 22).

It should be noted that residents' Total Seating score was largely a function of attendance in the Community Group sessions. It therefore reflects multiple relationships between seating behavior and attendance with the test scales. Because absence from the groups was often necessary for reasons beyond the residents' control, it also provides a less accurate indication of subjects' desire or intention to participate. On the other hand, Mean Seating score, which naturally controls for attendance, presents a simpler but more accurate measure of integration and involvement. Therefore, a number of personality traits, which show no relation to the Total score, are related to the Mean score.

Institutional Measures

A number of relationships between naturalistic measures and the test battery scales was also investigated by comparing prescores and a number of mutually supportive relationships was found. Because of the diversity in content over which the two data sets were collected, the coefficients simultaneously contributed to the construct validity of both kinds of measures. For the same reason though, most relationships were modest. Test battery correlations with staff ratings, charges, seating scores, time sentenced and time already spent in the institution were examined (Table 23).

Staff Ratings. The Ratings of residents' Behavior towards Others, Staff and Peers, by instructors and officers demonstrated many consistent relationships. All significant correlations were in the expected direction. Staff ratings correlated negatively with residents' self-reported Tolerance for Law Violation ($-.21$ to $-.47$) and Personal Space-Area ($-.17$ to $-.30$). Coefficients were stronger for the officer ratings than the instructor ratings. Similar relationships were found with Residents' Psychopathy ($-.24$ to $-.37$) and Alienation ($-.23$ to $-.38$) scores but these correlations were stronger for instructor evaluations. Positive correlations with staff ratings, particularly instructor ratings, were found on Socialization ($.38$ to $.45$), the Choice Lists ($.28$ to $.34$), and Acceptance of Others ($.34$ to $.45$). Positive correlations which tended to be higher for Officer ratings were on Attitude toward the Law and Judicial Process ($.19$ to $.43$), Self-esteem ($.19$ to $.30$) and Empathy ($.13$ to $.22$). In sum, positive staff ratings were obtained by residents who had a small personal space, a prosocial attitude toward the judicial system, little tolerance for law violation, low scores on Psychopathy and Alienation, and high scores on Self-esteem and Empathy.

TABLE 23

A Correlation Matrix of Institutional Measures
with the Attitude/Personality and Behavioral
Test Battery for Residents' Prescores(N = 50)

	Mean Officer Rating			Instructor Rating			Institution Charges		Total Sentence	Time Spent
	Ot	St	Pe	Ot	St	Pe	Fc	Sv		
Attitude toward Jud. Syst.	36	43	19	05	08	03	-12	04	-08	-10
Identification Crim. Oth.	05	-10	03	11	02	12	-02	-06	06	-04
Tolerance Law Violation	-47	-39	-21	-22	-25	-13	04	-02	23	20
Awareness Lim. Opportunity	-18	-06	-03	-20	-15	-18	09	07	01	05
Accept. of Others	26	12	10	40	34	45	-13	-12	05	12
Self-esteem	30	19	21	13	16	15	-10	-21	05	12
Alienation	-18	-05	-11	-23	-24	-38	02	04	-09	-05
Socialization	36	23	21	38	45	39	-07	-02	-14	02
Psychopathy	-21	-09	-10	-30	-37	-24	22	01	10	-12
Neuroticism	-23	-15	-26	-12	-19	-25	07	13	-01	-10
Scholastic Maladjustment	-38	-03	04	-24	-40	-12	-03	-05	-11	-04
Inadequacy	14	25	10	-03	-06	-14	06	-01	07	17
Family Dissention	-29	-13	-09	-34	-34	-33	17	04	02	-02
Positive Malingering	-04	-11	-18	-00	11	-06	06	17	-06	-12
Ego Strength	04	-07	-00	08	02	08	-07	-07	13	-12
Superego Strength	22	19	10	15	22	09	-13	-01	-06	03
Internal-External	-11	-05	-06	-02	-07	05	23	15	14	-13
Empathy	21	22	13	15	20	03	-10	03	-03	12
Self-control	14	-04	07	24	21	33	20	07	11	-04
Anxiety	-13	07	-14	-10	-11	-30	00	06	-11	-11
Personal Space: Total	-21	-22	-12	00	-10	08	-31	-21	-09	10
Personal Space: Area	-26	-30	-17	-00	-09	06	-25	-17	-10	-17
Porteus Maze: Years	-14	07	-05	-13	-13	-17	-07	-13	20	17
Porteus Maze: Quality	22	08	23	40	33	27	-04	-05	-14	-16
Cold Pressor: Time	06	07	-11	05	14	01	-16	-17	13	-00
Cold Pressor: Words	-15	-07	-22	-14	-02	-15	-12	-11	09	00
Mean Choice List	06	03	01	31	28	34	-22	04	02	-06
Money Saving Measure	19	08	15	07	09	28	-28	-17	-07	-10

$r = .28, p < .05$; $r = .36, p < .01$; $r = .45, p < .001$

It appears that officers and instructors were sensitive to different aspects of the residents' personality and behavior. Officers seemed more attuned to the residents' legal orientation while instructors are influenced by the impulsiveness and control.

Further examination of staff ratings with respect to institutional variables suggested that ratings, particularly the instructors', were positively correlated with the Interest Saving Coupon and negatively with disciplinary incidents (Table 24). There is also a slight suggestion that ratings may increase with familiarity (time spent in the Institution) and decrease with severity of original offence (Total Sentence). Inter-correlations for residents' prescores on the institutional variables Staff Ratings, Charges, Time Sentenced and Time already Spent are presented in Table 24.

Discipline Charges. Charges laid by the institution in the pre-condition was positively related to Psychopathy (.22) and External locus of control (.23) and negatively with Personal Space-Total (-.31), the Money Saving Measure (-.28) and Choice Lists (-.22). Severity of Charges was also negatively related to Self-esteem (-.21). These correlations are all in the appropriate direction. It appears that institutional misbehavior shows more correlations with the self-control variables. But since self-esteem, Personal Space, and, in part, Psychopathy are interpersonal measures and are also related to Frequency of Charges, institutional misbehavior must be regarded as a complex variable. In fact, treated as a criterion measure, its correlations with both interpersonal and self-control

Table 24

A Correlation Matrix of Institutional
Variables for Resident Prescores

Interpersonal Measures

	X Officer			Instructor			Charge			Time	(N)
	<u>0t</u>	<u>St</u>	<u>Pe</u>	<u>0t</u>	<u>St</u>	<u>Pe</u>	<u>Fr</u>	<u>Sv</u>	<u>Tot.S.</u>	<u>Spent</u>	
X Officer Rate - Others											
- Staff	78										
- Peers	72	74									
Instructor - Others	44	27	45								
- Staff	41	32	42	88							
- Peers	45	23	50	83	72						
Charges - Freq	-07	-14	-10	-33	-37	-26					
- Severity	-15	-14	-20	-05	-16	-14	63				
Total Sentence	02	-12	-06	-12	-16	-02	13	02			
Time Spent	16	04	19	-00	-02	01	-06	-08	61		
(N)	49	49	49	40	40	40	50	50	50	50 *	

Self-Control Measures

Interest Coupon	20	18	17	22	30	20	-12	-11	05	15	34 '

*r = .28, $p < .05$; r = .36, $p < .01$; r = .45, $p < .001$

'r = .33, $p < .05$; r = .44, $p < .01$; r = .54, $p < .001$

measures provide initial evidence for a two-factor approach to delinquent behavior. For example, a multiple regression analysis of test battery prescores performed on Frequency of Charges-pre, produced a significant multiple R of .62 ($F(7,38) = 3.36$, $p < .01$; .55 corrected for insufficient N ; McNemar, 1962) when limited to seven variables. Variables (zero order r s and betas) included Personal Space-total (-.31, -.84), Psychopathy (.22, .06), Cold Pressor-time (-.16, .04), Inadequacy (-.15, .06), Money Saving Measure (-.28, -.48), Self-control (.20, .25), and Ego Strength (-.07, -.35).

Sentence Length. Few relationships between Total Sentence and the test battery were found. Length of Sentence was positively related to Tolerance for Law Violation (.23), as well as Porteus Maze-Years (.20), suggesting that those with longer sentences tended ($p < .10$) to have a greater tolerance for law violation.

The effect of institutionalization on the test variables was minimal. Time Spent in the institution correlated with Tolerance for Law Violation .20 and even this result was largely due to the relationship between Tolerance for Law Violation and Total Sentence ($r = .23$). Residents who had been in the institution longer had a greater likelihood of having a longer sentence (.61). When Total Sentence was partialled out of the correlation, the relationship between Time Spent and Tolerance for Law Violation disappeared (partial $r = .07$). The reason that prisonization effects were not demonstrated on the test battery variables is most likely due to the short period of time (mean = 2.98 months, S.D. = 4.5) that residents had spent in the institution prior to testing.

One is reminded that these data represent only correlational analyses of incarceration effects over a very short period of time. A test-retest examination of institutionalization for the two-month period of active treatment programs is presented later and suggests a strong prisonization effect on the test scales.

Letter Record. The Letter Record contained both interpersonal (amount of correspondence) and self-control (planning behavior) related variables. It is therefore dealt with accordingly. Letter correspondence was investigated in relation to the seating behavior among experimental residents (N=35) in the discussion groups. Interestingly, amount of correspondence (Letters Sent and Received) with Relatives and Business Acquaintances was positively related to Seating scores, while correspondence with male friends showed highly negative relationships (-.13 to -.56; Table 25). It appears that those who are more heavily involved with the peer culture, also show more aggregation with their peers in the Community Groups. Those who are making or maintaining contact with their family and business relations mingle more readily with nondelinquent volunteers. The intercorrelations, therefore, provide further support for the construct validity of a prosocial disposition.

Self-control

Self-control has been studied independently from a variety of perspectives. They include intrapsychic control, impulse control, delayed gratification, tolerance of aversive stimulation, and self-initiated behavioral strategies. Because they represent different approaches to the construct, no attempt has been made to examine their interrelationships. Such is the function of the next section.

Delayed Gratification. A popular method of defining self-control is to describe the process in terms of delayed gratification behavior (Mischel, 1961; Rachlin, 1974). Two self-report measures designed by Stumphauzer (1969, 1970) are the four Choice Lists and a Money Saving Measure. The former consists of 14 pairs of items, a small object or money available immediately and a larger object or money available some time in the future. The Money Saving Measure asks how much a person would spend (0, 25, 50, 75, or 100%) if given three different sums (25¢, \$2.00, or \$20.00).

TABLE 25
A Correlation Matrix of the
Interpersonal Letter Classification
Measures for Letters Sent and Received
With Seating Scores (N=35)

<u>Letter Classification</u>	<u>Letters Sent</u>		<u>Letters Received</u>	
	<u>Seating</u>		<u>Seating</u>	
	<u>Total</u>	<u>Mean</u>	<u>Total</u>	<u>Mean</u>
Total Number	04	-08	10	-12
Total Pages	04	-02	02	05
Mean Pages	02	24	03	03
Correspondent: Relative	22	16	20	16
Male	-13	-26	-32	-56
Female	-02	-13	-01	04
Business	07	21	30	11

$r = .33, p < .05; r = .44, p < .01; r = .54, p < .001$

The three items on the Money Saving measure were used as validity criteria. Responses on the five point scale were dichotomized to immediate gratifiers (save none, save 25%) and delayed gratifiers (save 50%, save 75%, save all). Validity coefficients were calculated using the point-biserial formula. Choice List scores were obtained by taking the total of the two lists administered to residents during pretesting (28 items), the numerically well defined material items (8 items), and the monetary items (12 items). Correlations were highest with the 50¢ Money Saving criterion (.36 to .40) and slightly lower for the \$2.00 item (.32 to .36; Table 26). The Choice List scales did not correlate significantly with the \$20.00 criterion item.

These differences could be explained by the value of the Choice List items. Of twenty-eight choices, only two might be valued at greater than \$1.00. It is suggested that those who self-report saving a small amount are not the same as those who would save a large amount. This contention is supported by the difference in subscale correlations for the Choice List ($r = .85$) where values differ little, but commodities greatly, and the Money Saving Measure (mean $r = .64$), where value differs greatly but all items are monetary (Table 26).

In addition, the four parallel forms (Choice Lists A, B, C and D) were investigated with respect to their correlation with the Money Saving Measure. Coefficients are presented separately for residents' and volunteers' pre-scores in Table 27. These data indicate that Choice Lists A and B are more consistently related to the Money Saving Measure than C and D.

TABLE 26
A Correlation Matrix of
Choice List and Money Saving
Measure Subscales for Residents'
Prescores

	Money Saving Measure (N=48)			r=.288(p < .05) r=.372(p < .01)
	<u>50¢</u>	<u>\$2.00</u>	<u>\$20.00</u>	
M.S.M. 50¢		.811	.460	
M.S.M. \$2.00			.642	
Choice List Total	.366	.329	.142	
Monetary items	.357	.357	.207	
Well defined	.400	.315	.087	

	Choice List		
	<u>Total</u>	<u>Monetary</u>	<u>Well defined</u>
Total		.970	.935
Monetary			.851

$r = .29, p < .05$; $r = .37, p < .01$; $r = .47, p < .001$

TABLE 27

A Correlation Matrix of the Four
Choice Lists and Subjects' Mean
Choice List Score with the Money
Saving Measure for Residents'
and Volunteers' Prescores

Choice List	Money Saving Measure			
	Residents	N	Volunteers	N
A	44	28	39	15
B	37	28	48	15
C	25	20	-14	12 *
D	20	20	08	12
Mean ($\bar{X}$) Score	33	48	26	27'

* $r = .58$, $p < .05$; $r = .74$, $p < .01$; $r = .82$, $p < .001$

' $r = .38$, $p < .05$; $r = .49$, $p < .01$; $r = .60$, $p < .001$

The two Delay of Gratification Preference (DGP) scales, the Choice List and Money Saving Measure, were correlated with the Attitude/Personality scales and a number of relationships were observed. Although generally in the predicted direction, coefficients were not always consistent among clients (p values given for significance of difference between correlation). For example, the Choice Lists correlated negatively with residents' ($N=48$) Psychopathy, Alienation, Tolerance for Law Violation, and Positive Malingering and positively with Volunteers' scores (Table 28). With respect to the Money Saving Measure, correlations were in the same direction but tended to be lower for the residents. The Money Saving Measure correlated positively, particularly for volunteers, with Self-control, Self-esteem (correlations differed at $p < .02$) and Positive Malingering ($p < .05$). It correlated negatively with Anxiety ($p < .05$), Neuroticism, Psychopathy, and Alienation.

Even more disturbing is the fact that some coefficients are not consistent across the two DGP scales. Positive correlations on the Choice Lists and negative correlations with the Money Saving Measure were found on Volunteers' Tolerance for Law Violation (significance of difference between correlations, $p < .05$), Anxiety ($p < .01$), Psychopathy ($p < .05$), and Alienation ($p < .05$). Negative correlations with the Choice Lists and positive correlations on the Money Saving Measure were also found on volunteers' Self-esteem ($p < .01$).

Cold Pressor. A survey of the Cold Pressor's Ice Water Immersion time in relation to other variables suggests that it is a poor measure of self-control. Although it did correlate .30 with another behavioral measure, the Interest Coupon, its only test battery correlations were modest ones with the Positive Malingering (M_p) scale (.30 and .28 for residents and volunteers) and Empathy (.20 and .03). This suggests the variable is, in part, a measure of social desirability. Interestingly, Words

Spoken during the test correlated with the same variables, the Mp scale, (residents = .27, volunteers = .06), and Empathy (residents = .22, volunteers = .18) and differentially for residents (.20) and volunteers (-.16; $t = 1.86$, $p < .10$) on Alienation.

The function and utility of Words Spoken during the Cold Pressor test was examined. It could reflect one's interpersonal orientation, or social desirability, as is suggested from the above correlations. But this is unlikely since its correlations with Immersion Time (.59 and .54) are maintained when Mp is partialled out (partial r .55, .55). Alternatively, Words Spoken could simply be a function of Immersion Time; the longer one remains in the test situation, the more one emits spontaneous verbalizations (r .59, .54). But the measure's only correlations with control variables (.47 on volunteers' Choice List; and -.32 residents' Canteen spent:received ratio) are maintained or increased when Cold Pressor-time is partialled out (partial r .42, .46). This suggests that Words Spoken represents a successful strategy for the self-control of pain tolerance.

Porteus Maze. The Porteus Maze Test was examined for relationships it might have with self-control, impulsivity, and criminal orientation. The two scales of the Porteus Maze were related to the Attitude/Personality variables and the results were partially supportive of Porteus' claims (Table 28). The Years scores, an estimate of mental age, varied inversely with residents' Socialization and Self-control which was not anticipated. The scale was also negatively related to residents' and volunteers' Positive Malingering. The Quality Score, a weighted sum of errors, presumably related to impulsiveness and lack of forethought, correlated with a number of residents' scales only. This includes positive correlations with Self-esteem, Socialization, and Positive Malingering and negative correlations with Tolerance for Law Violation, Neuroticism ($p < .05$), Family Dissention, and Self-control.

Examination of the behavioral test matrix was not encouraging. Although intratest correlations were fair (e.g., Choice List and Money

TABLE 28

A Correlation Matrix of Behavior Test
Self-Control Measures with Attitude/
Personality Scales for Residents'
and Volunteers' Prescores

	Cold Pressor				Porteus Maze				Choice		Money Saving	
	Time		Words		Years		Quality		List		Measure	
	R	V	R	V	R	V	R	V	R	V	R	V
Attitude toward Jud. Syst.	-.09	.11	-.14	.10	-.11	.01	.03	-.04	.21	-.01	.07	.21
Identification Crim. Other	-.05	.09	-.16	.06	.16	-.15	.06	.02	-.16	.19	-.04	-.26
Tolerance Law Violation	-.11	-.10	.13	-.06	.19	-.10	-.32	.09	-.11	.21	.04	-.41
Awareness Lim. Opportunity	-.09	-.09	-.09	-.21	.18	-.02	-.09	-.13	-.01	-.23	-.09	-.28
Acceptance of Others	.03	.11	-.14	.12	-.02	.09	.07	-.15	-.04	-.04	.19	.03
Self-esteem	.17	-.04	.03	.24	-.22	-.03	.25	.00	-.20	-.12	.04	.57
Alienation	.11	-.13	.20	-.16	.11	.03	-.12	.23	-.02	-.07	-.29	-.49
Socialization	.11	-.04	-.03	-.09	-.30	.18	.38	.02	.08	.12	.15	.24
Psychopathy	.07	.07	.15	.09	.01	-.12	-.24	.14	-.26	.16	-.21	-.38
Neuroticism	-.13	.09	.11	-.01	.24	.03	-.35	.07	-.08	-.14	-.31	-.53
Scholastic Maladjustment	-.14	.06	-.12	.11	.15	.02	-.10	-.01	-.14	-.15	-.07	-.18
Inadequacy	.02	.40	.18	.47	.17	-.27	-.16	.13	-.11	-.05	-.00	.24
Family Dissention	-.07	.08	.19	-.04	.22	.15	-.26	-.00	.10	-.23	-.03	-.36
Positive Malingering	.30	.28	.27	.06	-.33	-.25	.27	.03	-.12	.30	.15	.58
16 PF C (Ego)	.05	.14	.02	.14	-.12	.04	.14	-.06	-.02	.28	.14	.27
16 PF G (Superego)	.17	.07	.13	-.23	-.21	.09	.20	-.07	.09	.19	.16	.35
External Control	.08	-.02	.04	-.05	-.15	-.11	.03	.14	-.19	.24	-.12	-.21
Empathy	.20	.03	.22	.18	-.10	.02	.10	.00	.17	.32	-.16	.07
Self-control	-.08	.04	-.14	.12	-.30	-.08	.26	-.03	.04	.10	.21	.59
Anxiety	-.05	-.03	.20	-.14	.20	.15	-.20	.07	.03	.11	-.24	-.63

(N) 50¹ 63^{*} 50 63 50 62 50 62 48 26 47 26⁺

*r = .25, $p < .05$; r = .32, $p < .01$; r = .41, $p < .001$

¹r = .28, $p < .05$; r = .36, $p < .01$; r = .45, $p < .001$

+r = .39, $p < .05$; r = .49, $p < .01$; r = .60, $p < .001$

Saving Measure, Porteus Maze Years and Quality) being in the order of .30 to .50 for residents and .20 to .40 for volunteers, the relationships did not hold between tests. In fact, Personal Space, presumably an interpersonal measure, showed a positive relationship with the Choice List scores while the Porteus Maze variables did not (Table 29).

Canteen Spending. The naturalistic data were also ambiguous (Table 30). Concerning the Canteen variables, there was a tendency for the correlations with Mean Spending and the Spent-Received Ratio to differ from those with Mean Balance, a saving measure. The majority of these differences was nonsignificant because there was not a substantial negative relationship between the Saving and Spending scales ($r = -.18$, ns.). For example, Attitude toward the Law and Judicial Process, Scholastic Maladjustment, Family Dissention, Empathy, and Cold Pressor-words were negatively related to spending ($-.16$ to $-.39$) but not at all to saving ($.04$ to $-.09$). Similarly, Awareness of Limited Opportunity and Personal Space-total were positively related to spending ($.20$ to $.40$) but not at all to saving ($.11$ and $-.08$). Identification with Criminal Others was positively related to saving ($.52$) and not to spending ($.07$ and $.15$). This suggests that those who play a major role in the institutional subculture may be able to acquire items usually purchased in the canteen from other residents, thus enabling them to accumulate savings. If this is so it certainly adds a questionable component to the saving variable as a measure of foresight, planning and self-control.

Interest Coupon. This test also presented a number of puzzling correlations. Again a positive relationship was found with Identification with

TABLE 29

A Behavioral Test Intercorrelation Matrix
for Residents' and Volunteers' Prescores

	Residents (N=50)*										(N=35)	
	Personal Space			Cold Pressor		Porteus Maze		C1	MSM	Age	Seating Total	X
	B	T	A	Tm	Wr	Yr	Q1					
Personal Space - Behind		88	80	-08	-11	16	-01	29	15	-22		
- Total	76		94	-14	-16	14	02	25	19	-22	17	15
- Area	56	72		-19	-15	15	05	21	16	-32	16	19
Cold Pressor - Time	27	26	30		59	-19	19	10	-11	13	-18	-05
- Words	-09	-12	-13	54		-01	-02	-01	-18	-04	-04	13
Porteus Maze - Years	-14	-04	-03	-14	-15		-50	-06	-18	-18	43	15
-Quality	-11	-17	-14	-17	05	-43		06	10	26	-45	22
Choice List	28	32	15	24	47	-17	-06		33	19	19	35
Money Saving Measure	15	-10	-03	01	04	-29	-15	21		09	26	16
Age	-20	-40	-31	-09	13	11	14	-20	43			
(Sex M=1, F=2)	-26	-09	-02	-34	-36	06	-03	08	-17	-37		

Volunteers (N=63)

* $r = .28$, $p < .05$; $r = .36$, $p < .01$; $r = .45$, $p < .001$

' $r = .25$, $p < .05$; $r = .32$, $p < .01$; $r = .41$, $p < .001$

TABLE 30

A Correlation Matrix of Naturalistic Self-Control
Measures with Test Battery Scales for
Residents' Prescores (N=50)

		Canteen ⁺		Interest
	Mean Spend	Mean Balance	Spend/Receive	Coupon (N=34) ⁺⁺
Attitude toward Judicial Proc.	-27	-09	-16	-19
Identification Crim. Others	07**	52	15	24
Tolerance Law Violation	16	-07	01	11
Awareness Lim. Opportunity	31	11	40	07
Acceptance of Others	07	-01	09	-02
Self-esteem	-04	01	-15	04
Alienation	-03	10	01	-00
Socialization	-01	03	-02	12
Psychopathy	-16	-05	-23	06
Neuroticism	-13	-02	-06	-12
Scholastic Maladjustment	-28	01	-39	03
Inadequacy	-11	20	-16	08
Family Dissention	-25	-02	-24	-14
Positive Malingering	-10	-15	-14	-01
16 PF C (Ego)	-06	14	-05	-26
16 PF G (Superego)	-21	-13	-27	04
External Control	10	00	09	-02
Empathy	-22	-03	-17	-07
Self-Control	09	-01	03	-29
Anxiety	-22	-10	-15	-00
Personal Space: Total	23	-08	20	00
Personal Space: Area	27	-03	25	-05
Porteus Maze: Years	-01	18	05	26
Porteus Maze: Quality	13	11	12	-05
Cold Pressor: Time	-09	03	-08	30
Cold Pressor: Words	-32	04	-32	19
Mean Choice List	13	12	09	19
Money Saving Measure	09	-02	18	25

Test-Scale correlations differ between: Mean Balance and Mean Spending ** ($p < .05$)
Mean Balance and Spend/Received ' ($p < .10$)

+r = .28, $p < .05$; r = .36, $p < .01$; r = .45, $p < .001$
++r = .34, $p < .05$; r = .42, $p < .01$; r = .53, $p < .001$

Criminal Others (.24) as well as the Money Saving Measure (.25), Choice List (.19), Cold Pressor-time (.30), and Porteus Maze-years (.26). But negative correlations were found with Self-control (-.29) and Ego Strength (-.26).

Test Battery Correlations

Lastly, the Attitude/Personality matrix was inspected for consistent relationships. Variables were ordered in the following manner to facilitate inspection: the interpersonal variables relating to the Law (Identification with Criminal Others to Tolerance for Law Violation) and to others in general (Empathy and Acceptance of Others), the measures of personal adjustment (Self-esteem to Neuroticism), the complex or transitional variables (Socialization and Psychopathy), and the control variables (Ego Strength to Self-control). The personal-historical (Scholastic Maladjustment to Family Dissention) and Positive Malingering variables are added last.

The groupings of interpersonal and control variables demonstrate numerous internal consistencies which support the validity of the different measures. For example, the following relationships are found in Table 31. High positive correlations were found between Tolerance for Law Violation and Psychopathy, Alienation and Awareness of Limited Opportunity (correlations differed for residents and volunteers at $p < .05$), Anxiety and Neuroticism, and Ego Strength and Self-control. Similarly, substantial negative correlations were found between Tolerance for Law Violation and Attitude Toward the Judicial System ($p < .05$), Socialization and Psychopathy, Alienation and Self-esteem, and Ego Strength and External Control. All of these relationships were in the expected direction and although only two differences were significant, there was a tendency for the coefficients to be higher on the residents' data.

Table 31

A Correlation Matrix of Test Battery Scales
For Residents' and Volunteers' Prescores

Residents (N = 50)*																				
	Id	Law	Tol	Emp	AO	SE	ALO	Alen	Anx	Ne	Soc	Pd	Sup	Ext	Ego	Sc	SM	In	FD	Mp
Identification Crim. Others		-24	07	-02	-17	-05	.33	.31	-.05	.20	-.16	.20	-.26	.34	-.03	-.19	-.03	.18	-.06	-.21
Attitude toward Judicial Syst.	-.16		-.68	.28	.29	.10	-.48	-.33	-.04	-.14	.24	-.35	.48	-.43	.10	.18	-.06	.12	-.02	-.09
Tolerance Law Violation	.28	-.25		-.15	-.14	-.12	.16	.14	-.05	.15	-.25	.35	-.39	.25	.01	-.25	.30	.01	.18	-.13
Empathy	.27	.21	-.10		.22	.18	-.07	-.21	-.15	-.26	.39	-.24	.31	-.25	.13	.02	-.05	-.13	.14	-.03
Acceptance of Others	.12	.17	-.24	.43		.51	-.54	-.72	-.54	-.50	.57	-.40	.38	-.29	.31	.44	.06	-.10	-.28	.03
Self-esteem	-.05	.12	-.14	.37	.42		-.44	-.49	-.45	-.55	.58	-.24	.59	-.22	.35	.27	.14	.10	-.43	.24
Awareness Lim. Opportunity	.03	-.12	-.00	-.35	-.44	-.41		.59	.15	.27	-.36	.20	-.56	.39	-.32	-.35	-.15	-.06	.09	-.16
Alienation	.14	-.21	.32	-.34	-.37	-.60	.28		.50	.61	-.55	.47	-.48	.39	-.43	-.49	-.11	.29	.29	-.01
Anxiety	.00	-.11	.21	-.33	-.25	-.57	.20	.63		.67	-.40	.22	-.17	.25	-.42	-.38	.04	.25	.29	-.10
Neuroticism	.01	-.08	.14	-.31	-.21	-.58	.25	.63	.52		-.71	.52	-.29	.40	.47	-.48	-.05	.46	.34	-.19
Socialization	.01	-.07	.01	.04	.20	.33	-.17	-.19	-.05	-.52		-.50	.45	-.36	.23	.30	-.02	-.21	-.47	.10
Psychopathy	.21	-.13	.40	-.04	-.07	-.23	-.12	.33	.23	.54	-.42		-.31	.47	-.13	-.26	.15	.24	.40	-.05
Superego Strength	-.35	.04	-.29	.04	.15	.15	-.04	-.29	.00	-.29	.34	-.47		-.36	.09	.14	.10	.14	-.20	.28
External Control	.22	-.08	.28	-.08	.01	-.21	.10	.59	.53	.27	.14	.13	.02		-.22	-.10	.01	.16	-.14	-.01
Ego Strength	-.03	.04	-.05	.17	.13	.34	-.31	.52	-.42	-.37	-.03	-.04	.08	-.40		.58	-.07	-.11	.01	.12
Self-control	-.18	.11	-.22	.16	.34	.50	-.35	-.49	-.59	-.52	.08	-.35	.24	-.36	.49		-.16	-.25	-.08	.31
Scholastic Maladjustment	.14	.11	-.00	-.03	-.04	-.29	.16	.24	.06	.56	-.50	.48	-.54	.02	-.12	-.26		.15	.07	-.17
Inadequacy	-.08	.25	-.24	-.03	.00	.07	-.02	-.20	-.17	.22	-.30	.27	-.27	-.24	.17	.07	.42		.07	-.12
Family Dissent	.11	.04	.05	-.11	-.20	-.48	.19	.30	.25	.66	-.46	.43	-.31	-.10	-.20	-.36	.58	.24		-.03
Positive Malingering	.02	.18	-.26	.03	-.05	.38	-.19	-.41	-.25	-.37	.13	-.10	.25	-.26	.41	.37	-.25	.20	-.23	

Volunteers (N = 63) '

* $r = .28, p < .05$; $r = .36, p < .01$; $r = .45, p < .001$

' $r = .25, p < .05$; $r = .32, p < .01$; $r = .41, p < .001$

Yet a number of the so-called interpersonal and control measures were also related. Acceptance of Others and Self-control correlated .44 and .34, Attitude toward the Law and Superego Strength correlated .48 and .04 for residents and volunteers. These coefficients do not detract from the earlier correlations. Instead, they demonstrate a consistency across a wide range of variables that interpersonal orientation and control are not independent but related in a systematic and predictable manner. Some aspects of control correlated positively with an interpersonal-moral outlook. This seems particularly so for the residents' data.

Summary

The validity of the measures appeared to vary considerably. Although many interesting and supportive correlations were found across the different methods of data collection, some were ambiguous and some were not correlated at all with other theoretically related variables. Among the scales with a social-interpersonal aspect to them, the behavioral test, Proxemics, demonstrated a number of moderate but appropriate relationships with Test Battery variables (.20 to .40) while Seating-Test battery correlations also appeared to reflect institutional or sub-cultural pressures. Although initially considered as interpersonal measures, it became apparent that the institutional variables, Staff Ratings and Charges were also related to control variables. For example, Instructor ratings correlated with Acceptance of Others (.34 to .45) and the Choice List (.28 to .34). Moderate correlations were also found between various institutional measures. Instructor ratings correlated with Charges (-.26 to -.37) and the Interest Coupon (.20 to .30). As criterion variables, the institutional scales supported the two dimension

analysis of delinquents' behavior. Interestingly, discussion Group Seating scores correlated differentially with different mail Correspondents (.21 to -.56). Many test battery variables related to legal matters (Attitude toward the Law, Tolerance for Law Violation, Identification with Criminal Others) and interpersonal orientation (Empathy, Acceptance of Others, Alienation) were also appropriately related. There was no relationship between length of sentence or time incarcerated and test battery prescores.

Among the control variables, test battery measures showed moderate relationships. The Choice List and Money Saving Measure were consistently related (.47). The Cold Pressor correlated with the Interest Coupon (.30) but nothing else. The Porteus Maze appeared more related to personality scales than impulsivity or control per se. There was no consistent relationship among the self-control behavioral measures. Canteen behavior was related to a number of test battery scales but the differences in correlations for saving and spending were few. A number of appropriate correlations were found among the test battery scales (e.g. Ego Strength - Self-control, .58, .49) but in general there were fewer relationships among the self-control than the interpersonal scales. There were also a number of interpersonal-control correlations (e.g. Acceptance of Others - Self-control .44, .34), all in the appropriate direction. In addition, a number of personal adjustment scales (Neuroticism, Socialization Psychopathy, Inadequacy) displayed moderate correlations (.20 to .70) with both dimensions. These last findings are not unexpected but, in fact, support the contention that personal development in both spheres may be a requisite for mature, prosocial behavior.

3. Factor Analysis

Factor analyses were performed separately on the residents' and volunteers' test battery prescores which consisted of 26 variables in all. A classical-factor solution was used. Principle factoring of the correlation matrix included a process permitting iterations to continue until successive communality estimates were within .001 of each other or 25 iterations had been performed. The factor matrix was rotated orthogonally using a VARIMAX criterion. Convergence of the communality estimates required 20 and 13 iterations for the resident and volunteer analyses, respectively. In both cases, eight factors were required to account for the data (Table 32). The first factor accounted for 41% of the variance on the residents' data and 35% of the volunteers'.

Identification of Factors

Factor loadings on the first factor (Tables 33 and 34) suggest that it is related to somewhat different aspects of maladjustment for the two groups. For the residents it was an Anxious-Neurotic dimension while for the volunteers it is primarily an Antisocial-Neurotic dimension. The remaining factors indicate that there are different kinds of legal-interpersonal and control dimensions and they appear in different orders in the two groups. For the residents, the remaining factors may be described as Legal-Moralistic, Desire to Please, Difficult Background, Motor Impulse, Delayed Gratification, Criminality and Egocentrism. The volunteer matrix is less clear. Describing the

Table 32
Eigenvalues and Percent of Variance
Accounted for by Factors of Residents'
and Volunteers' Test Battery Prescores

	Factor	Eigenvalue	Percent of Variance	Cumulative Percent
Volunteers'	Prescores			
	1	7.03	34.8	34.8
	2	3.70	18.3	53.1
	3	2.57	12.7	65.8
	4	2.39	11.8	77.6
	5	1.36	6.7	84.3
	6	1.25	6.2	90.5
	7	1.02	5.0	95.5
	8	0.90	4.5	100.0
Residents'	Prescores			
	1	6.90	40.8	40.8
	2	2.35	13.9	54.7
	3	2.05	12.1	66.9
	4	1.41	8.3	75.2
	5	1.24	7.3	82.5
	6	1.18	7.0	89.5
	7	1.02	6.0	95.5
	8	0.76	4.5	100.0

Table 33

Varimax Rotated Factor Matrix
on Residents' Test Battery Prescores

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
Attitude Toward Judicial Syst.	-10	85	-12	03	-04	07	-15	-19
Identification Crim. Others	05	-19	-12	-09	-02	-04	55	-07
Tolerance Law Violation	04	-78	18	13	-20	14	22	17
Awareness Lim. Opportunity	35	-59	-22	-02	-11	01	16	-20
Acceptance Others	-63	31	-02	24	04	-04	-09	-03
Self-esteem	-60	25	30	37	12	-18	08	15
Alienation	71	-36	14	19	-10	-03	19	06
Socialization	62	15	09	-47	23	06	-29	-26
Psychopathy	30	-28	14	44	04	-15	43	29
Neuroticism	80	01	05	23	-20	-09	26	21
Scholastic Maladjustment	03	-24	-07	13	-29	07	67	12
Inadequacy	21	29	33	-02	-21	01	35	31
Family Dissention	20	-06	08	85	-17	05	-10	-09
Positive Malingering	-09	-03	31	06	42	-13	-31	31
Ego Strength	67	06	08	26	14	05	06	-02
Super ego Strength	22	64	34	-24	15	04	-20	06
External Control	42	-34	01	-10	43	-12	52	11
Empathy	-20	19	27	04	-00	-10	-05	-65
Self-Control	-56	18	-17	20	45	-06	-16	08
Anxiety	77	10	05	16	-11	-10	-03	04
Personal Space: Total	05	-18	-13	-04	-09	48	09	10
Cold Pressor: Time	-06	01	68	-04	14	-06	-00	-11
Cold Pressor: Words	17	-07	80	14	01	-12	-16	-07
Porteus Maze: Years	19	-10	-11	06	-63	-04	04	-02
Porteus Maze: Quality	-23	07	03	-19	57	04	-08	-10
Mean Choice List	10	16	04	08	05	73	-12	-32
Money Saving Measure	-25	06	-09	-00	12	55	-05	23

Table 34

Varimax Rotated Factor Matrix
on Volunteers' Test Battery Prescores

	<u>Factor 1</u>	<u>Factor 2</u>	<u>Factor 3</u>	<u>Factor 4</u>	<u>Factor 5</u>	<u>Factor 6</u>	<u>Factor 7</u>	<u>Factor 8</u>
Attitude Toward Judicial Syst.	-01	08	87	03	05	-06	-02	10
Identification Crim. Others	07	-34	-47	46	09	-24	09	05
Tolerance Law Violation	22	-03	-58	07	40	09	27	-08
Awareness Lim. Opportunity	10	-66	-30	-16	25	11	01	-21
Acceptance Others	-10	07	32	08	-20	-38	-06	72
Self-esteem	-49	36	20	-13	-30	-05	-41	24
Alienation	33	-45	-40	05	00	25	58	06
Socialization	-93	-01	01	10	05	-08	-08	10
Psychopathy	73	27	-20	08	17	17	40	-18
Neuroticism	79	-13	-13	-24	09	02	41	02
Scholastic Maladjustment	88	-02	11	13	-10	05	-04	12
Inadequacy	44	53	36	-03	22	13	-13	-00
Family Dissention	81	-08	-08	-05	03	-18	07	-13
Positive Malingering	-36	49	30	22	28	30	-26	-16
Ego Strength	04	74	-12	15	12	03	-18	-04
Super ego Strength	-56	-29	34	04	03	-04	-46	09
External Control	-24	-48	-38	29	06	03	33	57
Empathy	-16	-17	20	53	-50	-31	-15	-02
Self-Control	-20	30	07	-13	27	49	-48	54
Anxiety	16	-20	02	-02	22	-15	86	02
Personal Space: Total	-17	-01	-03	20	70	-05	12	-07
Cold Pressor: Time	02	14	16	49	43	-38	-07	16
Cold Pressor: Words	05	39	01	60	06	-15	-05	27
Porteus Maze: Years	06	01	08	-03	-08	-75	23	07
Porteus Maze: Quality	34	-03	05	-13	-24	61	20	-12
Mean Choice List	-10	14	-09	69	16	21	01	-09
Money Saving Measure	-34	25	25	16	-03	35	-53	06

remaining factors as Stability, Legal-Moralistic, Delayed Gratification, Aloofness, Motor Impulse, Anxiety-Alienation, and Socially Accepting, a few oddities are apparent. For example, Inadequacy has a loading of .53 on Stability. Self-control loaded .49 on Motor Impulse in the volunteer analysis and .45 in the resident analysis. This raises serious questions about the validity of this self-report measure.

Factor Loadings

Particular attention should also be given to those variables which have high correlations with each of the resident and volunteer factors. Neuroticism, Anxiety, and Alienation all correlated highly (.70 to .80) with the residents' Anxious-Neurotic dimension. Tolerance for Law Violation and Attitude toward the Judicial System correlated highly (-.78, .85) with the Legal-Moralistic factor. The Cold Pressor-Words correlated highly with Desire to Please (.80) and Family Dissent was highly correlated with Difficult Background (.85). Slightly lower correlations were found between the Porteus Maze-Years and Motor Impulse (-.63) dimension, the Choice List and Delayed Gratification dimension (.73), Scholastic Maladjustment and Criminality (.67) and Empathy and Egocentrism (-.65). From the volunteers' factor matrix, the variable Socialization was highly correlated (-.93) with an Antisocial-Neurotic dimension, as was Anxiety on an Anxiety-Alienation factor (.86) and Attitude toward the Judicial System on a Legal-Moralistic factor (.87). Somewhat lower correlations were found between the variable Egostrength and Stability (.74), the Money Saving Measure and Delayed Gratification (.69), Personal Space and Aloofness (.70), Porteus Maze and Motor Impulse (-.75) and Acceptance of Others and Socially Accepting (.72). A summary of the heavily loaded variables

on each factor is presented in Appendix G. Because of their high loadings on various factors, particular attention should be paid to these variables in subsequent program analyses.

Summary

These data suggest three points. The difference in structure order and clarity of the factor analyses add further support to the contention that the study does, in fact, involve two very different groups. Secondly, by accounting for 75% of the variance of 28 variables in four factors, and 90% in six, in two separate investigations additional concurrent validity is provided for the scales. Lastly, a factor composition is suggested. With both groups, the first factor appears to be one of personal adjustment or emotionality. Among the residents, the second and third factors suggest legal-interpersonal and control dimensions. The remaining factors suggest variations on these dimensions. Likewise, with volunteers, following personal stability, interpersonal and control factors alternate through the remaining six factors. As one might expect, it is apparent that the original two target factors are more accurately described as a complex combination of various factors which can be isolated after the initial Adjustment factor is extracted. Such a factor composition was found with offenders and nonoffenders.

It was noted in the section on scale validity, that a number of scales representing different constructs were significantly correlated.

This suggests that an oblique rotation might be more appropriate in that it does not assume independence (orthogonality) of factors. Although such an approach seems more realistic, it did not yield a simpler factor structure according to Thurstone's criteria (Harman, 1967). In fact, the factor structure produced from the orthogonal solution was superior to the oblique rotation on all five simplicity criteria for both the resident and volunteer analyses (Appendix H).

4. Resident- Volunteer Differences

Resident and volunteer prescores were compared in two ways. Univariate t -tests and analyses of covariance were performed on each of the test battery scales. Age and sex, which correlated with a number of the measures, were used as covariates. Since the volunteer group was older and contained many females (73%), the latter analyses were necessary to determine whether client differences were simply a function of age and sex. Secondly, discriminant function analysis was used to examine the discriminability of clients based on test data. Specifically, a stepwise method designed to minimize Wilks' Lambda was employed. Because separation involved only two groups, a single function was required and no rotation was necessary (Nie et al., 1975).

The analytic features of discriminant analysis include a number of criteria for assessing the importance of a specific function. Lambda is an inverse measure of the discriminating power in the original variables which has not yet been removed by the discriminant functions. Lambda remains large if little information is removed. Therefore, the function which minimizes Wilks' Lambda also maximizes the overall multivariate F ratio for the test of group centroids. A test of significance is then performed on the multi-

variate F ratio which approximates a Chi-square distribution. This is done by converting Wilks' Lambda to a Chi-square statistic. A second criterion for assessing the importance of a given function is the eigenvalue. Since the sum of the eigenvalues is a measure of total variance existing in the discriminating variables, a single eigenvalue expressed as a percentage of the total sum of eigenvalues provides a reference to the relative importance of the associated function. Lastly, the canonical correlation provides a measure of association between a single discriminant function and the set of $(g-1)$ dummy variables which define the g group memberships. With only two groups, this is identical to the multiple correlation of weighted test scales to a single dichotomous classification variable. The canonical correlation squared is a measure of the proportion of variance in the discriminant function which is explained by group membership. With respect to classification, a summary of the subject allocation rate is also presented. These 'hit rates' are based on the discriminant function coefficients and subjects' relative probability of group membership (Nie, Hull, Jenkins, Stein, Brenner, & Bent, 1975). Variables are included into the equation in a stepwise manner. The criterion for variable inclusion is the overall multivariate F ratio for the test of differences between group centroids and, therefore, minimizes Wilks' Lambda. (A number of supplementary discriminant function analyses and other multivariate statistics are presented in Appendix H.)

Scales and Their Subscales

There was a total of twenty different scales in the Attitude/Personality battery. Two of these scales were arithmetic sums of subscales. Attitude Toward the Law and Judicial System was comprised of the component scales, Attitude Toward the Law, Courts, and Police. Alienation was composed of Isolation, Normlessness, and Powerlessness.

Discriminant Analyses demonstrated that a breakdown of the data to component subscales added little to the discrimination between residents and volunteers or the experimental and control conditions. For example, when Attitude toward the Law, Courts and Police are combined in a discriminant analysis designed to maximize Wilks' Lambda, thirty-four of fifty residents and fifty-two of sixty-three volunteers were correctly classified for a total of 76%. The classification to the two groups produces one discriminant function having an Eigenvalue of .43, canonical correlation of .559, Wilks' Lambda of .70 and Chi-square of 39.15 ($df=3$, $p < .001$). The standardized discriminant function coefficients were Law $-.07$, Court $-.57$, and Police $-.31$ produced centroids of .53 for residents and $-.42$ for volunteers. The success rate of subject allocation for Attitude Toward the Law and Judicial System, which is the sum of these three variables, was 37 and 53 for residents and volunteers respectively, for a hit rate of 79%. Using a trial and error approach, the optimum rate was found to occur when a critical score of 87.5 was used for this composite scale. This was done by varying the cut-off score and mechanically determining the hit-rate by examining the resident and volunteer distributions.

Similarly when Isolation, Normlessness, and Powerlessness were combined in a discriminant Function analysis, thirty-eight residents and forty-nine volunteers were correctly allocated for a hit rate of 77%. The discriminant function had an Eigenvalue of .56, canonical correlation of .60, Wilks' Lambda of .64 and Chi-Square of 48.88 ($df = 3, p < .001$). The Standardized Discriminant Function coefficients were Alienation $-.15$, Powerlessness $-.66$ and Normlessness $.19$ to produce centroids of $-.40$ for Residents and $.32$ for Volunteers. The simple sum variable, Alienation, was successful on thirty-five of the residents and fifty-four of the volunteers for a rate of 71% when using a critical score of 19.5. Therefore the variables Attitude toward the Law and Judicial System and Alienation are reported throughout.

Two behavioral tests, the Proxemics and Porteus Maze Tests, were also comprised of a number of subscales. They were analyzed in a similar fashion.

The means of the four Personal Space directional variables were summed to produce a Total Personal Space score. This score successfully allocated 78% of the subjects, thirty-three of forty-nine residents and fifty-five of sixty-three volunteers. The discriminatory capacity of this variable was almost completely accounted for by the mean Behind Score which successfully allocated 74% of the subjects, twenty-eight residents and fifty-five volunteers.

Taken alone, Personal Space Total, with its coefficient of 1.00 produced a Standardized Discriminant Function, having an eigenvalue of .37, canonical correlation of .52, Wilks' Lambda of .73 and a Chi-square of 34.60 ($df = 1$, $p < .01$). The discriminant function centroids were residents .587 and volunteers -.457. Addition of the Personal Space-Area did not add any classification strength to the Personal Space-Total variable nor did addition of the remaining three mean direction component distances add to the discriminatory power of the Single Behind measure.

The Porteus Maze Quality Score was also examined for its discriminatory capacity. Porteus (1965) claims his preassigned combination of the various quality subscores provides the optimum discrimination. The Standard Quality Score successfully discriminated 66.96% of the subjects, twenty-eight of fifty residents and forty-seven of sixty-two volunteers using a critical score of 34.5. This compares with Porteus' (1965) data reporting 80% success rate using a critical score of 29 and with Docter and Winder's (1954) 70% success rate for the allocation of delinquents. More in line with the present study which is complicated by sex differences, Porteus claimed the cut off for females was a score of 32. A lower discrimination ability in the present study might be expected since the majority of non-offenders were female. But the point-biserial correlation of Quality Score with sex demonstrated no such relationship among the volunteer subjects.

When the eight, unweighted, Quality subscales were used in a discriminant analysis the discrimination power increased only somewhat to 73% successfully classifying thirty-eight residents and forty-four volunteers. Interestingly, only four subscales were required, one of which, year seven, was weighted in the direction of the volunteers. The Standardized Discriminant Function coefficients for the subscales were, First Third $-.24$, Crossed Line $-.40$, Wavy Line $-.60$ and Year Seven $.33$. The centroids were $-.44$ for residents and $.36$ for volunteers. Other statistics include an Eigenvalue of $.24$, canonical correlation of $.44$, Wilks' Lambda $.80$, and Chi-square 23.61 ($df = 4, p < .001$).
 Univariate Test Battery Comparisons

The eleven Attitude/Personality tests and the four behavioral tests comprised a total of thirty-four scales and subscales. Residents' and volunteers' prescores were compared on each variable individually. The two groups of clients differed ($p < .05$) on all but six scales, the two delay of gratification scales, the two Cold Pressor measures, External Locus of Control and Superego Strength. Resident-volunteer comparisons are presented by scale for all measures in the test battery in Table 35. Volunteer subjects were also significantly older than resident subjects (24.97 vs. 20.82 ; $t = 4.13$, $p < .001$).

This initial comparison suggests that the two groups are highly different. Examining those variables which did not demonstrate

TABLE 35
 Volunteer Resident Prescores on the
 Attitudinal/Personality and Behavioral Test Battery

	Residents (N=50)		Volunteer (N=63)		t	p
	$\bar{X}$	S.D.	$\bar{X}$	S.D.		
Law	33.80	5.63	38.60	4.55	-5.02	.001
Court	23.44	5.60	29.40	4.11	-6.52	.001
Police	22.44	4.85	26.63	2.98	-5.65	.001
Attitude to Jud. Syst. (Total L C P)	79.68	14.01	93.21	15.14	-4.87	.001
Identification with Crim.	18.52	3.78	15.41	2.65	5.13	.001
Tolerance for Law Violation	26.56	6.25	23.17	4.19	3.44	.001
Awareness of limited opportunity	19.74	4.49	16.71	2.70	4.44	.001
Acceptance of Others	47.56	7.82	56.08	5.19	-6.94	.001
Self-Esteem	143.68	17.90	164.87	17.49	-6.33	.001
Isolation	28.96	4.44	25.52	4.15	4.24	.001
Normlessness	30.02	5.71	22.87	4.43	7.49	.001
Powerlessness	25.30	5.48	21.21	3.44	4.85	.001
Alienation (Total I N P)	84.28	12.81	69.78	9.89	6.79	.001
Socialization	22.34	5.74	32.90	6.78	-8.80	.001
Psychopathy	8.42	4.39	2.05	1.79	10.48	.001
Neuroticism	15.20	5.62	5.10	3.58	11.72	.001
Scholastic Maladjustment	7.72	8.72	3.19	2.42	3.94	.001
Inadequacy	5.04	1.53	2.62	1.50	8.47	.001
Family Dissention	4.16	2.78	1.98	2.15	4.69	.001
Positive Malingering	11.7	3.40	10.17	3.48	2.34	.021
16 PF C (ego strength)	13.68	3.80	16.10	3.54	-3.49	.001

Table 35 (continued)

	<u>$\bar{X}$</u>	<u>S.D.</u>	<u>$\bar{X}$</u>	<u>S.D.</u>	<u>t</u>	<u>p</u>
16 PF <u>G</u> (super ego strength)	10.20	3.66	11.54	3.68	-1.93	.057
Locus of Control (External)	9.57	3.44	9.14	4.13	.58	.560
Empathy*	30.63	5.64	39.59	5.58	-8.39	.001
Self-Control	22.62	7.59	30.60	6.52	-6.01	.001
Anxiety*	10.14	4.43	5.27	3.69	6.35	.001
Personal Space Front*	1.97	1.41	0.93	0.80	4.97	.001
Left*	1.97	1.39	0.77	0.80	5.77	.001
Behind*	2.30	1.83	0.40	0.76	7.44	.001
Right*	1.98	1.55	0.75	0.78	5.46	.001
(Personal Space: Total*)	8.16	5.74	2.91	2.74	6.39	.001
(Personal Space: Area*)	11.99	12.74	2.16	4.20	5.74	.001
Cold Pressor: Time	132.08	130.9	122.97	135.59	.36	.719
Cold Pressor: Words [°]	15.38	27.54	13.87	20.00	.33	.739
Porteus Maze: Years [°]	14.49	1.54	15.25	1.59	-2.55	.012
Porteus Maze: Quality [°]	41.34	20.32	28.55	16.49	3.68	.001
Choice List: mean** ^{°°}	7.79	5.22	8.60	4.62	-0.67	.509
Money Saving Measure*** ^{°°°}	11.98	3.54	10.46	3.49	1.76	.082

Missing data: on Residents *N=49

 **N=48

 ***N=47

 on Volunteers °N=62

 °°N=27

 °°°N=26

significant differences, one, Superego strength, showed a strong tendency in the predicted direction ($p < .06$). The Cold Pressor measures were hampered by extremely large variances. Locus of control showed no reliable difference and previous studies concerning inmate-noninmate differences are equivocal (LeBlanc and Tolor, 1972). Others feel that the scale loses its homogeneity at the external pole, different groups making external responses for different reasons (Levenson, 1975). Residents and volunteers also did not respond differently on the Choice List and Money Saving Measure. In fact, on the latter, residents tended to have more delayed responses than volunteers ($p < .08$).

Discriminant-Function Analysis

Using all scales, forty-eight of fifty residents and fifty-six of sixty-three volunteers were categorized appropriately for a correct classification rate of 92%. This increased to 98%, forty-five of forty-six residents and all of twenty-four volunteers when subjects with missing data were not included. Many volunteers (38) were not given the Choice Lists since they were administered at the first group session.

This analysis is of particular interest in that it employs a combination of eleven, legal, interpersonal, adjustment and control variables to highly discriminate residents from volunteers (Wilks' Lambda = .22, $\chi^2 = 94.22$, $df = 11$, $p < .001$). The group centroids were 10.31 for residents and -19.76 for volunteers. The standardized

discriminant function coefficients on the eleven variables were Neuroticism (8.52), Attitude toward the Law (-5.92), Porteus Maze-Years (-5.18), Tolerance for Law Violation (-3.6), External Control (-3.28), Inadequacy (3.03), Identification with Criminal Others (2.97), Self-control (-2.71), Personal Space-Total (2.57), Acceptance of Others (2.05) and Money Saving Measure (1.86). The test battery scales were then grouped according to conceptual orientation and the discriminant function analysis repeated (Table 36). In each case the function was highly significant.

Summary

It is evident that the two groups were quite different and not selected from similar populations. They differed in their legal and interpersonal orientation, background, stability, and personal control. These differences were not simply a function of age and sex differences as is evidenced from the covariate analyses of test variable prescores (Appendix G).

In addition, it was observed that little was lost in terms of resident-volunteer discrimination by combining subscales into a single scale. Also, discriminant function analyses highly differentiated residents from volunteers when all scales were used as well as when the Adjustment, Social, Self-control, and Legal measures were used separately.

TABLE 36

Discriminant Function Analyses of Residents and Volunteers
According to Collections of Prescore Measures

Group	Variables	Standardized Discriminant Function Coefficient	Canonical Correlation	Wilks Lambda	Chi Square	df	sig.
Legal	Attitude to Judicial System	.50	.53	.72	36	4	.001
	Identification Criminals	-.64					
	Tolerance Law Violation	-.19					
	Superego Strength	-.09					
			Centroids:	Residents (-.59)	Volunteers (.47)		
			Hit Rate (76%):	37 of 50 Residents	48 of 63 volunteers		
Social	Acceptance of Others	-.04	.78	38	102	5	.001
	Self-esteem	-.06					
	Empathy	-.36					
	Socialization	-.22					
	Psychopathy	.52					
			Centroids:	Residents (.89)	Volunteers (-.69)		
			Hit Rate (89%):	41 of 50 Residents	60 of 63 Volunteers		
Adjust- ment	Anxiety	.02	.79	37	106	4	.001
	Inadequacy	-.34					
	Neuroticism	-.76					
	Alienation	-.88					
			Centroids:	Residents (-.89)	Volunteers (.69)		
			Hit Rate (87%):	41 of 50 Residents	56 of 63 Volunteers		
Self- control	Porteus Maze Quality	-.56	.58	.66	45	2	.001
	Self-control	.90					
			Centroids:	Residents (-.71)	Volunteers (.57)		
			Hit Rate (74%):	36 of 50 Residents	47 of 62 Volunteers		

B. PROGRAM ANALYSIS

The analysis of treatment programs is presented in three parts, each one dealing with different aspects of program evaluation. The first section concerns an experimental investigation of treatment outcome. This includes analyses of variance and covariance of resident and volunteer changes by treatment regime and experimental condition. Within group correlations between attendance and test battery change scores are also presented because of the variable attendance on the part of experimental subjects.

All of the analyses are repeated on residents' institutional data in the second section. Archival and observational sources are used to determine the extent of treatment generalization to the naturalistic environment.

Aspects of treatment process are investigated in the second section. There are two principal sources of these data. Observational records of the Community Group discussions provide the first source. Specifically, the effect of manipulated informational training, the relationship between test prescores and verbal behavior, and the influence of feedback on test score outcome, are all examined. An investigation of seating behavior in these groups is included as an unobtrusive examination of group integration. The second source of data is the post-program evaluation. GAIT ratings are examined for differences between client ratings of volunteers, resident and volunteer ratings of programs, and their relationships to the test battery.

Process data pertaining to the second principal treatment manipulation, exposure to a self-control program, are presented by single subject in the program description. Program content (assignments, exercises, and readings) and results for the self-control program are presented in Appendix D.

1. Treatment Outcome: Test Battery Analysis

Initially, the assumption of random assignment to experimental and control conditions was examined by comparing prescores on the test battery scales. This was done separately for residents and volunteers. In over 28 comparisons in the two groups only three approached significance ($p < .10$). Experimental residents tended to have a higher Porteus Maze Years Score (14.80, S.D.=1.78 vs 13.77, S.D.=1.88; $t(19.84)=1.94$, $p < .07$)¹ and lower Socialization scores (21.4, S.D.=5.62 vs 24.53, S.D.=5.57; $t(48)=-1.81$, $p < .08$). Experimental volunteers tended to have a larger Personal Space-Total (2.58, S.D.=4.78 vs 1.02, S.D.=1.52; $t(60.62)=1.96$, $p < .06$).² The occurrence of three trends at the 10% level are well within the bounds of chance when 56 comparisons are made. Experimental and control residents were compared for age and it was found that control residents tended to be older than experimental residents (22.37, S.D.=5.99, vs 20.15, S.D.=3.07; $t(48)=-1.73$, $p < .10$). Experimental and control volunteers did not differ in age.

Initially, separate analyses were performed on residents' and volunteers' treatment outcome data. Individual analyses of variance

¹Heterogeneous variance ($F(45,16)=9.89$, $p < .01$). Therefore a t -test for independent groups with heterogeneous variances was used. The standard error of the difference between the means employs separate population variance estimates (Welch, 1947).

²Heterogeneous variance ($F(14,34)=2.16$, $p < .05$). Therefore a separate variance estimate was used.

were performed on the change scores (post minus pre) of each test battery variable. Analyses of covariance on post scores provided ancillary comparisons.

Experimental Residents Treatment Regime

When the four experimental groups of residents were compared in a factorial design (volunteer training vs no volunteer training by Self-control vs Recreation) one main effect ($p < .05$) was found on the training factor. Training versus no training had a main effect on the Personal Space variable Total Distance ($F(1,23)=5.82$, $p < .023$, Training = 1.65, No Training = -1.34).³ A training effect on the Empathy Scale displayed a nonsignificant tendency ($F(1,24) = 3.67$, $p < .065$, Training = 1.37, No Training = -1.20). Three additional tendencies and four interactions failed to reach significance ($p < .10$).⁴

The results indicate that the information training procedure designed to foster encouragement and reinforcement of residents' prosocial statements did not have any overall effects on the outcome of residents' test data pertaining to the law and criminal behavior. These preliminary analyses do suggest that volunteer training may have influenced residents' interpersonal orientation. Yet this is not clear since Personal Space and Empathy were influenced in different directions. The

3. All group means are expressed as adjusted differences from the grand mean. These deviating scores represent group differences after covariates (e.g. prescores) and other main effects (e.g. self-control factor) have been controlled for.

4. A summary of all results at or beyond the .10 level of significance is presented in Appendix G.

two groups of residents who were exposed to trained volunteers appear to have increased in Empathy and also in Personal Space.

Self-control training tended to increase Awareness of Limited Opportunity when compared to Recreation ($F(1,24) = 3.51, p < .07$; self-control = 1.42; recreation = -1.42). This treatment tendency was supported by a similar effect on the component variable Powerlessness ($F(1,24) = 5.88, p < .02$; self-control = 1.69; recreation = -1.69).

These results are not surprising since the academic and self-control skills of the volunteers played an important role in the self-control group. Rather than acting as 'models', volunteers may have served as 'benchmarks' resulting in feelings of futility among the residents. The scientific approach may also have implied a deterministic view of life although bringing one's behavior under personal control was the explicit target of the program. The therapeutic tendency of the program is also encouraging (Neuroticism $F(1,25) = 2.93, p < .10$; Self-control = -1.08; Recreation = 1.08). It suggests that an active behavioral treatment is more appropriate than simple exposure to non-delinquents in a social-recreational context. Self-control training did not affect residents' scores on the 'control' variables.

Although there were no significant interactions, encouraging results for therapeutic effects of the program indicated in the preceding results are again suggested. Interaction tendencies on Isolation ($F(1,24)=3.93, p < .06$) and Anxiety ($F(1,24) = 3.18, p < .09$) were primarily due to decrements in the Volunteer training - Self-control condition (Group One)⁵. Theoretically, this was the most treatment oriented condition. Two other interaction tendencies on Self-esteem ($F(1,25) = 3.0, p < .10$) and Attitude toward the

5. Analyses of Simple Effects were not significant. All tests of Simple Effects (Winer, 1962) are presented in Appendix H and significant results are also presented with the interaction Figures.

Law ($F(1,25) = 3.13, p < .09$) were found. Group Two (Training-Recreation) showed consistent decrements on both scales. Only one simple effect, Training versus No Training among the Recreation groups on the Law scale, was significant ($F(1,24) = 4.81, p < .05$). Figures 1 to 4 present change scores as a function of treatment regime. In sum, it is suggested that program combination is important to treatment outcome. Specifically, the training - self-control regime tended to show positive results while the training-recreation combination suggested negative effects when compared to other experimental groups. Yet there were no main effects on individual programs.

Volunteer Conditions

The ten groups were collapsed into the five treatment conditions. One-way Analyses of Covariance with five levels revealed a significant effect only on Empathy postscores when adjusted for prescores, ($F(4,55) = 3.047, p < .024$). Adjusted group deviation scores were as follows: Community Group with Training (-1.54); without Training (.26); Self-control (-2.07); Recreation (2.89); and Control Group (.60).

An interesting aspect of these data is the decrement found on two groups. Although the instructions were different and the programs very dissimilar, the two groups which required volunteer training were the two groups which decreased in self-reported Empathy scores. Both groups were instructed as to the theoretical rationale for their involvement and presented with specific functions and goals of their groups. On the other hand, the most socially-oriented, nondirective program, Recreation, produced the only substantial increase on Empathy (Appendix H, Figure 18). There were no other differences.

Treatment-by-Client Analysis

Interaction. Each variable was then analyzed for Overall Treatment and Client effects on adjusted postscores. Comparing experimental to control groups and residents to volunteers in a series of 2x2 analyses of covariance on the

Figure 1

Residents' Isolation Change Scores
as a Function of Program Combination

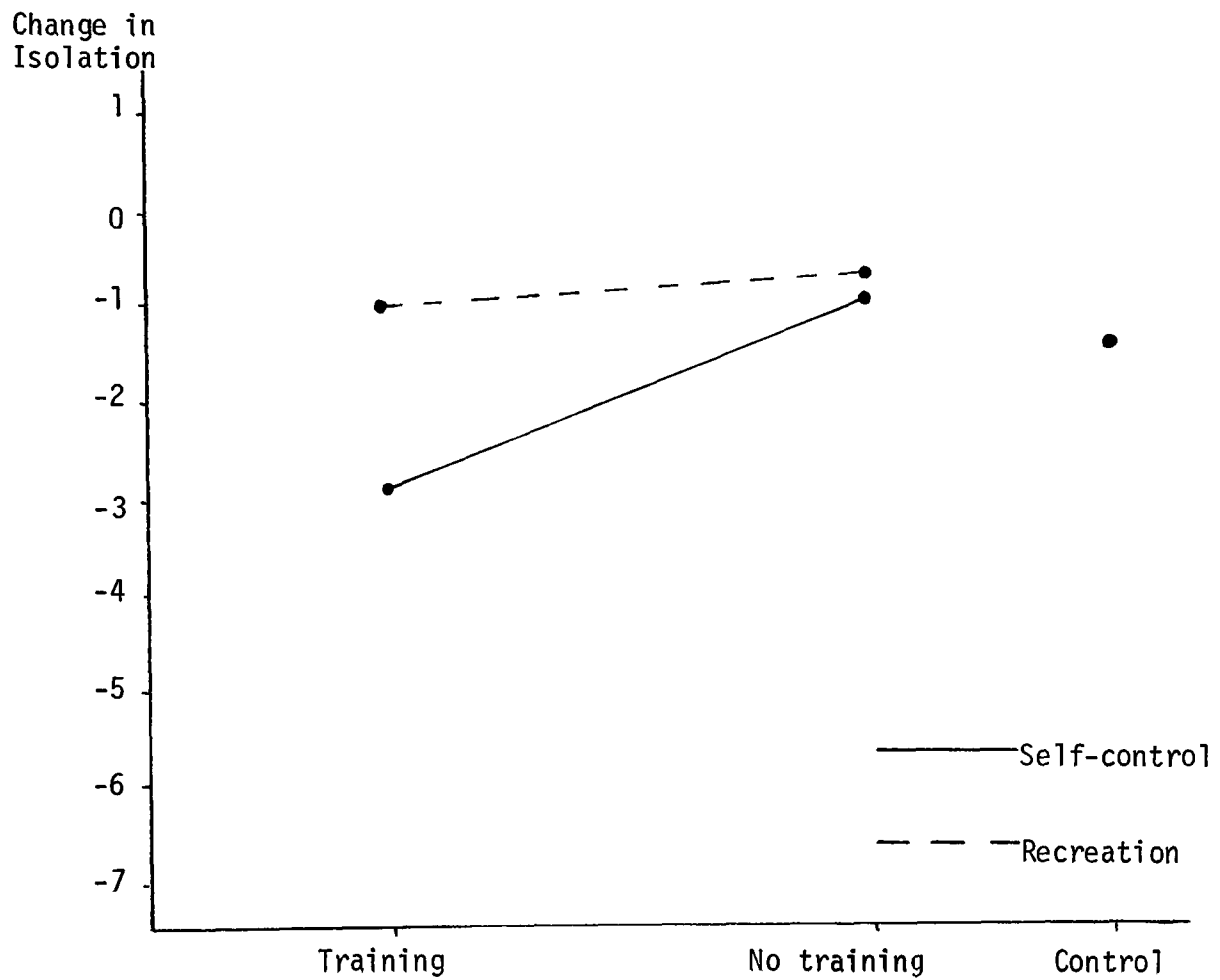


FIGURE 2

Residents' Anxiety Change Scores as a
Function of Program Combination

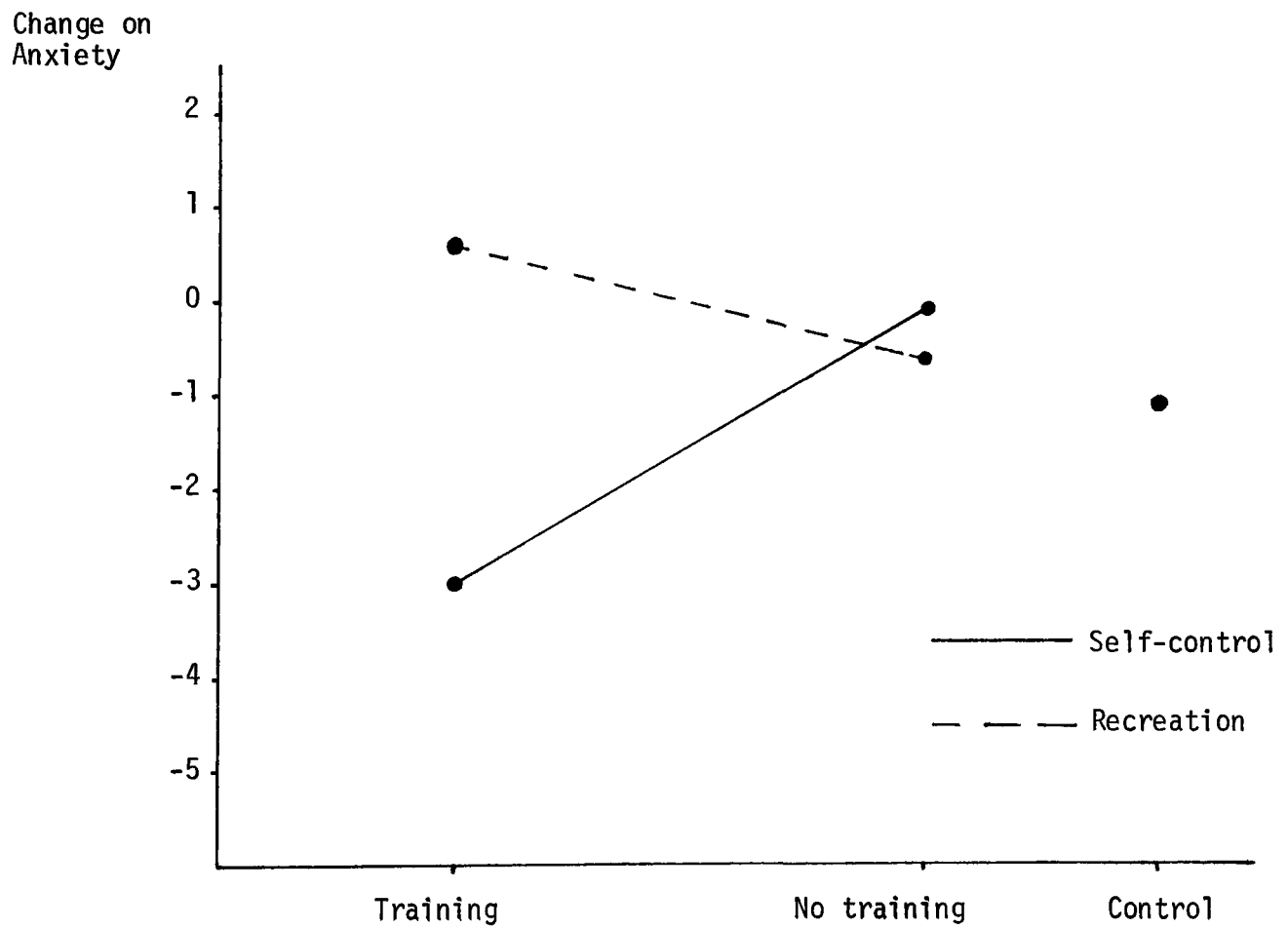


Figure 3

Residents' Self-esteem Change Scores
as a Function of Program Combination

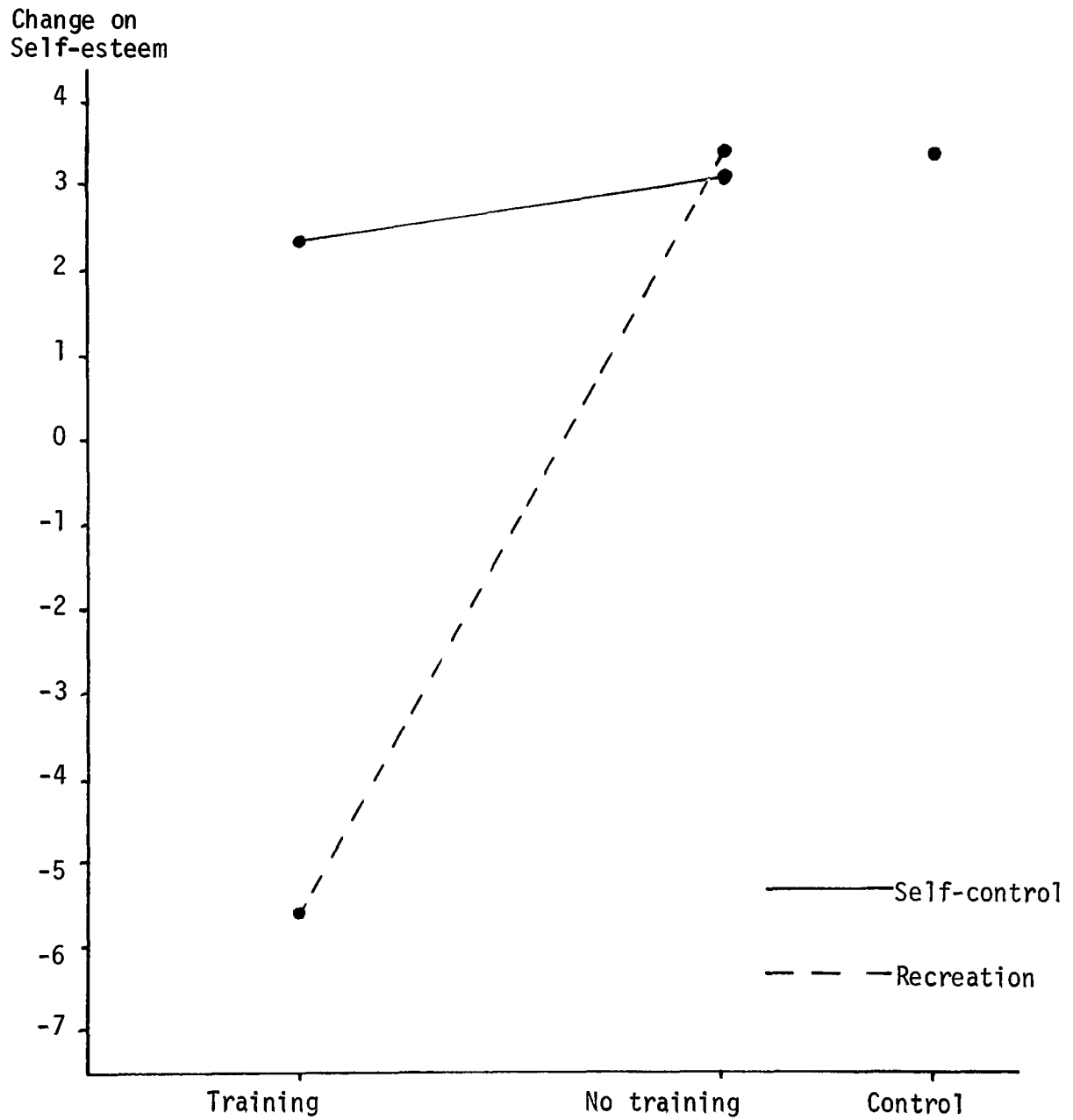
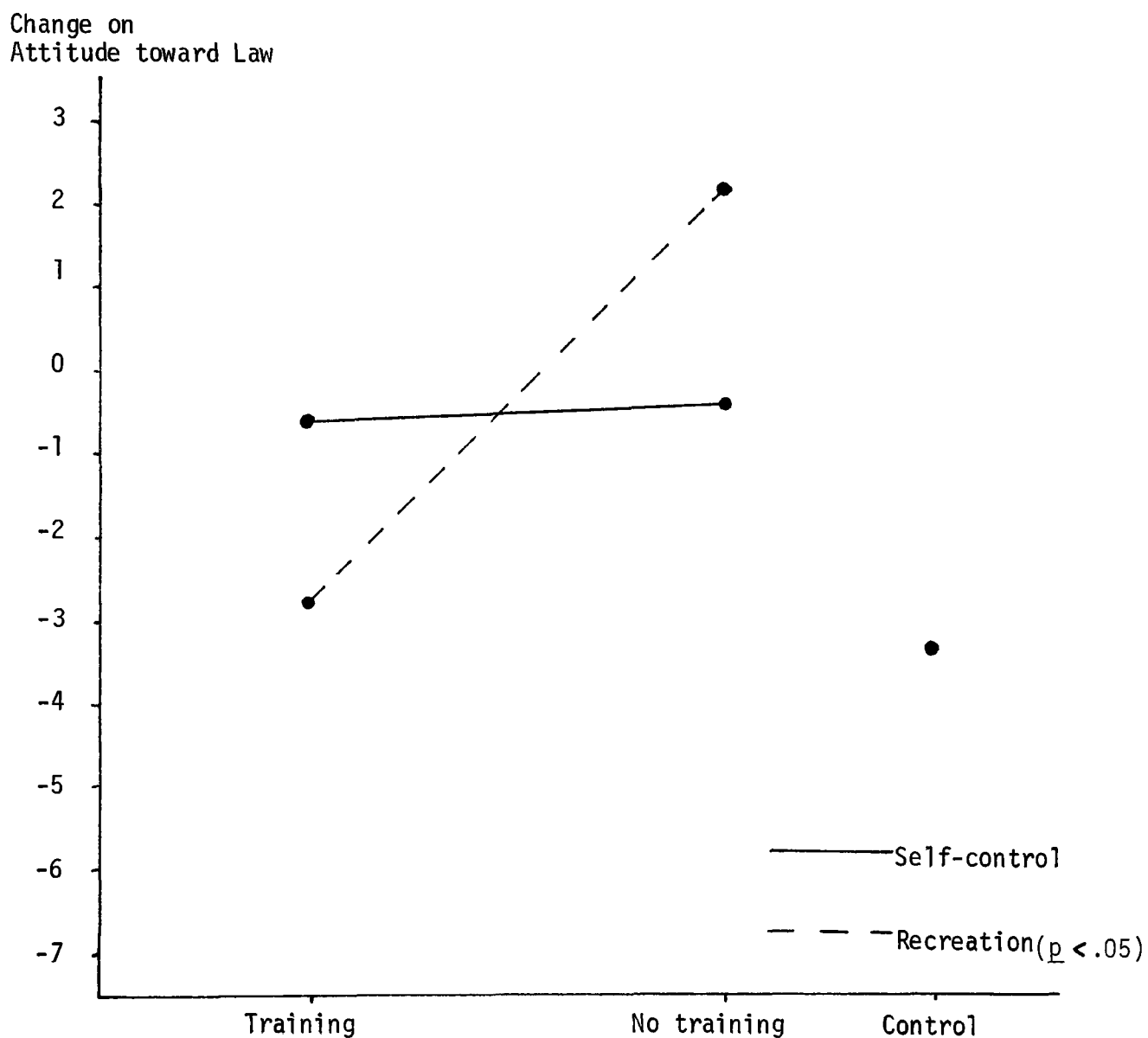


Figure 4

Residents' Attitude toward the Law Change Scores
as a Function of Program Combination



Attitude/Personality and Behavioral battery, the following results were found. The only significant client-by-treatment interaction on 28 variables was found on Identification with Criminal Others ($F(1,101) = 7.20, p < .01$). When age, which was correlated with initial Identification with Criminal Others prescores ($-.37$ for residents and $-.31$ for volunteers), and when age and sex were treated as covariates, little difference in the interaction was found ($F(1,99) = 4.38, p < .05$; $F(1,98) = 4.41, p < .01$: Table 37).

As seen in Figure 5, residents who participated in the program decreased on Identification with Criminal Others while those residents who did not participate, increased ($p < .05$). On the other hand, volunteers who participated in any aspect of the institution program increased on Identification with Criminal Others when compared to experimental residents who decreased ($p < .01$, Table 38).

Only one other variable, Personal Space-total, displayed an interaction tendency ($F(1,101) = 2.77, p < .10$). In an analysis of change scores (Appendix H), the two volunteer groups equally reduced their Personal Space-total measures at the time of posttesting (Figure 6). Residents in the two conditions changed in opposite directions, experimental subjects decreasing and controls increasing in their total distance ($p < .05$). No other variables demonstrated the significant treatment-by-client interaction, although a number of variables had significance levels at about the .10 level (Appendix G).

Treatment Effects. Results were examined for main effects on the treatment factor. Only one significant effect was observed.⁶ Analysis of covariance demonstrated a significant effect of treatment on participants' Inadequacy score ($F(1,99) = 6.13, p < .02$). An analysis of change scores was also significant ($p < .01$; Table 39). In addition to reporting

6. Treatment effect correlations are presented separately for residents and volunteers with M_p partialled out, in Appendix H.

Table 37

An Analysis of Covariance
on Identification with Criminal Others-Post
with Prescore and Age as Covariates

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>Sign. of F</u>
Covariates	230.135	2	115.068	17.918	.001
Ident - pre	126.177	1	126.177	19.647	.001
Age	19.936	1	19.936	3.104	.077
Main Effects	32.119	2	16.059	2.501	.085
Client	29.581	1	29.581	4.606	.032
Treatment	0.953	1	0.953	0.148	.999
Interaction: Client x Treatment	28.146	1	28.146	4.383	.037
Residual	235.782	99	6.422		
Total	926.182	104	8.906		

Standardized Regression Coefficients

<u>Covariate</u>	<u>Beta</u>
Identification-pre	.338
Age	-.077

Table 38

Analysis of Variance
Residents vs Volunteers by
Experimentals vs Controls on
Identification with Criminal Others, Change Score

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>Sig-nifi-cance</u>
Main Effects	30.99	2	15.50	1.34	.266
Client	29.62	1	29.62	2.56	.109
Treatment	2.26	1	2.26	.20	.999
Interaction					
Client X Treatment	83.45	1	83.45	7.20	.008
Residual	1171.10	101	11.60		
Total	1285.55	104	12.36		
Simple Effects					
Experimental vs. Control-Res	60.80	1	60.80	5.24	.05
-Vol	24.91	1	24.91	2.15	ns.
Residents vs. Volunteers-Exp	90.66	1	90.66	7.82	.01
-Con	22.40	1	22.40	1.93	ns.

Figure 5

Identification with Criminal Others Change Score
(post minus pre) as a Function of Treatment Con-
dition for Residents and Volunteers.

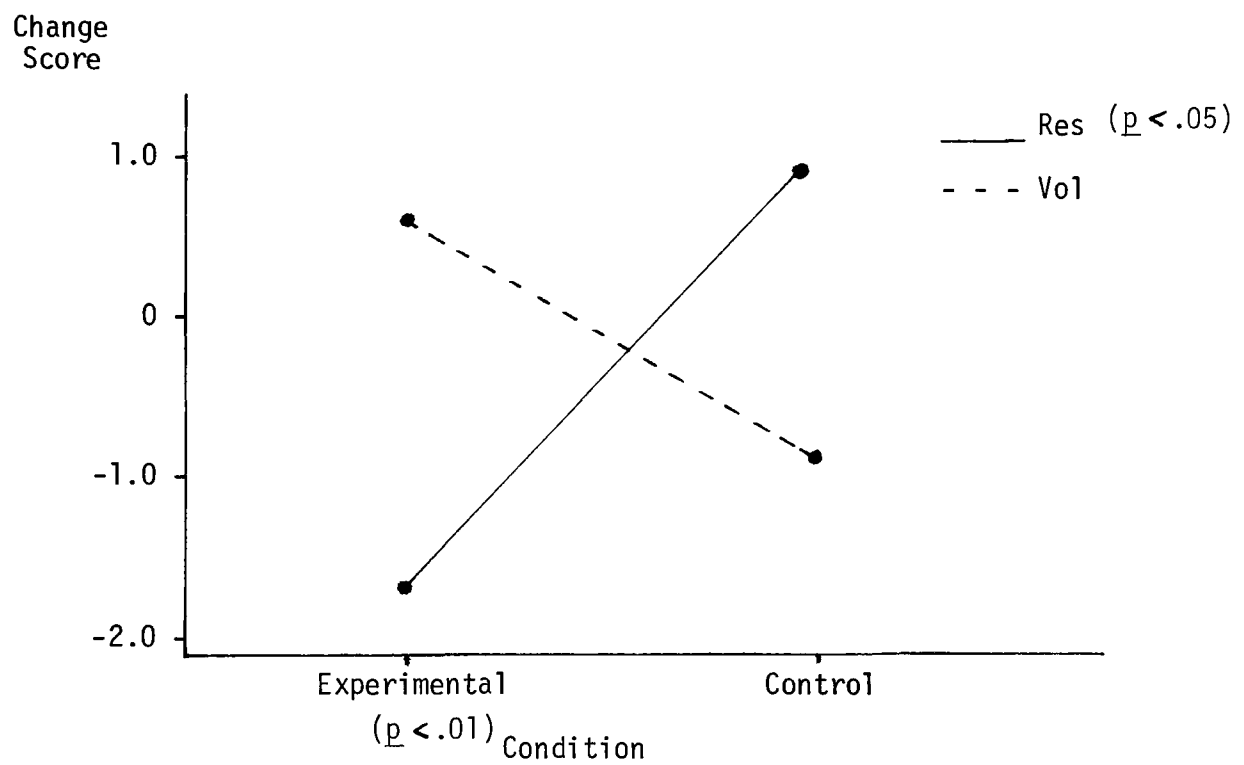


FIGURE 6

Personal Space - Total Change Score
as a Function of Treatment Condition
for Residents and Volunteers

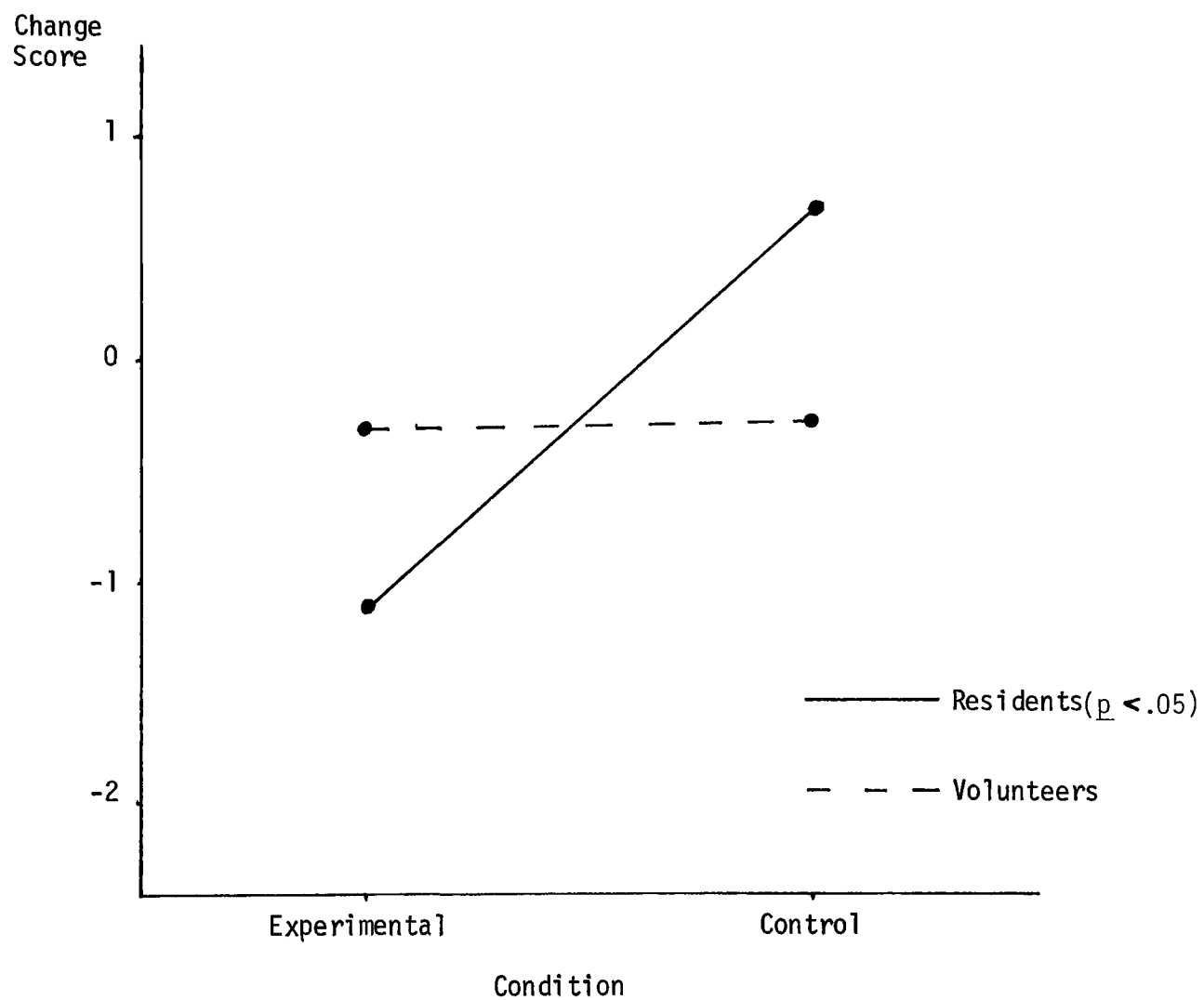


Table 39

Analysis of Variance
Residents vs Volunteers by
Experimentals vs Controls on
Inadequacy, Change Score

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>df</u>	<u>Mean Square</u>	<u>F</u>	<u>Sign of F</u>
Main Effects	14.898	2	7.449	3.707	0.027
Client	0.017	1	0.017	0.009	0.999
Treatment	14.888	1	14.888	7.409	0.008
2-way Interaction	1.212	1	1.212	.603	0.999
Client x Treatment	1.212	1	1.212	.603	0.999
Residual	202.937	101	2.009		
Total	219.047	104	2.106		

less Inadequacy, subjects (residents and volunteers) in the treatment program tended to express more Superego Strength, make fewer qualitative errors in the Porteus Maze and report a smaller area of Personal Space($p < .10$; Appendix G). Again, these results indicate positive therapeutic outcome as a result of program participation.

This contention is supported by the multivariate investigation as well. Change scores on nine test scales were sufficient to successfully allocate 88% of the residents to their respective experimental (30 of 35) and control (14 of 15) conditions. Analytic statistics included a Canonical correlation of .82, Wilks Lambda of .33, and Chi-square of 34.49 ($df=9, p < .001$). The group centroids were .58 for experimental and -1.12 for control residents. The relevant variables and their standardized discriminant function coefficients in order of inclusion were Personal Space-total (-0.73); Ego strength (-0.51); Cold Pressor-words (-.43); Inadequacy (-.40); Identification with Criminals (-.28); Porteus Maze Quality (-.32); Porteus Maze Years (-.40); Choice List (.21), and Acceptance of Others (.18). Again these data suggest that the principal treatment results are in terms of restricting or inhibiting the well-known inappropriate prisonization effects and secondarily in fostering a mature prosocial disposition (Appendix H).

Client Effects. Data were inspected for main effects on the factor Client. Significant effects were found on 14 variables and tendencies on two others. The analyses of covariance results are presented in Table 40 . Inasmuch as these results reflect the ongoing effect of incarceration (collapsing across treatment,⁷ residents are compared to nonincarcerated

⁷The residents and volunteer groups were comprised of approximately the same ratio of Experimental and Control subjects. Seventy percent of the residents and 73% of the volunteers were experimental subjects.

Table 40

Main Effects due to Client;

Residents vs Volunteers

<u>Variable</u>	<u>F</u>	<u>df(1,99)</u>	<u>P</u>	Means adjusted for Prescore and Treatment Effect	
				<u>Residents</u>	<u>Volunteers</u>
Attitude Toward Law	16.66	.001		-5.18	3.74
Identification Crim.	4.01	.032		.72	- .52
Tolerance Law Viol.	10.08	.002		1.66	-1.22
Awareness Lim. Opp.	6.89	.01		1.09	- .79
Acceptance Others	5.28	.022		-1.71	1.21
Socialization	20.85	.001		-2.98	2.15
Psychopathy	30.90	.001		2.43	-1.76
Neuroticism	8.47	.005		1.29	- .93
Inadequacy	7.30	.008		.57	- .41
Family dissention	5.57	.019		.48	- .34
Positive Malingering	5.06	.025		.91	- .64
Ego Strength	4.20	.041		- .73	.53
Empathy	5.73	.018		-1.47	1.06
Self-Control	16.34	.001		-2.50	1.80
Personal Space: Area	3.73	.053		1.97	-1.45
Cold Pressor Time	2.90	.088		-17.50	12.83

Post scores are adjusted for prescores and Age, collapsing across Treatment.

students on amount of change over a ten-week period not one change is in a desired, positive, or appropriate direction. Residents showed relative decreases on Egostrength, Self-control and pain tolerance. Their Attitude toward the Law decreased while they increased on Identification toward Criminal Others and Tolerance for Law Violation. They became less accepting of others, less empathic and increased their Personal Space. They became less socialized, more psychopathic, and neurotic. They felt less adequate, more limited in opportunity and expressed greater family dissention and social desirability.

Summary

Volunteer training effects were inconsistent in that residents' Empathy and Personal Space both increased. A number of tendencies supported the Training-by-Self-control combination in terms of therapeutic effect. There was an inverse relationship between program structure and volunteers' increased empathy. A treatment-by-client interaction on Identification with Criminal Others replicates previous findings (Andrews et al, 1973) and supports differential association theory.

The results also present a bleary outlook for the prospect of incarceration. In comparison with treatment results, these data might be expected. It is apparent that the deleterious effects of continuous incarceration are much greater than the therapeutic outcome of a short, weekly treatment program. Yet it should be noted that the present series of analysis is based solely on subject classification (resident or volunteer) and allocation to general treatment condition (experimental or control).

Because of the substantial variability in residents' attendance (mean=8.57, S.D=5.36), even the analyses by treatment regime is a crude examination of program effects. Further analyses investigating the relationship between attendance and treatment outcome within the different program groups is presented in Appendix G and H.

2. Treatment Generalization: Institutional Analysis

Initially, the experimental and control residents were compared on fifteen institutional measures for prescore differences. The two groups did not differ in Officer Ratings, the Interest Coupon, or frequency and severity of misconduct reports. The frequency and content of Letters Sent and Received did not differ.

The control subjects were present for a significantly larger portion of the pre-phase (two months) than the experimental subjects ($t = -2.81$, $df = 48$, $p < .01$). There was a tendency for this to be the case for the two month post-group period as well ($t = -1.94$, $df = 48$, $p < .06$) although their length of sentence did not differ.

In the institution canteen, control subjects generally received more canteen funds in the pre ($t = -1.84$, $df = 45$, $p < .072$), during ($t = -2.75$, $df = 37.37$, $p < .01$) and post phases ($t = -3.43$, $df = 21$, $p < .01$). This is consistent with previous institutional data. Canteen allowance is a function of each resident's grade rating and in order to be upgraded one need be in the institution for a given time period. Since control subjects had been in the institution longer they were more likely to receive a larger allowance. The Spending and Balance portions of Residents' canteen accounts did not differ nor did the Spent/Received ratio.

Experimental Residents Treatment Regime

Analyses of the institutional measures were performed on residents in the same manner in which the test variables were examined. These analyses concerned letter content, canteen spending, disciplinary charges, and staff ratings. Outcome of treatment regime was analyzed in a series of 2x2 analyses of the program combinations followed by overall experimental-

control group comparisons (and within group correlations of attendance with the naturalistic measures).

Discipline Charges. Charges were analyzed separately for the three two-month periods, pre-, during, and posttreatment (Appendix H, Figure 19). Both frequency and severity of charges were used as dependent variables. The percentage of time present during the period being analyzed was used as a covariate, once by itself, and again with the charges, frequency or severity, in the pre-program period. The factorial design analysis did yield a Training -by- Self-control interaction in the post-program condition. The interaction was significant on Frequency of Charges-Post, when Time Present-Post was covaried alone ($p < .05$), and when Frequency of Charges-Pre ($p < .05$) was also covaried (Table 41, Figure 7). There was an interaction tendency on Severity of Charges-Post with Time Present-Post covaried alone ($p < .053$) and when Severity of Charges-Pre ($p < .057$) was also covaried. The overall Experimental-Control comparison was not significant.

Canteen Spending. These data were analyzed in the same manner. The three phases were investigated separately. The variables included Mean Amount Spent, Mean Balance and Mean Spent-Received Ratio. Percentage of Time Present for the period being investigated was covaried alone and also with canteen behaviour in the pre condition.

The analyses revealed treatment effects during the postphase on Mean Balance. The treatment regime analysis reflected a Community Group Training effect ($p < .005$) when time present-post and Mean Balance-pre ($p < .003$) were covaried (Table 42). The program interaction only approached significance ($p < .10$, Figure 8) although there was a difference between Training

Table 41

An Analysis of Covariance on
Frequency of Charges-Post with Time
Present-post and Frequency of
Charges-pre as Covariates

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>Sig.</u>
Covariates					
Time Present - Post	5.129	1	5.13	9.370	.004
Charges, Frequency - Pre	.002	1	.002	.003	.956
Main effects					
Training	.024	1	.024	.043	.837
Self-Control	.257	1	.257	.470	.498
Interaction					
Training X Self-Control	2.363	1	2.363	4.318	.047
Explained	8.019	5	1.604	2.931	.029
Residual	15.867	29	.547		
Total	23.886	34	.703		

Deviations from Grand Mean

Grand Mean .343		<u>Unadjusted</u>	<u>Adjusted Independent and Covariate</u>
	Trained Group	-.030	-.029
	Untrained Group	.026	.024
	Eta	.034	Beta .032
	Self-Control	.046	.086
	Recreation	-.049	-.091
	Eta	.057	Beta .108
Multiple r^2	.237		
Multiple r	.487		

Figure 7
Change in Frequency of Charges
from the Pre- to Post-conditions as
a Function of Program Combination

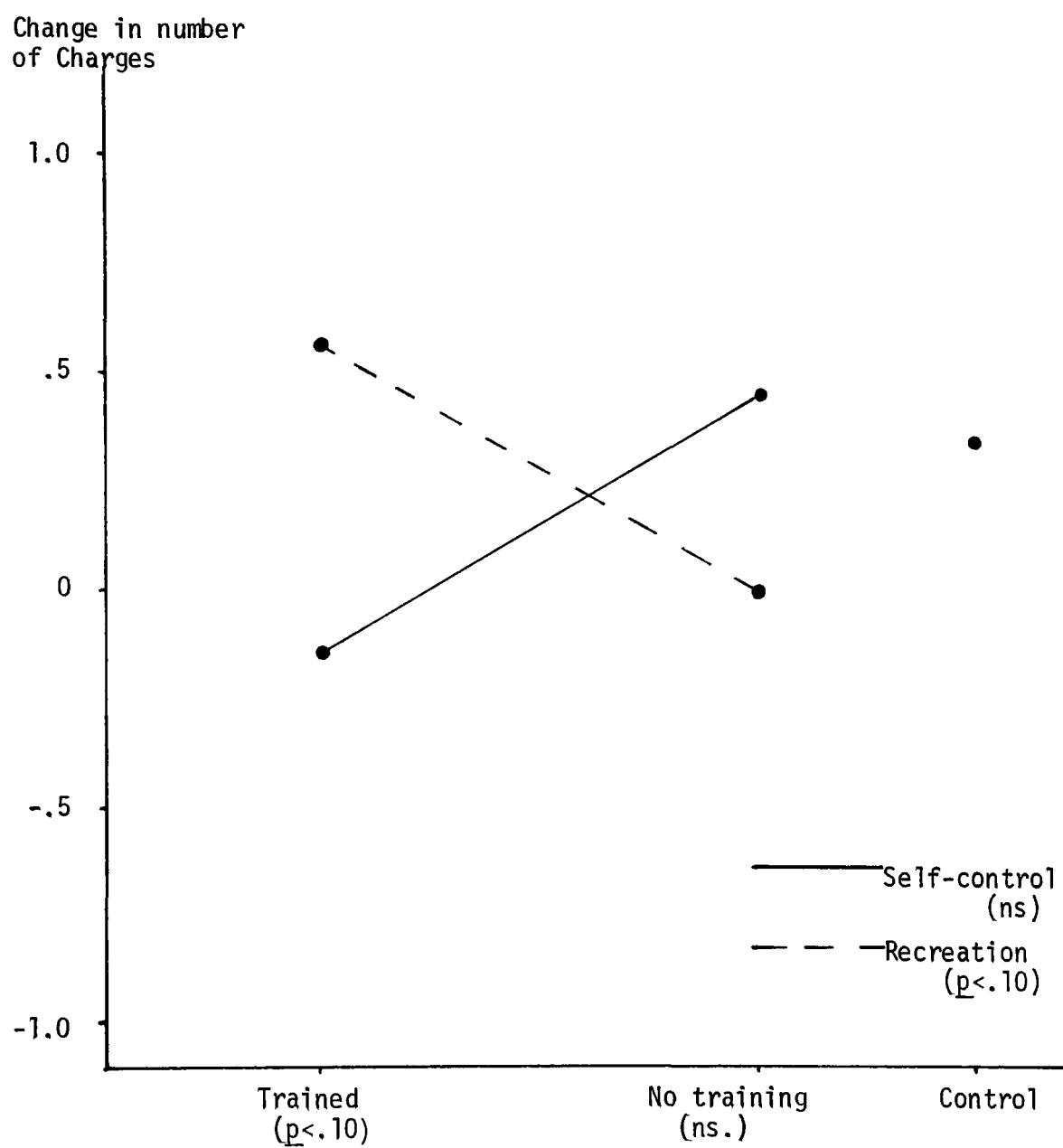


Table 42

Analyses of Covariance on Mean Canteen Balance-post
with Mean Canteen Balance-pre and Time
spent-post as Covariates

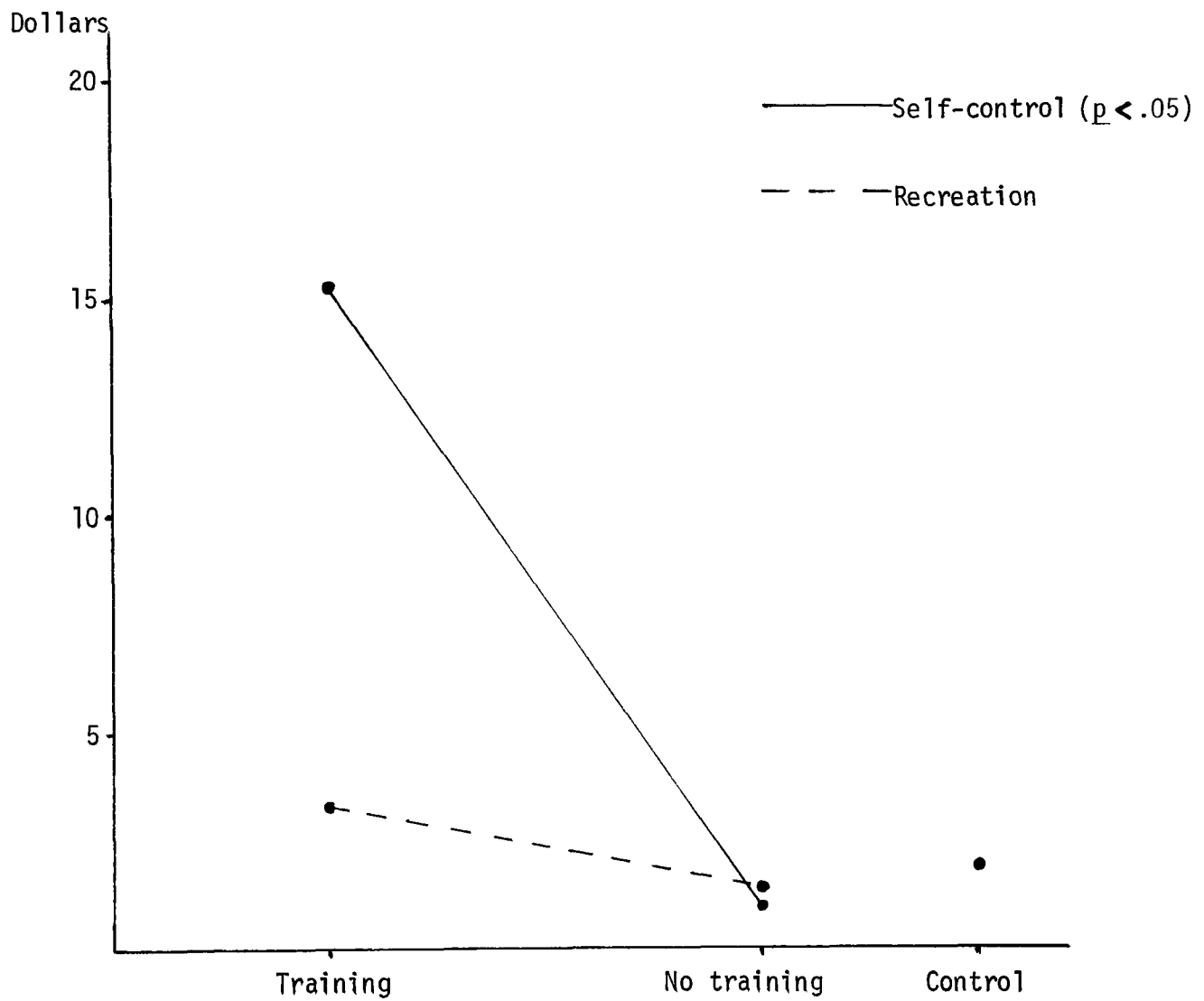
<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>Sig.</u>
Covariates					
Time Present-Post	212.929	1	212.929	36.130	.001
Mean Balance-Pre	213.762	1	213.762	44.755	.001
Main effects					
Commun. Training	87.413	1	87.413	14.832	.005
Self Control	5.825	1	5.825	.988	.349
Training X Self-Control	21.097	1	21.097	3.58	.095
Residual	47.148	8	5.893		
Total	432.711	13	33.285		

Deviations from Grand Mean

		<u>Unadjusted</u>	<u>Adjusted for independents</u>
Grand Mean 3.94	Trained	2.80	2.88
	No Training	-2.80	-2.88
		Eta .304	Beta .518
	Self Control	1.88	.88
	Recreation	-1.41	-.66
		Eta .293	Beta .134
Multiple r^2 = .842			
Multiple r = .918			

Figure 8

Mean Canteen Balance During the Post-Program
Phase as a Function of Program Combination



and No Training for those in the Self-control program ($F(1,10) = 5.85$, $p < .05$) but not for those in the Recreation group. The experimental versus control comparison was not significant.

Letter Record. Data collected in the eight week 'during' period were analyzed by factorial program combination and overall condition. Number of Letters, total Positive Plans, Letters having no Plans, and Nonrehabilitative Content were all investigated.

A training effect was found in the factorial analysis of treatment effects for experimental subjects. Residents in the Community Group with Trained volunteers tended to write more letters (4.37 vs 1.74 ; $F(1,31) = 3.48$, $p < .08$) and include more plans in their letters (8.375 vs 2.47 ; $F(1,31) = 3.46$, $p < .08$). They also had more letters with no plans (4.15 vs $.95$; $F(1,31) = 5.034$, $p < .05$) yet they did not have more negative or nonrehabilitative plans ($.50$ vs $.20$; $F(1,31) = 1.48$, ns). The overall analysis, experimental versus control residents, revealed no general treatment effects on Letters Sent or Received.

Staff Ratings. Ratings on the variables Behavior toward Others, Staff, and Peers were also analyzed by factorial combination, group, and overall condition. Analyses were performed separately for Instructor and Mean Officer evaluations. Difference scores and postscores adjusted for prescores were used.

The factorial analysis of treatment programs revealed two effects on Mean Officer Ratings of experimental residents. Analysis of differences scores revealed significant interactions between the Community Group and Self-control programs on both Behavior toward Peers (Table 43) and Staff

Table 43

An Analysis of Variance of Difference Scores for
Mean Officer Ratings on
Experimental Residents' Behavior toward Peers

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Main Effects					
Training	47.37	1	47.37	1.69	ns.
Self-control	8.59	1	8.59	.31	ns.
Interaction					
Training x Self-Control	183.84	1	183.84	6.58	.03
Residual	837.80	30	27.93		
Total	1077.60	33	32.65		
Analysis of Simple Effects					
Self-control vs Recreation					
Trained	75.84	1	75.84	2.72	
No Training	116.59	1	116.59	4.17	.05
Training vs No Training					
Self-control	201.52	1	201.52	7.22	.05
Recreation	29.69	1	29.69	1.06	

(Table 44). In each case the analysis supported the trained Community Group and Self-control Program combination, the interactions on Behavior toward Peers being $F(1,30) = 6.58$ ($p < .02$) and on Behavior toward Staff, $F(1,30) = 11.78$ ($p < .002$). These results are plotted in Figures 9 and 10. The interaction on Behavior toward Staff was also significant ($F(1,29) = 5.03$, $p < .029$) when postscores were analyzed with prescores covaried. There were no effects on Instructors' ratings. Collapsing across treatment regimes, an investigation of experimental and control groups showed no effects.

Summary

An investigation of the institutional measures was encouraging for the analyses by treatment regime. The most intensely loaded group (Trained discussion group and Self-control) demonstrated the greatest reduction in institutional charges, had accumulated the largest balance in their canteen allowance, and had the greatest improvement on Officer ratings with respect to their Behavior toward Peers and toward Staff. Combining treatment groups for overall experimental-control comparisons of the residents did not reveal any significant effects. This fact suggests that, with respect to institutional behavior, such an analysis is too crude, that by combining very different programs, the therapeutic impact of specific programs is not detected. Interestingly, this differs from the test battery results which were more discernable on the overall experimental-control comparisons.

Table 44

Analysis of Variance of Difference Scores for
Mean Officer Ratings on
Experimental Residents' Behavior Toward Staff

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>Sig.</u>
Main Effects					
Training	23.270	1	23.270	.755	.385
Self-Control	14.442	1	14.442	.481	.493
Interaction					
Training x Self-Control	353.963	1	353.963	11.782	.002
Residual	901.272	30	30.042		
Total	1300.681	33	39.415		
Analysis of Simple Effects					
Self-control vs Recreation-Train.	119.80	1	119.80	3.99	
-No Train.	248.60	1	248.60	8.28	.01
Train. vs No Training-Self-cont.	272.44	1	272.44	9.07	.01
-Recreation	104.79	1	104.79	3.49	

Figure 9

Difference Scores for Mean Officer Rating
on Residents' Behavior toward Peers
as a Function of Program Combination

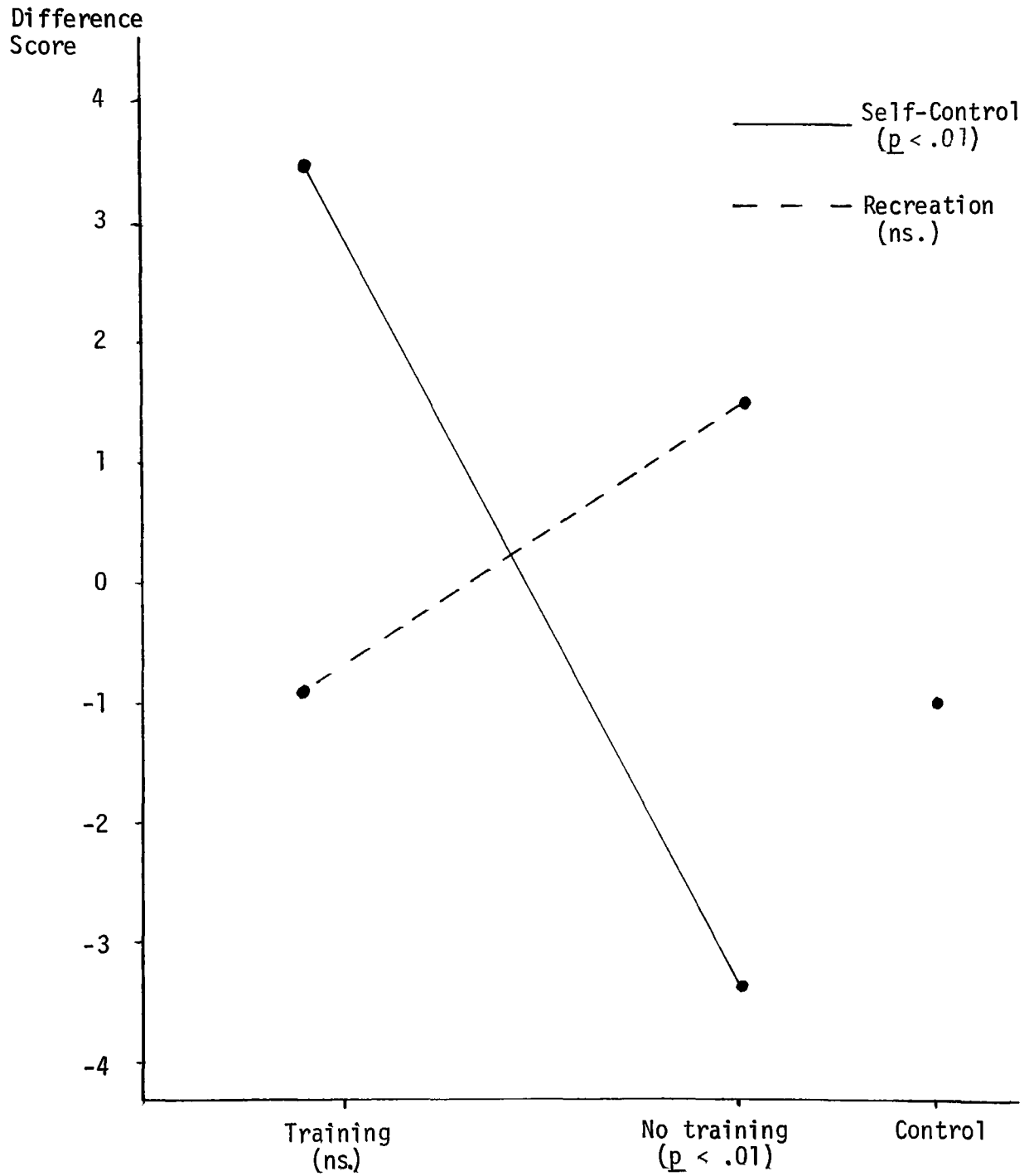
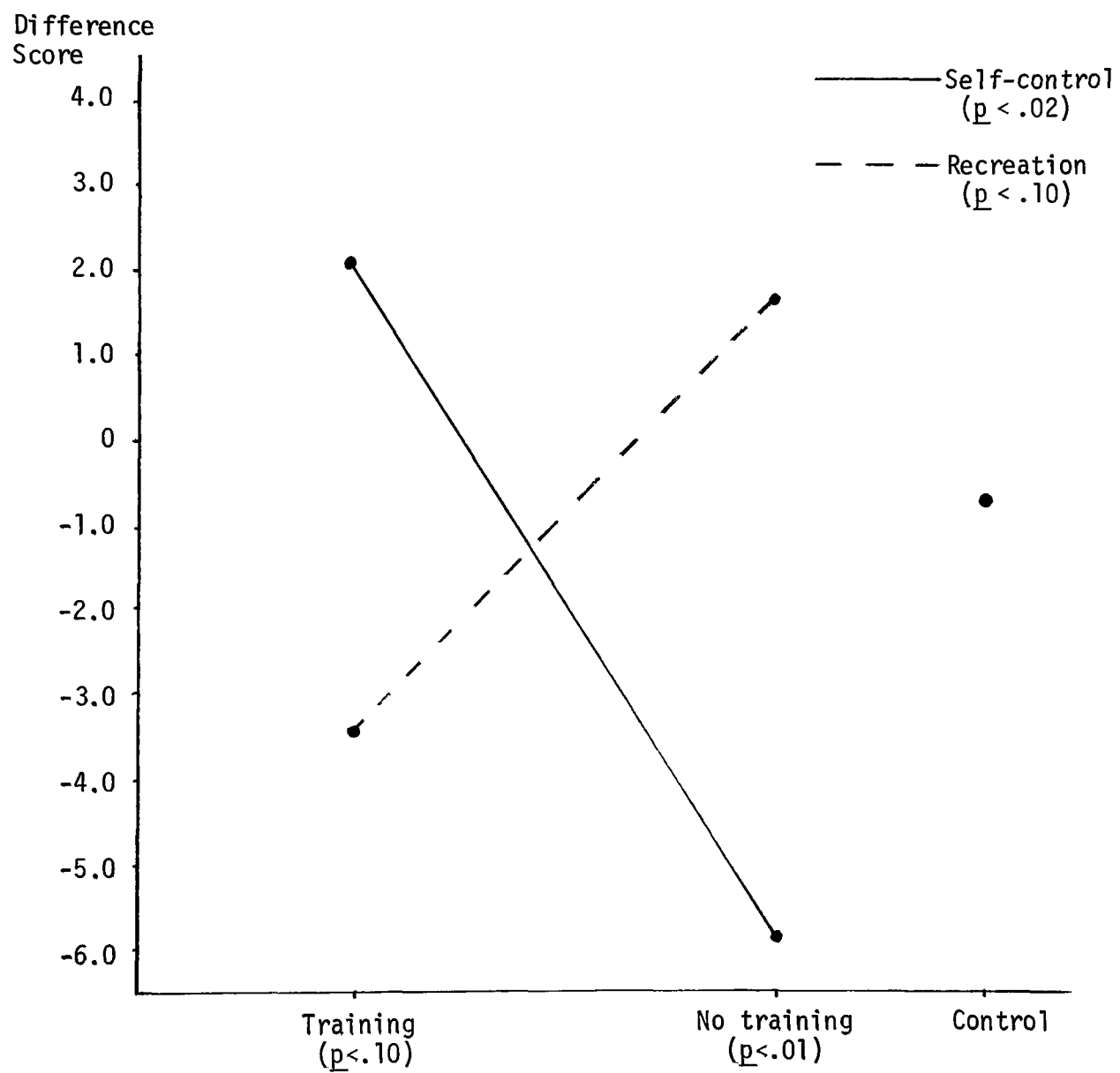


Figure 10

Difference Scores for Mean Officer Rating
on Residents' Behavior toward Staff as a
Function of Program Combination



Converting Prosocial Attitude Change
to Behavior Change Through
Self-Management Training

J. Stephen Wormith



Thesis Presented to the School of Graduate Studies
of the University of Ottawa
as Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

Ottawa, Canada, 1976



J.S. Wormith, Ottawa, Canada, 1977

3. Treatment Process: Discussion Group Analysis

Data obtained from the Discussion Group observers were used in a number of analysis. The quality ratings of residents' and volunteers' verbalizations were compared between group conditions and over sessions. Statements scored in conjunction with group feedback were used to investigate the possibility of differential reinforcement of positive and negative statements. The total classification system was reduced to positive/negative statements and reinforcement/punishment. Residents' individual data were used in order to examine volunteer training and session effects. In addition, individual data on the statement-feedback variables were compared to residents' pre and change scores on the test battery.

Statements and Feedback

Frequency and Value of Statements. Frequency of resident and volunteer statements in the two kinds of discussion group was calculated. The number of positive and negative statements in the trained and untrained discussion groups was obtained for each session. These data are plotted in Figures 11 and 12 as a function of sessions. The frequency of total statements, which includes neutral verbalizations, was also calculated and is presented in Figure 13. As expected, residents made consistently fewer positive statements and more negative statements than volunteers in spite of the fact that volunteers were more verbal than residents. Session Four, with its topic, The Law as a System of Rules, was central to the discussion group curriculum and is of special interest. Overall, it was the only session where the number of volunteer positive statements was reduced to the residents' rate and the only session where

Figure 11

Frequency Of Positive Statements for
Residents and Volunteers in Trained and Untrained
Discussion Groups as a Function of Sessions

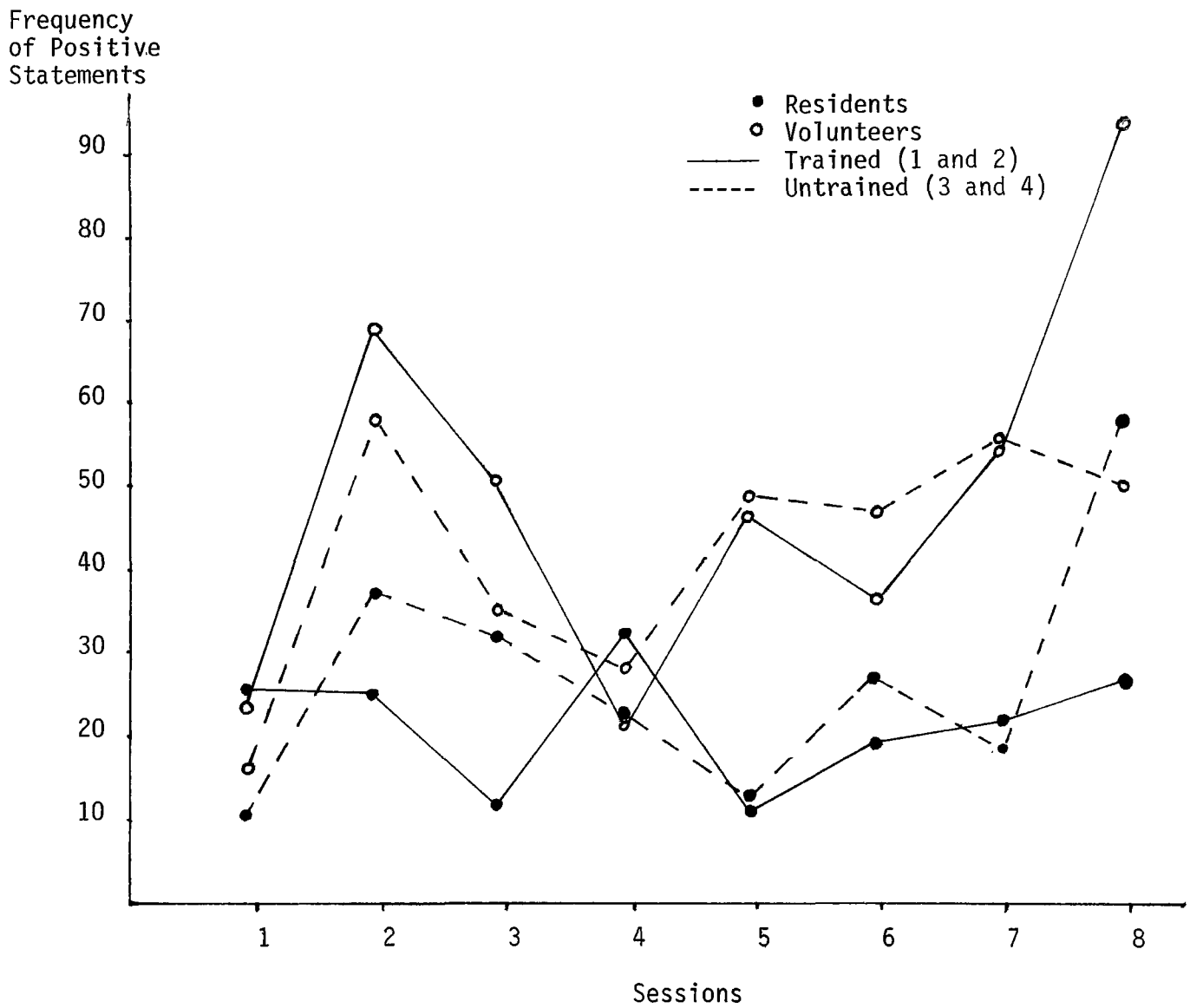


Figure 12

Frequency of Negative Statements For
Residents and Volunteers in Trained and Untrained
Discussion Groups as a Function of Sessions

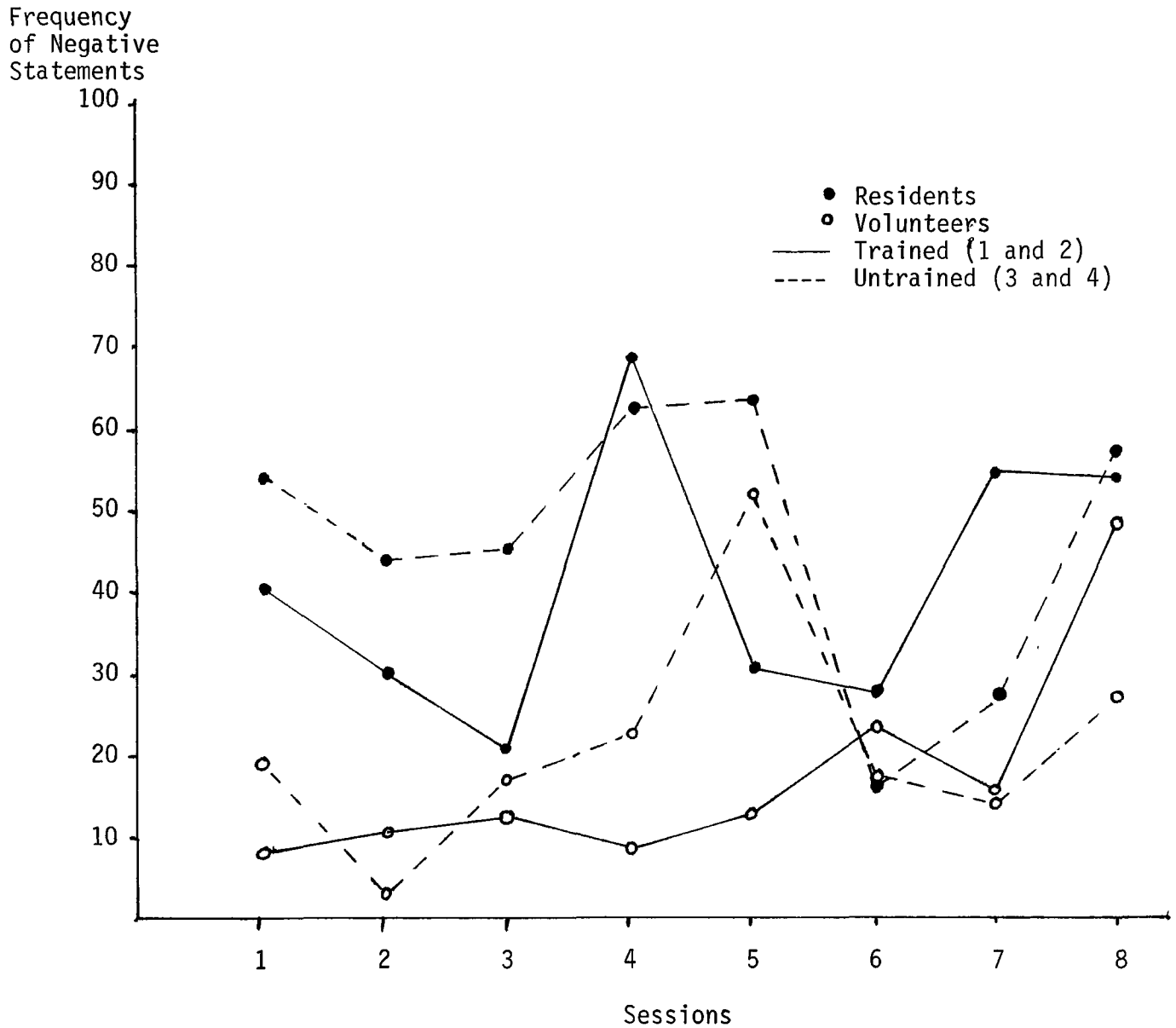
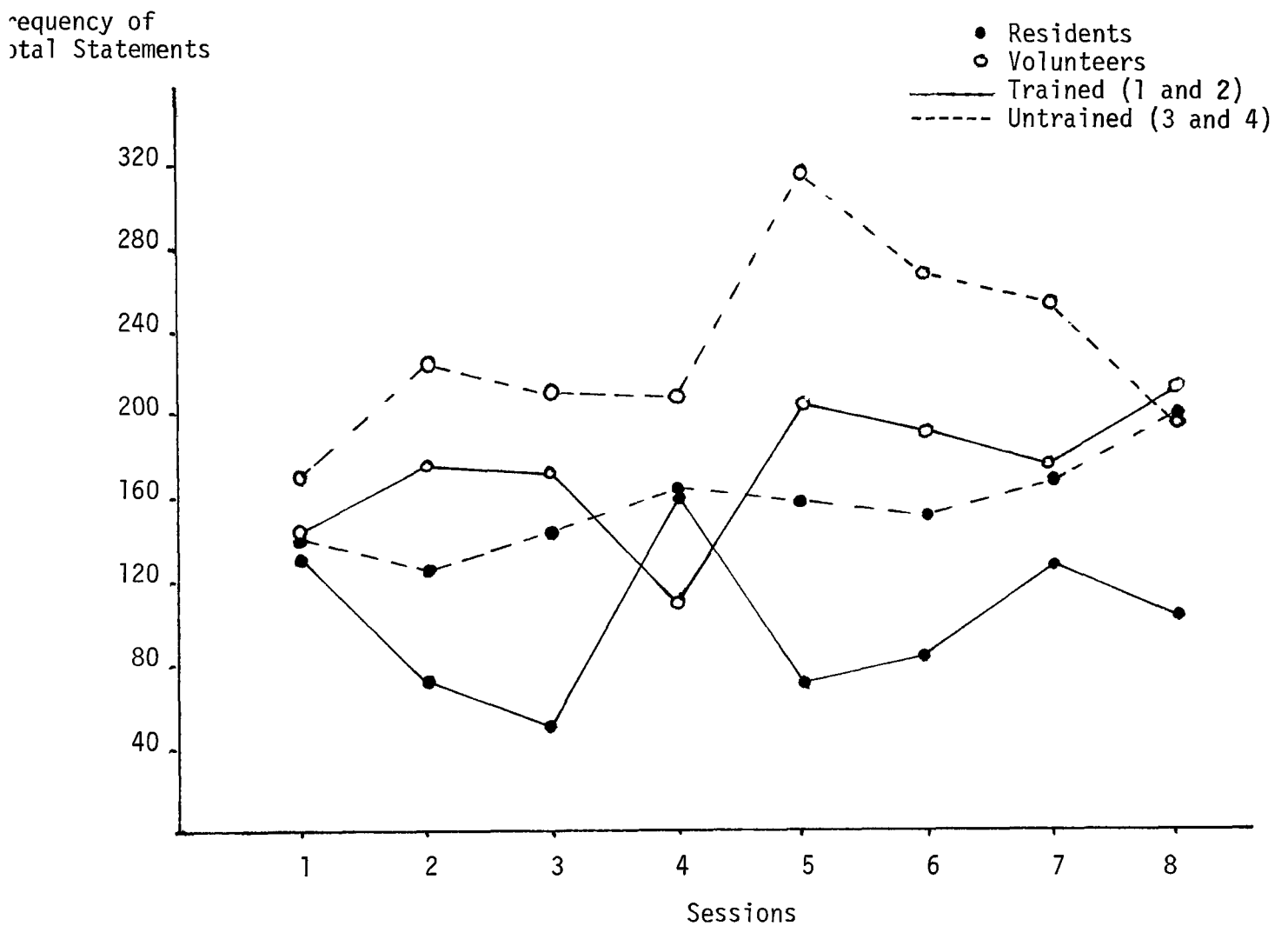


Figure 13

Frequency of Total Statements
for Residents and Volunteers in Trained and
Untrained Discussion Groups as a Function of Sessions



residents' verbalizations increased to that of the volunteers. The latter result was primarily due to the increased rate of residents' negative statements.

The mean value of residents' and volunteers' statements in the two groups was also calculated. Statement value or quality rating was based on the five-point statement classification scheme described previously. The mean quality of residents' and volunteers' statements is plotted as a function of sessions in Figure 14. In two conditions over eight sessions, the average volunteer statement was slightly negative on only one occasion (Session One, No Training) while for residents there was only one positive mean rating (Session Six, No Training). In addition, the average statement for the trained group of volunteers was more positive than the untrained volunteers on six of eight sessions. Further analyses of residents' positive and negative statements are presented later.

The five levels of statements were also categorized according to the kind and degree of feedback they elicited from the group members. Statements were described as being reinforced if followed by a supportive or praise-like comment and punished if followed by criticism or disagreement from a member of the group. The complete classification system for statements made in the discussion groups consisted of twenty-five cells, five categories of statements and five of feedback.

Statement-Feedback Matrix. A matrix for all residents in all conditions was calculated (Table 45). The Chi-square analysis was highly

Figure 14

Mean Statement Quality Rating for Residents and Volunteers
in Trained and Untrained Discussion Groups
as a Function of Sessions

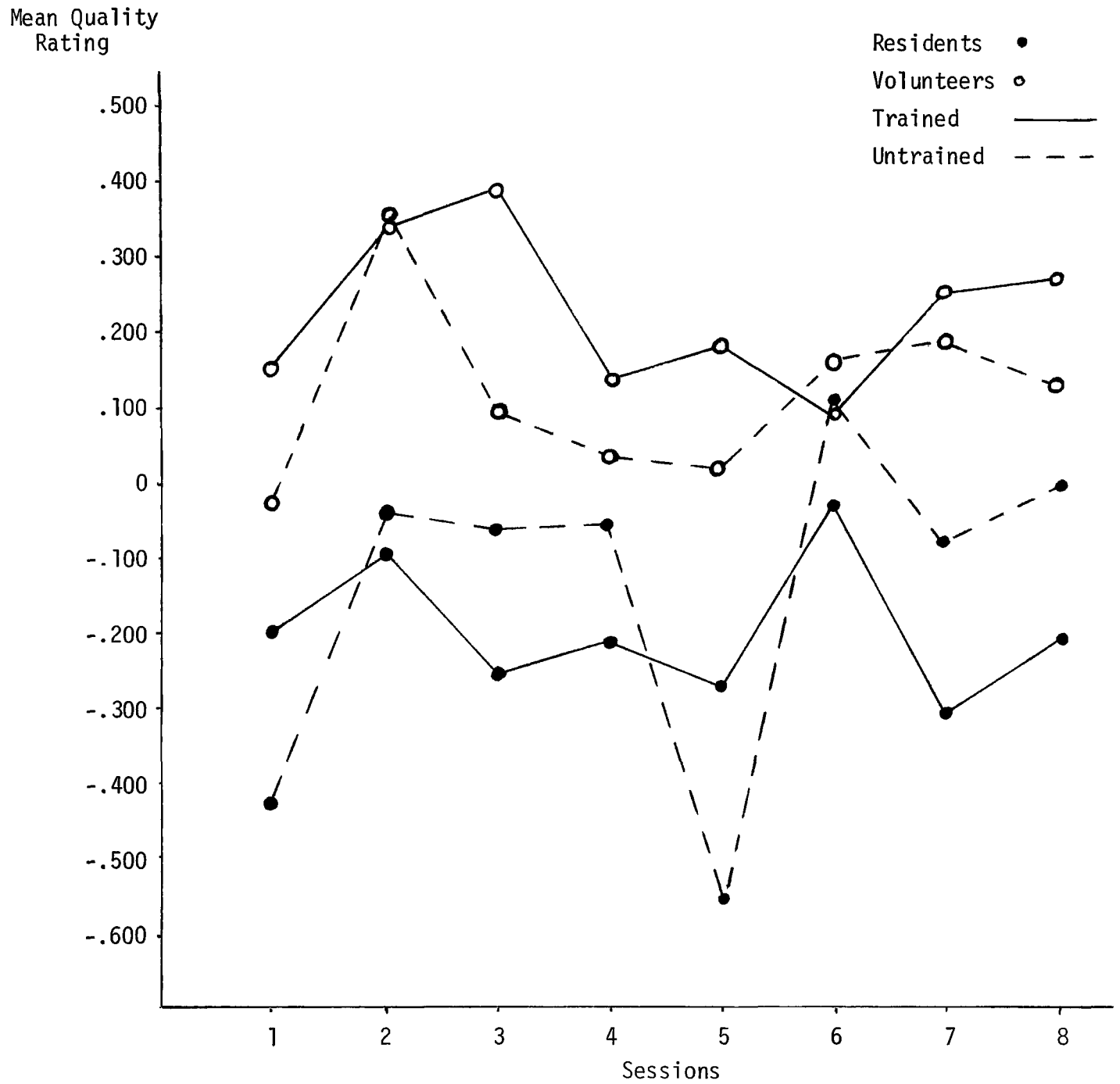


Table 45

Residents' Statements Classified by Quality
and Feedback for Four Discussion Groups Over
Eight Sessions

Feedback	Quality of Residents' Statements				
	Highly Positive	Positive	Neutral	Negative	Highly Negative
Highly reinforced	3	3	6	3	0
Reinforced	7	17	45	24	6
None/Neutral	53	282	822	497	108
Punished	6	12	50	42	13
Highly Punished	0	2	12	1	13

$$2 \times 2 \quad \chi^2 = 10.61, df = 1, p < .01$$

$$5 \times 5 \quad \chi^2 = 175.19, df = 16, p < .001$$

significant ($\chi^2=175.19, df=16, p < .001$) indicating that overall, participants in the discussion groups responded differently to residents' pro and antisocial statements. The feedback to residents' statements differentially reinforced prosocial responses and punished antisocial statements. This effect persisted when the response and feedback categories were collapsed across degree and neutral response/feedback cells were deleted ($\chi^2 = 10.61, df = 1, p < .01$).

An analysis of residents' individual data on the response-feedback categories was also performed. Statements were scored in the positive and negative categories, irrespective of degree, in conjunction with subsequent kind of feedback. Each resident's frequency of total positive and negative statements and amount of appropriate and inappropriate feedback were calculated. The first and last four sessions were grouped separately and comparisons made between trained and untrained groups.

Because there were no differences on residents' feedback scores between the trained and untrained discussion groups, subjects were collapsed across the training factor. By comparing the rates of appropriate and inappropriate feedback received by residents, the previous Chi-square analyses were supported. Over the total eight weeks, experimental residents received more appropriate than inappropriate feedback (2.83 vs 1.77; correlated $t = 2.07, df = 34, p < .05$).

Effect of Training on Feedback. In the training condition only the coleader was specifically instructed to provide reinforcement during the first four sessions. Midway through the program the volunteer

members of these groups were provided with a theoretical rationale and the potential value of supporting residents' prosocial statements. Therefore feedback to residents' responses was analyzed for the first and second half of the program to compare the pre and postinstruction phases. Analyses were carried out on total frequencies of the two groups in each condition using both the complete matrix and the general categorical matrix. Statement classification data for the training-no training, and first-second half conditions are presented in Table 46.

Chi-square analyses were performed separately on the trained and untrained groups for the first and last four sessions to examine the effects of training. The total matrix revealed highly reliable effects ($p < .001$) in all four conditions. Analysis by 'Kind Only' (positive vs negative statements-by-reinforcement vs punishing feedback) demonstrated that there was an increase in the appropriateness of feedback in the groups with trained volunteers. In the first four sessions the general category of residents' statements had no relationship to the feedback received ($\chi^2 = .09$, $df = 1$, $ns.$). In the last four sessions, feedback did differentially reinforce qualitative statements in the appropriate fashion ($\chi^2 = 12.61$, $df = 1$, $p < .001$). The feedback which residents received in discussion groups with untrained volunteers showed less improvement. The initial statement-feedback category matrix was significant ($\chi^2 = 4.48$, $df = 1$, $p < .05$) while the matrix for the last four sessions showed some improvement ($\chi^2 = 10.47$, $df = 1$, $p < .01$). In spite of the significant results, an obvious and important aspect to point out concerns the relative frequency of evaluative feedback. The vast majority of statements in all conditions were unresponded to, or elicited only a neutral reaction.

Table 46
 Quality-by-Feedback Matrices of Residents'
 Statements in the Trained and Untrained Discussion
 Groups Before and After Training

	Pretraining					Posttraining				
	High.			High.		High.			High.	
Feedback	Pos.	Pos.	Neut.	Neg.	Neg.	Pos.	Pos.	Neut.	Neg.	Neg.
Trained Condition (Total Groups 1 and 2)										
Highly Reinforced	0	0	3	0	0	2	3	1	0	0
Reinforced	1	2	7	8	0	1	5	5	1	0
Neutral/None	15	65	141	118	15	13	53	121	131	25
Punished	5	4	6	15	1	0	2	4	5	3
Highly Punished	0	1	0	0	4	0	0	4	0	1
	2x2 $\chi^2=.09, df=1, p = ns.$					2x2 $\chi^2=12.61, df=1, p < .001$				
	5x5 $\chi^2=82.49, df=16, p < .001$					5x5 $\chi^2=39.84, df=16, p < .001$				
Untrained Condition (Total Groups 3 and 4)										
Highly Reinforced	1	0	1	3	7	0	0	1	0	0
Reinforced	4	5	19	4	5	1	5	14	0	1
Neutral/None	20	68	201	106	49	5	96	365	123	19
Punished	1	1	20	9	5	0	5	19	13	4
Highly Punished	0	0	3	0	5	0	0	5	1	3
	2x2 $\chi^2=4.78, df=1, p < .05$					2x2 $\chi^2=10.47, df=1, p < .01$				
	5x5 $\chi^2=52.62, df=16, p < .001$					5x5 $\chi^2=40.23, df=16, p < .001$				

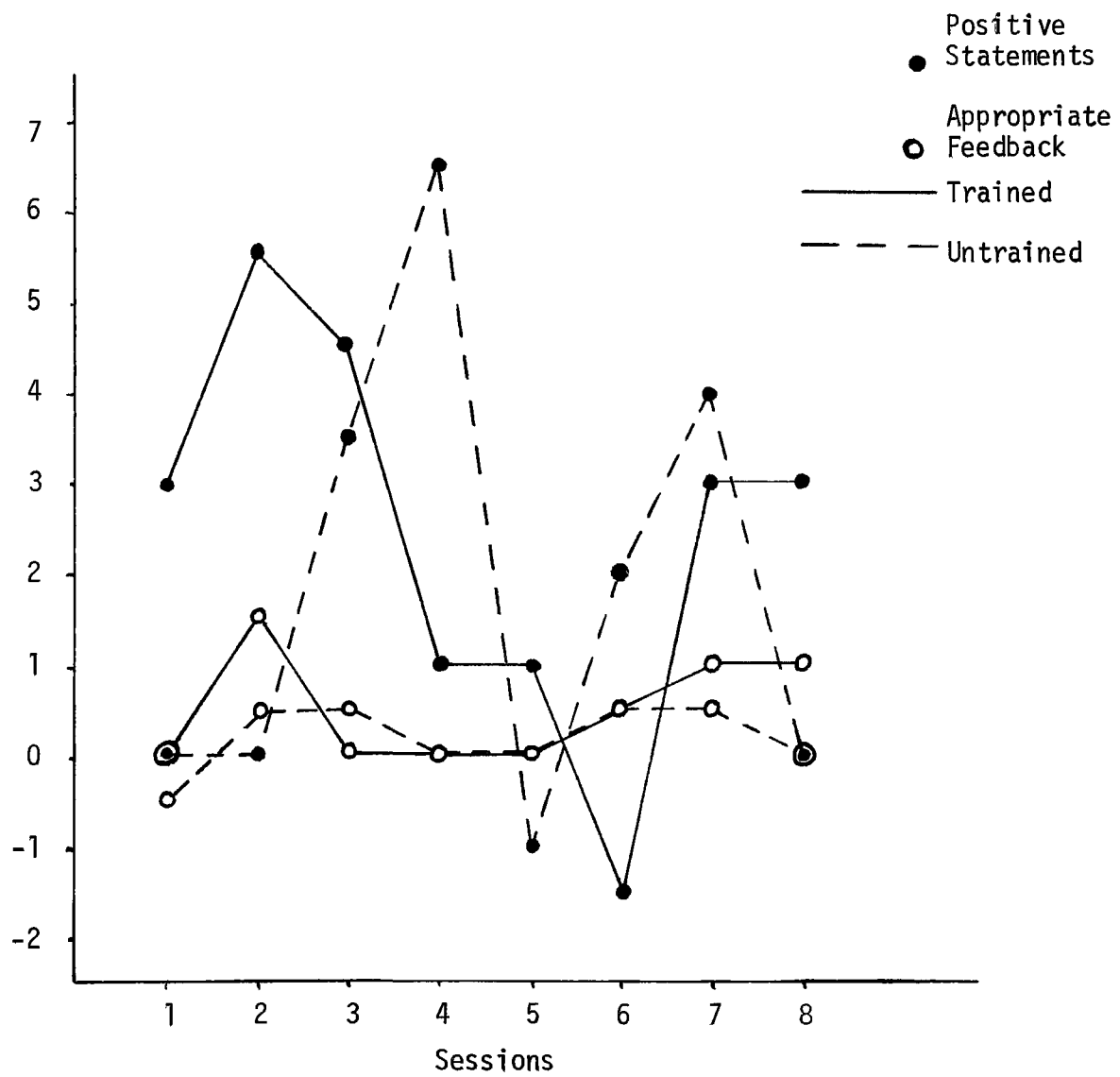
A comparison of coleaders revealed that differential instructions did not substantially influence their input to the program. The weekly average rate of positive-minus-negative statements for coleaders trained in prosocial reinforcement was only slightly higher than those encouraged to be understanding and accepting (2.99 vs 1.88) as was their mean weekly rate of appropriate minus inappropriate feedback (.50 vs .19; Figure 15).

Analyses of the reinforcement-to-punishment ratios demonstrate appropriate changes from pre- to posttraining for residents' pro- and anti-social statements. The reinforcement-to-punishment ratio of positive statements increased from 3/10 to 11/2 in response to training (or 3.2%, 86.0%, 10.8% to 13.9%, 83.5%, 2.5% expressed as a percentage of reinforced, neutral, and punished feedback to total positive statements). A similarly appropriate decrease was found for negative statements from 8/21 (4.9%, 81.1%, 12.8%) to 1/9 (.6%, 94%, 5.4%). On the other hand, feedback in the untrained groups became more critical of both positive (10/2 (10%, 88%, 2%) to 6/5 (5.4%, 90.2%, 4.5%)) and negative (29/12 (20.4%, 79.5%, 20.4%) to 1/21 (.6%, 86.6%, 12.8%)) statements made by residents, the former decrement being in an undesired direction.

Subsequent analysis of trained and untrained feedback to residents' negative statements did reveal one effect due to training. One means of eliminating a behaviour is to ignore or extinguish it. The degree to which this strategy was adopted after training was investigated by comparing the lack of feedback to residents' negative statement in the trained and untrained groups. During the last four sessions, residents in the trained groups had more of their

Figure 15

Mean Frequency of Trained and Untrained Coleaders' Statement Ratings and Appropriate Feedback to Residents as a Function of Sessions



negative statements go without any comment ($F(1,32) = 4.82, p < .05$) than residents in the untrained groups. The total number of negative statements available for feedback was covaried (Table 47). Residents in the trained and untrained groups did not differ on any of the remaining statement-feedback categories for the last four sessions, when the corresponding first half data and sessions attended were covaried.

Effect of Sessions on Feedback. Collapsing across groups, it was evident that there were general improvements in the appropriateness of participants' feedback to residents' statements from the first to last half of the program. Chi-square analyses revealed this development for the simple categorical matrices ($\chi^2 = .01, df = 1, ns$; $\chi^2 = 22.9, df = 1, p < .001$). The complete classification scheme was highly significant in both the first ($\chi^2 = 94.06, df = 16, p < .001$) and second segments ($\chi^2 = 56.48, df = 16, p < .001$).

Sources of Feedback Change. During the first four sessions, residents received the same amount of appropriate and inappropriate feedback (1.46 vs 1.43; correlated $t = .09, df = 34, ns$). The overall effect then was due to differences in the last four sessions. During these weeks the rates of appropriate and inappropriate feedback differed significantly (1.34 vs .40, correlated $t = 2.47, df = 34, p < .02$). Subsequent comparisons were performed to examine what particular aspects of the feedback had changed.

TABLE 47

An Analysis of Covariance on the Second Half Frequency
of Negative Statements having no Feedback by
Training with Second Half Total Negative Statements as a Covariate

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Covariate					
Total Negative	5585.40	1	5585.40	3152.16	.001
Main Effect					
Training	8.30	1	8.30	4.82	.04
Residual	55.02	32	1.72		
Total	8006.78	35	228.77		

Deviation from Grand Mean

Grand Mean	Group	Unadjusted	Adjusted for Covariate
8.49	Training	1.14	.56
	No Training	- .96	- .47

Examination revealed that the improvement came not in an increased rate of differential reinforcement in the appropriate manner, supporting prosocial comments and criticizing antisocial ones, but in a reduction in the rate of inappropriate feedback ($t = 2.48$, $df = 34$, $p < .01$). This reduction came primarily through a decrement in residents' antisocial statements which were subsequently supported ($t = 2.61$, $df = 34$, $p < .01$). The reduction occurred in spite of a maintained rate of residents negative statements from the first to the second half of the program. (10.11 vs 9.90. $t = .40$, $df = 34$, ns). There was only a slight tendency for a reduction in the number of positive statements which were punished ($t = 1.31$, $df = 34$, $p < .20$). These data are presented in Table 48.

Summary

These analyses indicate three things. First, although the ratios are in the predicted direction with respect to volunteer training, the differences were slight. In addition, caution must be taken in making comparisons when the total frequencies of statements between conditions differ. Second, it is apparent that a single trained member (coleader) was not sufficient to provide any increase in the amount of appropriate feedback emanating from the groups. Third, it appears that the groups become more adept at providing appropriate feedback as a function of experience. The analyses revealed that the total reduction of inappropriate feedback did not differ for the trained and untrained volunteers. Instead, both groups became more adept at responding with time since residents received less inappropriate feedback in the latter half, than in the first half of the program. Therefore,

Table 48

Mean Rate of Residents' Positive and Negative Statements
Followed by Reinforcement, Punishment or No Feedback (N=35)

<u>tement/Feedback</u>	<u>Total 8 Sessions</u>		<u>First 4 Sessions</u>		<u>Last 4 Sesssions</u>			
	<u>X</u>	<u>S.D.</u>	<u>X</u>	<u>S.D.</u>	<u>X</u>	<u>S.D.</u>	<u>t</u>	<u>p</u>
itive → Reinforce	.86	1.85	.40	.98	.49	1.36	-.36	.72
ative → Punish.	1.94	3.68	1.09	2.42	.86	2.06	.52	.60
itive → Punish.	.86	1.50	.60	1.38	.26	.66	1.31	.20
ative → Reinforce	.91	1.99	.83	1.82	.09	.28	2.61	.01
itive → None	9.40	12.81	4.69	7.26	4.69	7.17	0.00	.99
ative → None	16.8	26.03	8.34	12.19	8.49	15.35	-.09	.93
Appropriate	2.83	5.18	1.46	3.01	1.34	2.83	.25	.80
Inappropriate	1.77	2.90	1.43	2.52	.40	.95	2.48	.01
Total Positive	10.97	14.83	5.54	8.36	5.14	7.96	.33	.74
Total Negative	19.46	30.08	2.49	14.73	9.40	17.10	.40	.69

differential reinforcement to residents pro- and antisocial statements was occurring naturally in the community groups and appeared to improve over sessions and, to some extent, with training. These results were found in the discussion group statement feedback matrices and in analyses of individual residents' feedback to various kinds of statements. Improvement came mainly in a reduction of inappropriate feedback.

Process Measures in Relation to the Test Battery.

The frequency of residents' positive and negative statements made in discussion groups was correlated with test battery prescore variables. Partial correlations were also obtained controlling for sessions attended since the frequency of attendance was related to total statements. Frequency of statements and feedback were also correlated with test battery change scores.

Statements and Prescores. Residents' prescores correlated equally well with their positive and negative statements (Table 49). For example, Self-control correlated $-.29$ and $-.34$ with positive and negative statements, while Porteus Maze-Years correlated $.40$ and $.38$, Porteus Maze-Quality $-.43$ and $-.39$, and Psychopathy $-.27$ and $-.28$ with positive and negative statements, respectively. A number of 'control related' variables had correlations with positive and negative statements and the relationships were not always in the same direction. Ego strength, Self-control, and Psychopathy were negatively related,

Table 49

An Intercorrelation Matrix of Attitude/Personality
Pre and Change Scores with Frequency of
Positive and Negative Statements made in Community
Group Discussions by Experimental Residents (N=35)

	Statements with Prescore				Statements with Change Score			
	uncontrolled pos. state.neg.	control for Attend. pos. state. neg.	uncontrolled pos.state.neg.	control for Attend. pos. state. neg.	uncontrolled pos.state.neg.	control for Attend. pos. state. neg.	uncontrolled pos.state.neg.	control for Attend. pos. state. neg.
Law & Judicial Process	24	13	30	17	21	25	18	24
Ident. Crim. Others	-25	-06	-21	03	31	14	08	-16
Tolerance Law Violation	-01	04	-19	-13	-12	-22	-07	-19
Accept Others	13	08	09	03	11	15	03	08
Self-esteem	-03	-12	22	10	20	25	01	07
Seperateness	-17	-01	-20	-02	18	03	22	04
Socialization	20	11	23	12	-17	-13	-06	-01
Psychopathy	-27	-28	-29	-30	-01	05	-07	01
Neuroticism	-08	-01	-12	-04	16	22	-03	05
Scholastic Maladjust.	-14	-11	-00	05	17	17	11	11
Inadequacy	03	-08	12	-02	-09	03	-05	10
Family Dissention	-00	-05	-06	-12	-01	-03	06	04
Fake	02	01	15	14	-21	-27	-10	-17
Ego-Strength	-22	-40	-13	-35	23	29	13	20
Superego Strength	26	17	46	34	-09	-01	-11	-02
External Control	-43	-26	-40	-20	-12	-23	-25	-38
Empathy	05	-03	16	07	26	26	01	02
Self-Control	-29	-34	-17	-23	41	28	34	18
Anxiety	02	03	05	08	-13	-14	-08	-09
Awareness Lim. Opp.	-20	-08	-31	-16	-19	-23	-06	-11
Personal Sp.-total	-13	-03	-27	-15	-00	-02	14	12
Cold Pressor Time	16	16	34	34	-33	-36	-38	-41
Porteus Maze-Year	40	38	20	18	-10	-15	-14	-19
Porteus Maze-Quality	-43	-39	-20	-14	03	01	02	00
Mean Choice List	05	12	00	09	28	22	32	25
Money Save Measure	15	17	02	05	10	-02	03	-12
Pers. Sp.-Area	-21	-11	-34	-22	06	-02	18	08
Cold Pressor-wrds.			35	23			-11	-11

$r = .33, p < .05; r = .42, p < .01; r = .52, p < .001$

while Internal Control, Superego Strength, Porteus Maze Years and Quality (fewer mistakes) were positively related. As expected, Attitude toward the Law and Judicial Process was positively related with positive statements (.24) while Identification was negatively related (-.25) although these differences are significant only at the .10 level.

Because of the minimal differences between test score correlations with positive and negative statements, these results reflect residents' participation either through attendance or through verbal involvement in the program. Since partial correlations for attendance did not increase these differences, the correlations could indicate a relationship between residents' verbosity in the discussions and their attitude/personality characteristics. Psychopaths spoke less while those with high superego strength spoke more. In some cases, kind of statement is also related to test prescore. For example, those who were externally controlled spoke less, particularly making fewer positive statements. This was also so for residents who had a large personal space or felt an awareness of limited opportunity. Similarly, those who had a prosocial attitude toward the law made more, particularly positive, statements.

These correlations were initially calculated to provide further construct validity for the test battery. Some correlations (i.e. positive statements with Attitude toward the Law and Identification) support this position. That is to say, there was some relationship, particularly pertaining to social-legal perspective and quality of verbal behavior in discussion groups. But the similarity between test battery correlations with positive and negative statements when attendance is partialled out of the coefficient, suggests that the prescore battery is

more capable of predicting the amount of verbal participation in the groups. The data, therefore, suggest that a high Porteus Maze-Years score, which is often used as a performance I.Q. measure, predicts a high level of verbal participation, as does a small interpersonal space area, a high Cold Pressor-time, and a high Superego Strength score. High Self-control, External control, Psychopathy, Awareness of Limited Opportunity and Porteus Maze-Quality scores were predictive of less participation.

Attendance and Prescores. In addition, test battery prescores were examined as predictors of attendance on the part of experimental subjects. A multiple regression analysis was performed separately on residents and volunteers who were eligible for a total of 16 and 8 sessions, respectively. By restricting to 5 (6 for volunteers), the number of predictor variables permitted to enter the stepwise regression equation, a subject to variable ratio of 7:1 is maintained. Because such a ratio is considered by some (Kerlinger & Pedhazier, 1973) still to be too small, the multiple correlation is corrected for inadequate N (McNemar, 1962).

These results indicate that a second measure of participation, attendance, can also be predicted by test battery prescores. Again, high Self-control and the Porteus Maze-Quality score predicted a low rate of participation.

With residents, the highest zero order correlations were with Porteus Maze-Quality (errors) $-.57$, Porteus Maze-Years $.49$, Self-esteem $-.40$ and Self-control $-.38$. Employing all five variables in the battery, the multiple correlation was $.82$ (corrected $.797$). The probability of the F value of the regression remained significant from the single regression equation using Porteus Maze-Quality ($F(1,29) =$

14.04, $p < .01$) through each of the successive steps ($F(5,25) = 10.56$, $p < .01$; Table 50).

Volunteers' attendance correlated highly with Awareness of Limited Opportunity $-.39$ and Egostrength $.36$. The Multiple Regression equation reached significance ($F(2,21) = 4.57$, $p < .025$) when two variables, Awareness of Limited Opportunity $(-.39)$ and Attitude toward the Law and Judicial Process $(-.23)$ were used to produce a multiple correlation of $.55$. Significance was maintained through four variables where a multiple correlation of $.71$ (corrected $.67$) ($F(20,3) = 11.61$, $p < .05$) was produced.

Statements and Change Scores. Test battery change scores were correlated with positive and negative statements (Table 49). Once again, when change on a test battery variable was correlated with frequency of statements, the coefficients were similar for positive and negative statements. This suggests that test variable change is also related to total participation in the program. When attendance is partialled out of the correlation, the relationship between change and participation is exclusively with verbal participation. Of particular interest is that, when controlling for attendance, verbal participation, particularly negative statements, correlated with a decrease in self-reported feelings of External Control. Similarly, verbal participation, especially the frequency of positive statements, was also related to an increase in Self-control and delayed gratification on the Choice List. Positive and negative statements were both related to a decrease in Cold Pressor immersion time. Interestingly, all of the above significant correlations of statement frequencies

TABLE 50

Multiple Regression of Experimental Residents' and Volunteers'
Prescores on Program Attendance

<u>Residents</u> <u>Variable</u>	<u>F</u> <u>df</u>	<u>F</u> <u>p</u>	<u>Multiple R</u> (correct)	<u>Simple R</u>	<u>B</u>	<u>Beta</u>
Porteus Maze-Qual.	F(1,29)	14.04 <u>p</u> < .01	.57	-.57	-.37	-1.47
Money Saving Measure	F(2,28)	16.64 <u>p</u> < .01	.70	.28	-3.02	-2.19
Self-control	F(3,27)	17.61 <u>p</u> < .01	.76	-.38	.55	.83
Neuroticism	F(4,26)	10.96 <u>p</u> < .01	.79	-.06	-3.17	-3.15
Cold Pressor	F(5,25)	10.56 <u>p</u> < .01	.82 (.79)	-.20	-.05	-1.36
<u>Volunteers</u>						
Awareness Limited Opp.	F (1,22)	3.83 ns	.39	-.39	.18	.24
Attitude Jucicial Proc.	F (2,21)	4.57 .025	.55	-.23	-.10	-.55
Family Dissention	F (3,20)	4.57 .025	.64	.28	-.56	-.70
Alienation	F (4,19)	4.73 .01	.71 (.67)	-.24	-.07	-.41
Acceptance of Others	F (5,18)	4.57 .01	.75	.23	.17	.50
Choice List	F (6,17)	4.30 .01	.78	.15	-.28	-.62

were with 'control variables'.

The simple statement-test battery change correlations (Table 49) which naturally combine attendance and verbalization rate, also tended to show positive coefficients with changes on Attitude toward the Law, Self-esteem, Egostrength and Empathy and a negative correlation with Positive Malinger. A positive relationship was also found with Identification with Criminal Others. All but the last relationship were in the appropriate direction. Participation through attendance and verbalization was concomitant with greater control according to the Money Saving Measure, the Self-control scale, feelings of Internal Control, and Egostrength. In addition, participation was related to increases in self-reported Empathy and Attitude toward the Judicial System. Unexpectedly, increase on Identification with Criminal Others was also positively related to participation but when attendance was partialled out, this relationship disappeared.

Feedback and Change Scores. Correlations between feedback and change were found on 5 scales of the experimental residents' test battery. But in all cases the correlations for appropriate and inappropriate feedback were in the same direction (Table 51). For example, prosocial attitude change on the Law and Judicial Process correlated .30 with total amount of appropriate feedback and .32 with inappropriate feedback. Increased saving on the Choice List correlated .31 with appropriate and .17 with inappropriate feedback. Ego strength increased with appropriate feedback (.30) and inappropriate feedback (.19). Awareness of Limited Opportunity decreased with inappropriate (-.33) and appropriate feedback (-.14). Lastly, immersion time in the Cold Pressor decreased with appropriate (-.43)

Table 51

A Correlation Matrix Between Experimental Residents' Change Scores on
the Test Battery and Feedback Received in Community Group Discussions (N = 30)

Test Battery Change	Feedback					
	Total		First Half		Second Half	
	Appropriate	Inappropriate	Appropriate	Inappropriate	Appropriate	Inappropriate
Attitude toward Judicial Process	30	32	21	30	34	17
Identification Criminal Others	21	15	23	12	13	18
Tolerance Law Violation	-14	-19	-03	-16	-23	-17
Awareness Limited Opportunity	-14	-33	01	-31	-24	-25
Acceptance Others	-00	10	-12	07	13	08
Self-esteem	19	17	17	17	14	11
Alienation	05	12	-04	02	17	27
Socialization	-12	-13	-15	-09	-06	-17
Psychopathy	-12	-04	-13	-03	-12	04
Neuroticism	14	20	11	19	12	16
Scholastic Maladjustment	20	15	19	12	15	21
Inadequacy	-05	-07	-03	-10	-07	08
Family Dissention	00	11	-03	13	02	03
Positive Malingering	-27	-28	-24	-28	-25	-10
Ego Strength	30	19	32	19	20	15
Superego Strength	-17	-12	-23	-18	-07	09
External Control	-12	-03	-11	-04	-08	-01
Empathy	08	16	05	13	08	16
Self-Control	24	15	24	12	22	11
Anxiety	-09	-07	-09	-09	-07	02
Personal Space-Total	-01	05	-05	03	04	01
Personal Space-Area	03	04	02	03	05	-01
Cold Pressor-Time	-43	-30	-32	-24	-44	-35
Cold Pressor-Words	-05	05	10	11	-20	-25
Porteus Maze-Years	-03	-04	04	02	-09	-17
Porteus Maze-Quality	-03	07	-09	05	02	11
Choice List	31	17	31	18	24	03
Money Saving Measure	-06	24	-19	20	10	20

$r = .36, p < .05$; $r = .46, p < .01$; $r = .57, p < .001$

and inappropriate feedback (-.30). The differences between correlations for appropriate and inappropriate feedback were not significant.

Summary. Although there is some indication that the test battery prescores are related to participation (statements and attendance) in the discussion groups, the results do not support a verbal reinforcement principle of differential association theory. It does appear that prosocial change is related to either amount of verbal participation in the program or total amount of feedback to verbalized statements.

Seating

Experimental residents and volunteers in the Discussion Group program were also monitored for their seating behavior over the eight sessions. Each week attendance was taken and each discussant's seating position recorded. Seats were arranged in a circle-around a large table in each of the discussion rooms. The number of residents that each volunteer was seated beside (0 to 2), and the number of volunteers that each resident was beside, were recorded weekly.

Client-by-Group-by-Weeks. A $2 \times 4 \times (8)$ analysis of variance was performed on Experimental subjects' Seating scores (Table 52). There was a highly significant Weeks effect and a Client effect. Residents scored higher than volunteers (1.19 vs. .92), but when they were compared on subjects' Total Seating score accumulated over the eight weeks or on the mean Seating score of those sessions for which a subject was in attendance, clients did not differ. Also, because there were more volunteers than residents in the average session (6.44 vs. 4.84, $t = -3.58$, $df = 58$, $p < .001$), it was "easier" or more probable for a resident to sit beside volunteers. These facts discredit the Client effect. They do not, however, account for the Weeks effect since the resident-volunteer ratio was not related to the Mean Weekly Seating score, the rank order

Table 52
Analysis of Variance on
Seating Scores Obtained in
Community Group Discussions

Between Subjects	Sums of Squares	df	Mean Squares	<u>F</u>	<u>p</u>
Client	8.56	1	8.56	9.90	.003
Group	1.15	3	.38	.44	
Client-by-Group	3.75	3	1.25	1.44	
Error	32	37	.86		
Within Subjects					
Weeks	7.84	7	1.12	3.11	.004
Client-by-Weeks	2.82	7	.40	1.12	
Group-by-Weeks	18.57	21	.88	2.46	.001
Client-by-Group-by-Weeks	5.16	21	.24	.68	
Error	93.23	259	.36		

correlation between these two variables over eight weeks being $-.02$ (Figure 16). There was a linear trend for Seating Scores to increase as a function of sessions ($F(1,259) = 9.19, p < .01$), thus showing more interclient integration with time. Although the first week displayed the least integration and the last week, the most, there was also a steady decline over sessions Four through Six suggesting that there was a cubic trend as well ($F(1,259) = 14.86, p < .01$).

A group-by-weeks interaction was also found. Analyses of simple effects revealed that this was due to differences in Group Two over the eight sessions ($F(7,259) = 6.56, p < .01$) (Figure 17). Individual comparisons (Winer, 1962) revealed that Group Two's integration was significantly lower on week 5 than week 3 ($F(1,259) = 5.55, p < .05$) and week 8 ($F(1,259) = 5.0, p < .05$).

Seating and Statement Feedback. Integration (seating) and participation (statements) were also examined for their relationship between one another. An intercorrelation matrix of residents' mean and total Seating Scores as well as Attendance, with frequency of statement classifications, is presented in Table 53. Total Seating Score was related to both positive (.55) and negative statements (.54). This was partially due to the common effect of attendance which was related to both positive (.56) and negative statements (.57) as well as Total Seating (.94). Therefore, the correlation with mean Seating Score was obtained and it maintained a mild relationship with positive (.30) and negative

Figure 16

Mean Weekly Seating Score for all Group Discussion
Participants and the Resident-Volunteer Ratio as a

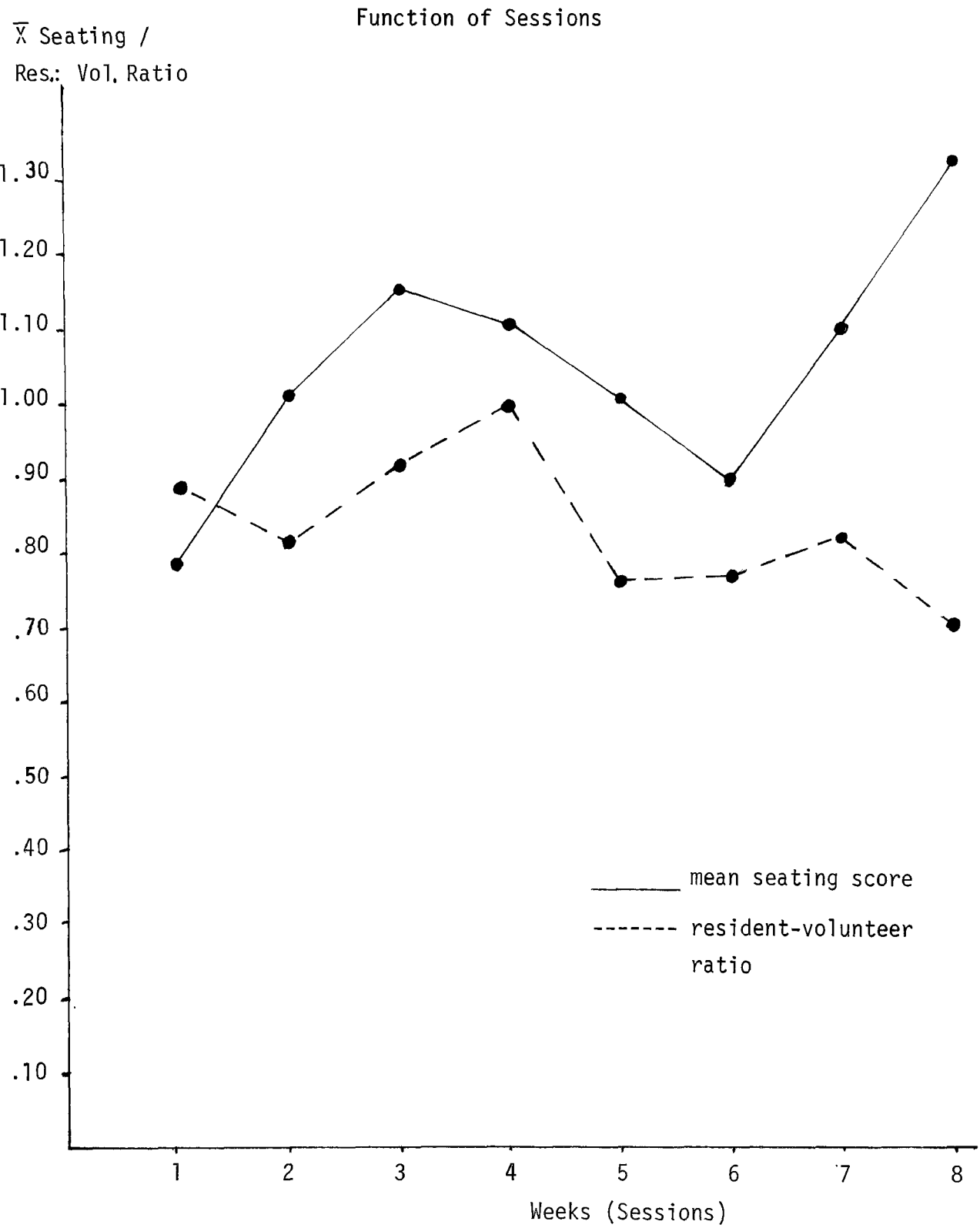


Figure 17

Mean Seating Scores of all Participants Present
in 4 Group Discussions as a Function
of Sessions

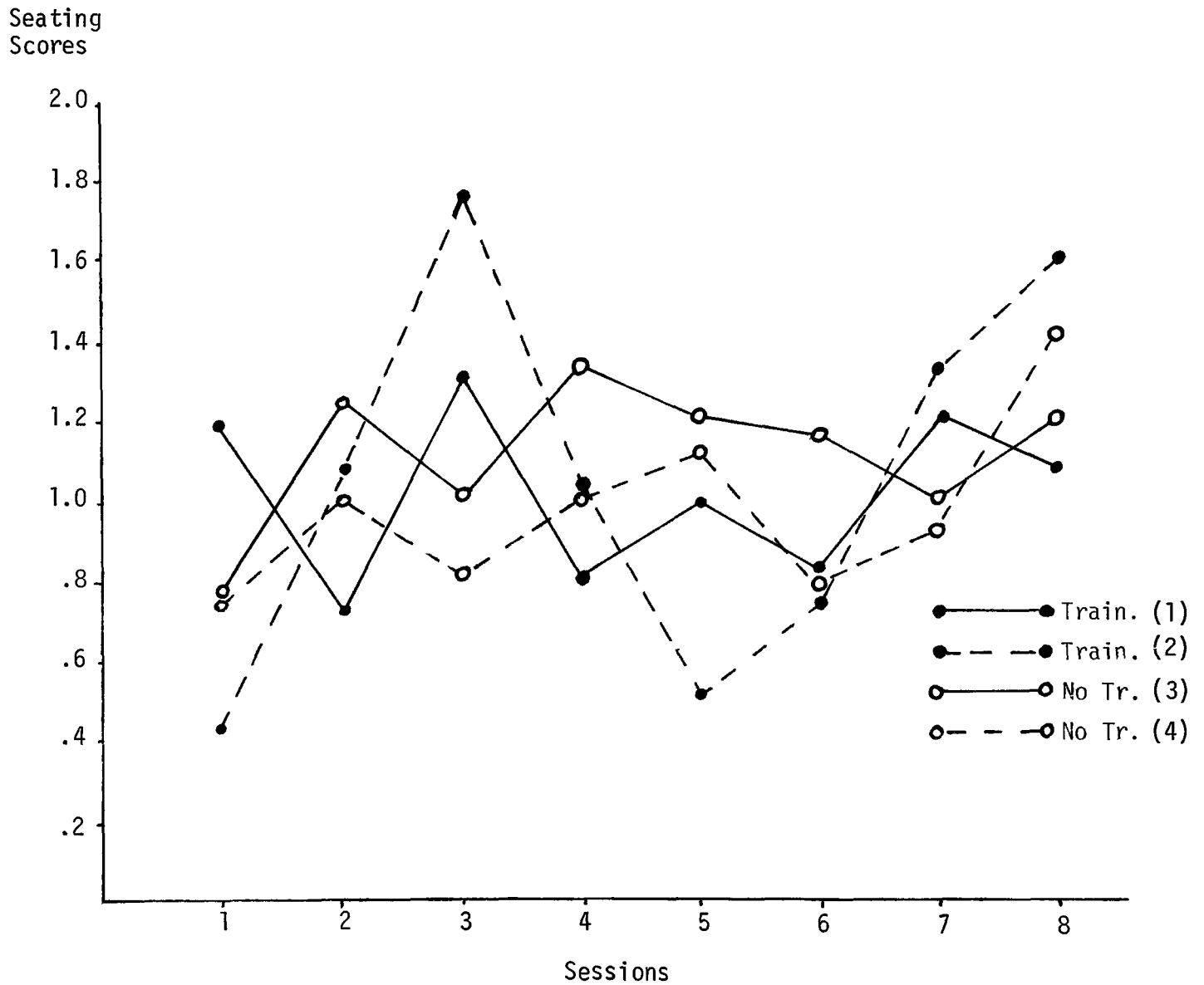


Table 53

Correlations for Residents'
Attendance, Total, and Mean Seating Score
with Statement-Feedback Rates in
Community Group Discussions (N=35)

<u>Statement/Feedback Classification</u>	<u>Total Seating Score</u>	<u>Attendance</u>	<u>Mean Seating Score</u>
Positive → Reinforced	22	25	16
Negative → Punished	35	41	08
Positive → Punished	28	32	16
Negative → Reinforced	29	41	04
Positive → None	59	59	31
Negative → None	57	58	25
Appropriate	33	39	11
Inappropriate	35	45	11
Total Positive	55	56	30
Total Negative	54	57	22

$r = .28, p < .05$; $r = .42, p < .01$; $r = .53, p < .01$

statements(.22) indicating that those who sat adjacent to volunteers made more, particularly positive, statements. Interestingly, this appears to be due to positive (.31) and negative (.25) statements which elicited no/neutral feedback.

Summary. The seating analyses indicated that the groups became more integrated over time although all groups did not progress at the same rate. They also suggest that those residents who are more integrated with volunteers in terms of seating behavior are also more likely to be more verbal in the discussions. There was not a single negative Statement-Seating correlation. In addition, the correlations of seating behavior with positive and negative statements which elicited no feedback suggest that those residents who tend to sit closer to volunteers either emit fewer provocative statements or the group is less likely to respond to their verbalizations. This contention is supported by the lack of relationship between seating and the other statement classification subscales.

Group Assessment of Interpersonal Traits (GAIT)

GAIT scores were used to examine subjects' (residents and volunteers) post-group impression of the volunteers' behavior in each of the programs. Volunteers' self-evaluation in the trained and untrained discussion group and in the self-control and recreation program were compared separately. These comparisons were then repeated using resident evaluations of the volunteers' performance and differences between the two sets of data noted. The analyses were performed by regressing the GAIT scales on the dummy or dichotomous program variable to obtain multiple regression equations. Zero-order, point-biserial and multiple correlations were also obtained.

Volunteer Self-Evaluation. Among volunteers assigned to the trained and untrained groups, the following results were obtained on volunteer self-evaluations made with respect to the volunteer's interaction with each resident in the program (Table 54). Those in the Trained condition self-reported more Tension ($r = -.39$, Beta = $-.39$), and more Influence ($-.37$, $-.11$). Volunteers in the untrained condition self-reported more Flexibility ($.31$, $.54$). The multiple correlation with four predictor variables (Tension, Empathy, Concreteness, and Warmth) was $.66$ ($.60$, corrected). When the volunteers in these two programs were rated by each of the residents in the discussion groups, the following results were obtained. Resident rated evaluations of volunteers reported more Flexibility among volunteers in the trained groups ($r = -.44$, beta = $-.29$) and more Openness-disclosure ($.49$, $.44$) and Openness-genuine ($.46$, $.31$) among the untrained volunteers. The multiple correlation after four variables (Openness-disclosure, Tension, Flexibility and Openness-genuine) had been included was $.79$, ($.76$ corrected).

The self-control program and the control program, a recreational-exposure condition were compared in the same way (Table 55). Volunteers' self-evaluations reported more tension in the self-control groups ($r = -.57$, Beta = $-.59$) while volunteers in the Recreation groups reported greater Flexibility ($.42$, $-.35$), more Approachability ($.47$, $.33$) and greater Influence ($.37$, $.24$). The multiple correlation with 3 variables (Tension, Openness-disclosure, and Approachability) was $.75$ ($.71$ corrected). Volunteers' scores, as rated by residents, partially supported the greater Tension of the self-control volunteers ($-.31$, $-.07$) but also rated them more Approachable ($-.75$, $-.80$) and more Concrete ($-.37$, $-.43$). The

TABLE 54

Multiple Regression of Volunteer GAIT Scales
(Self- and Volunteer-rated) on Trained and Untrained Groups

<u>Scale</u>	<u>Multiple R</u> (correct)	<u>Simple R</u>	<u>B</u>	<u>Beta</u>	<u>df</u>	<u>F</u>	<u>p</u>
Mean <u>Volunteer Self-Evaluation</u>							
Tension	39	-39	- 08	- 39	1,24	4.40	.05
Empathy	54	-25	- 06	- 27	2,23	4.68	.025
Concreteness of Expression	61	29	07	35	3,22	4.39	.025
Warmth	66 (60)	-03	06	32	4,21	3.96	.025
Flexibility	67	31	13	54	5,20	3.24	.05
Openness-genuine	71	05	- 10	- 58	6,19	3.14	.05
Responsivity	72	-05	- 07	- 21	7,18	2.81	.05
Overall Evaluation	74	06	08	23	8,17	2.52	ns.
Assumed Similarity	75	-30	- 03	- 15	9,16	2.30	ns.
Influence	75	-37	- 03	- 12	10,15	1.98	ns.
Approachability	76	-11	- 01	- 10	11,14	1.72	ns.
(Constant)			2.13				
Mean <u>Resident Rated Volunteer Score</u>							
Openness-disclosure	49	49	12	44	1,24	7.43	.025
Tension	71	29	15	50	2,23	11.58	.01
Flexibility	75	- 44	- 16	- 29	3,22	9.31	.01
Openness-genuine	79 (76)	46	09	31	4,21	8.47	.01
Overall Evaluation	81	- 02	- 44	- 78	5,20	7.51	.01
Influence	86	18	23	81	6,19	8.99	.01
Responsivity	89	07	- 07	- 26	7,18	9.39	.01
Warmth	89	17	09	25	8,17	8.46	.01
Empathy	90	19	- 04	- 11	9,16	7.22	.01
Approachability	90	- 12	- 01	- 08	10,15	6.17	.01
(Constant)			-1.22				

TABLE 55

Multiple Regression of Volunteer GAIT Scales
(Self- and Volunteer-rated) on Self-Control
Self-control and Recreation
Groups

<u>Scale</u>	<u>Multiple R</u>	<u>Simple R</u>	<u>B</u>	<u>Beta</u>	<u>df</u>	<u>F</u>	<u>p</u>
	(Correct)						
<u>Mean Volunteer Self-evaluation</u>							
Tension	57	-57	-08	-59	1,17	7,98	.025
Openness-disclosure	69	-08	-09	-48	2,16	7,29	.01
Approachability	75	(71)	05	33	3,15	6,55	.01
Influence	79	37	05	24	4,14	5,79	.01
Empathy	81	28	04	18	5,13	4,89	.025
Assumed Similarity	82	18	-04	-23	6,12	3,98	.025
Overall Evaluation	83	35	07	17	7,11	3,36	.05
Openness-genuine	83	-03	-08	-51	8,10	2,76	ns.
Warmth	83	33	09	43	9,9	2.27	ns.
Concreteness of Expression	84	-09	04	21	10,8	1.91	ns.
Flexibility	84	42	-06	-35	11,7	1,56	ns.
Responsivity	85	21	03	21	12,6	1,27	ns.
(Constant)			3.07				
<u>Mean Resident-rated Volunteer Score</u>							
Approachability	75	-75	-10	-30	1,17	21.78	.01
Overall Evaluation	92	-03	06	12	2,16	46.55	.01
Empathy	93	(92)	08	23	3,15	33.90	.01
Concreteness of Expression	95	-37	-18	-43	4,14	29.52	.01
Influence	97	25	14	48	5,13	36.91	.01
Openness-genuine	98	-01	-06	-15	6,12	39.85	.01
Flexibility	98	11	03	06	7,11	34.96	.01
Assumed Similarity	98	12	04	11	8,10	30.96	.01
Tension	98	-31	-04	-11	9,9	25.96	.01
Responsivity	98	18	-02	-07	10,8	21.61	.01
Warmth	98	-03	-03	-08	11,7	18.04	.01
Openness-disclosure	98	-13	-01	-02	12,6	19.21	.01
(Constant)			5.65				

multiple regression with three variables (Approachability, Overall Evaluation, and Empathy) was .93 (.92 corrected) suggesting that in these four comparisons, resident ratings of volunteers in the self-control and recreation programs were most distinguishable. It should be pointed out that in each of these comparisons, two groups actually comprised each condition. The volunteer comparisons then, were made across four and not simply two groups. This minimized the possibility that condition differences were due to idiosyncratic characteristics of a particular group.

Resident and Volunteer Agreement Rates. Volunteer Mean Self-ratings and the Mean scores of volunteers when rated by Residents did not correlate. Agreement on volunteers' participation in the program included correlations of .27 on Approachability and .26 on Openness-disclosure ($N = 55$, $p < .05$). All others, including negative correlations on Influence and Empathy (-.17, -.21) were nonsignificant.

Effect of Prescores on Evaluation. The GAIT scales were correlated with residents' and volunteers' test battery prescores. Residents' prescores on the Attitude/Personality battery were compared separately with their mean ratings of volunteers in the two programs upon completion of the groups (Table 56). A number of test battery variables correlated consistently with the GAIT subscales, and a number of GAIT scales were consistently influenced by scales of the test battery. In particular, in the Self-control and Recreation Program, Psychopathy, Socialization, Family Dissention, Neuroticism and Scholastic Maladjustment correlated over $\pm .38$ ($p < .05$) with three to nine of the GAIT scales. In the same matrix, Residents' ratings of volunteers on the variables Empathy, Concreteness, Responsivity and Approachability correlated with six to eight of their own prescores in the test battery.

Table 55

Correlation Matrices of Residents' Test Battery

Prescores with Residents' Mean Rating of the GAIT Scales for Volunteers
in the Community Group and Self-control/Recreation Program

Residents' Test Battery Prescores	Residents' $\bar{X}$ Evaluation of Volunt.(N=26) in Discussion Gp (Mon.Night)												Residents' $\bar{X}$ Evaluation of Volunteers(N=25) in Self-control/Recreation(Thurs.night)											
	Em	Od	Og	W	Con	AS	Fl	Res	Te	In	App	Oe	Em	Od	Og	W	Con	AS	Fl	Res	Te	In	App	OE
Law & Judi- cial Process	55	39	-05	29	25	32	01	33	-34	37	32	31	19	13	10	-05	08	00	04	13	-13	22	48	11
Ident. (Vim.0th.)	-12	-32	-31	-17	-33	34	-24	-15	31	-15	-07	-30	-08	07	-04	22	-02	03	-24	-04	24	07	-27	01
Tolerance Law Viol.	-53	-37	-06	-39	-46	-38	-24	-30	38	-33	-32	-38	-33	22	-13	-08	-32	-14	-14	-37	26	-29	-48	-17
Awareness Lim. 0.	-11	-15	-05	03	-08	-03	09	-08	21	-03	-18	-08	-23	-18	-04	06	-27	-03	05	-40	-12	-11	-30	04
Accept.0th.	10	23	38	24	14	-09	25	09	-40	-09	17	24	24	24	31	24	50	17	24	45	-27	02	25	-00
Self-esteem	10	32	30	29	17	06	11	17	-21	15	35	34	30	25	33	23	27	25	26	34	-15	01	36	14
Separateness	-17	-30	-24	-26	-37	02	-21	-16	54	-07	-18	-24	-43	-22	-36	-04	-61	-29	-16	-50	17	-20	-44	-22
Socialization	27	43	46	33	35	01	22	29	-47	11	24	38	54	35	37	21	49	36	27	57	-32	28	47	26
Psychopathy	-50	-43	-36	-52	-40	-16	-38	-36	43	-37	-28	-46	-55	-32	-40	-37	-38	-37	-47	-42	69	-39	-59	-39
Neuroticism	-04	-20	-33	-23	-10	12	-13	-12	25	-07	-21	-30	-38	-28	-38	-22	-32	-34	-41	-37	33	-10	-34	-19
Scholastic Mal.	-43	-34	-29	-33	-26	-15	-34	-33	26	-31	-46	-50	-49	-39	-40	-16	-28	-33	-35	-49	25	-26	-53	-18
Inadequacy	06	12	-32	01	19	-05	-00	22	01	36	19	-03	03	01	-04	-05	06	-04	-40	-09	19	05	20	20
Family Dissention	-33	-33	-36	-42	-44	-08	-21	-18	06	-11	-20	-41	-41	-41	-44	-54	-50	-39	-45	-59	37	-37	-47	-35

Table 56 (continued)

Pos. Mallinger	-15	06	27	-09	14	-25	16	06	21	-02	11	12	09	11	-14	-01	23	-00	04	31	-12	06	26	-06
Ego Strength	-32	04	20	-08	-12	-35	01	-25	12	-19	-08	01	11	-20	-04	-14	-11	-03	05	02	-05	-13	00	-11
Superego Strength	46	44	17	44	48	43	34	53	-44	40	58	51	22	30	19	03	44	13	18	46	-07	12	58	07
External	-31	-37	-35	-25	-24	44	-21	-17	51	-05	-29	-34	-41	-30	-23	05	-27	-08	-17	-32	17	-11	-36	-04
Empathy	17	27	10	20	15	45	02	05	-29	24	20	12	-01	-26	-07	-16	-17	-03	-00	-16	-05	-07	14	01
Self-Control	-29	-09	27	-16	-11	-38	07	-37	06	-20	-21	-09	-17	-23	-31	-24	-32	-25	-30	-29	15	-03	-08	-06
Personal Sp.-Tot.	-29	-45	05	-42	-27	-19	-08	-32	30	-44	-54	-37	06	07	-17	01	03	12	-10	21	-05	14	-37	-14
Cold Pressor - Time	-08	08	17	06	-39	-11	-04	13	41	-01	15	12	12	21	21	17	07	-01	18	16	-01	14	11	01
Porteus Maze-Year	54	32	03	32	18	32	34	30	-19	10	31	31	-07	18	21	-01	-01	-17	-12	-02	12	-03	08	-07
Qual.	-34	-34	-21	-34	04	-06	-26	-13	-02	-00	-35	-44	28	-10	-19	17	20	38	-16	07	-11	38	-16	39
Mean Choice List	02	-12	-01	-18	-24	-04	-10	-05	12	-02	-23	-15	33	14	03	18	-04	22	10	13	-22	41	-09	18
Personal Sp. Area	-28	-49	07	-44	-30	-26	-09	-35	28	-46	-53	-36	15	17	-08	12	09	19	02	28	-09	19	-36	-10
Cold Pressor - Words	10	09	-03	00	-23	-04	-07	24	04	30	30	10	32	31	30	09	-05	15	03	08	-13	16	22	14
Money Save. M.	03	-04	-20	-01	05	-19	06	31	-09	27	15	-00	22	22	10	18	38	25	-10	35	-10	22	32	23

$r = .39, p < .05; r = .49, p < .01; r = .60, p < .001$

Ratings of volunteers in the Community Discussion groups were similarly affected by the personality variable, Psychopathy. In addition, residents' ratings of volunteers were also related to their prescores on Tolerance for Law Violation, and 16PF-G (Superego) respectively, having six and ten out of twelve correlations over .38.

These data suggest that not only is a resident's rating of volunteers influenced by his own attitude or personality but that the strength of that relationship varies with the relevance of the Attitude/Personality variable to the program in which the volunteer is being rated.

Volunteers' prescores on the test battery were correlated with their mean self-evaluation and their mean evaluation as rated by the residents (Table 57). Self-esteem, Positive Malingering, Superego, and Self-control prescores all displayed a number of positive correlations with volunteers' self-evaluations while Awareness of Limited Opportunity, Separateness, and Neuroticism all displayed negative correlations. These data suggest that volunteers' self-evaluations are moderately affected by their own attitudinal and personality characteristics.

Few relationships were found between residents' ratings of volunteers and volunteers' prescores, although those which were found were particularly interesting. Residents' evaluations tended to be negatively related to volunteers' prescores on Identification with Criminal Others, Tolerance for Law Violation, Personal Space and Socialization and positively on Self-control. These results provide some indication that, contrary to what lay people often feel, residents appreciate volunteers who might act as models rather than those with whom they might identify. A notable exception was with those volunteers who self-reported high socialization. It is possible that these volunteers were overly moralistic or excessively advocated a pro-social lifestyle. Such a position could then cause the residents to form a negative impression of them.

Table 57

An Intercorrelation Matrix of Volunteers (Experimental)

Attitude/Personality and Behavioral Pretest Battery with Their Own
Mean Self-Evaluation Rating and Their Mean Received by Residents Evaluation (N=45)

Volunteers' Test Battery Scales	$\bar{X}$ Volunteers' Self-evaluation ¹												$\bar{X}$ Residents' Rate of Volunteers											
	Em	Od	Og	W	Con	AS	F1	Res	Te	In	Ap	OE	Em	Od	Og	W	Con	AS	F1	Res	Te	In	Ap	OE
Law & Judicial Process	09	21	25	17	-00	-02	05	04	-12	02	-18	29	10	27	11	-12	03	12	-16	21	13	18	-10	16
Ident. Crim. Others	-10	05	08	09	19	-16	-00	-03	40	-10	-18	-11	-28	-06	-10	-24	-09	-20	-05	-19	30	-11	-00	05
Tolerance Law Viol.	-01	-15	23	-22	02	-25	-18	-27	11	-37	-07	-17	-35	-23	-18	-15	-01	-29	-11	07	-09	-20	07	-11
Awareness Lim. Opp.	-43	-28	-31	-21	-25	-37	-24	-27	26	-18	-28	-03	10	15	06	01	-01	-09	-08	-01	-02	-02	06	07
Accept. Others	07	24	41	21	35	09	11	24	05	09	21	03	-00	-00	-01	-08	-09	-07	-06	07	-01	11	04	-03
Self-esteem	54	39	50	35	31	44	13	35	-16	52	33	29	10	05	00	09	02	12	14	12	-02	13	01	-07
Separateness	-46	-28	-24	-27	-08	-42	-05	-30	14	-40	-13	-20	06	-02	07	-00	08	-02	01	-07	-07	06	03	10
Socialization	35	-24	-08	18	15	12	-03	-09	-03	20	21	01	-15	-32	-33	-21	-28	-35	01	-19	24	-04	-23	-23
Psychopathy	-29	04	-13	-26	04	-08	-16	-09	08	-23	-12	-14	-15	-05	-06	-10	15	-11	-11	-10	-08	-24	-02	-07
Neuroticism	-45	-05	-13	-26	02	-38	-01	-11	07	-33	-25	12	-06	06	12	-05	09	02	-17	-15	-04	-17	00	08
Scholastic Mal.	-30	09	-08	-10	-01	01	-11	05	00	-07	-15	01	00	12	10	-10	02	-04	-38	03	-04	-13	08	-02
Inadequacy	08	12	04	12	-05	21	04	11	04	22	-21	19	02	09	-01	-10	-13	03	-15	-10	-02	-16	-27	-08
Family Diss.	-28	03	-10	-19	12	-25	-09	01	-02	-26	-26	-13	-08	09	-20	-02	-12	-40	-13	23	-35	07	-10	-08

Table 57 (continued)

Pos. Malingering	53	24	15	24	05	47	10	23	-09	38	-03	22	-13	-30	-14	-05	01	08	-13	05	-10	-27	-13	-13
Ego Strength	32	10	04	-03	02	44	-01	18	-03	32	-04	05	-12	-20	-33	-07	-11	-02	26	03	-23	-28	-08	-24
Superego Strength	28	07	13	17	05	11	07	16	-06	21	17	09	-04	08	-16	-07	-01	01	12	-15	-19	00	15	05
External	-00	02	08	11	25	-18	16	-07	12	-13	21	-04	-20	-08	-14	-23	08	-32	01	-07	-06	05	-00	01
Empathy	24	33	46	25	15	10	23	30	-05	05	17	10	-01	14	-05	19	11	-07	13	20	07	18	06	-01
Self-Control	22	16	09	07	06	34	13	19	-14	36	10	02	21	13	16	21	11	22	31	11	-34	30	04	14
Anxiety	-14	-15	-14	-04	-12	-25	17	-14	-10	-39	-02	-06	-07	-04	-15	-10	-06	-09	-14	-12	08	03	02	04
Personal Sp. total	-02	-13	-31	-36	02	-06	03	-09	-03	-33	-06	-10	-45	-22	-30	-36	03	-13	-22	-00	-02	-12	03	-11
Cold Pressor Time	33	15	04	18	-07	16	21	01	-02	24	-01	02	-22	-32	-34	-46	-24	-07	-04	-18	00	-05	-17	11
Porteus Maze-Year	-18	-14	-16	-12	-12	-07	05	-08	-23	-26	-02	-11	12	-17	05	01	-12	09	-07	-17	18	01	15	05
Qual.	09	-02	14	11	-05	07	-01	01	08	14	14	11	07	09	-04	04	-07	06	-09	-11	07	-04	04	05
Mean Choice List	32	33	04	21	03	31	33	33	-02	03	18	14	-17	03	-24	07	31	03	09	-10	-19	11	21	08
Money Save M.	56	34	38	48	30	51	24	40	30	56	43	48	13	09	-06	20	02	-11	16	-14	-36	-15	-24	-32
Personal Sp. Area	03	02	-23	-23	11	-14	-03	-12	01	-12	-03	-17	-36	-29	-18	-32	-16	-24	-19	-11	-02	-17	07	02
Cold Pressor Words	37	39	35	32	-00	28	35	26	-05	22	26	30	01	02	08	-18	07	25	-17	12	-01	14	-08	04

$r = .29, p < .05; r = .38, p < .01; r = .47, p < .001$

1. Since Mp prescores correlated with three volunteers' self-evaluation scales, partial correlations are presented in Table 62 (Appendix H).

Volunteer Agreement on Residents. Each resident met a group of volunteers in two different activities. Volunteers evaluated themselves with respect to each resident. The resident score based on the mean self-rating of volunteers, on one evening, correlated very highly with the self-ratings of a different group of volunteers participating in different activities on the same resident. These data suggest that the residents to whom one group of volunteers related to in one activity were the same residents to whom another group of volunteers could relate in another activity. The mean correlation on the twelve scales was .71. On the other hand, there was much less relationship between a resident's mean evaluation of volunteers in one activity group and his mean evaluation of other volunteers in a different activity, the mean correlation being .25. These data are presented in Table 58.

Summary. The 12 GAIT scales provide some interesting findings with respect to the group processes. They suggest that volunteers' self-evaluations do not necessarily concur with those of the residents. Both volunteers' self-evaluations and resident ratings reflected the different orientation of the various groups. Trained discussion group volunteers self-reported more Tension, and less Flexibility than untrained volunteers. The residents did not feel this way. Nor did they agree with the trained volunteers' self-reports of their amount of Influence. Residents also reported a greater openness among the untrained volunteers. Volunteers in the self-control program also reported more Tension and less Flexibility, Approachability and Influence relative to the Recreation volunteers. Resident ratings supported the feelings of Tension only. They also reported self-control volunteers were more approachable and more concrete in their expression. There was also an overall observation that residents seem to appreciate the noncriminally-oriented volunteers.

TABLE 58

A Correlation Matrix of Resident GAIT Scores
 (Given by volunteers on Volunteers' Self-ratings and given out by
 Residents on Residents' ratings of Volunteers) between Programs (N=25)

Correlation	Discussion Group with Self-control/Recreation Programs												Mean <u>r</u>
	Em	Od	Og	W	Con	AS	F1	Rs	Te	In	Ap	OE	
Mean Resident Scores received on Volunteers Self-rating	79	68	77	74	80	58	64	44	70	70	87	85	71
Mean Resident Score from Residents' Evaluation of Volunteers	31	19	12	40	36	03	08	31	13	40	61	06	25

$r = .40, p < .05$; $r = .50, p < .01$; $r = .61, p < .001$

CHAPTER IV

DISCUSSION AND SUMMARY

The results of the present study were presented in two sections. The first, a psychometric analysis of the test battery, institutional, and process measures was included to provide important reliability and validity data on these variables. Such information was either previously unavailable or the measures were specific to the present investigation. The second section comprised a program evaluation in which four treatment combinations and a control group reference were compared. Outcome on the test battery and changes in residents' institutional behavior were examined. Analyses of individual program conditions were carried out using the process measures which were designed for the present study.

Initially, the two investigations were carried out and presented independently. All analyses were planned and data collected prior to examining the variable characteristics. No decisions were made with respect to deleting measures based on the psychometric results. Therefore, an evaluative review of the scales' psychometric attributes is required prior to discussing the applicability or external validity of experimentally significant program results.

Outcome measures which were employed in a pre-post design were administered in three different fashions. Test battery attitudinal and personality scales were given using a series of self-report paper-and-pencil questionnaires. The battery also included four behavioral or performance tests. Records of residents' institutional performance were obtained unobtrusively from staff ratings and archival sources. Initially, two principal constructs were cited as targets for change, a prosocial-interpersonal orientation and personal or self-control. The measurement of two or more different traits,

each measured by three methods, is reminiscent of Campbell and Fisk's (1959) multitrait-multimethod matrix. This hypothetical matrix provides a means of combining convergent and divergent validities while examining the scales and their constructs. Tests of the same trait using maximally similar test conditions (reliability) should have the highest correlations. Tests of the same construct using different methods should also be correlated (convergent validity). Tests of different characteristics which use a common method of data collection should be less related (divergent validity). These heterotrait-monomethod correlations include the common method variance and should be used as a comparison when examining monotrait correlations.

Psychometrics

An examination of the psychometric data provides some indication as to the lack of consistent results on the self-control dimension. Whereas the social, legal, and interpersonal measures showed strong relationships between scales and good relationships across measurement method, the self-control variables were more diverse and unrelated. Although there is an indication that some self-control related traits exist, the reliability and validity data suggest that they are generally not being measured well. The self-report paper-and-pencil Sc scale, although highly correlated with Ego Strength (.58, .49), also correlated equally well with the adjustment scales Alienation (-.49, -.49), Anxiety (-.38, -.59), and Neuroticism (-.48, -.52). On the other hand, its relationship with the behavioral and institutional measures of control was inconsistent. Resident and volunteer correlations with the

Money Saving Measure are in the appropriate direction (.21 and .59) but unrelated to the Choice List. Resident scores were appropriately related to the Porteus Maze but volunteers' were not. The Sc scale was negatively related to the Interest Coupon. The behavioral measures of self-control demonstrated high internal consistency but showed few consistent relationships between measures. The Porteus Maze discriminated accurately between residents and volunteers but showed stronger relationships with the personality than the control variables.

The Cold Pressor was not a discriminatory test nor did it demonstrate any consistent relationships. Although it was employed as a behavioral test of self-control, Immersion Time appears to be influenced by too many other factors (eg. social desirability) and the tremendously large variability in scores (S.D. = 130.09 and 135.59) rendered it of very little value. In addition, any causal relationship between Immersion Time and Words Spoken cannot, at present, be confirmed. It is suggested that these two highly related variables are, in fact, interdependent. For example, the longer one remains immersed, the greater is one's opportunity to verbalize. Yet verbalization appears to represent a self-control strategy and therefore could be conducive to longer Immersion Time.

An investigation of self-control measures with institutional criterion variables revealed inconsistent findings. The Sc scale and the Choice Lists were consistently related to the three instructor ratings, as was the Money Saving Measure to fewer institutional Charges. But at the same time, the Porteus Maze-

quality (a measure of impulsive errors) was also related to instructor ratings.

The Interest Coupon also appears to have potential as a legitimate in vivo measure of delayed gratification but needs much further investigation because of its variability in correlations with other self-control scales. It was positively related to the Porteus Maze-years, Cold Pressor, and Money Saving Measure and negatively to the self-reported Sc and Ego Strength scales. These results suggest that a possible source of confusion among the self-control variables lies in the paper-and-pencil versus behavioral measures. Mental and behavioral control may be two discreet attributes having very little relationship. Yet, because of the novelty of the Interest Coupon as it was used in the present study, this contention remains tentative. It does suggest that 'control' may be a multidimensional trait and it therefore merits further investigation. In particular, the Interest Coupon should be examined for its utility as a multidimensional criterion measure of control. Conceivably, Coupon Saving requires not only the ability to delay gratification but the organization and planning ability to save the coupon without losing it. In addition, since a number of residents saved the coupon beyond the date of maturity, potential for a finer discrimination of subjects is possible (i.e. between those who save to accumulate maximum interest and those who saved beyond that date maintaining this 'nest-egg' reserve). Regrettably, insufficient data were collected during posttesting for analyses of change scores as a function of program combination. The lack of posttest returns reflects a drawback of this naturalistic delayed gratification measure. Certainly, extraneous

variables had an influence and took their toll on returns. Transfers, discharges, and lost coupons resulted in only a 20% return rate during posttesting.

The legal, social, and interpersonal measures also demonstrated high internal consistency coefficients but, in addition, displayed more systematic relationships across the method of data collection. The test scales (Alienation, Attitude toward the Judicial System) and behavioral measures (Personal Space) which were all comprised of subscales, had high rates of consistency as did the institutional reports (staff ratings, charges and Letter Correspondence). The social and interpersonal scales were highly related and the legal-moral measures were also reliably correlated.

Personal Space was appropriately related to Empathy and Self-esteem. Because it tended to correlate with some variables differentially for residents and volunteers, there is a suggestion that demand characteristics of the test were somewhat different for the two samples. There is little doubt that personal space is an appropriate behavioral interpersonal measure and deserves further attention. Experimental residents' seating behavior presents a slightly different configuration. It appears that these residents who tended to integrate with volunteers reported lower self-esteem and superego strength. Possibly these were 'weaker' residents in terms of the prison subculture and ended up with their seating position by default if the stronger residents positioned themselves as an aggregate block.

A number of the legal, social, and interpersonal variables correlated with institutional criterion measures. Socialization and Acceptance of Others were consistently related to staff ratings in a positive

direction while Tolerance for Law Violation and Psychopathy were negatively related. Smaller personal space was also predictive of favourable officer ratings.

Factor analyses of the test battery variables indicated that scales were measuring a number of conceptually similar but orthogonal factors. For example, among the resident prescores, the Legal-moralistic, Criminality, and Egocentrism factors may be subsumed under the social-interpersonal dimension as could Delayed Gratification and Motor Impulse under the Control dimension. When independence of factors was not required for the oblique solutions, similar factors were extracted and moderate correlations were found on the social-interpersonal factors (Appendix G). The self-control construct did not emerge as well in these analyses and their factors did not show intercorrelations. An additional set of important factors was also extracted. The personal adjustment or stability factors were prominent in all analyses. They were moderately correlated in the oblique solutions and a Neurotic dimension, being responsible for up to 40% of the accountable variance, was repeatedly the first extracted factor.

Hypotheses

A theoretical contention of the present research is that residents differ from nonoffenders in their legal attitude, interpersonal-social orientation, and self-control behavior, and that such a combination of dispositions is conducive to delinquent behavior. A resident-volunteer difference comprised the first hypothesis. In addition, an assumption of the research design was that the experimental residents were exposed to volunteers who were more prosocial in their legal attitude, interpersonal

disposition, and self-control ability. Certainly, appropriate differential association of attitudes and modeling of control could not occur without such differences.

Residents and volunteers were easily distinguishable in both the univariate and multivariate comparisons. Analyses revealed that the two samples were very different ($p < .001$) on 20 of the 28 individual comparisons. Therefore, the condition that experimental residents in the program be exposed to more prosocial volunteers was satisfied. Grouping scales by factor combinations also indicated that the two samples were collected from very different populations. The multivariate comparisons revealed that the volunteers had a more prosocial and prolegal orientation, were better adjusted and had more self-control than the residents. Particularly evident in both analyses were differences on the social orientation and personal adjustment, or stability, scales. Controlling for age and sex, the significance of many comparisons was reduced but 19 scales were still significant ($p < .05$). These differences suggest that many of the test variables may be related to delinquent behavior.

The second hypothesis predicted a treatment-by-client interaction, that participation in the program would differentially affect residents and volunteers. The interaction on Identification with Criminal Others replicates previous findings in the initial Community Group research (Andrews *et al.*, 1973). Examination of simple effects revealed that the interaction was primarily due to the differential effect of program participation on experimental residents and volunteers ($p < .01$). Experimental residents also decreased on Identification with Criminal Others relative to their control resident counterparts ($p < .05$).

The reliability of a differential effect of volunteer-resident meetings is now well established (Andrews et al., 1973) and must be acknowledged for both theoretical and applied reasons. Experimental studies of differential association have been few. The present study, with its forerunners, provides consistent and much needed empirical support since the program follows directly from Cressey's (1955) theory-derived propositions. Further confirmation of the theory requires a more specific investigation than can be obtained from outcome data, and for this reason, a number of process measures, to be discussed later, were monitored throughout the program.

Secondly, the evidence that such a program reverses, or at least inhibits, the criminal identification progress of the incarcerated provides crucial information for correctional policy guidelines. This is particularly so in light of the developing volunteer movement in corrections (Scheier, 1970). Again, only by examining the process details can specific suggestions be derived for the creation of an optimally successful program.

The volunteer results necessitate a cautionary note. The tendency for volunteers to identify with the criminal subculture is a possible drawback of the program and should be considered before its implementation. Means should be taken to minimize such an effect. Although there were no differences in the four volunteer programs on increased Identification with Criminal Others, there was a tendency for the self-

control volunteers to be influenced least and the Recreation group most ($p < .10$). In addition, there was a Groups effect on volunteers' Empathy scores ($p < .03$). The recreation volunteers were the only ones to increase on their self-reported Empathy. In this regard, the recreation groups differed most dramatically from the self-control group ($p < .01$), then from the trained discussion group ($p < .05$), the untrained discussion group ($p < .10$), and lastly the no treatment controls ($p < .20$). Interestingly, the amount of Empathy change varied inversely with the amount of structure and instruction which characterized the various programs. In addition, there were two sets of each group and the above relationship was maintained for both.(Appendix G).

It appears that training, organization, and task structure directly affect volunteers' feelings of Empathy. Although these conditions did not significantly affect volunteers' increased Identification with Criminal Others they may restrict excessive sympathy with the residents' plight. Treating the volunteer as a para-professional is one way of meeting these conditions. The results also provide evidence for maintaining a short, fixed-interval program. For if prosocial resident change requires exposure to prosocial volunteer values, a diminution of these values reduces the potential for resident improvement. Additional studies are required to determine precisely how training, instruction, and content affect the program's influence on the volunteer and if, in fact, over-identification impedes positive therapeutic outcome.

The practical importance of change on Identification with Criminal Others can only be estimated. Much has been said about the role of

identity and self-perception in the development of self-esteem and ultimately in determining delinquent behavior (cf. Miller, 1958; Mussen, Conger, & Kagan, 1969). Certainly, less affiliation with the delinquent culture and its values may be a precursor to prosocial behavior change. A review of the scale's psychometric attributes provides indirect support for this position.

Reliability of the scale was adequate. It has a one week test-retest reliability of .59 (Stockton & Hogan, 1974). There was no relation to sex in the present or a previous investigation (Stockton & Hogan, 1974). Concerning the scale's validity, residents have scored repeatedly much higher than non-incarcerated volunteers (Andrews et al., 1973, 1975, 1976, in press) and student volunteers do not differ from non-volunteers. Among non-offenders the scale correlated $-.23$ with a differential association index and an offense scale $.36$ (Wilkins, 1975). The present study also found older residents and volunteers had lower scores ($-.37$, $-.31$) although this relationship has not always been reported (Stockton & Hogan, 1974).

The psychometric investigation of the prescore battery provides further support. Identification with Criminal Others does appear to reflect self-concept traits as well as legal orientation. This is indicated by the positive correlations with Awareness of Limited Opportunity and Alienation and a negative relationship with Super Ego Strength. The scale was heavily loaded on the residents' Criminality factor in the factor analyses. The scale was not related to staff ratings or disciplinary reports but did correlate with residents' Canteen Balance. It was suspected that the Canteen-Identification relationship may have been due to mutual relation-

ships with Time already Spent in the institution (i.e., the residents who were in the institution longer would develop a stronger criminal identification and also have a greater canteen balance). But Time Spent was not related to Identification ($r = -.04$). Therefore, it was suggested that Canteen Balance provides an unobtrusive measure of the residents' position in the institution hierarchy when the effect of time is partialled out of the measure. When Time Spent is used as a control variable, the Identification-Canteen Balance coefficient increases to .55.

The only other indication that the total program differentially affected residents and volunteers came from the Personal Space data. An examination of simple effects revealed that experimental residents tended to decrease their Personal Space relative to their control group counterparts ($p < .05$). The remaining individual comparisons were not significant (Appendix H). In addition, the different demand characteristics of the test, which were evident in the pretest analyses, may have affected the client-by-treatment interaction and therefore render such a differential effect interpretation questionable.

The main effects of the treatment-by-client analyses examine two corollaries of the second hypothesis which are implicit assumptions of the research program. The first is that incarceration has a deleterious effect on the resident and the second is that the total volunteer program is of therapeutic value. Collapsing across treatment conditions, the first assumption was examined by investigating the rates of change on the test battery for volunteers and residents over the ten week (pre-post) period. In spite of an increase in their desire to please (M_p), residents deteriorated relative to volunteers on 14 of the 20 self-report scales.

Overall, residents showed negative changes, relative to volunteers, in their legal orientation, prosocial values, personal adjustment and self-control. The purpose of the present study was not specifically to examine the effects of prisonization, yet strong evidence is provided for the assumed deterioration.

In comparison, the only main effect due to treatment was on Inadequacy. Experimental subjects expressed decreased feelings of Inadequacy relative to the controls ($p < .01$). Treatment tendencies ($p < .10$) suggested that the program was also related to fewer Porteus Maze errors, a smaller Personal Space and greater Super Ego Strength (Appendix G).

Although discouraging in comparison to the effects of incarceration, the overall program results indicate appropriate changes. Inadequacy has been a characteristic long associated with delinquency. In fact, the scale was one of five, devised by Gough and Peterson (1952), as one of the precursors to delinquent behavior. Among residents the scale was highly related to Anxiety, Neuroticism, Psychopathy, Alienation and negatively with Socialization and Self-Control. One is reminded that this comparison involves an examination of four different combinations of volunteer programs and that all tendencies and effects were in the appropriate direction suggesting that, in general, the volunteer-resident interaction is beneficial.

The third hypothesis states that teaching volunteers about the use and value of appropriate feedback to residents' statements will increase residents' prosocial attitude change. This hypothesis is derived from two assumptions. The first suggests that differential reinforcement of pro-

and antisocial statements affects one's attitudes and behavior. A second assumption is that informational training and a simple request will improve the appropriateness of feedback received by the residents.

The present hypothesis may be examined by comparing the differences between the residents in the trained and untrained discussion groups. (Forty-four and 42% of each group also received the self-control program and the remainder were in the recreational activity). But first an examination of the effect of volunteer training on the volunteers' behavior is in order.

The process results did show that training altered the ratio of appropriate-to-inappropriate feedback. The differences were minimal and enhanced only slightly the initial base rate of differential responding to pro and antisocial statements. Concerned, voluntary psychology students who had responded to an open solicitation of subjects, and who went through a simple orientation procedure, were interacting more appropriately than inappropriately from the outset. Some of this behavior may have been a result of the orientation program or of leaders' reinforcement and encouragement to respond in such a fashion. If so, this was a natural outcome of the program organization. No prompts were given to the leaders, who were, in fact, blind to treatment conditions and hypotheses.

It is also encouraging that only a very minimal amount of training further affected the volunteers' behavior. Specifically, the change came in a decrement of inappropriate feedback caused by the reinforcement of residents' antisocial statements. This kind of error on the part of well intentioned, but naive and sympathetic volunteers, who are captivated by

anecdotes of the criminal subculture, presents a very real and potential danger to well-meaning volunteer programs.

The indication that trained volunteers showed a relative increase in the appropriate use of extinction was also encouraging. Individual comparisons examined the effect of training a single person (the co-leader) and results were not encouraging. These data suggest that one cannot be content to train only one of the participants and expect an impact on the group in terms of appropriate feedback.

Lastly, suggestions are made for providing a detailed training program. It should include examples of the different kinds of appropriate feedback (reinforce positive statements, and extinguish or punish negative statements). Volunteers should be cautioned as to the possibility of inadvertently providing inappropriate feedback (reinforcing negative statements and punishing positive statements).

In addition to the feedback component of the discussion groups, residents were exposed to a verbally more prosocial group than themselves. Volunteers emitted consistently more prosocial and fewer antisocial statements than the residents. Among the trained and untrained volunteers, the trained group made fewer total statements but had a more prosocial positive-to-negative ratio. This suggests that they were more cautious and selective in their statements. Interestingly, a point of convergence between the residents and volunteers occurred during Session Six with the topic 'Responsibility, Conscience, and Interpersonal Styles'. The reduced dissimilarity was largely due to a decrement in the frequency of residents' negative statements.

The relationship between statements and change on the test battery was not particularly encouraging. Positive and negative statements showed very similar correlations with change on the test variables. Since both positive and negative statements correlated with appropriate change it appears that the frequencies of statements reflect participation or activity level rather than a personal orientation. Consequently, appropriate change, particularly in the self-control dimension, seems related to the level of residents' participation. More activity in the discussion program led to greater self-control, less external control and a higher Money Saving Measure score. This effect was maintained when attendance effects were partialled out of the equation.

An examination of the relationship between test battery change scores and appropriate feedback received by experimental residents revealed a number of correlations. More appropriate feedback was related to positive attitude change toward the judicial system, more ego strength, and more delayed gratification on the Choice Lists. Positive feedback was also related to a decrease in the Cold Pressor-Immersion Time, and the Positive Malingering Scale. The latter two results are compatible with indications from the psychometric analyses. The correlation and factor matrices suggested that the Cold Pressor was largely a measure of social desirability.

The remaining scales represent three principal targets of the discussion group program; a prolegal orientation, stability or maturity, and foresight or planning. There were no correlations between feedback and any of the interpersonal variables. Also of concern was the fact that the

total amount of inappropriate feedback was similarly related to positive attitude change toward the judicial system.

The only scale which showed differential correlations ($p < .05$) was Awareness of Limited Opportunity where the frequency of inappropriate feedback was related to a decrease on the test scale. An investigation of the statement-feedback component scales provides further information as to the source of this relationship. The frequency of reinforced negative statements was highly correlated with a decrease on Awareness of Limited Opportunity (-.47). That is to say, one can reduce the resident's feelings of restrictedness by reinforcing his antisocial statements.

In sum, there remain some questions as to the mechanisms by which trained volunteers interact with the residents to facilitate appropriate change. There is an indication that change is not simply a function of appropriate feedback but that it is related to attention, feedback, and total participation in the program.

Finally an analysis of volunteer training on resident outcome is reviewed. Among the test battery variables the only effects were on Personal Space. The residents exposed to trained volunteers increased in total space. There was a tendency for this group also to increase on Empathy. These results are a source of confusion. As expected, they showed a moderately negative correlation during pretesting. (Smaller Personal Space was related to more Empathy). In this case, working with trained volunteers led to more self-reported Empathy and more interpersonal distance.

Among the institutional measures, the results indicated that participation in discussion groups with trained volunteers influenced both the

canteen saving and letter writing behavior of the residents in an appropriate direction. Experimental residents who were exposed to trained volunteers demonstrated a greater degree of saving in their Canteen Balance for the two months following program completion. This effect remained highly significant ($p < .005$) when scores were adjusted for pre-score balance and percent of time present for the follow-up investigation period. There was also an indication that training was beginning to affect residents' performance during the two months during the program.

There was also a tendency for residents in the trained groups to write more letters. The only significant difference, though, was on the frequency of neutral letters. It was encouraging that residents in the trained groups tended to show more planning behavior in their letters but not more negative or non-rehabilitative content.

The content of the discussion group (Appendix A) is important for a conceptual understanding of these results. Planning and self-determination of future events were second only to legal orientation in importance to the program focus. At no point were the leaders requested to discuss their mail or canteen. Neither the volunteers nor the residents knew that these data were collected. Spontaneous discussion frequently dealt with residents' discharge plans and volunteers often queried, challenged, and made suggestions as to how residents might proceed. The issue of whether the resident differences were due to a higher appropriate-inappropriate feedback ratio remains unclear. Their discussions may have differed in other, as yet undetermined, ways. What is apparent is that a minimal amount of training can effect more appropriate behavior change on the part of the residents.

The fourth hypothesis predicted that residents who participated in the self-control program would show more impulse, behavioral, and self-reported control than residents in the recreation program. The test battery results were not encouraging. Although there was an indication that residents in this program decreased slightly on the self-reported Neuroticism Scale, it also appears that exposure to student volunteers in a very academically structured program causes feelings of powerlessness and limited opportunity. In spite of much program content supporting a personal control philosophy, learning about the science of human behavior from a group of more advantaged and educated volunteers seems to have had a detrimental effect with respect to personal causation. The actual strength of this effect may have been very minimal in that it was not found on the composite Alienation Scale, or on Locus of Control (External). Among the institutional measures there was a significant effect on Canteen Balance in the appropriate direction for two months following completion of the program. Further discussion of these results will be presented with the next hypothesis concerning program interaction.

The data are not encouraging for the outcome of a self-control program with incarcerated residents. This is particularly the case for the behavioral tests and delay of gratification measures. It appears that the self-control program by itself is insufficient to effect behavior change in a controlled test situation or in the natural environment. It is pointed out that the average number of assignments completed was 5 out of a possible 9 and the number of submissions was highly related to attendance (Appendix D).

A corollary condition suggests that greater participation within the self-control program should correlate with more appropriate outcome change. Using attendance, which was highly related to the number of projects completed in the program, there was some indication that within the program, participation was related to outcome. Attendance correlated with changes on Empathy (.56; $p < .05$) and Personal Space (-.64; $p < .01$) but only .35 (ns.) with Self-control (Appendix H).

The treatment interaction comprised the major research hypothesis. The theoretical position was that both a prosocial discussion program where residents received appropriate feedback and a behavioral training program focusing on greater self-control were necessary to effect behavior change in the natural environment. The discussion group program could possibly shape appropriate verbal behavior, attitudes, and intentions but does not contain the necessary instructions, techniques and practice opportunity to implement a change in behavior. The self-control program alone would not be building on an adequate attitudinal or disposition foundation. Only by combining the two in an interdependent program regime can one expect behavioral change in one's environment.

These results were encouraging, particularly for the institutional measures. Appropriate tendencies were found among the test battery scales. The trained discussion-self-control combination led to the greatest decrement in anxiety and feelings of isolation. The trained discussion-recreation program does not appear to be a good treatment regime. These residents and the no treatment controls were the only groups to show less self-esteem and greater anxiety. Their antilegal attitude change was second only to the delayed treatment control group. Interestingly, the only group which

showed a prosocial change in its attitude toward the law was the no training-recreation group. This attitudinal change was a major target of the discussion group program. Among the four discussion groups, leaders and observers concurred that the no training-recreation group was the most "successful" for group cohesion and good discussions. The attendance data support these subjective evaluations. The mean number of sessions attended (6.43) was one to 2.4 more than the averages for attendance in the remaining three groups. Residents from the training-recreation group reported the poorest mean attendance (4 sessions).

The two institutional measures which the psychometric analyses suggested as the best general criterion measures (disciplinary reports and staff ratings) provided the most impressive and consistent data. Results of both measures supported the treatment interaction hypothesis and earlier analyses indicated that they were two of the best general criterion measures of behavior.

Tests of simple effects revealed that there were tendencies between the two trained groups on Frequency of Charges. The group which also received a self-control program decreased its rate compared to the one which received recreation. Also the trained discussion-recreation group increased its rate of charges compared to the untrained-recreation group.

The only residents who displayed a decrement in institutional charges were those in the training-self-control regime. A decrease (Appendix G) occurred in spite of an increasing seasonal trend. The significance of these results was maintained when postscores were adjusted for prescores and for amount of time present in the institution during the post phase.

The performance of the no-training-recreation group is also of interest. As mentioned previously, it was felt that their discussion group ran more smoothly and was superior to the other three. An examination of their disciplinary record suggests that the group, although randomly chosen from the resident enlistees was superior from the outset in terms of their institutional behavior. During the two months of the program they demonstrated an increase in the rate of charges but then returned to their zero base-rate in the two months following the program. On the other hand, the trained discussion-recreation group began with no changes but had the greatest increase over the six month period. This result coincides well with the decrease in self-esteem, attitude toward the law and a maintained level of anxiety. Again the evidence suggests that placing residents in a highly structured program where they are reinforced for saying that they want to do well but which does not provide a training mechanism to operationalize these intentions, may have deleterious results.

The officer ratings concur nicely with the disciplinary change analysis. Since these reports are most often a result of staff-resident conflicts, it is appropriate that the strongest effects were reported on officer ratings of Behavior toward Staff ($p < .005$). Among the self-control groups, the one which also participated in discussion with trained volunteers showed significant improvement relative to the untrained group ($p < .01$). Between the two groups which were in discussion with untrained volunteers those who also participated in the recreation program showed relative improvement in their ratings ($p < .01$). The analysis of Behavior toward Peers reflected the same interaction and significant simple effects.

Again, the results are favourable for a trained discussion group-self-control regime and appear particularly negative for a trained discussion group with recreational activity. The only other group to show positive change was the no training-recreation group.

As mentioned previously, there were both main effects and interactions on Canteen Balance following the program completion. The training-self-control regime showed a greater accumulation of saving than any other combination. This group had significantly more saving than the training-recreation and the no training-self-control group ($p < .05$).

There are three reasons why these findings should be regarded with caution. Firstly, the two-month follow-up comparisons were hampered by transfers, paroles, and discharges, reducing the number of subjects available for this analysis to 21. Nonetheless, the results were significant in spite of a small N. Secondly, the results were partially affected by greater canteen savings on the part of the trained discussion-self-control group. When Canteen Balance-pre was covaried the interaction displayed a nonsignificant trend ($p < .10$). Only the training effect, which was discussed above, remained significant. Thirdly, issues cited in the psychometric analysis of the Canteen Balance variable raise serious questions concerning the meaning of the scale. The results were not found on the Spent-Received ratio measure which appeared, psychometrically, to be a more appropriate scale. Also, the significant correlation between Mean Balance and Identification with Criminal Others ($r = .52$) is cause for concern. This result was not due to a common correlation with Time Spent in the institution since Identification was not related ($r = .04$) to Time Spent. In defense of the scale, Canteen Balance was not related

to any other test battery variable including other scales which were heavily loaded on the delinquent factor. Nonetheless, considerable caution must be taken in interpreting the meaning and external validity of these results.

In sum, the interactions found on the institutional measures provide crucial evidence for interdependent treatment effects when these effects are assessed with respect to extra-program behavior. All institutional measures were obtained using unobtrusive data sources of residents' daily behavior in the institution. Only the letter record did not show a treatment interaction although it did show evidence for a training effect. The remaining interactions all resulted in superior performance by Group One, the most intensely treatment oriented regime.

The data also suggest that a one dimensional target program is not only insufficient but may, in fact, be detrimental to the behavioral outcome of participating residents. Conceivably, such a program places strong demands on the resident without providing effective means of realizing them. Thus, anxieties are not allayed, self-esteem falls, staff ratings worsen and disciplinary reports increase.

The results tend to justify one of Glaser's (1975) concerns that minimal training may be antirehabilitative. He claims that a little training or education could potentially increase unrealistic expectations and subsequent frustration by instilling motivation to succeed but not providing the necessary tools for the offender to achieve his social and economic goals. Similarly, the Trained Discussion-Recreation program could have provided motivation among residents to change but did

not propose the necessary techniques. As a result, this group showed a consistently poorer outcome compared to the other treatment regimes and in many cases was worse than the no treatment control.

One must be very careful in designing programs for incarcerated offenders. It is apparent that programs which 'motivate' the resident to change some aspect of his life style and do not provide an effective means of doing so may have deleterious effects. At the same time, providing a behavior change program without a systematic attitudinal or cognitively oriented component to the treatment regime may not effect a change in behavior. Only the combination of a structured discussion program with trained volunteers and a systematic, rigorous, self-control program consistently effected behavioral change in the natural environment.

Interestingly, the interaction results on the test battery scales suggest that the interdependent program results occurred at a behavioral but not an attitude/personality level. Only anxiety scores were noticeably reduced ($p < .10$) in the trained discussion-self-control regime when compared with the other three programs and the institutional control.

At least one other study has demonstrated treatment effects on institutional measures but not paper-and-pencil research scales. Wenk and Frank (1973) demonstrated that an Inmate Performance Pay Demonstration Project reduced sick calls, job transfers and had some effect on disciplinary reports while test scale results were ambiguous at best. Because of such finding, it is suggested that more attention be given to the development and monitoring of institutional, behavioral

measures to adequately assess the true impact of treatment programs with incarcerated offenders.

Lastly, the results of the present study suggest that one must attend to program goals, combinations, and specifics of the treatment regime. A program evaluation carried out by combining all the volunteer programs, as is often done in correctional research, would have missed many of the results in the present study. Overall, there was little difference between the experimental and control residents. Hence, one should be very cautious in combining programs simply because they have a certain commonality, in this case, the use of volunteers. Instead, specific programs and program combinations should be investigated individually and detailed records maintained on program variation. In addition, components of a program which may combine to form a compatible regime should be assessed.

Group Processes

Exploratory analyses were undertaken to investigate further aspects of the Community Group discussion program. An analysis of residents' seating behavior and the volunteer evaluations provided followup process data to supplement the statement-feedback analysis.

Seating behavior provided an indication of both individual and group integration. There was an increase in client integration over time ($p < .05$). In addition, individual scores were found to correlate with many of the test battery scales. But the nature of the coefficients suggests that residents'

high seating scores were not just a measure of integration with volunteers meaning they were more outgoing and mingled with the volunteers but their integration may have been partly by default. Residents excluded from the "residents' seating block" would only find seating available adjacent to volunteers. This is suggested by the seating integration being related to low self-esteem, low super ego strength, high anxiety and high family dissention. Yet there was also an indication that the resident integrators demonstrated greater foresight and behavioral self-control and participated more in the program although this could have been due to their closer proximity to the volunteers. Seating patterns do provide an interesting and potentially useful index, not only of total group cohesion and integration, but of individual characteristics and within-group affiliations.

The volunteer assessment measures (GAIT) also provided informative follow up data on how volunteers are received in the different programs, what characteristics cause volunteers to be positively evaluated, and the relationship between resident and volunteer self-evaluations.

The GAIT data suggest that volunteer training does affect volunteers' self-perception of their performance. Resident-rated evaluations provide some interesting contrasts. As one might expect, trained volunteers felt they had a greater influence on the residents but reported more tension in their interactions while the untrained volunteers expressed more flexibility. The residents found the trained volunteers more flexible and the untrained volunteer to be more open in terms of disclosure and genuineness. Volunteer training appears to cause feelings of constraint among the volunteers and this is conveyed to the residents who perceive the trained

volunteers, not as being inflexible, but less open. The training activity, which was largely in the form of cautionary instruction, appears to have inhibited the volunteers.

Volunteer activity in the self-control and recreation activities were also compared in terms of resident and self-evaluations. Volunteers in the recreation program felt they were more relaxed, flexible, and approachable in addition to having a greater influence than volunteers in the self-control program. Residents also perceived the self-control volunteers to be more tense as well as more approachable and concrete in their conversation.

These ratings coincide with what one would expect according to the program design. The recreation program with its lack of structure and emphasis on interpersonal socializing appears to be an easier more enjoyable activity and creates greater feelings of perceived influence although this was not supported in any of the many outcome measures. The nature of the self-control program with its very specific content and mini-group labs (Appendix D) was no doubt responsible for the high ratings on Approachability and Concreteness of Expression.

These data indicate a number of treatment-evaluation relationships and demonstrate that one must be most cautious when interpreting subjective evaluations. Structure and systematic program design are related to feelings of constraint and limitation while unstructured activities foster feelings of accomplishment and scope on the part of the volunteer. Some of these self-observations are noticed by the residents. Others are either nonexistent or undetected. In total, the untrained and recreation volunteers rated themselves more positively than the trained and self-control volunteers.

The resident ratings do not concur and the outcome measures suggest effects in the opposite direction. These findings are particularly important for the implementation and evaluation of future programs.

There is a second and very critical reason for suggesting caution in the use of personal evaluations. Over the four programs there was very little relationship between volunteers' self-evaluations and resident ratings. An examination of these two sets of ratings in relation to volunteer prescore characteristics provides some insight as to the reasons for this discrepancy. Volunteer self-evaluations were not related to the same traits which led to positive ratings by the residents.

The details of these findings provide useful information for designing and understanding the mechanisms of volunteer programs and also for contributing to the construct validity of the measures. For example, volunteers who reported a small personal space were rated highly by the residents on their clinical skills (Empathy, Warmth, Openness). Residents also appreciated volunteers with a self-controlled and anticriminal orientation but not a strong desire to please (Mp, Cold Pressor) or prosocial, moralistic (Socialization, Ego Strength) outlook. Of particular interest is the fact that residents preferred volunteers who did not have criminal attitudes but at the same time they did not enjoy those who were highly prosocial.

The volunteer self-evaluations correlated as strongly, but with different, attitude/personality characteristics. These data indicate that self-rating is largely a function of self-concept and social desirability. (Self-reported Ego Strength, Self-Esteem, Positive Malingering and Cold Pressor-words were all related to positive self-evaluations. High scores

on Neuroticism, Alienation, Awareness of Limited Opportunity all led to poor self-evaluations. Lastly, self-control (Sc and Money Saving Measure) and Empathy were also correlated with positive ratings but since the self-control scales were also related with Mp (.37, .58), the former effect was partly due to the common element of social desirability in both self-report batteries. But the partial correlation analysis, controlling for Mp (Appendix H) still displayed significant correlations.

Resident evaluations were also examined with respect to their own attitude/personality characteristics. This analysis was carried out twice since residents participated in two volunteer programs (Community Group discussions and Self-Control/Recreation). These data indicate that resident ratings of volunteers were highly affected by their own prescores. In particular, psychopathic, antisocial residents, with a history of Scholastic Maladjustment and Family Dissention, and an External Locus of Control rated volunteers consistently low in both sets of groups. Residents with a pro-legal orientation, high super ego strength and empathy, and a small personal space rated volunteers highly particularly in the Community Group discussions. Residents who scored low on Alienation and high on the Choice Lists and Money Saving Measure tended to rate the Self-Control/Recreation volunteers highly. Errors on the Porteus Maze (Quality) were related to low volunteer ratings in the discussion groups and high ratings in the Self-Control/Recreation program. An interesting discovery of these analyses is that resident ratings are not simply affected by their own attitude/personality traits, but that the magnitude of the effect varied with the relevance of the trait to the specific content of the different programs.

In sum, the present results indicate that evaluations are affected

by many factors, including the program content, structure, and amount of training. These findings were confirmed in the multivariate analysis (Appendix H) where resident and volunteer evaluations successfully allocated 80% of the volunteers to their correct program. Resident and volunteer evaluations showed little agreement. Volunteer self-ratings were related to their self-concept while resident ratings were influenced by the volunteers' interpersonal attributes and legal orientation. Resident ratings were also influenced by their own attitudes and personality and these traits were more influential when specifically related to the content of the program. In addition, the residents with whom volunteers thought they interacted positively in one program were the same residents with whom different volunteers rated themselves most positively in the self-control/recreation program.

Further investigation of a number of issues may be derived from the present study. First, replicating the two-factor theory of criminal behavior is needed to provide support for an attitude-behavior approach to corrections, since there are very few studies (Bailey, 1966) of this particular dual premise combination (e.g., Sarason & Ganzer, 1973). Such a replication would be particularly encouraging if it employed a modality other than volunteer groups.

Second, a more systematic investigation of differential reinforcement and punishment of offenders pro- and antisocial statements is in order since the present results concerning the feedback-attitude change relationship were inconclusive. Until the critical mechanisms of differential association are empirically isolated, many (eg. Miles, 1973) will continue to complain that the theory is descriptive and does not provide an

explanation of criminal behavior,

Third, the relationship between process and outcome deserves further attention. Cressey (1955) contended that positive change was related to group cohesion. Group Three which had the highest attendance rate also had surprising and consistently positive outcome results. Because other aspects of process are unclear, further content analyses are suggested.

Fourth, a number of program modifications should be investigated. The effect of a more intensive volunteer training program might be studied for practical reasons, since even minimal training had an effect on the volunteer interaction. Specifically, role-playing responses to resident statements, or training in the detection of offenders' rationalizations could be examined. Variations of the self-management program should be investigated. Different versions might include single client sessions, a long term program, or a change in emphasis, for example, to desensitization, problem solving, or life skills.

Lastly, future studies could include an analysis by type of offender (Warren, 1970; Glaser, 1975). Follow-up investigations of recidivism in relation to treatment regime and to the self-report and behavioral outcome measures are also warranted.

Summary

The results of the present study strongly support two of the research hypotheses. As expected, incarcerated residents differed from non-delinquent students on a wide variety of attitudinal, adjustment, and personality scales. Residents who participated in discussion groups with trained volunteers tended to show more positive change than those exposed

to untrained volunteers on the institutional, but not the self-report measures. Training did affect the ratio of appropriate-to-inappropriate feedback received by the residents but this verbal feedback was not systematically related to residents' attitude/personality change. It appears that change was related to amount of participation. The specific aspect of the residents' interaction with trained volunteers which led to appropriate change remains unclear. The self-control program did not have an overall effect on the self-control or institutional measures. There was some indication that degree of participation in the self-control group was related to appropriate change.

The principal hypothesis, a training-by-self-control interaction, was supported on the institutional measures. Residents who participated in the Community Group with trained volunteers and the self-control program consistently showed the most appropriate change on naturalistic measures which were obtained from institutional records. They also demonstrated relative improvement on a number of personality scales. The initial contention that a treatment program with delinquents requires both a strong and systematic attitudinal component and a pragmatic, behavioral, teaching element is supported. It is encouraging to find that the treatment interaction occurred most strongly on the unobtrusive, behavioral measures. That is to say, the self-control program influenced daily behavior more appropriately when it was carried out concurrently with structured discussions using trained volunteers.

Some of the practical implications of these results are discussed with respect to a cost-effectiveness analysis in the administrative summary (Addendum).

ADDENDUM

CONVERTING PROSOCIAL ATTITUDE CHANGE TO BEHAVIOR CHANGE

THROUGH SELF-MANAGEMENT TRAINING;

OVERVIEW AND ADMINISTRATIVE SUMMARY

The purpose of the present paper is to assess the effectiveness of four volunteer programs in the modification of incarcerated offenders' attitudes and behavior. Intuitive and theoretical rationale are provided for the use of volunteers and for the implementation of various program combinations. Treatment outcome is reviewed and discussed in terms of cost effectiveness. Lastly, recommendations, in accordance with process observations, are made for volunteer programs.

Background

There are two very common-place kinds of statements which one often hears when dealing with young offenders. The first concerns a strongly antisocial orientation. These statements suggest a lack of social conscience, moral judgement and regard for others. They are often characterized by expressed hostility toward the judicial system. The second type of statement concerns the inability to control one's own behavior. This includes a lack of self-control or "will power" which often results, regardless of one's attitudinal state, in peer conformity and ultimately law violation. These two impressions are substantiated by many empirical investigations and countless clinical-anecdotal accounts.

A principal contention of the present study is that a successful program must focus on both issues. Therefore, a number of treatment com-

binations, or regimes, were examined. Each regime was comprised of two programs. In all cases, one program used discussion to focus on the attitudinal or cognitive component and the other used various activities to focus on behavior.

Volunteers

Theoretically, the use of volunteers in corrections is quite justified. Differential association theory suggests that delinquent values and behavior are learned through association and reinforcement from members of the delinquent peer group. Since the incarceration process results in many such associations, exposure to nondelinquent volunteers may tend to offset these negative associations. Volunteer participation in corrections is widespread largely for this reason. The present study examines the effect of their utilization in various modalities.

Treatment Regime

Volunteers were used in a total of eight group programs which comprised the four resident treatment regimes. Thirty-five residents participated in eight weekly discussion groups with volunteers and discussed topics such as the judicial system, responsibility, interpersonal behavior and goal setting (Appendix A). Since the value of volunteers was believed to be their source of prosocial statements and appropriate reinforcement, two groups of volunteers were instructed on the mechanisms of differential association and reinforcement. It was anticipated that these volunteers, through their interaction, would have a greater impact on the residents' attitudes.

Two groups of residents also participated in a self-control program with volunteers. The emphasis was on self-initiated behavior change and

volunteers took part in all the exercises acting as models and advocates of the program (Appendix D). The remaining two groups of residents participated in recreational activities with volunteers. Recreation was chosen because it is also activity oriented and represents a common variety of volunteer participation. Fifteen additional residents were allocated to a wait-list control group. In sum, programs were combined to form the following treatment regimes:

Discussion group with trained volunteers and self-control group.

Discussion group with trained volunteers and a recreation group.

Discussion group with untrained volunteers and a self-control group.

Discussion group with untrained volunteers and a recreation group.

Delayed treatment control group.

Outcome

In order to assess the treatment outcome, data were collected on a wide variety of measures. These include self-report attitude and personality scales, behavioral tests, and institutional records. The overall results indicated that, in general, the use of volunteers had only modest effects. Participating, or experimental, residents did not differ substantially from the control residents. Although they tended to reduce their identification with the criminal subculture, in comparison to an increase on the part of control residents, the effect did not generalize to their institutional behavior.

The program did have different effects on the two kinds of clients. Participating residents decreased in their neuroticism, identification with criminal others and feelings of inadequacy and increased their moral conscience

(super ego strength) when compared to participating volunteers. Volunteers, on the other hand, increased their empathy, socialization and ego strength and decreased their tolerance of law violation when compared to changes among the experimental residents (Appendix G).

An examination of the specific program combinations is more encouraging. Residents who participated in discussion with trained volunteers showed more appropriate change on the attitude and personality battery than those in the untrained group and there was some indication that this effect generalized to their daily institutional behavior.

A review of the self-control program revealed that it did not effect behavior change in comparison to the recreation group. But when the trained discussion-self-control regime was investigated a number of positive and consistent results were found in terms of the residents' institutional behavior. Disciplinary reports, officer ratings and personal monetary savings all showed appropriate trends when compared to the other combinations. The results therefore support a 'two-factor' theory, that a successful treatment of criminal behavior must deal with the attitudinal element (antisocial disposition) and a behavioral training (self-control techniques). The effective magnitude of these results may be derived from the institutional records. Behavior change, which was in fact noticeable to staff, was maintained for up to two months following program completion. Lastly, the use of volunteers was documented. Details of their involvement are discussed in a later section on treatment process.

Cost-Effectiveness

Expenses incurred during the present study may be allocated to two

sources, operating expenses and research costs. It should be noted from the outset that because the project was a thesis endeavour, the manpower costs of program design, organization, and implementation were defrayed. The inexpensive source of labour, therefore, minimized both operational and research expenses.

The principal operating cost of all four programs was travel. A total of eight groups (two each of trained discussion, untrained discussion, self-control and recreation) met for a total of 64 sessions (8 groups x 8 sessions). The cost of transporting 8 leaders and 46 volunteers for the 64 sessions was \$600.00 (100 drivers @ \$6.00 per drive) or \$9.37 per session. Reimbursement of volunteer drivers was minimal considering the round trip distance of 70 miles. The use of a volunteer driver pool and the scheduling of up to 3 group meetings on the same evening, although hectic at times, also helped to defray costs. This, in effect, represents the transportation cost of having an average of 4.5 volunteers present for the 64 sessions. The 46 volunteers attended a total of 289 sessions (6.28 per volunteer).

Thirty-five residents were present for a total of 300 sessions for an average of 4.69 residents in attendance per session. The effective expense of exposing one resident to 4.5 volunteers for a single group session was \$2.00 ($\$9.37 \div 4.69$).

Other potential sources of operating costs were eliminated through the use of student services. Program organization and implementation were the responsibility of the author, and being an academic requirement, no reimbursement was made to them. Organizational tasks included the solicitation and orientation of resident and volunteer subjects, program scheduling, coordination, and supervision, and the training of group leaders. The leaders'

and coleaders' functions were also academically related. The co-ordinator was reimbursed by the academic institution for his supervision. Historically, similar programs have functioned with ex-volunteers and students fulfilling course requirements as leaders. Therefore, any cost to the host institution was nil.

Volunteer training cost a total of \$36.00 in addition to the basic operating costs. This expense was incurred in the photocopying and distribution of training material (\$3.00) to the 12 trained volunteers. Sixteen residents attended a total of 60 sessions (\$3.75 per resident) with these volunteers. The additional cost of training was \$.60 ($\$36.00 \div 60$) making a total cost of \$2.60 per resident for each session in attendance.

Materials for the two recreation groups (monopoly, clue, playing cards, etc.) cost a total of \$34.51. Seventeen residents attended a total of 64 recreation sessions (\$3.76 per resident). The recreation program, therefore, cost an additional \$.54 per resident for each session for a total cost of \$2.54.

The self-control program was the most expensive. Costs included daily behavior cards (\$12.00), books (\$14.75), photocopying (\$33.00 = 20 pages for 10 volunteers and 18 residents @ \$.60) and reinforcers (\$34.12), for a total cost of \$94.47. Eighteen residents attended a total of 81 sessions (4.5 sessions per resident). The self-control program cost an additional \$1.17 per resident for each session attended for a total cost of \$3.17.

The operating cost of the total program, travel plus supplies, of the eight groups was \$764.98 or \$2.55 for each session attended by a resident. If the leaders (\$10.00 per session) and the co-ordinator (\$10.00 per evening)

had been paid the total operating costs would have increased by \$960.00 (224%) or \$5.75 ($\$1724 \div 300$) per resident session attended. Therefore, in return for providing a field placement setting, linking the program to an academic setting reduced the effective operating cost by over 50% to the recipient institution.

A review of the four treatment regimes revealed that the trained discussion-self-control combination was the most expensive. Seven residents attended 32 trained discussions and 32 self-control sessions for a total cost of \$184.64 ($32 \times \$2.60 + 32 \times \$3.17$) or \$26.38 to have one resident participate in these groups. The trained discussion-recreation program was attended by 9 residents at a cost of \$138.84 ($28 \times \$2.60 + 26 \times \$2.54$), or \$15.43 per resident. The untrained discussion-recreation regime was attended by 8 residents at a cost of \$190.52 ($47 \times \$2.00 + 38 \times \$2.54$), \$23.81 per resident. The untrained discussion-self-control combination was attended by 11 residents at a cost of \$251.33 ($48 \times \$2.00 + 49 \times \$3.17$), \$22.85 per resident.

It is interesting to note that the regime of choice, trained discussion-self-control, was the most expensive. This was followed by the untrained discussion-recreation program which also tended to show some positive treatment results, while the trained discussion-recreation program, which demonstrated indications of actually being detrimental, was considerably less expensive. In sum, although the three remaining programs represent, on the average, a 21% (13% if leaders had been paid) reduction in operating cost the decrement in program effectiveness does not warrant such a saving. In fact, it appears that such a restriction would eliminate any appropriate attitudinal and behavioral changes since the overall treatment effect was minimal and these groups did not differ from the no treatment control condition.

The research portion of the present study incurred a number of expenses which were independent of the service activity and therefore are represented separately. The following expenses were submitted:

Testing Subjects			
Travel	\$ 48.50		
Material - Questionnaires	100.00		
- ice for cold pressor	50.00		
Subject payment - candy	111.18		
- money	82.95		
			\$ 392.63
Supervisor Travel			
53 total trips			320.00
Discussion Group Observer			
1 observer, 8 weeks			80.00
Data Scoring and Coding			
65 hours @ \$3.00			195.00
Archival Data			
28.25 hours @ \$3.00	84.75		
Travel	16.00		
			100.75
Process Analysis			
79 hours @ \$3.00	237.00		
Travel	18.00		
			255.00
Typing			
62.5 hours @ \$4.00	250.00		
By Page	235.00		
			485.00
Supplies			
Reference Books	26.20		
Photocopying	45.00		
General	10.00		
			81.20
			<u>\$1,909.58 *</u>

* This does not include final preparation costs.

Student services were utilized in a reciprocal academic-field setting relationship to alleviate approximately one-half of the manpower costs of the program evaluation. The majority of subject testing and some data scoring were done by students at considerable saving (estimated \$600.00). Nonetheless, the program evaluation was considerably more costly than the program operation and accounted for 71% of the total project cost (\$2,674.56).

The project was funded by the following:

Research Branch, Ontario Ministry of Correctional Services	\$1,700.00
Research Division, Solicitor General, Government of Canada	\$ 500.00
Department of Psychology, University of Ottawa	\$ 243.00
Deans Fund, St. Patrick's College, Carleton University	\$ 193.00
	<u>\$2,636.00</u>

The following benefits and services were derived by the funding institutions:

The Ministry of Correctional Services was the principal recipient of the service. Thirty-five residents were eligible to participate in two 8 session volunteer programs with an average of 4.5 volunteers present per session. They attended an average of 8.57 sessions. A detailed description of the program content and outcome was also provided.

The Department of the Solicitor General received a similar report. This included a description and evaluation of two principal activities, a guided discussion program designed to facilitate attitude change, and a self-induced behavioral control program.

The University of Ottawa was supporting a PhD. candidate and therefore assisted with financial support. In addition, a practicum setting was provided for students in a graduate methodology course. Two students participated

as coleaders in the discussion program, thus gaining exposure to offenders in a group setting. Two other students were trained and practised in the use of behavioral observations of discussion group activities.

St. Patrick's College was provided with the opportunity of having 42 students participate in volunteer programs with incarcerated offenders. Approximately 50% of these students were in Psychology or Sociology courses and were fulfilling course requirements. Six senior students participated as group leaders. Four of them were taking a Practicum in Corrections and also functioned as testers and data collectors. In addition, four students were hired as research assistants and obtained considerable experience in the implementation of applied research in corrections. In return, an honorarium of \$200.00 was awarded for supervision of these students.

Recommendations

A number of policy guidelines and specific program recommendations may be derived from the process and outcome data. They are as follows:

Volunteer programs in general have minimal attitudinal and behavioral effects. Specific treatment oriented programs are more effective (structured group counselling) than recreational type programs.

The total treatment regime may be crucial for developing a successful treatment, volunteer or otherwise. Two important aspects of rehabilitation programs appear to be 1) an attitudinal, cognitive, moral, verbal and motivational aspect and 2) an application of practical techniques or a behavioral element. An appropriate combination where one aspect supports the other is most suitable.

Volunteers appear to have more impact and be better protected from

antisocial development with more guidelines and structure to the program.

Volunteer training is helpful for the program outcome. An intensified orientation bringing attention to the quality of their social interaction is suggested to increase program impact.

The self-control program needs further development. By itself it had little impact.

Naturalistic behavioral observations are the most appropriate in the evaluation of an institutional program. Not only are they more relevant to evaluating the treatment effect on daily living but they detected appropriate changes where self-report scales failed to do so.

Subjective evaluations on the part of volunteers or residents are affected by various extraneous factors and should be used very cautiously. They are more indicative of the raters and are influenced by the activity more than they are related to treatment outcome.

Appendix A

The Community Group Discussion Guide

Topics:

- Week-1. Introduction and Overview
- 2. Freedom, Control, and the Individual
- 3. Rules, Regulations, and Responsibility
- 4. The Law as a System of Rules
- 5. Responsibility vs Rationalization for Law Violation
- 6. Responsibility, Conscience, and Interpersonal Styles
- 7. Goal Setting, Planning, and the Individual - Family, School, Employment
- 8. Freedom of Choice and the Realization of Goals

Four leaders were used to expedite the four different discussion groups. All four were female senior undergraduate psychology majors with previous experience in corrections. They employed the same discussion format and followed a weekly discussion guide for conversation topics. The principal theme of the discussion program concerned the relationships between freedom, regulations, and responsibility in a social environment. The groups were held in different rooms of the psychology department, a building physically separated, and about one hundred yards, from the main housing unit. Each discussion room had an adjoining observation room with a window or door through which observations were made. They also had separate access routes so that changing observers did not disrupt ongoing sessions.

Leaders were given a number of general readings prior to the initial group. A wide variety of articles, pamphlets, and inmate literature was also available for use as resource material. Formal readings included articles by Hartung (1965),

Buehler, Patterson, and Furniss (1966), Andrews, Brown, and Wormith (1973), Andrews, Young, Wormith, Kouri, and Searle (1973), Andrews, Wormith, Kennedy, and Daigle-Zinn, (in press), Cautela (1969), Mahoney (1972), Kinkade (1973), and Carpenter (1974). Leaders were then referred to these readings by means of the weekly discussion guide. Weekly briefings prior to each session insured that leaders adequately prepared their material.

A description of the discussion guide and the leaders' instructions are presented below.

Week 1 Introduction and Overview

The leader introduced herself and welcomed all participants to the group. Group members introduced themselves and described their reasons for volunteering. After a general introductory discussion the leader expressed the following rules to the group. The conversation, particularly what a given person says was to be regarded as confidential. This was applicable to residents and volunteers alike. In addition, attention was drawn to the presence of a cassette tape recorder and group observers as data collectors. Residents were told that the information, like the test material, was confidential and would be removed immediately from the institution. The group was told that it would be following a general discussion guide but that there would be some latitude. The discussion was to be orderly with one person "having the floor" at a time.

The leader presented her role primarily as an expediter of a good, lively, and "on topic" discussion. She also suggested to the residents that, with new and different faces present, this was a time to talk about matters other than the institution. It was strongly suggested that the group should not devote this "couple of hours a week" to institutional talk. An "all-equal" policy was suggested and it was expressed that the leader was looking forward to a good, cohesive group with interesting and helpful discussion.

The remainder of the first session was 'open' and consisted of an elaboration on why people volunteered, what they expected from, or heard about the program, and what they hoped to gain by participating.

Week 2 Freedom, Control and the Individual

Names were reviewed, any participant who missed the initial week was introduced. The issue of confidentiality was reiterated. Reminders were given concerning the audio tape and group observers being used to check the discussion content.

The discussion was introduced by suggesting that the group attempt to define "Freedom" and "Control". They are two important words, frequently used but difficult to specifically pin down. The following items were suggested for conversation:

Do different people have different definitions?

Do we mean free to do what you want to do, freedom of action, freedom from pain, from "want".

Ability to maximize positive feelings and minimize negative feelings or states through one's own actions.

What about those who are self-injurious, inflicting pain on themselves?

If not given the opportunity to do what will bring us pleasure do we consider ourselves free?

Is this the case? How much?

Who controls one's life? (free will vs determinism)

Did anyone read Beyond Freedom and Dignity?

"As flies to wanton boys are we to the gods, they kill us for their sport" (King Lear) vs "The fault dear Brutus, is not in our stars but in ourselves" (Julius Ceasar)

Discussion was general and philosophical but leaders were asked that, at some point, it be directed toward the individual and personal responsibility with respect to one's own behavior, obligation, duty toward others, general society, and the law.

Week 3 Rules, Regulations and Responsibility

Leaders were asked to repeat the introductions, names again (make a game out of it), recap last week, highlight good points made by certain people, (don't hesitate to use names), and highlight the value of a "freedom of choice" position, its implications for responsibility.

Leaders then introduced this week's topic by asking "how can one adopt a 'freedom of choice' point of view with so many rules, regulations, responsibilities and obligations around us all the time?" The floor was then open open for discussion and it was suggested that the following points be raised:

If these things are restrictive, then are they bad?

What function do they serve?

Are they incompatible with a "freedom of Choice" point of view?

Cite examples of rules, regulations, responsibilities, and obligations.

What about in this group?

Were they pre-arranged? What is their function?

Have any developed spontaneously, as "unwritten" rules?

What about their role in living arrangements, for example, co-ops, communal living, family, marriage and couples? - refer to Twin Oaks (Kinkade, 1973)

In athletics, competition, the Thursday night games in which some residents are partaking.

In institutions (correctional, educational, government), what is an ideal society?

Leaders were permitted to mention the Law as an example of rules but only as a lead-up to the next week's discussion topic and not as a major portion of the present discussion.

Week 4 The Law as a System of Rules

Leaders were asked to discuss the function of our legal system in relation to the role of rules and regulations in our society, picking out from last week some good points that were made. This week's program should include a discussion of the different aspects of the legal system and its role in upholding the law (law, police, courts, probation, parole and institutions). Aspects for discussion included:

The law in other societies or other species.

How does the role of the law in Socialized Society differ from Primitive Societies?

The use of laws to protect the society vs protection of the individual or others vs himself (victimless crimes).

Week 5 Responsibility vs Rationalization for Law Violation

This week leaders were asked to discuss personal accounts of Law Breaking as something we've all done. They could use personal examples to demonstrate the "psychology of rationalization" (e.g., defense mechanisms or built-in self-support structures (see Hartung 1965)).

Leaders were asked to discuss Aspect of Conscience and read Freedom and Practice (Carpenter, 1974). The following suggestions were made:

Compare Law Violation of visible vs invisible victims, (e.g. insurance companies, big stores, business, the university, how this affects the cost of things? Who really suffers? Does the victim justify the Law violation?)

Note local statistics (Ottawa Police) released last week indicated that "theft doubled in 1974".

It is important to analyze in detail different law breaking accounts pointing out, criticizing, and challenging the obvious rationalizations and teasing out the hidden or more subtle ones. It is important to get residents looking at behavior in this way (play Sherlock Holmes) with one another (it can be fun)!

Week 6 Responsibility, Conscience, and Interpersonal Styles

Leaders were asked to focus on ones dealing with other people (deal in specifics). Use examples or make up little scenarios such as:

You have a problem in the dorm, home, work, school, with officer, friend, family, parent, teacher, employer, etc., how do you deal with it?

-e.g. different response styles (appropriate vs inappropriate)

Leaders were asked to remind the group of good points made last week on the idea of conscience. Other possible issues for discussion included; a comparison of mature, thoughtful, foresight, and impulse control vs "flying off the handle", thoughtless, inconsiderate behavior.

Leaders could conduct some interpersonal exercise or take examples of what people have said previously to exemplify concepts discussed. Discussion often became very personal.

The Leaders were instructed to "practice what you preach," be an example.

Week 7 Goal Setting, Planning and the Individual - Family, School, Employment

Leaders were asked to introduce specific aspects of personal life, particularly in relation to planning and coping (dealing) with problems. In this context leaders were free to structure a role playing exercise. Discussion should include the following:

With respect to goal setting, what can the resident do to improve his lot in these different spheres while in an institution?

Nothing? If that is the response, reflect back on earlier weeks and the importance of self-determining one's direction, personal control or one's destiny.

Present article which describes a program with extremely low recidivism. The program was simply of the "get the ex-con a job" variety.

Famous saying "A person who feels his hands are tied, ties his own hands". Given one's condition (which he should assess) what can he do for himself?

Leaders could relate points from last week to the conversation (e.g. interpersonal relations with respect to family, employer, teacher, fellow students) or they could develop this week's topic by reflecting back on last week and various statements that were made.

Emphasis was placed on the importance of making plans with regard to these different aspects of life and the role of self-determined future, goal setting, and implementation as opposed to a "what will be, will be" (que sera, sera,) attitude.

Week 8 Freedom of Choice and Realization of Goals

One goal of the program was to assist individuals in making personally and socially responsible decisions or plans and then carry them out.

Leaders were asked to point out this goal in their summary of the previous seven weeks but to focus specifically, in this last week, on the realization or attainment of ones goals.

Leaders were instructed to introduce the following points:

Is there any need for some kind of input at the institutional level-

Answer Obviously yes. Look at the record and therefore the prospects of the average resident. Participants might look at specific individuals. What will the results be - answer We can only guess (our present subjective impression).

How do participants feel about self-determination of the future (e.g. personal responsibility).

How does a feeling of responsibility for behavior - enable us to avoid the rationalizations we often work out for ourselves.

How does a feeling of responsibility for the future (personal choice, freedom) enable us to help set a course of action for ourselves.

Introduce the importance of attitudes towards - self (self-esteem), others (family, friends, interpersonal relations), and systems (institutions , legal systems , school).

Suggest the importance of self-evaluation or self-observation (e.g. in structuring goals, in analyzing things, like rationalizations for Law Violation). How can one implement goals to change behavior? Psychology has a number of suggestions for people to change their behavior patterns (self-management, self-control). Leaders may also introduce some outside material (eg. "Tired" article by an ex-con who has decided to make such changes).

Appendix B

Information Training of Volunteers

Three articles comprised the basic component of volunteer training. Volunteers were given the reading assignment individually with an explanation as to purpose of the exercise. No data were collected on volunteer compliance although it was noted that some volunteers spontaneously referred to the material in conversations with project personnel. Future research should include unobtrusive measures to assess the compliance rate of volunteer preparation.

Following is the notice of explanation which accompanied the training assignment.

VOLUNTEERS.

Enclosed you will find 3 articles which may be of interest. We are passing these on to you for two reasons. The first concerns the theoretical rationale for running the Community Group Program. Those of you who are Psychology/Sociology students or are involved in the program through academic courses should be particularly interested in the purpose of these groups. Secondly, a greater understanding of the value of the program may facilitate your function as a volunteer.

One article (Buehler, Patterson and Furniss) concerns the peer approval, or support for certain values, and attitudes which exist in a correctional setting. It has been reliably found that, as expected, the kinds of things which receive the most support (psychologists might call this reinforcement) are those statements which are specifically contrary to a rehabilitative future. Similarly a "positive attitude" or morally mature and socialized position are most often criticized (punished). Thus, the cry, "Prisons only breed criminals" is at least in part, probably accurate. Some recent findings (Andrews, Brown and Wormith) indicate that discussion group programs with volunteers do tend to contravene this trend. It is our feeling that volunteers, aware of this function, may become more effective in their role.

One activity which is commonly supported in correctional settings is actual law violation and the rationalizations which one may construct to support this behavior. For this reason we are including a third article which you may find relevant (Hartung).

Obviously this is not a formal assignment. We do hope you will get a chance to familiarize yourself with the material, and that you find it interesting, informative and helpful in your function as a volunteer.

Since not all groups are being given material at this point in time, we ask that you not discuss the information outside your own group. Also, if you do have any questions do not hesitate to inquire with those who are running the program.

Appendix C

A Statement Classification System for Community Group Discussions

CODE FOR DISCUSSION GROUP RATINGS

The first rater of each group on each night will construct a schematic map outlining the seating arrangement around a table using the coding scheme. This will be left for subsequent observers during the session. He will also start the watch at Time 0 when the leader starts the tape just prior to his opening remarks. Rating periods are 0-20, 30-50 and 60-80 minutes from start. Raters will rotate between groups between ratings.

TIME:

Periodically (about every 5 minutes) record the exact time that a particular speaker begins.

SPEAKER:

Record who is speaking Leader (L), Co-Leader (CL), Residents (numbered clockwise from the Leader, R1-R7), and Volunteers (V1-V7). Consult seating arrangement map for quick reference.

SPOKEN TO:

Same as above but may be left blank if statement is not directed to a particular person. Use eye direction as a cue. If gaze and content of speech is directed to one person, record. If general comment and speaker looks at many others leave blank. If statement is directly related to a previous comment definitely record.

Quality Ratings

Highly Positive (++) Prosocial statement conducive to socialized attitude and behaviour. A statement clearly contrary to delinquent antisocial lifestyles. Altruistic statement, morally mature statements which strongly support ties to conventional society and norms (legal, educational, employment or interpersonal). Clear and outright rejection of law violation or rationalizations for law violation.

To score (++), statement must be supported by further elaboration or emphatic speech. 1) Person gives reason why he takes such a position. The rationale or reason he uses to support such a position may be either a factual or value type of comment. 2) Person is verbally emphatic in his position by tone of voice or vehemence used in making a point.

Positive (+) Same as above. Generally a prosocial statement but not supported by speaker's own elaboration, emphasis or vehemence.

Highly Negative (--) Highly antisocial statement. Hostile criticism of criminal justice system. Strong rejection of institutions or agencies which create ties to conventional norms (courts, police, correctional institutions or their personnel). Highly egocentric, short-term hedonistic values. Blatant support or rationalization for law violation. Strong support for delinquent behaviour.

To score (--), statement must be 1) supported by elaboration giving reasons why the position is taken or anecdotes of particular incidents, or 2) made in an emphatic manner by vehement speech.

Negative (-) Same as above. Generally a negative or antisocial statement but not supported by speaker's own elaboration, anecdotes, or emphasis.

Neutral (0) A neutral statement not applicable to the social quality dimension. Ambiguous or not applicable.

Feedback Ratings

Used when a person is commenting on a previous speaker's statement.

Highly Praised (++) Statement comments on a particular statement in a supportive fashion, agreeing with the point of view taken by the previous speaker.

To score (++), reinforcement must be made in either an obvious vocally emphatic manner, or support is qualified in that the speaker describes why he agrees with the particular point. Elaboration of the reason for support is given.

Praised (+) A person voices his approval, support or agreement concerning a particular statement previously made, but does not develop the original point nor provide explanation for his agreement.

Highly Negative (--) Statement is highly critical or punishing of a previous statement. Speaker is 1) emphatic or 2) providing an explanation for the reason of his disagreement or 3) is challenging and confronting. Criticism may be in the form of a question.

Negative (-) Statement is critical or punishing. Obvious statement of disagreement but no elaboration or challenge presented.

Neutral/None (0) A comment is made with regard to a previous statement but it neither supports or criticizes it (nonjudgemental), is ambiguous, or not applicable (makes no reference to a previous statement).

RATING	RATER	DATE	PAGE

INTERRUPTION	SPEAKER/SPOKEN TO	FEEDBACK	TOPIC	FACT VALUE	QUALITY

Leader L	Highly Praised ++	On Topic	Fact F	Highly Positive ++
Co-Leader CL	Praised +	Off Topic	Value V	Positive +
Residents (1-7) RL	N/A Neutral O		Plan P	N/A Neutral O
Volunteers (1-7) VL	Negative, Critical -			Negative -
	Highly Negative --			Highly Negative --

Appendix D

A Self-Control Program

Topics:

- Week-1. The Scientific Method and Applications to Human Behavior.
2. Observational Techniques.
3. Self-observation and Self-control.
4. Operant Conditioning: changing your own behavior with self-reward systems.
5. Stimulus Control: changing your own behavior by the use of cues.
6. Classical Conditioning: changing your own behavior with relaxation techniques.
7. Generalization, coping with problems - techniques.
8. Case Studies and Summary.

The program was described to the residents more in the rubric of an academic course than a treatment program. It had specific content material, laboratory work, and after-class assignments. The material was divided into eight discreet packages or modules, most of which consisted of the following; a short informal lecture or informational talk by the leader, a question and answer period and discussion of the material, inclass tasks and group projects, presentation of project results, summary discussion and a take home assignment. The homework was then discussed at the beginning of the following session.

The leader met with all volunteers one week before the first session to explain the purpose of the group and point out its potential value, both academically and personally. Volunteers were asked to see themselves not only as participants in the study but also as facilitators of the program and its

various exercises. They were then briefed as to the content of the first meeting, and input which they might provide was suggested. Readings entitled "Self-Control: introduction" (Thoresen and Mahoney, 1974; chapter 1), "Behavioral definitions and terms" (White, 1971), and "Self-Control is learned: External Control precedes Internal Control" (Bishop, 1973) were distributed. These meetings were continued each week so that volunteers might discuss the readings¹ and be briefed on material for the coming session.

The program was carried out separately with Groups 1 and 4. Following is a description of the weekly content and progress of the two groups. Discussion material and individual data are also sampled. Leader, volunteer, and resident content are designated by (L), (V), and (R) respectively.

Week 1 The Scientific Method and Applications to Human Behavior

Introduction, names, interest in the group.

Project: Discuss the following saying as a theme to remember.



¹Although discussions were designed to insure their completion, formal data were not collected on volunteers' compliance with the reading assignment.

The statement was restated as, "It is not what you look like, or say (the way the pudding looks) but what you do (what it tastes like) which is really important."

Discussion: The group was asked to free associate to "Psychology". Answers included "shrink, couch, psychiatrist" (R). Definitions of psychology ranged from "study someone's mind" (R) to "the Scientific Study of Behavior" (L). The present program was described not as the study of someone else's mind but the study of our own behavior (L). These differences were emphasized. Two kinds of human analysis, Psychoanalysis and Behavior analysis were compared. The group was told that emphasis would be on the latter. The role of experimentation in the understanding, prediction, and control of behavior was stressed. The need to define and measure the change agent and the behavior to be changed was discussed.

Project: We are all psychologists involved in the scientific study of behavior and are given the following problem.

"Do blondes really have more fun"

The group broke into four mini-groups composed of at least one resident and one volunteer each and were asked, "How would you or can you answer the given question." Study time was fifteen minutes. Each group returned and presented results.

Suggested Solutions: Solutions ranged from subjective impressions and personal accounts to formal experimentation. In both groups, three of the four mini-groups attempted to design some systematic investigation, either by naturalistic observation or through a controlled experiment. For example, one group said,

"No. Fun is a characteristic of the individual and depends on one's personality, not hair colour." Another group suggested, "Send a group of girls to a dance with their hair dyed blonde, then again with their hair dyed brown and have them rate which time was more fun."

Discussion: Solutions involving the following points were reinforced:

1) Define fun - try to quantify the term, 2) define blondes - how blonde, natural or coloured, male or female, 3) collect information on operationalization of "fun", 4) do a controlled study with designed manipulations, 5) emphasis on naturalistic observation.

Week 2 Observation Techniques

Briefing: Prior to session 2 the value of behavioral observation was discussed with volunteers and the importance of appropriately detailed definitions of the behaviors to be observed was stressed. Volunteers were given articles by Buehler, Patterson and Furniss (1966) "The Reinforcement of Behavior in Institutional Settings" and by Thoresen and Mahoney (1974) "Self-Observation".

Review: Psychologist seen not as a "shrink", but as a behavior analyst. Discuss Blonde problem. Good solutions set up a particular situation and made observations. Collected information relevant to definition, like number of occasions a particular event occurred (frequency of dancing). This behavioral observation and data collection is important not just to science and psychology, but even self-understanding.

Project: The group was told to divide into their mini-groups. Two groups were to plan a ten-minute debate, Free will (freedom) versus Determinism (control), while two groups collected in an adjacent room where they were given the following task; "Define a behavior which you expect to observe during the debate and do a frequency count. For the first five minutes score in collaboration with your mini-group partner and then on your own for the second five minutes."

Mini-groups were given fifteen minutes to prepare. All groups reconvened in the discussion group room. The debaters were on each side of a large table with the observers at either end. Each group was given two and one-half minutes for presentation, the half time signal was given and each group given two and one-half minutes for rebuttal. The project was then repeated. The observers became debaters and debaters became observers.

Results: Collaborative and independent frequency counts were compared on each number of the observer defined behaviors.

Group 1

<u>Chosen Behavior</u>	<u>Observer</u>	<u>Frequency</u>	
		<u>1st</u>	<u>2nd</u>
1. Frequency of hand movements (including smoking) of V 12	V 10	21	- 31
	R 06	21	- 23
2. Frequency of leader looking at watch	V 09	17	- 9
	R 01	17	- 5
	R 04	17	- 4
3. Frequency of R 01 adjusting glasses	R 02	2	- 0
	V 12	2	- 0
4. Frequency of verbal pauses (Ah, Eh, Um,) by R 06	R 07	3	- 7
	V 08	3	- 6

Group 4

1. Frequency of "ya know" by V 49	V 48	4	-	3
	V 47	4	-	3
	R 34	4	-	3
2. Frequency of "freedom" by each group	R 32	0	-	0
	R 29	0	-	0
	V 50	0	-	0
3. Frequency of interruptions (cutting off a statement before through) by a member of the other group	V 49	0	-	1
	R 26	0	-	0
4. Frequency of arm movements by R 29	V 51	26	-	12
	R 30	26	-	10

Discussion: Accuracy, reliability, and problems of definition were discussed with reference to observer differences. Participants discussed first-second half differences with respect to possible reasons for actual behavior change over time as well as the possibility of experimenter errors in measurement.

Week 3 Self-Observation and Self-Control

Briefing: The importance of self-observation to a successful self-control program was discussed with volunteers and the behavioral observation task of the next session was described. Mahoney and Thoresen's (1974) Chapter 2, "Behavioral Self-Control" was distributed for reading.

Project: Each person in the group wrote his name on an index card, submitted the card for shuffling and drew a card other than his own. Each person was asked to define a behavior of interest which one could expect to observe in an upcoming discussion. The group was told to describe this behavior as accurately as possible on the card so that another person could continue to monitor the behavior simply by looking at the definition. Each person monitored "his subject's" behavior on the back of the card for the first fifteen minutes of a half hour discussion. At the half-way point all cards were submitted and redistributed to the original person. Everyone was asked to read the behavioral definition on the front of the card and begin to self-monitor the same behavior for the second half of the discussion. All participants were asked not to look on the back of their cards. At the thirty minute point, everyone was told to discontinue the frequency count and the conversation was terminated shortly thereafter.

Discussion: The discussion was on self-control. Participants were asked to provide their own definitions, think of examples and discuss their utility. The discussion was introduced by using the term "will-power", how it relates to self-control and the problems that develop when it is lacking, "you end up in a place like this"(R), "obesity, alcoholism, cancer"(V).

Other examples expressed by participants included saving money to refurnish a house, academic progress, studying, and purchasing a savings bond.

The leader presented a "description" of self-control as a choice between one response (or non-response) now with immediate consequences versus another response (or non-response) with long term consequences. A graphic presentation was based on Rachlin's (1974) example "going to the dentist for a filling". Pain as a function of time might be monitored for two alternative and competing responses (see the dentist and avoiding the dentist). The first response would cause an immediate and moderate increase in pain which would then subside. The second would produce less immediate pain but a gradual increase and eventual abscess. At this point the pain would be more than it ever would have been while getting a filling. The discussion then focused on the "time" dimension introduced by this example of self-control. The role of time was seen not only in the self-infliction of an aversive stimulus to avoid a more aversive situation in the future, but also in the delaying of a small immediate gratification for a larger future gratification. This perspective was used to discuss the choice of staying home to study versus going out drinking with friends. The discussion ended by posing the question "What are the techniques which help us achieve more self-control?"

Results: Each person tabulated his own behavioral observation data for the two segments and presented them to the group.

Group 1:

<u>Subject</u>	<u>Behavior Observed</u>	<u>Observation Unknown</u>	<u>Self- Observation</u>
R 02	pushed his hair back with his pen	3	3
L	verbal intervention-enters conversation to steer topic or add answer more than two sentences	15	12
V 11	vocal stops	4	3
V 09	crossed legs, switch or shift	8	7
V 12	pushed hair away from face and scratches side of head	5	2
V 08	number of times participates in group discussion	10	10
R 06	number of gross body movements or changes of position	9	20
R 07	number of times he makes contact with his face by one of his hands	9	4
R 01	movement;times lifts leg onto other leg	5	3

Group 4:

V 49	says "self-control"	5	7
V 51	leg crossing at knee or ankle	2	1
R 29	touches his face with any part of his hand	3	1
R 32	every time he says, "ah"	4	2
V 50	rubbing or pulling his moustache	14	3
R 26	hesitates during speech	1	1

Group 4: (con't)

<u>Subject</u>	<u>Behavior Observed</u>	<u>Observation Unknown</u>	<u>Self- Observation</u>
R 28	indulge in points brought out in the discussion by asking "why"	1	0
R 30	interrupts-cutting one speaker off before he has finished what he is saying	4	1
V 47	how many times she scratched	1	0
R 35	says "uh"	0	0
V 48	looks at his watch	3	0

Summary Group 1: Six behaviors decreased in frequency.

Two behaviors increased in frequency.

One behavior remained unchanged.

Group 4: Eight behaviors decreased in frequency.

One behavior increased in frequency.

Two behaviors remained unchanged.

Discussion: The results were then discussed and implications were related to the question concerning techniques of self-control. "The first and simplest we've just been doing" (i.e. self-monitoring our behavior; L).

Specifically the following questions were asked; Were the majority of decreases due to chance, observer differences, problems in monitoring one's own behavior causing missed responses, or an increase in self-awareness, self-consciousness. etc. The groups decided that there were definitely decreases in reported frequencies. Some participants suggested that data might be inaccurate particularly for "habit" behaviors and the problem of reliable self-

observation data was discussed. Others self-reported consciously attending to the behavior being monitored, and feelings of inhibition to make the specified response. Thus, the concept of self-awareness through self-monitoring was introduced. When it was suggested (R) that one cannot control "unconscious" expressions, pauses, or movements, others were quick to disagree.

Participants were reminded that an appropriate criterion for an adequately defined behavior had been discovered. When the behavior can be communicated in writing in enough detail for another person to understand and reliably monitor it, the response has been successfully defined.

The value of seeing ones own results was discussed and participants were asked if they have ever "monitored" some aspect of their own behavior in a less formal sense. Budgeting finances (V) and amount of smoking (R) were suggested. It was pointed out that "we've just done the same thing but much more accurately and with no guess work" (L).

Assignment: Everyone was then given a Daily Behavior Card (Stumphauzer, 1974) and a daily record sheet (after Foster, 1974) and requested to define a behavior on the card and monitor it for the coming week, plotting daily scores on the sheet at the end of each day. Rs. were also given Bishop's (1973) article describing self-control as a learned quality which is important if one is not to become delinquent.

Week 4 Operant Conditioning: Changing your own behavior with Self-reward Systems.

Briefing: The project for the next session was described. Volunteers were taught how to act as experimenters in the 'Greenspoon experiment' by reinforcing some aspect of the subjects' behavior. They were also given reading material from Merten's (1972) A Behavioral Approach to Self-Control.

Homework Results: Data were presented by participants, the use of graphs was discussed and the results were analyzed by looking at cumulative and non-cumulative frequency graphs. Examples of defined behaviors and the daily frequency counts follow.²

Group 1:

<u>Subject</u>	<u>Behavior Observed</u>	<u>F</u>	<u>S</u>	<u>S</u>	<u>M</u>	<u>T</u>	<u>W</u>	<u>T</u>	<u>Total</u>
R 01	number of projects completed in shop.	3	-	-	4	3	2	2	14
R 06	number of times I fall asleep, anywhere, any time.								
	Morn:	1	2	1	1	1	1	2	
	Aft.:	1	1	2	2	3	4	1	
	Eve.:	2	2	1	1	2	2	3	36
R 07	lessons completed.	1	-	-	2	1	1	2	7
V 08	every time I'm late for a commitment of any type and by how many minutes.								
	frequency:	2	2	0	2	1	1	2	10
	minutes :	71	220	0	30	4	50	47	
V 09	amount of time spent watching television.								
	a.m. :								
	p.m. :	7	3.5	1	1	2	1	0	8.5
V 11	minutes spent studying: psychology.								
	Morn. :	45						90	
	Aft. :	75	115	165				90	
	Eve. :		120	120	150	180			970

2. The compliance to homework data is summarized on Page 343.

Group 1 : (con't)

<u>Subject</u>	<u>Behavior Observed</u>	<u>F</u>	<u>S</u>	<u>S</u>	<u>M</u>	<u>T</u>	<u>W</u>	<u>T</u>	<u>Total</u>
V 12	number of hours studying	1	0	0	3	2	7	2	15
L	number of times I forget to do something or lose something. Record according to estimated times of loss.	1	1	1	5	1	5	0	14

Group 4:

R 26	swear to myself.	17	8	3	13	18	6	4	
R 28	swear "fuck"	24	6	4	7	10	8	5	64
R 30	everytime I'm up before 6:45 a.m.	1	1	0	1	1	0	1	5
V 47	eating cookies.	3	7	0	0	0	1	0	11
V 48	number of cigars smoked	1	1	0	1	1	1	0	5
V 49	number of cigarettes smoked.	5	14	6	3	14	0	2	44
V 50	number of times I don't get out of bed when I wake up and make excuses for not getting up.	4	2	0	3	4	3	3	19
V 51	eat between meals.	1	0	1	0	0	0	0	2

Discussion: Trends and cyclic patterns were observed. How can we explain fluctuations or changes in frequency? "Weekend effects" and self-observation effects were suggested. "Do you feel the changes in results reflect real behavioral changes?" Questions of reliability were discussed. There was a

consensus that self-observation increased awareness of participants' behavior. It "made me think", etc.

Project: Volunteers had been trained to act as experimenters in a verbal reinforcement experiment demonstrating the "Greenspoon effect" (Greenspoon, 1955). Residents were used as subjects for this project. Participants divided into their minigroups and the volunteers were instructed to say "I want you to start saying words. Begin with the first word which comes to mind. The only requirement is that the words do not go in sequential order to make a sentence like 'there- is - a - cat - in - the - tree'. Okay, start whenever you are ready". The experiment consisted of three stages. Each subject was run through two blocks of baseline, four of reinforcement and two of extinction. Half of the experimenters reinforced all words and monitored the frequency of spoken words in sixty second blocks. The remainder reinforced 'plural nouns' and monitored their frequency in blocks of ten words. Experimenters used verbal reinforcement, "hm-mm" or "okay" accompanied with a head nod. Results were presented by the different experimenters after subjects were questioned as to the purpose of the experiment. None of the subjects was aware of the manipulation nor the purpose of the study. Typically, they felt it was some kind of word association or "personality" test. Data were plotted in graph form on a blackboard and the concept of reward or reinforcement was introduced with reference to the more "successful" data. Baseline, acquisition and extinction phases were identified.

Results: Examples of individual results are shown below.

Frequency of plural nouns in blocks of 10

	Group 1 - E 213 L 208				Group 4 - E 248
	<u>S 101</u>	209	105		<u>S 128</u>
Baseline	0	1	2	5	0
	<u>1</u>	<u>0</u>	<u>2</u>	<u>6</u>	<u>0</u>
Reinforcement	1	2	3	5	2
	0	1	3	7	1
	4	0	1	8	1
	<u>5</u>	<u>6</u>	<u>2</u>	<u>3</u>	<u>1</u>
Extinction	0	1	2	3	0
	1	3	2	4	0

Frequency of words spoken in blocks of 60 sec.

	Group 4 - E 251		Group 4 - E 247	
	<u>S 130</u>		<u>S 134</u>	
Baseline	26		14	
	<u>20</u>		<u>15</u>	
Reinforcement	19		8	
	23		19	
	<u>11</u>		<u>10</u>	
Extinction	11		8	
	15		8	

Discussion: 'The role of reinforcement as a technique to modify behavior.'

Participants were asked to discuss the different reinforcers and their effect in institutional as well as every day life. Discussion was directed to the

utility of the reinforcement phenomenon and its application for personal betterment.

Assignment: All participants were instructed to continue monitoring the behavior of interest they had chosen to observe. Subjects were told that they would be able to reward themselves depending on how well they bring the defined behavior under control. Everyone was asked to self observe for the next seven days and to divide each day into morning, afternoon, and evening. Handouts included index cards and daily record sheets for self observation, a sheet of behavioral principles (see below), and an introductory article by Mahoney and Thoresen (1974) on behavior and self-control for the residents.

Behavioral Principles (taken from Mertens, 1972)

First Behavioral Principle: Positive Reinforcement

Responses that are followed by a positive reinforcer will increase in rate.

As a procedure: Positive reinforcement is the presentation of a reinforcing stimulus or event following a response.

As a process: Positive reinforcement is the increase in the probability or the rate of a response when that increase results from the presentation of a reinforcer.

Second Behavioral Principle: Extinction

Responses which have been previously established or maintained by reinforcement will decrease in rate when that reinforcement is withheld.

As a procedure: Extinction is the withholding or termination of the reinforcement for a response which has been previously established or maintained through the use of that reinforcement.

As a process: Extinction is the decrease in the probability or rate of a response which results from the withholding or termination of the reinforcement for that response which was previously reinforced.

Third Behavioral Principle: Punishment

Responses that are followed by a punisher will decrease in rate.

As a procedure: Punishment is the presentation of a punisher (an aversive stimulus or event) immediately following a response.

As a process: Punishment is the decrease in the probability or rate of a response which results from the presentation of a punisher.

reward' n. & v.
something you get -



for doing something
you wouldn't ordinarily do -



if it wasn't for the reward.



1985

Week 5 Use of Cues

Briefing: Volunteers were told that in the next session they would be given the task of carrying out an operant conditioning study with a dog.

Examples of different reinforcement schedules were presented as possibilities with which one could self-reward one's own behavior. Volunteers were told that cigarettes and candy would be available as reinforcers and each participant would design his own reinforcement system and collect the appropriate number of items.

Review: The concept and techniques of behavior change were reviewed with specific reference to the experiment on conditioning of plural nouns and its R-S^r paradigm.

Lecture: Reinforcement was then discussed with respect to rate (Schedule) and the term "Cue" (stimulus condition) was added creating the S - R - S^r paradigm. Participants were told that they would be making use of both of these points later in the session.

Exercise: Members of the group then broke into minigroups and were asked to do two things. First, devise a 'behavioral experiment' which one could carry out with a dog. They were told to make use of their knowledge of the canine behavioral repertoire and the behavioral techniques at their command; shaping, verbal and non-verbal cues, and appropriate reinforcement (dog food) which would be provided.

Secondly, they were asked to devise a reinforcement schedule applicable to their data obtained from the self-observation task, assigned the previous week as homework. It was pointed out that such a schedule was

'after-the-fact' but from the vantage point of hindsight it might be much easier to devise a scheme most appropriate to each participant's behavior of interest. The scheme was to be devised by consulting with other members of the mini-group.

Project: A dog was provided as the subject and each mini-group attempted to condition a specific behavior. Each mini-group then described the behavior it would try to shape and the technique it would employ. These included barking, sitting up, rolling over, shaking hands, going to a corner of the room, and climbing on a chair.

Some groups were more successful than others and the relative degrees of success were discussed in terms of behavioral repertoire of the subject, techniques employed, and preciseness of the experimenter. The role of previously conditioned antecedent stimuli was discussed and differentiated from subsequent or consequential events. The $S - R - S^R$ paradigm was discussed.

Exercise and Homework: Each mini-group also presented self-monitored homework data. Reinforcement schedules which mini-groups felt were most appropriate were described in conjunction with the individual data. Following are examples of defined behaviors, self-observation results, reinforcement schemes, and number of reinforcements taken.

Group 1:

<u>Subject</u>	<u>Behavior Observed</u>	<u>F</u>	<u>S</u>	<u>S</u>	<u>M</u>	<u>T</u>	<u>W</u>	<u>T</u>	<u>Total</u>
R 01	number of shop projects completed (however small) 2 reinforcers per project.	1	-	-	4	6	6	5	22
	fixed ratio 1/2	reinforcement = 44							

Group 1: (con't)

<u>Subject</u>	<u>Behavior Observed</u>	<u>F</u>	<u>S</u>	<u>S</u>	<u>M</u>	<u>T</u>	<u>W</u>	<u>T</u>	<u>Total</u>
R 05	number of cigarettes.								
	Morn.:	3	4	5	2	1	1		
	Aft. :	2	4	5	3	1	1		
	Eve. :	4	6	4	5	2	3		56
R 06	number of times								
	polite.	13	4	1	16	10	19		57
	Fixed ratio 5	reinforcement = 11							
R 07	one point for each								
	course.	1	2	0	1	2	1	2	9
		reinforcement = 9							
V 08	"minutes late for any								
	appointment or committ-								
	ment."								
	Morn.:	15	0	0	25	35	0	20	90
	Aft. :	0	0	0	0	0	0	0	
	Eve. :	0	0	0	0	0	35	0	35
	Response-Monitor "late free periods" = 16								
	Fixed ratio 2 = 8 reinforcements.								
V 09	"hours spent watching								
	T.V."								
	a.m.:								
	p.m.:	4	2	.5	1	2	.5	0	10
	hours T.V. available = 48								
	Response-hours avoided T.V. = 38								
	Fixed ratio 2 = 19 reinforcements.								

Group 1: (con't)

<u>Subject</u>	<u>Behavior Observed</u>	<u>F</u>	<u>S</u>	<u>S</u>	<u>M</u>	<u>T</u>	<u>W</u>	<u>T</u>	<u>Total</u>
L	monitor forgetting name, to do something or leave something.	0	0	0	1	0	0	1	
		0	1	0	4	0	1	0	
	reinforce number of periods successfully not forget anything.	0	0	0	1	0	1	0	10
	reinforcement = 14								
V 11	hours studying.	0	1	0	0	0	0	0	
	Fixed ratio 1	0	1	3	2	0	0	0	
		0	0	1.5	0	2	0	0	10
	reinforcement = 10								

Group 4:

R 26	swearing to myself. Reinforcement = 8	0	0	2	2	0	0	2	6
R 30	monitor time getting up in morning. reinforce 6:30 a.m. 2 points 6:45 a.m. 1 point reinforcement = 11	2	2	0	2	2	1	2	11
R 34	hold back temper at work.	3	0	0	5	3	4	0	15
R 35	Cigarettes reinforce each one less than 10 per day. reinforcement = 2	10	10	8	10	10	10	10	68
V 48	monitor cigar smoking. reinforce each day no cigars. reinforcement = 4	1	1	0	0	0	1	0	3

Group 4: (con't)

<u>Subject</u>	<u>Behavior Observed</u>	<u>F</u>	<u>S</u>	<u>S</u>	<u>M</u>	<u>T</u>	<u>W</u>	<u>T</u>	<u>Total</u>
V 49	number of cigarettes 3 reinforcements for a day with less than 5 cigarettes.	1	2	0	8	10	8	1	30
		reinforcement = 12							
V 50	excuses for not getting up	2	2	3	3	5	3	4	22
		reinforcement = 2							
V 51	eating between meals reinforce 3 per day minus 1 each eating	1	2	0	0	0	1	0	4
		reinforcement = 17							

Discussion: These results were discussed with respect to the previous weeks data, the role of reinforcement, the possibility of erroneous data, and the appropriateness of the reinforcement procedures. Reinforcing incompatible behavior and response cost systems were seen as alternatives when a reduction in response frequency was the desired goal. The data were also discussed with respect to stimulus conditions in which the behaviors occurred most frequently. It was suggested that understanding or insight into these conditions could help bring the behavior under control.

Assignment: All participants were asked to continue their monitoring practice. Monitoring cards and weekly sheets were given out.

Week 6 Classical Conditioning

Briefing: The principles of classical conditioning were outlined with volunteers and various examples presented. The usefulness of this paradigm in one's own self-management program was stressed. Volunteers were reminded of their self-monitoring task and requested to act as "models" with respect to their maintenance of program assignments.

Review: Operant conditioning was reviewed as one kind of learning. The role of antecedent and consequent events was discussed with respect to increasing and decreasing the frequency of a behavior. Smoking was used as an example.

Lecture: The principle of classical conditioning was introduced and presented in terms of "pairing", association, or contiguity. "Natural" or unconditioned stimulus-response relationships were described. The process of acquisition and extinction of a conditioned response was detailed. An historical perspective was introduced by describing Pavlov's work with dogs and other examples, such as drug taking, were used to illustrate the phenomenon.

Demonstration: A dog was presented for a classical conditioning experiment. The group members were asked to record the dog's response following a series of individual and paired stimuli: Alarm clock alone caused slight head turn; Air puff alone caused blink, flick ears, pull away; Alarm clock with air puff caused blink, flick ears, pull away; Alarm clock alone caused nothing, blink, some pulling.

Discussion: Applications of the classical conditioning paradigm were asked for and discussed. Some of the less desired unconditioned, or previously conditioned, stimulus-response relationships were cited. Annoyances and frustrations were discussed with respect to their role in producing "up-tightness"(stress, anxiety, and aggressiveness). Another common, but less realized stimulus-response relationship was then presented, the ability of self-instructions to produce relaxation or tension reduction. The implications of these two relationships for self-control were discussed.

Means of avoiding unpleasant states or regrettable behavior were presented.

Project: Instructions were provided for two kinds of relaxation exercises.

One was described as being a muscular relaxation technique (Wolpe and Lazarus, 1966) and the other was described as a more mental or cognitive version (Wolberg, 1964). Participants were asked to break into mini-groups and choose the exercise which they felt would be more applicable. They then took turns going through the instructions with each other. Following the exercise problems were discussed and questions answered.

Homework: Each participant was asked to hand in his previous week's data card and redeem the appropriate number of reinforcements. Following are data results.

Group 1:

Subject	Behavior Observation	F	S	S	M	T	W	T	Total
R 01	number of shop projects completed.	0	-	-	2	3	7	5	17
		reinforcement = 34							
R 05	number of cigarettes 15 points - 1 for each smoke.	0	-	-	4	3	1	0	8
		reinforcement = 7							
R 06	Smoking 1 point for every 5 cigarettes less than a pack a day (20).	7	4	6	9	10	9	9	54
		reinforcement = 18							
R 07	number of lessons.	1	-	-	1	1	2		5
		reinforcement = 5							

Group 1: (con't)

<u>Subject</u>	<u>Behavior Observation</u>	<u>F</u>	<u>S</u>	<u>S</u>	<u>M</u>	<u>T</u>	<u>W</u>	<u>T</u>	<u>Total</u>
V 08	times late.	1	0	0	1	0	0	1	
	reinforce 2 periods								
	not late.	0	0	0	0	0	0	1	
	reinforcement = 7	1	0	0	1	0	0	0	6
V 10	frequency of irritable								
	responses to social								
	stimuli.	1	0	0	0	0	1	1	3
	response cost 2 rein-								
	forcers per response.								
	reinforcements $20 - 6 = 14$								
V 11	hours studying.	0	5	2.5	3.5	2	0	0	13
V 12	hours studying.	2	6	1	4	5	1	0	29
	reinforcement = 14								
L	frequency of forgetting	1	4	1	1	0	3	2	12
	reinforcements = 10								

Group 4:

R 26	swearing	24	42	21	19	8	16	9	121
	reinforcement = 0								
	reinforcement = 14								
R 29	drinking pepsi allow								
	15 minus 1 for each								
	drink.	3	0	0	0	1	2	2	8
	reinforcement = 0								
R 30	Does school work in								
	dorm reinforce 2 for 1	1	1	1	1	1	1	2	8
	reinforcement = 16								

Group 4: (con't)

<u>Subject</u>	<u>Behavior Observation</u>	<u>F</u>	<u>S</u>	<u>S</u>	<u>M</u>	<u>T</u>	<u>W</u>	<u>T</u>	<u>Total</u>
R 32	number of cigarettes	11	16	20	10	7	12	9	85
	reinforcement = 15								
R 34	avoid loosing temper								
	at work	1	-	-	0	0	0	0	1
	loose temper	4	-	-	2	0	1	3	10
	Avoid temper FR 3								
	loose temper-take 4								
	per day								
	reinforcement = 13								
R 35	cigarettes	10	5	5	6	5	4	8	43
	reinforce number less								
	than last week = 27								
	Fixed ratio 2								
	reinforcement = 14								
V 48	cigars	0	1	1	0	0	1	0	3
V 49	cigarettes	3	1	1	3	2	2	3	15
	reinforcement = 21								
V 50	excuses for not								
	getting up	3	1	1	3	2	2	3	15
V 51	eating between meals	0	0	1	2	0	2	0	5
	reinforcement = 15								

Assignment: Participants were asked to continue monitoring their behavior of interest for self-reinforcement the following week. They were also asked to monitor and grade their own relaxation progress daily. Monitoring cards and data sheets were given to every one as well as three articles "Learning to relax in tense world," by Lipe, Rose, and Marquis, "Relaxation techniques", by Wolpe and Lazarus (1966), and "Self-Hypnosis", by Wolberg (1964).

Week 7: Generalizations Coping with Problems - Techniques

Briefing: Volunteers were encouraged to continue with the relaxation procedures on their own. They were told that the purpose of the next meeting would be to encourage generalization of the procedures, that they could be applied to every day life.

Review: The relaxation exercises were reviewed. Participants discussed their successes, failures, problems, and thoughts concerning the techniques. The importance of appropriate settings was discussed.

Project: Participants were given a number of Case Studies. This package was comprised of results from various self-change programs presented in graph form. Target behaviors included exercise behavior (Kau & Fischer, 1974) cigarette smoking (Mahoney & Thoresen, 1974), weight reduction (Mahoney, 1974), fingernail biting (Horan, Hoffman, & Macri, 1974), and self-esteem (Hannum, Thoresen & Hubbard, 1974).

Mini-groups then convened to discuss the different programs, approaches, and behaviors investigated. They were instructed to pick out one study which appealed to them. After briefly conferring with partners the whole group reassembled and participants were asked to describe the study which

interested them and the reasons why it did so.

Discussion: Group members were asked how they might take advantage of the skills they were acquiring in the program and in what context these skills could be beneficial.

The discussion included methods of coping with problems. The use of alternative responses was suggested as one possibility. The applicability of self-directed relaxation instructions in the presence of aversive stimuli was discussed for its feasibility, and likelihood of avoiding common and undesired responses. Group members talked about diversionary action whereby self-instructions could elicit a desired response. The concept was discussed with respect to self-control.

The session took on a group therapy model in which individuals were asked to present personal anecdotes of their own interpersonal behavior and suggest how a different response may have been more appropriate, and how that response may have been self-elicited. Advice, suggestions, and support were encouraged from the other members. Examples included "perseverance" on the job or elsewhere, and making use of "natural" or built in reinforcers.

The session concluded with specific suggestions in self-instruction. The utility of a 'self-statement' as a response to modify another response was presented. Examples of how 'self-talk' has helped different populations with different behavior problems were cited (Meichenbamm, 1974).

Assignment: All participants were asked to continue to monitor their behavior of interest, practise the relaxation exercises, and record relaxation progress.

Homework: The previous week's homework data were collected, results presented, comparisons with previous weeks were made, and problems of reinforcement discussed. The following data were submitted at the end of the session.

Group 1:

Subject	Behavior Observation	F	S	S	M	T	W	T	Total
R 01	projects completed	2	-	-	7	5	4	2	20
		reinforcement = 20							
R 06	cigarettes smoked	9	4	0	2	7	8	7	38
R 07	lessons completed	1	-	-	2	1	1	2	7
		reinforcement = 14							
V 08	number of times late	1	0	0	0	0	0	2	3
V 09	amount of time watching - T.V. 48 hours available 1 reinforcer for every 4 hours not watched	-	4	2	0	3	0	0	9
		reinforcement = 10							
V 10	frequency of anger, impatience response.	0	0	1	0	0	0	2	3
V 11	hours studying	0	3.5	4	1.5	1	0		9
	day dreaming	0	2	1	1	0	0		4
	clock watching	0	1	1	0	0	0		2
	return 6 of 20 rein- forcers	reinforcement = 15							
V 13	number of hours studying	6	3	0	5	7	6	3	30
	Fixed ratio 2	reinforcement = 15							

Group 1: (con't)

<u>Subject</u>	<u>Behavior Observation</u>	<u>F</u>	<u>S</u>	<u>S</u>	<u>M</u>	<u>T</u>	<u>W</u>	<u>T</u>	<u>Total</u>
R 01	tried relaxation (March 21-27)	2	3	1	1	0	0	0	7
R 06	relaxation therapy	1	1	1	1	2	1	1	8
V 10	relaxation score	10	-	-	-	-	-	11	
								5	
								5	
V 11	relaxation frequency (11)	-	1	-	1	-	1	-	3

Group 4:

R 26	swearing to myself. 3 reinforcers per day minus 1 per swear.	15	12	14	11	16	13	8	89
		reinforcement = 0							
R 29	number of cokes at work 3 reinforcers per day-minus 1 per coke	0	-	-	1	-	-	-	1
		reinforcement = 14							
R 30	number of times does homework in dorms 2 for one	0	1	1	1	1	1	1	6
		reinforcement = 12							
R 34	control temper loose temper	0	-	-	0	0	0	0	0
		6	-	-	4	8	7	5	30
R 35	cigarettes number less than last week= 10	6	4	4	5	4	4	6	33
		reinforcement = 5							

Group 4: (con't)

<u>Subject</u>	<u>Behavior Observation</u>	<u>F</u>	<u>S</u>	<u>S</u>	<u>M</u>	<u>T</u>	<u>W</u>	<u>T</u>	<u>Total</u>
V 48	cigars smoked give self 7 rein- forcers minus 1 per cigar.	1	2	1	0	0	1	0	5
		reinforcement = 2							
V 49	cigarettes smoked	7	12	0	5	0	6	0	30
		reinforcement = 16							
V 50	number of excuses give self for not getting up	1	2	2	2	3	1	1	12
V 51	eating between meals 3 reinforcers per day minus 1 per eating	0	4	0	1	0	0	0	5
		reinforcement = 16							

Week 8: Case Studies and Summary

Briefing: Volunteers were told that the following session would adopt a case conference model, that they would have the opportunity to analyze and propose suggestions for various behavior problems.

Review: All behavior change techniques were reviewed. The 'problem definition' approach was stressed and the importance of focussing on specific well defined behaviors was advocated as a means of 'tackling' a problem.

Project: Members were given the task of constructing a problem situation to present in a case conference context. Each mini-group would describe its case and then discuss it with respect to behavioral analysis and possible treatment regimes.

Results: On both occasions during which the programs were carried out, three of the four cases turned out to be personal accounts. Following are the case summaries.

Group 1. New girl in office who is critical and doesnot want to work.

2. Difficulty meeting people, shy and anxious in new setting.
3. Leaving jail in a week, what to do, how to go about it.
4. Problems of a 45 year-old recidivist.

Group 4. 1. Mentally retarded boy, very tough, spits.

2. Temper, running feud with brother.
3. Person in jail and a staff member seems to "have it out for him".
4. Boy gets in habit of staying away from school.

The group members were asked to role play a team of behavioral consultants. Discussion tended to focus on the conditions in which the events of concept took place and means of avoiding cues which seemed to trigger undesired behaviors. Most cases were primarily concerned with decreasing undesirable behavior and so discussion centered on extinction, reinforcement of incompatible behavior or trouble free time intervals, and response cost. Situations requiring an increase in desired behavior evoked discussion on different reinforcement schedules.

Discussion: The session was concluded with summary statements and discussion about the applicability of the program to every day life. The following self-monitoring data were handed in and reinforcements distributed.

Week 8:

Group 1:

<u>Subject</u>	<u>Behavior Observation</u>	<u>F</u>	<u>S</u>	<u>S</u>	<u>M</u>	<u>T</u>	<u>W</u>	<u>T</u>	<u>Total</u>
R 01	projects completed	4	-	-	3	5	2	3	17
	reinforcement =	17							

Group 1: (con't)

<u>Subject</u>	<u>Behavior Observation</u>	<u>F</u>	<u>S</u>	<u>S</u>	<u>M</u>	<u>T</u>	<u>W</u>	<u>T</u>	<u>Total</u>
R 06	cigarettes smoked.								15
		reinforcement = 23							
R 07	lessons completed	2	-	-	1	1	2	2	8
		reinforcement = 16							
V 09	T.V. viewing hours reinforce every 2 hours less than last week	0	7	0	0	1	0	1	9
		reinforcement = 19							
V 10	no. of outbursts when upset	0	1	1	0	1	0	0	3
V 08	number of times late	3	1	0	3	1	1	2	11
		reinforcement = 5							
V 11	study hours	2	1.5	4	2	3	0	0	17
	daydreaming, clock watching	1	2	2	1	0	0	0	6
	cost 7 bars	reinforcement =							
V 12	number of hours studying	5	4	7	11	12	7	5	51
	FR 2 Total 28	reinforcement = 24							
V 08	relaxation rating	50	70	80	-	20	-	50	5
V 11	relaxation rating								
	physical	-	10	-	15	-	-	-	
	Self Hyp.	12	10	-	15	25	-	-	6

Week 8

Group 4:

[illegible]

Group 4: (con't)

<u>Subject</u>	<u>Behavior Observation</u>	<u>F</u>	<u>S</u>	<u>S</u>	<u>M</u>	<u>T</u>	<u>W</u>	<u>T</u>	<u>Total</u>
V 49	relaxation	-	-	-	-	-	-	5	5
V 50	relaxation	1	-	-	-	-	-	-	1
V 51	hypnosis	-	-	-	1	1	1	1	4

In sum, there were 9 activities for which a subject in the self-control program could submit individual data. The number of projects, sessions attended, and homework assignments handed in by each subject were as follows:

Residents

	Group 1							Group 4									
Subject	1	2*	3	4	5	6	7	26	27*	28	29	30	31*	32	33	34	35
Sessions present	7	3	1	2	5	8	6	8	0	6	8	7	0	6	1	6	7
Submissions	9	2	0	1	3	8	7	8	0	3	5	8	0	6	0	6	5

Volunteers

Subject	8	9	10	11	12	47	48	49	50	51
Sessions present	8	7	7	6	8	3	8	8	8	7
Submissions	9	7	6	9	6	4	8	9	9	9

* posttest not available.

Of those subjects for which posttest data were available, the correlation between attendance and items handed in was .85 (.88 and .64 when separated by residents and volunteers). Therefore, within the self-control program attendance does present an accurate indication of the participants' training in self-control techniques. This fact should be considered when investigating the attendance-change score correlations.

Appendix E

A LETTER RECORD CODE DESCRIPTION

In order to complete the Daily Letter Record please fill in the following when checking incoming and outgoing mail: today's date; sent or received (circle one) depending on whether it is incoming or outgoing mail; letter length in pages; the appropriate 'Correspondent' symbol; and the 'Nature' and 'Content' of plans symbols.

Correspondent

Relative (R)

Any person with the same surname as the resident (wife, parents, brother, sister, grandparents) or if there is some indication that the correspondent is a member of the family but does not use the same family name (married sister or step-parent).

Male Friend (M)

Any male name who is a friend and is not related to the resident nor is a business acquaintance (address is not a business or agency).

Female Friend (F)

Any female who is a friend (not wife) and is not related to the resident nor is a business acquaintance.

Business Acquaintance (B)

Any formal acquaintance, not a personal friend or relative. This includes lawyer, parole/probation officer, past or prospective employer, doctor, priest, banker, and landlord. Please specify.

N.B. If a letter is addressed to more than one person, use the first name. For example, Mr. & Mrs. Brown would be classed (M) as long as the resident's name was not Brown.

Nature of Plans

Seeking Information (SI)

This is used if the resident is seeking or requesting any kind of information from a friend, institution, agency, or professional. Any questions he is asking about factual material such as the availability of school, job, welfare, or housing.

Seeking Advice (SA)

This is used for any questions of advice that the resident is requesting for his own use on a personal matter.

Making Decision (MD)

This concerns any statement of intent that is made concerning the resident's post-release behavior. This includes decisions or plans in letters written (I will look for a job) and in letters received (I heard you decided not to return home when you are released).

Making Application (MA)

This concerns any formal application or request for an application which the resident makes with respect to parole, employment, education, or residence.

Content of Plans

Education (ED)

Any indication of plans related to the resident's upgrading, education, or training is scored in this category.

Employment (EM)

This includes any indication of plans related to future employment.

Parole/Probation (P)

This category includes any indication that the resident has made plans with respect to parole (National or Provincial) or probation.

Residence (R)

This category is scored if the resident has made any plans concerning lodging, room and board, or residence.

Nonrehabilitative (NR)

This category includes any plans which are illegal, antisocial, or potentially detrimental to the resident's wellbeing (drugs, alcohol, delinquent friends, or crime).

Other (O)

Any other area of resident's planning. Please specify.

Appendix F

Key to Variable Abbreviations

Behavioral Tests

PM	<u>Porteus Maze</u>
PM-Qual.	-Quality
PM-Yrs.	Years
FT	First Third Error
LT	Last Third error
CC	Cut Corner error
CL	Crossed Line error
LP	Lift Pencil error
WL	Wavy Line error
WD	Wrong Direction error
YR 7	Year Seven error
PS	<u>Personal Space (proxemics test)</u>
($\bar{X}$)F	(mean) Front
($\bar{X}$)L	(mean) Left
($\bar{X}$)B	(mean) Behind
($\bar{X}$)R	(mean) Right
To	Total
Ar	Area
CP	<u>Cold Pressor</u>
Tm	Time
Wr	Words
Ph	Phrases
DGP	<u>Delayed Gratification Preference</u>
($\bar{X}$)CL	(mean) Choice List of 2 (A,B, or C,M,)
A	Choice List A
B	B
C	C
M	M
MSM	Money Saving Measure

Attitude/Personality Scales

L	Attitude toward the Law
C	Court
P	Police
$\bar{T}$ LCP	Attitude toward the Judicial System
Id	Identification with Criminal Others
To1	Tolerance for Law Violation
Ac0	Acceptance of Others
ALO	Awareness of Limited Opportunity

SE	Self-Esteem
A	Alienation
N	Normlessness
P	Powerlessness
T ANP	Separateness
Soc	Socialization
Pd	Psychopathic Deviance
Ne	Neuroticism
ScM	Scholastic Maladjustment
Inad	Inadequacy
FD	Family Dissention
Fake	Positive Malingering
C	16 PF C - ego strength
G	16 PF G - super ego strength
Ext	Locus of Control (external)
Em	Empathy
Sc	Self-Control
Anx	Anxiety

Discussion Group Analyses of Statement Quality and Subsequent Feedback

P→P	positive statement	reinforced
N→N	negative	punished
P→N	positive	punished
N→P	negative	reinforced
P→O	positive	no feedback
N→O	negative	no feedback
App	Total Appropriate Feedback	
Inap	Total Inappropriate Feedback	
TP	Total Positive Statements	
TN	Total Negative Statements	

GAIT Group Assessment of Interpersonal Traits

Emp	Empathy
O-d	Openness-disclosure
O-g	Openness-genuine
W	Warmth
Conc	Concreteness of Expression
Ass	Assumed Similarity
Flex	Flexibility
Resp	Responsivity
Te	Tension
Inf	Influence
App	Approachability
OE	Overall Evaluation

GAIT (con't)

$\bar{X}$ vol-res	Mean Rating of Volunteers by Residents
$\bar{X}$ vol-self	Mean Volunteer Self-Rating
$\bar{X}$ res-self (Mon/Thurs)	Mean Rating given out by a Resident to Mon/Thur Volunteers
$\bar{X}$ res-vol (Mon/Thurs)	Mean Resident Score of Mon/Thur Volunteers' Self-Rating with respect to that resident

Canteen

$\bar{X}$ Rec	Mean Amount Received
$\bar{X}$ Spent	Mean Amount Spent
$\bar{X}$ Bal	Mean Balance after weekly Spending
$\bar{X}$ S/R	Mean Spending-Received Ratio

Letter Record (Sent/Received)

TN	Total Number
TP	Total Pages
$\bar{X}$ P	Mean pages
R to/from	Relative
M	Male Friend
F	Female Friend
B	Business/Official Acquaintance

Nature of Plans

SI	Seeks Information
SA	Seeks Advice
MA	Makes Application
MD	Makes Decision
TP	Total Positive Plans (SI to MD)
NP	Letters with No Plans

Content of Plans

Ed	Education
Em	Employment
Par/Prob	Parole/Probation
Res	Residence
Oth	Other
NR	Non-Rehabilitative

Resident Rating by Institutional Staff

CA	Officer A	in conjunction with	Ot	Generalized Others
CB	Officer B		Pe	Peers
XC	Mean Officer		St	Staff
In	Instructor			

Ch	<u>Charges</u>

Fr	Frequency
Sv	Severity

Sen	<u>Sentence</u>

TS	Total Sentence
Def	Definite Sentence
Indef	Indefinite Sentence

Tm Sp	Time Spent in Institution at time of testing

Tm Pr	<u>Percentage of a period that resident was present</u>

eg. TmPrPr	Time present during pre condition, a 2 month period
TmPrDr	Time present during during condition, a 2 month period
TmPrPt	Time present during post condition, a 2 month period

Pr	Pre Testing condition and/or period two months prior to program
Pt	Post testing condition and/or period two months following program
Dr	During program - a two month period

APPENDIX G

A Statistical Summary of All Results

Code: (Pr) Pretest (R) Residents (E) Experimental Subjects
 (Pt) Posttest (V) Volunteers (C) Control Subjects
 (Dr) During (Ch) Change (Pt co Pr) post with pre covaried

PSYCHOMETRIC RESULTS

<u>Variable</u>	<u>Analysis</u>	<u>Result</u>	<u>N</u>	<u>Page</u>
Reliability				
Behavior Test Battery				
Porteus Maze	Interrater (Pr,Pt) Test Scores	$\bar{r} = .89$ to 1.00 (R,V)	30	93-96
	(Pr,Pt) Scale Scores	$\bar{r} = .07$ to $.99$ (R,V)	30	
	Interscale (Pr) Year-Quality	$\bar{r} = -.43$ (R), $-.50$ (V)	50 , 63	
	Subscales	$\bar{Xr} = .10$ (R), $.14$ (V)	50 , 63	
	part-whole	$\bar{Xr} = .40$ (R), $.47$ (V)	50 , 63	
Proxemics	Test-retest (Pr,Pt) Immediate	$\bar{Xr} = .89$ (R,V)	44 - 63	95-100
	Subscales (Pr,Pt)	$\bar{Xr} = .76$ (R,V)	44 - 63	
	Total-Area (Pr)	$\bar{r} = .94$ (R), $.73$ (V)	49 , 63	
	part-whole (Pr)	$\bar{Xr} = .90$ (R), $.75$ (V)	49 , 63	
Cold Pressor	Time-Words (Pr)	$\bar{r} = .59$ (R), $.54$ (V)	50 , 63	99-101
	Outcome-Stimulus Conditions (Pr)	$\bar{r} = .01$ to $.41$	50 , 63	
Choice List and M.S.M.	Point-Biserial, Forms A,B (Pr)	$\bar{Xr} = .74$ (R)	28	102-105
	Inter-item Forms A,B (Pr)	$\bar{Xphi} = .53$ (R)	28	
	Inter-item	$\bar{Xr} = .53$ (R)	28	
	Kudar-Richardson	$\bar{r} = .97$	28	
	parallel forms	$\bar{Xr} = .90$ (R), $.86$ (V)	12 - 28	
	part-whole	$\bar{Xr} = .98$ (R), $.96$ (V)	12 - 28	

Institutional Measures (R)

Charges (Pr)	Frequency-Severity	$\underline{r} = .63$	50	106
Canteen (Pr)	Interscale Saving Spending	$\underline{r} = -.01 \text{ to } .82$	50	106 - 108
Letter Record(Dr)	Interrater agreement	73 to 91%	50	107 - 115
	part-whole	$\bar{X}\underline{r} = .50$	50	
	process-content	$\bar{X}\underline{r} = .23$	50	
	plans-correspondent	$\bar{X}\underline{r} = -.11 \text{ to } .65$	50	
	Sent-Received sub- scales	$\bar{X}\underline{r} = .32$	50	
Staff Ratings (Pr)	Interrater(corrected)	$\bar{X}\underline{r} = .54 (.70)$	47	114
	Interscale	$\bar{X}\underline{r} = .78$	40 - 49	

Process Measures

Discussion Group Observation

Tapes (Pr,Dr)	Interobserver agreement	52% to 85%		116 - 123	344
	$\bar{X}$ rater & rating variance	.36	10		
	$\bar{X}$ statement variance	.33	46		
	Difference over time	$F(1,37) = .03, ns$			
	between tapes	$F(1,37) = 3.28, p < .10$			
	between observer	$F(4,37) = 2.25, p < .10$			
	between grouped observer	$t(45) = .79, ns$			
Live (Dr)	Total statement frequency	$\underline{r} = .96, 89\% \text{ agreement}$	14		
	Cell frequencies	$\underline{r} = .97, \bar{X} \% \text{ agreement} = 58$	25		
	part-whole	$\bar{X}\underline{r} = .79$	35		
	Interscale	$\bar{X}\underline{r} = .64$	35		
	1st half-2nd half	$\bar{X}\underline{r} = .48$	35		

Group Assessment of Interpersonal Traits (PT)

Interscale (V)	self-evaluation	$\bar{X}\underline{r} = .38$	45	123 - 125
	(V) as rated by (Rs)	$\bar{X}\underline{r} = .32$	45	
	(Rs) rating of (V)	$\bar{X}\underline{r} = .51(mon.), .55(Thur.)$	26,25	
	(R) score on (V) self-eval.	$\bar{X}\underline{r} = .44(mon.), .45(Thur.)$	24,23	

Discussion Group Seating (Dr)

(R) part-whole (Total)	$\bar{X}_r = .23$	35	126-128
(R) part-whole (Mean)	$\bar{X}_r = .44$	35	
(R) interweek	$\bar{X}_r = -.02$	16-24	

Validity

Social-Interpersonal Orientation

Personal Space (Pr) - Test Battery(Pr)	$r = .26$ to $-.40$ (R,V)	49,63	129-131
Seating (Dr) - Test Battery (Pr)	$r = .27$ to $-.50$ (R)	35	128-132
Staff ratings - Test Battery (Pr)	$r = .45$ to $-.47$ (R)	50	133-135
Charges - Test Battery (Pr)	$r = .23$ to $-.31$ (R)	50	134-135
Institutional Measures (Pr)	$r = .78$ to $-.37$ (R)	50	135-137
Sentence, Time Spent - Test Battery(Pr)	$r = .23$ to $-.17$ (R)	50	134,137
Letters - Seating (Dr)	$r = .22$ to $-.56$ (R)	50	138-139

Criterion

(R) Charges (Pr) Multiple $\underline{R} = .62$ (.55 corrected)	Simple r	Beta	50	137
	Pers. Sp. tot.	$-.31, -.84$		
	Pd.	$.22, .06$		
	CP-tm	$-.16, .04$		
	Inad.	$-.15, .06$		
	MSM	$-.28, -.48$		
	Sc	$.20, .25$		
	Ego	$-.07, -.35$		

Self-control

Choice List Scales-Money Saving Measure Items(Pr)	$\bar{X}_r = .47$ (R)	48	138-139
Choice List A,B,C,D-Money Saving Measure Items(Pr)	$\bar{X}_r = .26$ (R,V)	12-28	138,142
Behavior Tests - Test Battery (Pr)	$r = .59$ to $-.63$ (R,V)	26-63	143-144
Behavior Tests (Pr)	$r = .94$ to $-.50$ (R,V)	50,63	144-145
Seating (Dr) - Behavior Tests (Pr)	$r = .43$ to $-.45$ (R)	35	132,145
Interest(Pr),Canteen(Dr) - Test Battery (Pr)	$r = .30$ to $-.32$ (R)	34,50	144-148
Test Battery (Pr)	$r = .67$ to $-.68$ (R,V)	50,63	147-149

Factor Analysis (Orthogonal)

	Factors	Principle Variables	50,63	153-159
(R,Pr)	Anxious Neurotic Legal Moralistic Desire to Please Difficult Background Motor Impulse Delayed Gratification Criminality Egocentrism	Neur.(.80), Anx.(.77), Alien.(.71), Ego(.67) Law (.85), Tol.(-.78), Superego(.64) Aware.(-.59) C.P.ar. (.80),C.P. tm.(.68) Superego (.34), Mp.(.31) Fam.D.(.85, Soc.(-.47), Pd.(.44), S.E.(.37) P.M.yr.(-.63), P.M.al.(.57), Sc.(.45), Ext. (.43) C.L. (.73), M.S.M.(.55), P.S. tol. (.48) Sc. Ml.(.67), Iden(.55), Ext.(.52), Pd.(.43) Emp.(-.65), C.L.(-.32), Mp.(.31), Inad(.31)		
(V,Pr)	Antisocial Neurotic Stability Legal-moralistic Delayed Gratification Aloofness Motor Impulse Anxiety-Alienation Socially Accepting	Soc.(-.93), Sc.Ml.(.88), Fam.D.(.81), Neur.(.79) Ego(.74), Aware.(-.66), Inad.(.53), Mp.(.49) Law (.87), Tol. (-.58), Iden.(-.47), Alien.(-.40) M.S.M.(.69), C.P.wr.(.60), Emp. (.53), C.P.tm.(.49) P.S. tot. (.70), Emp. (-.50), C.P.tm. (.43), Tol. (.40) P.M. yr. (-.75) P.M. Q1(.61), Sc. (.49), Accept. (-.38) Anx. (.86), Alien. (.58), M.S.M. (-.53), Sc.(-.48) Accept. (.72), Ext. (.57), Sc. (.54)		

Factor Analysis (Oblique)

	Factors	Principle Variables	50,63
(R,Pr)	Anxious Neurotic Interpersonal Comfort Illegal-Amoral Desire to Please Criminality Antisocial Control Understanding Impulsive	Neur.(.79), Anx.(.75), Alien. (.70),Sc.(-.65) P.S.-ar.(-.98), PS-to (-.95), Emp.(.34) Law(-.86), Tol. (.85), Aware. (.66), Super.(-.68) CP-TM.(.81), CP-ar.(.70), Super.(.42), Mp.(.39) Sc.Md.(.69), Inad.(.53), Pd. (.51), Indent.(.50) Fam. Dis.(.85), Soc. (-.70), S.E.(-.59), Pd.(.56) P.M.-yr.(.63), P.M.-Q1(-.59), Ext.(-.48), Sc.(-.41) Emp. (.61), Mp.(-.42), C.L. (.41), Pd (-.30) M.S.M. (-.78), CL.(-.47), Super. (-.39), Pd (.35)	
(V,Pr)	Antisocial Neurotic Internal Control Interpersonal distance	Soc. (-.92), Neur. (.83), Sc.Ml. (.86), Fam.D. (.85) Ext. (-.88), Ego. (.62), Inad. (.61), Alien.(-.58) P.S.-ar. (.92), PS-to.(.80), CPtm. (.55), Tol. (.39)	

Socially Accepting	P.M.yr. (.72), Accept. (.65), PM-Q1. (-.58), CPtm (.42)
Delayed Gratification	(P wr. (.78), C.L. (.70), CP tm (.51), Ego. (.45)
Self-Control	Sc. (.96), M.S.M. (.50), SE. (.48), Anx. (-.43)
Stability	Anx. (-.81), Ner. (-.66), Super. (.65), Alien. (-.60)
Legal-interpersonal	Law (.86), Tol. (-.64), Accept. (.50), Alien. (-.48)

Factor Matrix of Oblique Factors

<u>Residents</u>	Ner.	Ill.	Crim.	Anti.	Cont.	Imp.	Comf.	Und	Ples.
Anxious Neurotic		20	20	28	17	20	-15	-02	-03
Illegal-Amoral			26	19	-02	26	-21	-00	-15
Criminality				06	11	20	-10	-12	04
Antisocial					13	11	-09	-05	01
Control						03	-07	09	-07
Impulse							12	-02	-05
Interpersonal Comfort								-04	23
Understanding									-09
Desire to please									
<u>Volunteers</u>	Ner.	Dist.	Grat.	Int.	Acc.	Sc	Stab.	Legal	
Antisocial Neurotic		-08	-05	03	-04	-16	-36	-12	
Interpersonal distance			10	-02	-01	-01	-06	-09	
Delayed Gratification				09	13	12	10	02	
Internal Control					-08	28	05	17	
Socially Accepting						-06	08	16	
Self-Control							14	19	
Stability								24	
Legal-Interpersonal									

Resident-Volunteer Differences (Pr)
(R vs V)

159-169

<u>Discriminant Function Analysis</u>	<u>Correct % Allocation</u>	<u>Eigen Value</u>	<u>Canonical Correlation</u>	<u>Wilks Lambda</u>	<u>X²</u>	<u>df</u>	<u>p</u>
Subscales and Compound Variables							
Judicial System (Law, Court, Police)	76	.43	.56	.70	39.2	3	.001
Alienation(Isolation, Normless, Powerless)	77	.76	.68	.53	64.0	1	.001
Personal Space (Four directions)	76	.88	.65	.56	60.4	1	.001
Porteus Maze Quality Scales	73	.24	.44	.80	23.6	4	.001
Judicial System Total	79	.21	.42	.82	21.4	1	.001
Alienation Total	71	.42	.59	.71	38.4	1	.001
Personal Space (To., Ar.)	79	.37	.52	.73	34.6	1	.001
All Scales	98	3.52	.88	.22	94.22	11	.001
Scale Combinations							
Legal	76		.53	.72	36	4	.001
Social	89		.78	.38	102	5	.001
Adjustment	87		.79	.57	106	4	.001
Self-control	74		.58	.66	45	2	.001

Differences by Scale (R vs V)

	<u>p</u>	<u>Adjusted for age, sex</u>
Residents greater on Identification	.001	.02
Tolerance Law Viol.	.001	.10
Aware Lim.Opp.	.001	.05
Alienation	.001	.001
Psychopathy	.001	.001
Neuroticism	.001	.001
Schol. Malad.	.001	.02
Inadequacy	.001	.002
Family Diss.	.001	.05
Positive Malinger	.02	ns.

		<u>p</u>	<u>Adjusted for age,sex</u>
	Anxiety	.001	.001
	Personal Space-Tot.	.001	.02
	Personal Space-Ave.	.001	.02
	Porteus Maze-Q	.001	.02
	M.S.M.	.08	ns.
Volunteers greater on	Attitude Judicial	.001	.01
	Self-esteem	.001	.001
	Socialization	.001	.001
	Accept others	.001	.005
	Ego	.001	.002
	Empathy	.001	.001
	Self-control	.001	.005
	Porteus Maze yrs.	.02	ns.
	Superego	.05	ns.
No difference on	Cold Pressor-time	ns.	.03
	Cold Pressor-words	ns.	ns.
	Choice List	ns.	ns.
	Locus of Control	ns.	ns.

Program Analysis

Variable	Analysis	Result	N	Page		
Test Battery						
Check on Random Assignment (E vs. C)						
(Pr) Attitude/Behavior Measures	t - test		50	171		
	all comparisons	ns. except				
(R) P.M.-yr. E > C		$t(10)=1.94, p < .07$				
(R) Soc. E < C		$t(48)=-1.8, p < .08$				
(V) P.S.-to E > C		$t(61)=1.96, p < .06$	63	171		
(V) Age E < C		$t(61)=-1.73, p < .09$				
(E,R) Attitude/Behavior Measures	Change (Pt co Pr)					
	F(training vs. no training)		30,31	172		
			<u>train</u> <u>no train</u>			
P.S.-total	$F(1,24)=5.82, p < .03$	1.65	-1.34			
P.S.-area	$F(1,24)=3.14, p < .09$	3.35	- .41			
Empathy	$F(1,25)=3.67, p < .07$	1.37	-1.20			
P.S.-front	$F(1,24)=8.05, p < .01$	.35	- .28			
P.S.-left	$F(1,24)=5.00, p < .04$	.50	- .41			
F (Self-control vs. Recreation)		<u>Sc.</u>	<u>Rec.</u>	173		
Aware Lim. Opp.	$F(1,25)=3.51, p < .07$	1.42	-1.42			
Neuroticism	$F(1,25)=2.93, p < .10$	-1.08	1.08			
Powerless	$F(1,25)=5.88, p < .03$	1.69	-1.69			
Attitude Police	$F(1,25)=5.99, p < .03$	-1.98	1.98			
F Interaction (Self-control-byTraining)				173-178		
		<u>Tr.-Sc.</u>	<u>Tr.-Rec.</u>	<u>NT.-Sc.</u>	<u>NT.-Rec</u>	<u>Cont.</u>
Self-esteem	$F(1,25)=3.00, p < .10$	2.33	-5.75	3.11	3.43	3.41
Anxiety	$F(1,25)=3.18, p < .09$	-3.00	.63	- .11	- .57	-1.14
Attitude Law	$F(1,25)=3.13, p < .09$	- .67	-2.86	- .44	2.29	-3.26
Isolation	$F(1,25)=3.93, p < .06$	-2.83	-1.00	-1.22	- .57	-1.50

(E,V) Attitude/Behavior Measures Change (Pt co Pr)
F(by Program)

174

Empathy $F(4,55)=3.05, p < .03$ Tr.(-1.54)no. Tr.(.26)
Sc.(-2.07),Rec.(2.89)Cont.(.60)

(E and C, R and V) Overall Change

Attitude/Behaviour Tests Interaction (Client-by-Treatment)

179-184

(Pt co Pr) Identification $F(1,100) = 4.35, p < .05$
(Pt co Pr, age) $F(1,99) = 4.38, p < .05$
(Pt co Pr, age, sex) $F(1,98) = 4.41, p < .01$
(Ch) $F(1,101) = 7.30, p < .01$
(Ch co age) $F(1,100) = 6.99, p < .01$
(Ch co age, sex) $F(1,99) = 7.19, p < .01$

(Pt co Pr) P.S.-total $F(1,96) = 2.28, p < .13$
Ego $F(1,99) = 2.24, p < .13$
Social $F(1,99) = 1.99, p < .16$
Self-esteem $F(1,99) = 2.30, p < .13$

F Main Effects Treatment

179,184,185
(Experimental vs. Control)

(Pt co Pr, age)	Inadequacy	$F(1,99) = 6.13, p < .02$	-.21	.52
	Schol. Mal.	$F(1,99) = 3.09, p < .07$	-.21	.51
	Pos. Mal.	$F(1,99) = 3.71, p < .06$	.39	-.96
	Superego	$F(1,95) = 3.18, p < .08$	.26	-.66
	P.S.-Area	$F(1,99) = 3.15, p < .08$	-.86	2.02
	P.M.-Qual.	$F(1,95) = 2.82, p < .09$	-1.54	3.69
(Ch)	Inadequacy	$F(1,100) = 7.41, p < .01$	-.24	.60

F Main Effects Client

(Residents vs. Volunteers)

185-187

(Pt co Pr, age)	$F(1,99)$	P		
Attitude Judicial	16.66	.001	-5.18	3.74
Identification	4.01	.04	.72	-.52
Toler.Law Viola.	10.08	.01	1.66	-1.22
Awareness	6.89	.01	1.09	-.79
Acceptance	5.28	.03	-1.71	1.21
Socialization	20.85	.001	-2.98	2.15

	<u>F</u> (1,90)	<u>p</u>	(Residents vs. Volunteers)	
Pd	30.90	.001	2.43	-1.76
Neuroticism	8.47	.005	1.29	- .93
Inadequacy	7.30	.01	.57	- .41
Family Dis.	5.57	.02	.48	- .34
Pos. Malingering	5.06	.03	.91	- .69
Ego	5.73	.02	-1.47	1.06
Sc.	16.34	.001	-2.50	1.80
P.S.-av.	3.73	.06	1.97	-1.45
P.S.-to	2.90	.09	-12.50	12.83

Test Battery	F	(Program and Attendance Effects)	<u>N</u> 35	187
(E,R)	Main (Ch)	Attend. (Co)	Interaction	
Identification		Total <u>F</u> (4,22) = 2.66, <u>p</u> < .06		
Aware Lin.O. Tr/Nt		<u>F</u> (1,22)=5.02, <u>p</u> < .04		
Socialization		Ntr. <u>F</u> (1,22) = 7.51, <u>p</u> < .02	<u>F</u> (1,22) = 4.87, <u>p</u> < .04	
		Sc. <u>F</u> (1,22) = 3.35, <u>p</u> < .08		
Psychopathy		Rec. <u>F</u> (1,22) = 6.34, <u>p</u> < .02		
Neuroticism Sc/Rec		<u>F</u> (1,22)=4.32, <u>p</u> < .05	<u>F</u> (1,22) = 4.07, <u>p</u> < .06	
		Total <u>F</u> (1,22)=2.25 <u>p</u> < .10		
Fam. Dis.		Tr <u>F</u> (1,22) = 4.27, <u>p</u> < .05		
Pos. Malingering		Total <u>F</u> (4,21)= 2.57, <u>p</u> < .07		
		Ntr. <u>F</u> (1,21) = 9.57, <u>p</u> < .01		
		Sc <u>F</u> (1,21) = 3.57, <u>p</u> < .07		
Superego			<u>F</u> (1,22) = 4.02, <u>p</u> < .06	
Empathy		Total <u>F</u> (4,22) = 2.43 (<u>p</u> < .08)		
Sc Sc/Rec		<u>F</u> (1,22)=4.27, <u>p</u> < .05		
Anxiety		Rec <u>F</u> (1,22) = 3.66, <u>p</u> < .09		
P.S.-Tot Tr/Ntr.		<u>F</u> (1,21)=5.58, <u>p</u> < .03		
		Ntr. <u>F</u> (1,21)= 3.18, <u>p</u> < .09		
		Sc <u>F</u> (1,21)= 4.96, <u>p</u> < .04		
P.S.-ar		Ntr. <u>F</u> (1,21) = 3.63, <u>p</u> < .07	<u>F</u> (1,21) = 4.80, <u>p</u> < .04	
		Sc <u>F</u> (1,21) = 4.83, <u>p</u> < .04		
C.P - wr Tr/Ntr.		<u>F</u> (1,21)=5.12, <u>p</u> < .04		

P.M.-yr Tr $F(1,23) = 3.52, p < .07$
P.M.-q1 Tr $\bar{F}(1,23) = 3.23, p < .08$
CL Rec $\bar{F}(1,23) = 4.25, p < .05$

$\bar{F}(1,20) = 3.32, p < .08$

Institutional Measures

Check on Random Assignment (E vs. C)

		E	C	188
Time in institution	(Pr) $t(48) = 2.81, p < .01$	.74	.97	
	(Pt) $\bar{t}(48) = -1.94, p < .06$	.38	.67	
Canteen Received	(Pr) $\bar{t}(45) = -1.84, p < .08$	2.39	2.75	
	(dr) $\bar{t}(37) = -2.75, p < .01$	2.77	2.96	
	(Pt) $\bar{t}(21) = -3.43, p < .01$	3.34	4.63	
Charges-Severity	(Pr) $\bar{t}(48) = 3.42, p < .07$	.09	1.27	
Instructor Peers	(Pr) $\bar{t}(32) = 2.87, p < .10$	49.83	54.21	
Instructor Staff	(Pr) $\bar{t}(32) = 3.29, p < .08$	54.56	61.00	

(E,R) Institution Measures Change

F Interaction (Self-control-by-Training)

		Tr.-Sc.	Tr.-Rec.	NT.-Sc.	NT.-Rec.	187-189 Cont.	353
Charges-Fr	(Pt co tm) $F(1,30) = 4.47, p < .05$	-.14	.56	.45	.00	.33	
	(Pt co Pr,tm) $\bar{F}(1,29) = 4.32, p < .05$						
Charges-Sv	(Pt co tm) $\bar{F}(1,30) = 4.02, p < .06$	-1.00	3.89	3.45	.00	2.87	
	(Pt co Pr,tm) $\bar{F}(1,30) = 3.91, p < .06$						
Letters Sent-Nature None (Dr)	$F(1,31) = 2.89, p < .10$						
Letters Received-nonrehab. (Dr)	$\bar{F}(1,31) = 3.84, p < .06$	.30	.00	.00	.25	.07	
Letters Received-nonrehab. (Dr.co tm.)	$F(1,30) = 3.87, p < .06$						
(Ch)Officer-Beh.Peer	$\bar{F}(1,30) = 6.58, p < .02$	3.5	-.89	-3.36	1.86	-1.00	
Beh.Staff	$\bar{F}(1,30) = 11.78, p < .005$	2.07	-3.44	-5.86	1.71	-.62	
(Pt co Pr) Beh.Staff	$\bar{F}(1,29) = 5.03, p < .03$						
(Pt co tm) Canteen Bal.	$\bar{F}(1,9) = 8.65, p < .02$	15.43	3.26	1.03	1.30	2.05	
(Pt co Pr,tm) Canteen Bal.	$\bar{F}(1,8) = 3.58, p < .10$						

F (Training <u>vs.</u> No Training)				
(Dr co Tm)			Tr.	NTr.
	Total Letters Sent	$F(1,31) = 4.48, p < .08$	4.43	1.74
	Letters Sent-plans	$\bar{F}(1,31) = 3.46, p < .08$	8.38	2.47
	Letters Sent-no plans	$\bar{F}(1,31) = 5.03, p < .05$	4.15	.95
	Letters Sent-nonrehab.	$\bar{F}(1,31) = 1.48, ns.$	.50	.20
(Dr co Tm)	Canteen Bal.	$F(1,24) = 4.11, p < .06$	6.22	.83
(Dr co Pr,Tm)	Canteen Bal.	$\bar{F}(1,23) = .97, ns$		
(Pt co Tm)	Canteen Bal.	$\bar{F}(1,9) = 17.05, p < .005$	6.74	1.14
(Pt co Pr,Tm)	Canteen Bal.	$\bar{F}(1,8) = 14.83, p < .005$		

F (Self-control <u>vs.</u> Recreation)				
			Sc.	Rec.
(Pt co Tm)	Canteen Spent	$F(1,9) = 3.84, p < .08$	5.65	4.85
(Pt co Tm)	Canteen Bal.	$\bar{F}(1,9) = 5.73, p < .04$	5.82	2.51
(Pt co Pr,Tm)	nil			

Institutional Measures F (Program and Attendance Effects)				N	
				35	189
<u>Variable</u>	<u>Main</u>	<u>Covariate</u>	<u>Interaction</u>		
(Ch) Officer - Beh.	Peers	Tr. $\bar{F}(1,26) = 3.36, p < .08$	$F(1,26) = 4.85, p < .04$		
	Staff		$\bar{F}(1,26) = 12.68, p < .005$		
	Other		$\bar{F}(1,26) = 2.91, p < .10$		
(Dr) Charge Freq.		NTr. $\bar{F}(1,27) = 10.94, p < .005$			
		Sc. $\bar{F}(1,27) = 7.10, p < .02$			
		Rec. $\bar{F}(1,27) = 14.49, p < .001$			
(Dr) Charge-Sev.		Total $\bar{F}(4,27) = 3.90, p < .02$			
		Tr. $\bar{F}(1,27) = 5.74, p < .03$			
		NTr. $\bar{F}(1,27) = 10.54, p < .005$			
		Sc. $\bar{F}(1,27) = 7.28, p < .02$			
		Rec. $\bar{F}(1,27) = 14.25, p < .001$			
(Pt) Charge-Sev.			$\bar{F}(1,27) = 3.61, p < .07$		

(Pt) Charge-Fr $F(1,27)=3.55, p < .07$

(Dr) Letters Sent-total Tr. $F(1,27)=3.20, p < .09$

Letters Sent-total pos. Tr. $F(1,27)=3.85, p < .07$ Sc. $F(1,27)=3.12, p < .09$

Letters Rec'd-total Sc. $F(1,27)=2.98, p < .01$ NTr. $F(1,27)=4.07, p < .06$

Letters Rec'd-total pos. Train $F(1,27)=4.65, p < .04$ Total $F(4,27)=2.79, p < .05$ Rec. $F(1,27)=3.98, p < .06$

(Pt) Canteen-Bal. Train $F(1,6)=18.35, p < .01$ Total $F(4,6)=3.55, p < .09$ $F(1,27)=6.17, p < .02$

Sc. $F(1,6)=10.19, p < .02$ Tr. $F(1,6)=12.45, p < .02$ Rec. $F(1,6)=6.92, p < .04$ $F(1,6)=5.80, p < .06$

Treatment Process (Dr)

(R) Discussion Group Statements

Statement Feedback Classification (R)

	design	χ^2	df	p
All statements	5X5	175.19	16	.001
positive, negative, statements	2X2	10.61	1	.01
pretraining trained	5X5	82.49	16	.001
untrained	2X2	.09	1	ns.
Posttraining trained	5X5	52.62	16	.001
untrained	2X2	4.78	1	.05
Reinforcement/punishment ratio of Statements	5X5	39.84	16	.001
trained positive statements	2X2	16.61	1	.001
negative statements	5X5	40.23	16	.001
untrained group positive statements	2X2	10.47	1	.01
negative statements				

Reinforcement/punishment ratio of Statements

trained positive statements

negative statements

untrained group positive statements

negative statements

pretraining

3/10

8/21

10/2

29/19

posttraining

11/2

1/9

6/5

1/2

N
35

204-209

355

(R) Appropriateness over time

		<u>design</u>	<u>χ^2</u>	<u>df</u>	<u>p</u>	211
Trained group	first half	2X2	.01	1	ns.	
	second half	2X2	22.9	1	.001	
Untrained group	first half	5X5	94.96	16	.001	
	second half	5X5	56.48	16	.001	

(R) Training

First Half	trained	2X2	6.10	1	.02	
	untrained	2X2	5.99	1	.02	
Second Half	trained	5X5	57.22	16	.001	
	untrained	5X5	73.3	16	.001	

212-214

(R) Feedback Appropriate vs. Inappropriate Feedback

	<u>Ap.</u>	<u>Inap.</u>	
total $\underline{t}(34) = 2.07, p < .05$	2.83	1.77	
first half $\underline{t}(34) = .09, ns.$	1.46	1.43	
second half $\underline{t}(34) = 2.47, p < .02$	1.34	.40	

First Half vs. Second Half

	<u>First</u>	<u>Second</u>	213-214
Total Inappropriate $\underline{t}(34) = 2.48, p < .01$	1.77	1.43	
negative state. $\rightarrow$ reinf. $\underline{t}(34) = 2.61, p < .01$	.83	.09	
positive state $\rightarrow$ punish. $\underline{t}(34) = 1.31, p < .20$	.60	.20	
Total negative state. $\underline{t}(34) = .40, ns.$	10.11	9.90	

Training vs. No Training

	<u>Tr.</u>	<u>No Tr.</u>	215-216
(2nd co 1st) negative $\rightarrow$ none $F(1,32) = 4.82, p < .04$	9.63	7.53	

Positive/negative statements(Dr) with Test Battery (pre)

$r = .40$ to $-.43$
 $\underline{r} = .40$ to $-.40$ (partial attendance)

215-217

Predicting Attendance

219-221

(R) Test Battery on Attendance Multiple $\underline{R} = .82$ (corrected .79)

(V) Test Battery on Attendance Multiple $\underline{R} = .71$ (corrected .67)

Positive/negative statements (Dr) with Test Battery (Ch) 35 217-219
 $\underline{r} = .41$ to $-.36$
 $\underline{r} = .39$ to $-.41$ (partial attendance)

Seating (R and V, Dr)

Client $F(1,37) = 9.90, p < .003$ 221-225
 Weeks $\overline{F}(7,259) = 3.11, p < .004$
 Group X Weeks $\underline{F}(21,259) = 2.46, p < .001$

Seating Total with positive/negative statements $\underline{r} = .08$ to $.31$ 224,226-230
 Seating mean with positive/negative statements $\underline{r} = .22$ to $.59$

Group Assessment of Interpersonal Traits

Multiple Regression GAIT on Trained-untrained volunteers 230-234
 Volunteer score - self-evaluation $\underline{r} = .31$ to $-.39$
 Multiple $\underline{R} = .66$ (.60 corrected)
 Volunteer score-Resident rated $\underline{r} = .49$ to $-.44$
 Multiple $\underline{R} = .79$ (.76 corrected)

Multiple Regression GAIT on Self-control - Recreation volunteers
 Volunteer score - self-evaluation $\underline{r} = .41$ to $-.57$
 Multiple $\underline{R} = .75$ (.71 corrected)
 Volunteer score-Resident rated $\underline{r} = .25$ to $-.75$
 Multiple $\underline{R} = .93$ (.92 corrected)

(V,R) $\bar{X}$ Volunteer self-rate with $\bar{X}$ Volunteer rating by Residents (Dr) 53 234

	Scale $\underline{r}$	Scale $\underline{r}$	Scale $\underline{r}$
Empathy	$-.21$	Concrete	.06
Open.-disc.	.26	Similar	.06
Open-gen.	.11	Flexible	.01
Warmth	$-.01$	Response	.16
		Tension	.01
		Influence-	.17
		Approach	.27
		Overall	.01

(R) $\bar{X}$	Resident given Rating of Volunteers (Dr) with Resident Test Battery (Pr)	26	234-237
	Discussion groups $\underline{r} = .55$ to $-.50$	25	
	Sc. and Rec. groups $\underline{r} = .54$ to $-.50$	25	
(V) $\bar{X}$	Volunteer Self-rate (Dr) with Volunteer Test Battery (Pr)	45	235-237
	$\underline{r} = .54$ to $-.46$		
(V, R) $\bar{X}$	Volunteer Rating by Residents (Dr) with Volunteer Test Battery (Pr)	45	237-239
	$\underline{r} = .70$ to $-.45$		
(R) $\bar{X}$	Resident Score on Volunteer Self-evaluation		
	Monday with Thursday ratings $\underline{r} = .44$ to $.87$	23	237-238
(R) $\bar{X}$	Resident Score given by Residents		
	Monday with Thursday ratings $\underline{r} = .03$ to $.61$	25	240-241

Appendix H
Additional Analyses

Thurstone's Criteria for Determining
Factor Structure Simplicity

- 1) Each row of the Factor Matrix should have at least one zero

Number of Rows not having at least one zero
(i.e. a Factor-variable correlation $< .10$)

	<u>Residents</u>	<u>Volunteers</u>
Orthogonal	0	1
Oblique	1	5

- 2) If there are 8 (or 9) common factors, each column factor of the Factor Matrix should have 8 (or 9) zeros

Number of Factors with less than 8 (or 9) zeros
(i.e. a correlation $< .10$) .

Orthogonal	1	1
Oblique	5	3

- 3) For every pair of columns in the Factor Matrix there should be several variables whose entries vanish in one column but not the other.

Frequency of correlation pairs when one vanishes and the other does not (i.e. one correlation $< .20$, the other $< .10$ averaged over all column combinations.

Orthogonal	6.79	7.55
Oblique	6.33	5.77

- 4) For every pair of columns of the Factor Matrix, a large proportion of the variables should have vanishing entries in both columns.

Frequency of correlation pairs when both correlations vanish (i.e. both $< .10$) averaged over all column pairs.

Orthogonal	3.57	3.79
Oblique	7.64	7.57

- 5) For every pair of columns of the Factor Matrix there should be only a small number of variables with nonvanishing entries on both columns.

Frequency of Correlation pairs where both correlations are non-vanishing (i.e. both $< .20$) averaged over all column pairs.

Orthogonal	3.64	5.43
Oblique	5.81	7.32

Table 59

Analyses of Simple Effects for all Interactions
Beyond the .10 Level

Experimental Residents

<u>Self-control vs Recreation</u> <u>in Training Condition</u>	<u>in No Training Condition</u>	<u>Training vs No Training</u> <u>in Self-control Condition</u>	<u>in Recreation Condition</u>
Attitude toward the Law and Judicial System (Pt co Pr)			
F (1,24) = .80, ns.	F (1,24) = 1.41, ns.	F (1,24) = .00, ns	F (1,24) = 4.81, $p < .05$
Self-esteem (Pt co Pr)			
F (1,24) = 1.63, ns	F (1,24) = .00, ns.	F (1,24) = 0.0, ns.	F (1,24) = 2.30, ns.
Isolation (Pt co Pr)			
F (1,24) = 1.21, ns.	F (1,24) = .17, ns.	F (1,24) = .98, ns.	F (1,24) = .97, ns.
Anxiety (Pt co Pr)			
F (1,24) = 2.64, ns.	F (1,24) = .05, ns.	F (1,24) = 1.82, ns.	F (1,24) = .31, ns.
Frequency of Charges (Pt co Pr, Time)			
F (1,29) = 2.22, ns.	F (1,29) = 3.43	F (1,29) = 3.17, ns.	F (1,29) = 2.39, ns.
Canteen Balance (Pt co Pr, Time)			
F (1,8) = 34.49, $p < .01$	F (1,8) = .02, ns.	F (1,8) = 47.01, $p < .01$	F (1,8) = .93, ns.

Officer Rating - Behavior Toward Peer (Ch)

$F(1,30) = 2.72, ns$ $F(1,30) = 4.17, p .05$ $F(1,30) = 7.22, p .05$ $F(1,30) = 1.06, ns.$

Officer Rating - Behavior Toward Staff (Ch)

$F(1,30) = 3.99, ns.$ $F(1,30) = 8.28, p .01$ $F(1,30) = 9.07, p .01$ $F(1,30) = 3.49, ns.$

All Subjects

Experimental vs. Control
among Residents among Volunteers

Identification with Criminal Others (Ch)

$F(1,101)=5.24, p .05$ $F(1,101)=2.15, ns.$

Personal Space-Total (Ch)

$F(1,100)=5.22, p .05$ $F(1,100)=.00, ns.$

Experimental Subjects

Groups Effect (1 vs. 2 vs. 3 vs. 4)

for Week 1 $F(3,37) = 1.29, ns.$
for Week 2 $F(3,37) = .61, ns.$
for Week 3 $F(3,37) = 2.29, ns.$
for Week 4 $F(3,37) = .61, ns.$
for Week 5 $F(3,37) = 1.17, ns.$
for Week 6 $F(3,37) = .49, ns.$
for Week 7 $F(3,37) = .43, ns.$
for Week 8 $F(3,37) = .64, ns.$

Residents vs. Volunteers
in Experimental Condition in Control Condition

$F(1,101)=7.82, p .01$ $F(1,101) = 1.93, ns.$

$F(1,100)=1.94, ns.$ $F(1,100) = 1.15, ns.$

Weeks Effect (1 to 8)

for Group 1 $F(7,259) = 1.53, ns.$
for Group 2 $F(7,259) = 6.56, p .01$
for Group 3 $F(7,259) = 1.08, ns.$
for Group 4 $F(7,259) = 2.06, p .05$

Figure 18
Change in Volunteers' Empathy as
a Function of Program for
the First and Second Groups

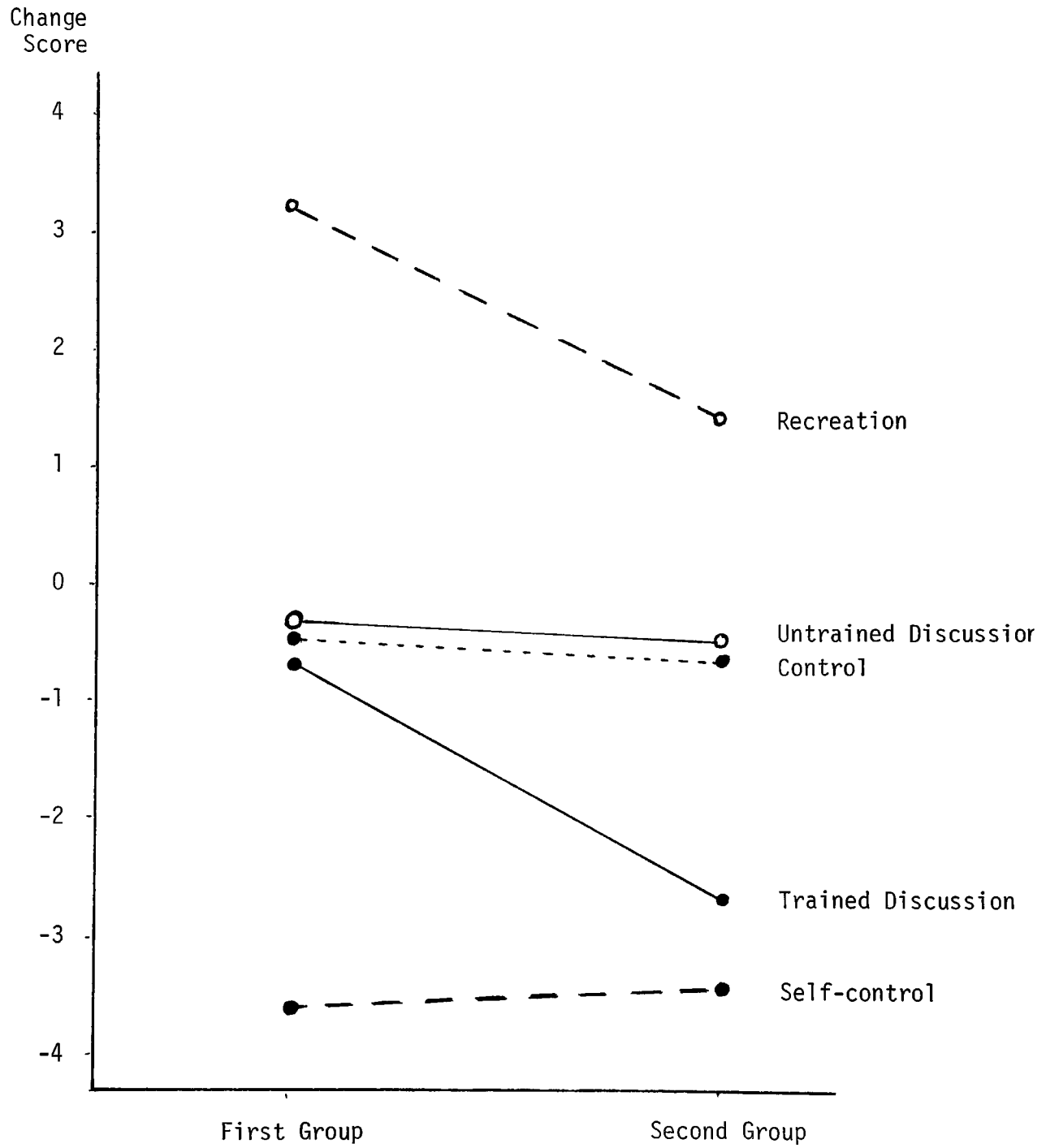


Table 60

An Analysis of Variance of Residents' and Volunteers'
Personal Space-Total Change Scores

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>df</u>	<u>Mean Squares</u>	<u>F</u>	<u>p</u>
Client	1.935	1	1.935	.32	.99
Treatment	14.827	1	14.824	2.45	.12
Client-by-Treatment	16.761	1	16.761	2.77	.10
Within Subjects	604.708	100	6.047		
Total	637.475	103	6.189		

Analyses of Simple Effects

<u>Simple Effect</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Experimental <u>vs.</u> Control Residents	31.583	1	31.583	5.22	.05
Experimental <u>vs.</u> Control Volunteers	.005	1	.005	0.00	ns.
Resident <u>vs.</u> Volunteer Experimentals	11.742	1	11.742	1.94	ns.
Resident <u>vs.</u> Volunteer Controls	6.940	1	6.940	1.15	ns.

Treatment Effect Correlations

Examining point-biserial correlations of residents' change scores on the dichotomous Experimental-Control treatment variable, the following results were obtained. Experimental residents displayed a relative increase in Superego Strength ($r = -.28$, $N = 44$, $p < .07$) and a decrease on Identification with Criminal Others ($r = .28$, $N = 44$, $p < .07$) and Inadequacy ($r = .29$, $N = 44$, $p < .06$). Since there was no difference between experimental and control residents' change score on Positive Malingering ($r = -.08$), partialling this response set variable out of the correlations had virtually no effect on the treatment coefficients ($-.27$, $.28$, and $.28$, respectively).

Experimental volunteers differed from their control counterparts by showing a relative increase on Identification with Criminal Others ($r = -.23$, $N = 61$, $p < .07$), and a decrease on Inadequacy ($r = .23$, $N = 61$, $p < .07$).

Experimental vs. Control Residents on
Test Battery Change Scores

t-tests

<u>Variable</u>	<u>Experimental</u>		<u>Control</u>		<u>t</u>	<u>df</u>	<u>p</u>
	<u>$\bar{X}$</u>	<u>S.D.</u>	<u>$\bar{X}$</u>	<u>S.D.</u>			
Identification Crim.other	-1.67	4.29	.86	3.89	-1.8	42	.067
Inadequacy	- .10	1.86	1.00	1.36	-1.97	42	.055
Superego Strength	1.10	2.75	-.57	2.68	1.89	42	.065

Discriminant Function Analysis

<u>Variable</u>	<u>Standardized Discriminant Function Coefficient</u>	<u>Eigen- Value</u>	<u>Canonical Correl.</u>	<u>Wilks' Lambda</u>	<u>Chi Square</u>	<u>df</u>	<u>p</u>
		1.99	.82	.33	34.99	9	.001
Identification Crim. Other	-.26						
Acceptance of Others	.18						
Inadequacy	-.40						
Ego Strength	-.51						
Personal Space Total	-.73						
Cold Pressor-Words	-.43	Centroids: Exper. (.58), Control (-1.12)					
Porteus Maze-Years	-.40						
Porteus Maze-Qlty.	-.32	Hit Rate (88%): 30 of 35 Experimental Res. 14 of 15 Control Residents					
Choice List	.21						

Experimental vs. Control Residents on Institutional Outcome Behavior

Discriminant Function Analysis

	1.21	.74	.45	9.91	5	.08
Officer Rate-Others	.76					

Variable	Standardized Discriminant Function Coefficient	Eigen-Value	Canonical Correl.	Wilks' Lambda	Chi Square	df	p
Experimental Residents in the Trained <u>vs.</u> Untrained Discussion Group Test Battery Change							
		44836.61	1.00	.00	123.17	23	.001
Attitude Judicial Process	.10						
Identification							
Crim. Others	.51						
Tolerance Law Violation	-.80						
Awareness Limited Opp.	-.42						
Self-esteem	-.31						
Socialization	-.16						
Psychopathy	-.40						
Neuroticism	-.45						
Scholastic Maladjustment	.20						
Positive Malingering	.39						
Superego	-.46						
External Control	.60						
Empathy	.16						
Self-control	-.48						
Anxiety	-.34						
Personal Space-total	-.96						
Personal Space-area	.14						
Cold Pressor-time	-.19						
Cold Pressor-words	.52						
Centroids: Training (-1.02), No Training (.94)							
Hit Rate (83%): 16 of 16 in trained group 13 of 16 in untrained group							
Porteus Maze-Year	-.14						
Porteus Maze-Quality	.14						
Choice List	-.17						
Money Saving Measure	.05						

Experimental Residents in the Trained vs. Untrained Discussion Groups
Institutional Measures

	4697.60	1.00	.00	48.9	9	.001
Instructor - Other	- .36					
Instructor - Peer	- .37					
Letters Sent -Total	.85					
Letters Sent -						
Positive	- .84					
Letters Sent -						
Nonrehab.	- .59					
Letters Rec'd -						
Total	.62					Centroids: Trained(.72),No Training(-1.26)
Letters Rec'd						
Nonrehab.	- .43					Hit Rate(57%): 16 of 16 in trained group 4 of 15 in untrained group
Canteen Balance	.47					
Canteen Spent/Rec'd	.07					

Experimental Residents in the Self-control vs. Recreation Group,
Test Battery Change

	196592.69	1.00	.00	140.17	23	.001
Law & Judicial Process	.60					
Identification Crim.						
Others	.20					
Tolerance Law Viol.	- .03					
Awareness Lim.Opp.	.51					
Self-esteem	- .59					
Alienation	- .95					
Neuroticism	.71					
Scholastic Malad.	.36					
Inadequacy	- .30					
Family Diss.	.12					
Ego Strength	.64					
Superego	- .02					
External	.09					
Empathy	.28					
Self-control	- .39					
Anxiety	.20					
Personal Space -						
Total	.39					
Personal Space-area	- .05					Centroids: Self-control(-.94),Recreation(1.02)
Cold Pressor-Time	- .04					
Porteus Maze-Years	.07					Hit Rate(86%): 18 of 18 in Self-control 12 of 17 in Recreation
Porteus Maze Quality	.04					
Choice List	.25					
Money Saving Measure	.66					

Experimental Residents in Self-control vs. Recreation Groups

		72961.49	1.00	.00	50.39	9	.001
Instructor-Peer	.06						
Officer-Other	.48						
Change-Frequency	.50						
Change-Severity	- .57						
Letters Sent-total	- .06						
Letters Sent-Positive	- .89	Centroids: Self-control(-1.56),Recreation(.58)					
Letters Rec'd-total	- .10						
Canteen Bal.(Pt)	-1.10	Hit Rate(74%): 18 of 18 in Self-control					
Canteen Spent/Rec'd (Pt)	.05					8 of 17 in Recreation	

Experimental Residents vs. Experimental Volunteers
Test Battery Change Scores

		1.80	.60	.36	39.66	15	.001
Inadequacy	- .17						
Identification							
Crim.Others	- .35						
Tolerance Law							
Violation	.22						
Socialization	- .31						
Neuroticism	- .45						
Family Dissention	.19						
Ego Strength	- .22						
Superego Strength	.32						
Empathy	.14						
Self-control	- .20						
Personal Space-total	- .29	Centroids: Residents(.53),Volunteers(-.58)					
Cold Pressor - time	- .15						
Cold Pressor - words	- .23	Hit Rate (94%): 22 of 25 Residents					
Porteus Maze - Quality	- .25					23 of 23 Volunteers	
Choice List	.12						

Table 61

Correlation Matrix between Residents' Change
on the Test Battery and their Attendance
in Assigned Programs

Test Battery Change	Attendance in:			
	Trained Discussion Grp	Untrained Discussion Grp	Self-Control Group	Recreation Group
Attitude toward Law	-12	31	11	08
Iden. Criminal Others	36	54	59	06
Tolerance Law Violation	28	-56	-16	-15
Awareness Lim. Opport.	11	-29	-13	-16
Acceptance Others	20	19	19	-02
Self-esteem	61	02	33	31
Alienation	-35	38	06	03
Socialization	14	-50	01	-21
Psychopathy	12	12	16	34
Neuroticism	11	70	21	45
Scholastic Malad.	-13	42	05	04
Inadequacy	02	-08	-33	15
Family Dissention	-40	45	-15	09
Positive Malinger.	12	-73	-01	-08
Ego Strength	60	-15	20	36
Superego	11	-14	28	-06
External	26	-17	32	09
Empathy	65	45	56	28
Self-Control	50	03	35	07
Anxiety	-26	08	-03	-39
Personal Space-Total	-46	08	-64	-12
Personal Space-Area	-36	07	-54	-17
Cold Pressor-Time	-28	07	12	-19
Cold Pressor-Words	-09	19	11	22
Porteus Maze-Year	-04	08	10	-22
Porteus Maze-Quality	-10	09	-05	35
Choice List	20	-22	18	08
Money Saving Measure	-04	30	15	09
(N)	14*	16 ⁺	15	15

* $r = .53, p < .05$

$r = .66, p < .01$

$r = .78, p < .001$

+ $r = .50, p < .05$

$r = .62, p < .01$

$r = .74, p < .001$

Figure 19
Mean Frequency of Institutional Discipline
Charge for Program Regimes
As a Function of Treatment Phase

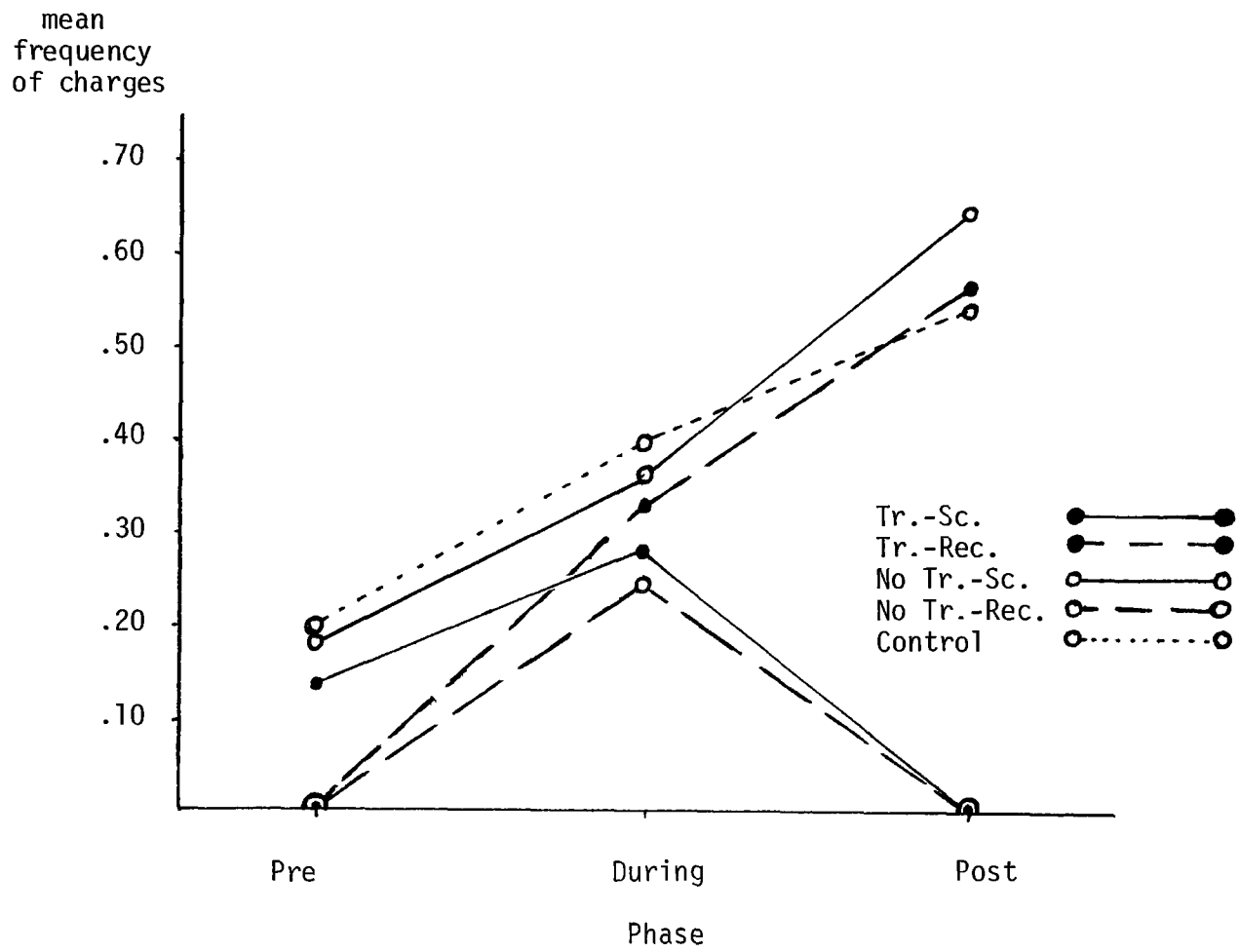


Table 62

A Correlation Matrix of Experimental Volunteers' Mean Self-Rating
with Test Battery Prescores Controlled for
Positive Malingering (N=30)

	<u>Em</u>	<u>Od</u>	<u>Og</u>	<u>W</u>	<u>Con</u>	<u>AS</u>	<u>F1</u>	<u>Rs</u>	<u>Te</u>	<u>In</u>	<u>Ap</u>	<u>OE</u>
Attitude toward Jud. Syst.	-04	15	31	35	-10	04	08	17	-00	12	17	19
Identification Crim. Oth.	13	09	08	26	08	15	10	-03	28	-21	09	06
Tol. Law Violation	07	-29	-53	-46	-19	21	-21	-35	08	-55	-43	-12
Aware Lim. Opportunity	-26	-27	-40	-21	-17	-39	-19	-18	49	-04	-30	-29
Accept. Others	31	39	54	48	31	38	17	14	-14	10	56	18
Self-esteem	53	40	65	41	44	37	10	30	-30	42	41	28
Alienation	-50	-19	-23	-16	-14	-30	07	-22	17	-35	-00	15
Socialization	51	-23	04	23	-05	-02	05	-13	-00	06	45	15
Psychopathy	-40	-08	-21	-38	-13	02	-22	-10	04	-27	-36	03
Neuroticism	-47	-05	-22	-29	-11	-24	00	-03	04	-24	-40	03
Schol. Maladjustment	-33	18	06	04	-08	29	-08	21	-04	-01	-22	21
Inadequacy	-15	-13	-07	02	-35	23	-06	07	-03	04	-46	08
Family Dissention	-20	19	-03	-18	15	-08	-04	07	-04	-11	-39	-18
Ego Strength	05	-06	-11	-07	-12	45	-20	-11	05	18	-36	-13
Superego	41	29	30	38	22	-10	17	17	00	28	41	21
External	15	10	06	33	27	03	34	06	12	-13	59	29
Empathy	48	35	51	50	02	42	34	29	-23	11	52	20
Self-control	17	23	09	12	34	23	04	09	-16	39	22	01
Anxiety	-34	-20	-23	-16	-25	-36	26	-10	07	-51	-04	-12
Personal Space-Total	07	-14	-40	-38	-06	-38	13	-18	02	-47	-14	-16
-Area	-02	00	-29	-33	09	-43	-08	-21	12	-17	-11	-33
Cold Pressor Time	45	-09	-10	22	-06	01	20	-06	06	-22	11	-05
Words	54	18	17	45	-02	63	28	27	-10	-22	10	08
Porteus Maze-Years	14	15	27	18	03	-04	25	11	05	-04	05	06
Quality	-40	-15	01	-09	-37	07	-05	01	-17	05	-05	23
Choice List	08	20	-09	15	-06	20	24	27	08	-13	10	04
Money Saving Measure	24	33	41	44	18	21	18	33	-23	58	42	41

$\bar{r} = .44$; $\bar{p} < .05$; two tailed
 $\bar{r} = .56$; $\bar{p} < .01$

APPENDIX I

SUBJECT ATTRITION

Five residents (10%) were not available for posttesting. One resident from the Trained-Self-control group was transferred to a different institution after attending four and three sessions in the two activities. One resident who was inadvertently admitted to the program (No Training-Recreation) was discharged after two and one sessions. Two residents in the No Training-Self-control group were transferred, one to a half-way house, the other to an institution closer to his home after one and zero, and zero and zero sessions were attended. One Control resident declined to respond to the self-report questionnaires during posttesting.

Two volunteers (3%) were unavailable for posttesting. One volunteer in the recreation program with group 3 became ill after attending three sessions. One control subject could not be scheduled for posttesting.

APPENDIX J

DESCRIPTIVE SUMMARY OF
BEHAVIORAL TESTS, INSTITUTIONAL MEASURES
AND DISCUSSION GROUP OBSERVATIONS

KEY:

VARIABLE

VARIABLE NAME

CODE	FREQ	ADJ. PCT.	CUM. PCT.
(Score, to nearest whole number)	(Number of Scores)	(Percentile, Freq./N)	(Cumulative Percentile)

07/24/76

FILE = SYRESGP - CREATED 12/18/75

PSXT0PR

PERSONAL SPACE - TOTAL (PRE) RESIDENTS

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	6	12	12	7.	1	2	49	13.	1	2	76
1.	2	4	16	7.	1	2	51	13.	1	2	78
1.	1	2	18	8.	1	2	53	14.	2	4	82
2.	1	2	20	9.	1	2	55	15.	1	2	84
3.	1	2	22	9.	1	2	57	15.	1	2	86
3.	1	2	24	9.	1	2	59	15.	2	4	90
4.	2	4	29	10.	1	2	61	16.	1	2	92
4.	1	2	31	11.	1	2	63	17.	1	2	94
5.	1	2	33	11.	1	2	65	18.	1	2	96
6.	3	6	39	11.	1	2	67	18.	1	2	98
6.	1	2	41	12.	1	2	69	21.	1	2	100
7.	3	6	47	12.	2	4	73				

M I S S I N G D A T A

CODE	FREQ	CODE	FREQ	CODE	FREQ
100.	1				

MEAN	=	8.163265	STD ERR	=	.8196653	MEDIAN	=	7.250000
MODE	=	.0000000	STD DEV	=	5.737657	VARIANCE	=	32.92070
KURTOSIS	=	-1.102052	SKEWNESS	=	.1762198	RANGE	=	20.50000
MINIMUM	=	.0000000	MAXIMUM	=	20.50000			

VALID CASES = 49

MISSING CASES = 1

07/24/76

FILE = SYRESGP - CREATED 12/18/75

PSXARPR

PERSONAL SPACE - AREA (PRE) RESIDENTS

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	8	16	16	6.	1	2	47	16.	1	2	73
0.	1	2	18	6.	1	2	49	21.	1	2	76
0.	1	2	20	8.	1	2	51	21.	1	2	78
1.	1	2	22	8.	1	2	53	22.	1	2	80
1.	1	2	24	9.	1	2	55	23.	1	2	82
2.	1	2	27	9.	1	2	57	24.	1	2	84
2.	1	2	29	10.	1	2	59	26.	1	2	86
2.	1	2	31	12.	1	2	61	29.	2	4	90
3.	1	2	33	12.	1	2	63	32.	1	2	92
4.	2	4	37	14.	1	2	65	34.	1	2	94
5.	1	2	39	15.	1	2	67	38.	1	2	96
6.	1	2	41	16.	1	2	69	39.	1	2	98
6.	2	4	45	16.	1	2	71	53.	1	2	100

MISSING DATA

CODE	FREQ	CODE	FREQ	CODE	FREQ
100.	1				

MEAN	=	11.99121	STD ERR	=	1.820209	MEDIAN	=	7.970000
MODE	=	.0000000	STD DEV	=	12.74146	VARIANCE	=	162.3448
KURTOSIS	=	.6134160	SKEWNESS	=	1.133444	RANGE	=	52.53000
MINIMUM	=	.0000000	MAXIMUM	=	52.53000			

VALID CASES = 49

MISSING CASES = 1

CPTMPR — COLD PRESSOR - TIME (PRE) RESIDENTS

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
15.	1	2	2	41.	1	2	34	85.	1	2	62
21.	1	2	4	44.	1	2	36	92.	1	2	64
22.	2	4	8	45.	1	2	38	99.	1	2	66
23.	1	2	10	52.	2	4	42	105.	1	2	68
25.	1	2	12	55.	1	2	44	151.	1	2	70
29.	1	2	14	57.	1	2	46	195.	1	2	72
31.	1	2	16	62.	1	2	48	203.	1	2	74
32.	2	4	20	65.	1	2	50	226.	1	2	76
33.	1	2	22	67.	1	2	52	268.	1	2	78
36.	1	2	24	68.	1	2	54	299.	1	2	80
37.	1	2	26	70.	1	2	56	346.	1	2	82
38.	2	4	30	71.	1	2	58	360.	9	18	100
39.	1	2	32	73.	1	2	60				

MEAN = 132.0800 STD ERR = 18.39795 MEDIAN = 65.50000
 MODE = 360.0000 STD DEV = 130.0932 VARIANCE = 16924.24
 KURTOSIS = -.9120470 SKEWNESS = .9208034 RANGE = 345.0000
 MINIMUM = 15.00000 MAXIMUM = 360.0000

VALID CASES = 50

MISSING CASES = 0

07/24/76

FILE = SYRESGP - CREATED 12/18/75

CPWRPR — COLD PRESSOR - WORDS (PRE) RESIDENTS

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	19	38	38	9.	3	6	68	25.	1	2	84
1.	1	2	40	10.	1	2	70	26.	1	2	86
2.	2	4	44	13.	1	2	72	47.	1	2	88
3.	1	2	46	14.	1	2	74	49.	1	2	90
5.	2	4	50	15.	1	2	76	51.	1	2	92
6.	2	4	54	16.	1	2	78	54.	1	2	94
7.	2	4	58	18.	1	2	80	101.	2	4	98
8.	2	4	62	20.	1	2	82	122.	1	2	100

MEAN = 15.38000 STD ERR = 3.894831 MEDIAN = 5.500000
 MODE = .0000000 STD DEV = 27.54062 VARIANCE = 758.4854
 KURTOSIS = 5.485850 SKEWNESS = 2.447561 RANGE = 122.0000
 MINIMUM = .0000000 MAXIMUM = 122.0000

VALID CASES = 50

MISSING CASES = 0

07/24/76

FILE = SYRESGP - CREATED 12/18/75

PMYRPR

PORTEUS MAZE - YEARS (PRE) RESIDENTS

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
10.	1	2	2	14.	5	10	28	16.	4	8	88
12.	2	4	6	14.	7	14	42	17.	4	8	96
12.	1	2	8	15.	4	8	50	17.	2	4	100
13.	4	8	16	15.	7	14	64				
13.	1	2	18	16.	8	16	80				

MEAN	=	14.49000	STD ERR	=	.2182912	MEDIAN	=	14.75000
MODE	=	15.50000	STD DEV	=	1.543551	VARIANCE	=	2.382551
KURTOSIS	=	.1303751E+02	SKEWNESS	=	-.6138396	RANGE	=	7.000000
MINIMUM	=	10.00000	MAXIMUM	=	17.00000			

VALID CASES = 50

MISSING CASES = 0

07/24/76

FILE = SYRESGP - CREATED 12/18/75

PMQLPR

PORTEUS MAZE - QUALITY (PRE) RESIDENTS

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
12.	1	2	2	29.	1	2	32	46.	3	6	72
14.	1	2	4	31.	1	2	34	53.	3	6	78
16.	1	2	6	32.	2	4	38	57.	1	2	80
17.	1	2	8	34.	3	6	44	60.	1	2	82
20.	2	4	12	35.	3	6	50	62.	1	2	84
21.	1	2	14	36.	1	2	52	64.	1	2	86
22.	1	2	16	37.	1	2	54	65.	2	4	90
24.	2	4	20	38.	2	4	58	78.	1	2	92
25.	1	2	22	40.	2	4	62	80.	1	2	94
26.	1	2	24	42.	1	2	64	89.	2	4	98
27.	3	6	30	44.	1	2	66	93.	1	2	100

MEAN	=	41.34000	STD ERR	=	2.873896	MEDIAN	=	35.50000
MODE	=	27.00000	STD DEV	=	20.32150	VARIANCE	=	412.9636
KURTOSIS	=	.5858647E+01	SKEWNESS	=	.9013330	RANGE	=	81.00000
MINIMUM	=	12.00000	MAXIMUM	=	93.00000			

VALID CASES = 50

MISSING CASES = 0

07/24/76

FILE = SYRESGP³⁷⁸ = CREATED 12/18/75

CLXPR

MEAN CHOICE LIST (PRE) RESIDENTS

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	5	10	10	5.	1	2	35	10.	2	4	56
1.	4	8	19	5.	1	2	38	11.	4	8	65
2.	1	2	21	6.	1	2	40	12.	2	4	69
2.	1	2	23	6.	1	2	42	13.	1	2	71
3.	3	6	29	8.	3	6	48	13.	5	10	81
4.	1	2	31	9.	1	2	50	14.	3	6	88
4.	1	2	33	10.	1	2	52	14.	6	13	100

MISSING DATA

CODE	FREQ	CODE	FREQ	CODE	FREQ
100.	2				

MEAN = 7.791666 STD ERR = .7538074 MEDIAN = 8.750000
 MODE = 14.00000 STD DEV = 5.222530 VARIANCE = 27.27483
 KURTOSIS = -1.596314 SKEWNESS = -.2343568 RANGE = 14.00000
 MINIMUM = .0000000 MAXIMUM = 14.00000

VALID CASES = 48

MISSING CASES = 2

MSMPR

MONEY SAVING MEASURE (PRE) RESIDENTS

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
3.	1	2	2	8.	3	6	19	12.	2	4	45
5.	1	2	4	9.	6	13	32	13.	2	4	49
6.	2	4	9	10.	2	4	36	14.	1	2	51
7.	2	4	13	11.	2	4	40	15.	23	49	100

MISSING DATA

CODE	FREQ	CODE	FREQ	CODE	FREQ
99.	3				

MEAN = 11.97872 STD ERR = .5165973 MEDIAN = 14.00000
 MODE = 15.00000 STD DEV = 3.541612 VARIANCE = 12.54302
 KURTOSIS = .8568416 SKEWNESS = -.6984048 RANGE = 12.00000
 MINIMUM = 3.000000 MAXIMUM = 15.00000

VALID CASES = 47

MISSING CASES = 3

INOTPR INSTRUCTOR RATINC BEHAVIOR TOWARD OTHERS (PRE) RESIDENTS

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
40.	1	2	2	59.	5	13	38	69.	1	2	82
43.	1	2	5	60.	2	5	42	70.	1	2	85
46.	1	2	7	61.	3	7	50	71.	1	2	88
49.	2	5	13	63.	3	7	57	73.	2	5	92
50.	1	2	15	64.	2	5	63	74.	1	2	95
51.	1	2	17	65.	1	2	65	75.	1	2	97
56.	1	2	20	66.	3	7	72	82.	1	2	100
57.	1	2	22	67.	2	5	77				
58.	1	2	25	68.	1	2	80				

MISSING DATA

CODE	FREQ	CODE	FREQ	CODE	FREQ
99.	10				

MEAN = 61.64999 STD ERR = 1.417632 MEDIAN = 61.50000
 MODE = 59.00000 STD DEV = 8.965890 VARIANCE = 80.38718
 KURTOSIS = -.4134093E-01 SKEWNESS = -.3276611 RANGE = 42.00000
 MINIMUM = 40.00000 MAXIMUM = 82.00000

VALID CASES = 40

MISSING CASES = 10

INPEPR INSTRUCTOR RATINGS - BEHAVIOR TOWARD PEERS (PRE) RESIDENTS

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
39.	1	2	2	49.	2	5	42	56.	2	5	77
40.	1	2	5	50.	2	5	47	57.	6	15	92
43.	1	2	7	51.	3	7	55	59.	1	2	95
45.	4	10	17	53.	1	2	57	60.	2	5	100
47.	2	5	22	54.	4	10	67				
48.	6	15	38	55.	2	5	72				

MISSING DATA

CODE	FREQ	CODE	FREQ	CODE	FREQ
99.	10				

MEAN = 51.17499 STD ERR = .8517610 MEDIAN = 50.83333
 MODE = 48.00000 STD DEV = 5.387010 VARIANCE = 29.01987
 KURTOSIS = -.8127162 SKEWNESS = -.2522471 RANGE = 21.00000
 MINIMUM = 39.00000 MAXIMUM = 60.00000

VALID CASES = 40

MISSING CASES = 10

INSTPR

INSTRUCTOR RATINGS - BEHAVIOR TOWARD STAFF (PRE) RESIDENTS

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
34.	1	2	2	54.	2	5	32	65.	1	2	77
39.	1	2	5	55.	2	5	38	66.	2	5	82
41.	2	5	10	56.	1	2	40	67.	2	5	88
43.	1	2	13	57.	3	7	47	68.	1	2	90
44.	1	2	15	59.	2	5	52	72.	1	2	92
45.	1	2	17	60.	5	13	65	73.	1	2	95
51.	1	2	20	61.	1	2	67	74.	1	2	97
52.	1	2	22	62.	1	2	70	76.	1	2	100
53.	2	5	27	63.	2	5	75				

MISSING DATA

CODE	FREQ	CODE	FREQ	CODE	FREQ
99.	10				

MEAN = 57.54999 STD ERR = 1.566046 MEDIAN = 59.00000
 MODE = 60.00000 STD DEV = 9.904545 VARIANCE = 98.10001
 KURTOSIS = -.3587326 SKEWNESS = -.3705928 RANGE = 42.00000
 MINIMUM = 34.00000 MAXIMUM = 76.00000

VALID CASES = 40

MISSING CASES = 10

XCOTPR

OFFICER RATINGS - BEHAVIOR TOWARD OTHERS (PRE) RESIDENTS

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
42.	1	2	2	54.	1	2	31	62.	3	6	67
43.	1	2	4	54.	1	2	33	63.	1	2	69
47.	2	4	8	55.	1	2	35	63.	1	2	71
48.	1	2	10	56.	1	2	37	64.	2	4	76
49.	1	2	12	56.	1	2	39	65.	1	2	78
50.	1	2	14	57.	1	2	41	65.	2	4	82
50.	2	4	18	57.	1	2	43	66.	6	12	94
51.	1	2	20	59.	3	6	49	68.	1	2	96
52.	1	2	22	59.	2	4	53	69.	1	2	98
53.	2	4	27	60.	2	4	57	77.	1	2	100
53.	1	2	29	62.	2	4	61				

MISSING DATA

CODE	FREQ	CODE	FREQ	CODE	FREQ
100.	1				

MEAN = 58.15306 STD ERR = 1.051926 MEDIAN = 58.87500
 MODE = 65.50000 STD DEV = 7.363482 VARIANCE = 54.22087
 KURTOSIS = -.4851899 SKEWNESS = -.1667327 RANGE = 34.50000
 MINIMUM = 42.00000 MAXIMUM = 76.50000

VALID CASES = 49

MISSING CASES = 1

C0DE	FREQ	ADJ PCT	CUM PCT	C0DE	FREQ	ADJ PCT	CUM PCT	C0DE	FREQ	ADJ PCT	CUM PCT
35.	1	2	2	50.	3	6	31	60.	3	6	71
36.	1	2	4	51.	1	2	33	61.	2	4	76
38.	1	2	6	52.	2	4	37	61.	2	4	80
40.	1	2	8	54.	2	4	41	62.	3	6	86
43.	1	2	10	55.	1	2	43	62.	1	2	88
44.	1	2	12	55.	1	2	45	63.	1	2	90
45.	1	2	14	56.	1	2	47	64.	1	2	92
45.	1	2	16	57.	3	6	53	65.	1	2	94
47.	1	2	18	58.	1	2	55	66.	1	2	96
47.	1	2	20	58.	2	4	59	67.	1	2	98
48.	1	2	22	59.	1	2	61	73.	1	2	100
49.	1	2	24	59.	2	4	65				

M I S S I N G D A T A

C0DE	FREQ	C0DE	FREQ	C0DE	FREQ
100.	1				

MEAN = 54.54080 STD ERR = 1.207688 MEDIAN = 57.00000
 MODE = 49.50000 STD DEV = 8.453818 VARIANCE = 71.46706
 KURTOSIS = -.3132868 SKEWNESS = -.5334159 RANGE = 38.00000
 MINIMUM = 34.50000 MAXIMUM = 72.50000

VALID CASES = 49

MISSING CASES = 1

C0DE	FREQ	ADJ PCT	CUM PCT	C0DE	FREQ	ADJ PCT	CUM PCT	C0DE	FREQ	ADJ PCT	CUM PCT
42.	1	2	2	48.	3	6	35	54.	2	4	73
42.	1	2	4	49.	2	4	39	54.	2	4	78
43.	1	2	6	50.	2	4	43	55.	1	2	80
44.	1	2	8	50.	1	2	45	55.	4	8	88
45.	1	2	10	51.	4	8	53	56.	1	2	90
46.	1	2	12	51.	1	2	55	57.	1	2	92
47.	3	6	18	52.	3	6	61	58.	2	4	96
47.	1	2	20	53.	3	6	67	59.	1	2	98
48.	4	8	29	53.	1	2	69	60.	1	2	100

M I S S I N G D A T A

C0DE	FREQ	C0DE	FREQ	C0DE	FREQ
100.	1				

MEAN = 50.68367 STD ERR = .6282558 MEDIAN = 50.56250
 MODE = 47.50000 STD DEV = 4.397791 VARIANCE = 19.34056
 KURTOSIS = -.6358680 SKEWNESS = .1899788E-02 RANGE = 18.50000
 MINIMUM = 41.50000 MAXIMUM = 60.00000

VALID CASES = 49

MISSING CASES = 1

07/24/76

FILE = SYRESGP - CREATED 12/18/75

CHFRPR

DISCIPLINARY REPORTS (CHARGES) FREQUENCY (PRE)

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	45	90	90	1.	4	8	98	2.	1	2	100

MEAN	=	.1199999	STD ERR	=	.5451081E-01	MEDIAN	=	.5555558E-01
MODE	=	.0000000	STD DEV	=	.3854496	VARIANCE	=	.1485714
KURTOSIS	=	10.50046	SKEWNESS	=	3.245440	RANGE	=	2.000000
MINIMUM	=	.0000000	MAXIMUM	=	2.000000			

VALID CASES = 50

MISSING CASES = 0

07/24/76

FILE = SYRESGP - CREATED 12/18/75

CHSVPR

DISCIPLINARY REPORTS (CHARGES) SEVERITY (PRE)

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	45	90	90	2.	1	2	96	10.	1	2	100
1.	2	4	94	8.	1	2	98				

MEAN	=	.4400000	STD ERR	=	.2558060	MEDIAN	=	.5555558E-01
MODE	=	.0000000	STD DEV	=	1.808822	VARIANCE	=	3.271836
KURTOSIS	=	18.72298	SKEWNESS	=	4.413927	RANGE	=	10.00000
MINIMUM	=	.0000000	MAXIMUM	=	10.00000			

VALID CASES = 50

MISSING CASES = 0

LSTP

LETTERS SENT - TOTAL PAGES (DUR)

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	21	42	42	7.	1	2	76	13.	1	2	92
1.	5	10	52	8.	2	4	80	16.	1	2	94
2.	3	6	58	9.	1	2	82	23.	1	2	96
3.	5	10	68	10.	2	4	86	26.	1	2	98
4.	2	4	72	11.	1	2	88	57.	1	2	100
5.	1	2	74	12.	1	2	90				

MEAN	=	4.980000	STD ERR	=	1.352395	MEDIAN	=	1.299999
MODE	=	.0000000	STD DEV	=	9.562875	VARIANCE	=	91.44858
KURTOSIS	=	15.32479	SKEWNESS	=	3.560386	RANGE	=	57.00000
MINIMUM	=	.0000000	MAXIMUM	=	57.00000			

VALID CASES = 50

MISSING CASES = 0

LSNTPS

LETTERS SENT - TOTAL PLANS (DUR)

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	31	62	62	2.	2	4	92				
1.	13	26	88	3.	4	8	100				

MEAN	=	.5800000	STD ERR	=	.1280625	MEDIAN	=	.3064516
MODE	=	.0000000	STD DEV	=	.9055385	VARIANCE	=	.8200000
KURTOSIS	=	1.438848	SKEWNESS	=	1.544188	RANGE	=	3.000000
MINIMUM	=	.0000000	MAXIMUM	=	3.000000			

VALID CASES = 50

MISSING CASES = 0

LSCNR

LETTERS SENT - CONTENT NON REHABILITATIVE (DUR)

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	41	82	82	2.	3	6	98				
1.	5	10	92	4.	1	2	100				

MEAN	=	.3000000	STD ERR	=	.1078548	MEDIAN	=	.1097561
MODE	=	.0000000	STD DEV	=	.7626485	VARIANCE	=	.5816327
KURTOSIS	=	9.651918	SKEWNESS	=	2.975780	RANGE	=	4.000000
MINIMUM	=	.0000000	MAXIMUM	=	4.000000			

VALID CASES = 50

MISSING CASES = 0

LSNN

LETTERS SENT

NATURE NONE (DUR)

CODE	FREQ	PCT	ADJ CUM PCT
0.	27	54	54
1.	9	18	72
2.	3	6	78
3.	1	2	80

CODE	FREQ	PCT	ADJ CUM PCT
5.	2	4	84
6.	1	2	86
7.	2	4	90
9.	1	2	92

CODE	FREQ	PCT	ADJ CUM PCT
10.	1	2	94
13.	1	2	96
14.	1	2	98
22.	1	2	100

MEAN = 2.320000

STD ERR = .6308013

MEDIAN = .4259260

MODE = .0000000

STD DEV = 4.460439

VARIANCE = 19.89551

KURTOSIS = 6.557117

SKEWNESS = 2.506229

RANGE = 22.00000

MINIMUM = .0000000

MAXIMUM = 22.00000

VALID CASES = 50

MISSING CASES = 0

LRIN

LETTERS RECEIVED - TOTAL NUMBER (DUR)

CODE	FREQ	PCT	ADJ CUM PCT
0.	12	24	24
1.	11	22	46
2.	6	12	58
3.	3	6	64

CODE	FREQ	PCT	ADJ CUM PCT
4.	4	8	72
5.	3	6	78
6.	6	12	90
7.	2	4	94

CODE	FREQ	PCT	ADJ CUM PCT
9.	1	2	96
11.	1	2	98
15.	1	2	100

MEAN = 2.959999

STD ERR = .4535214

MEDIAN = 1.833333

MODE = .0000000

STD DEV = 3.206881

VARIANCE = 10.28408

KURTOSIS = 2.429873

SKEWNESS = 1.465426

RANGE = 15.00000

MINIMUM = .0000000

MAXIMUM = 15.00000

VALID CASES = 50

MISSING CASES = 0

LRTP

LETTERS RECEIVED - TOTAL PAGES (DUR)

CODE	FREQ	PCT	ADJ CUM PCT
0.	12	24	24
1.	4	8	32
2.	7	14	46
3.	2	4	50
4.	5	10	60
5.	1	2	62

CODE	FREQ	PCT	ADJ CUM PCT
6.	1	2	64
7.	2	4	68
9.	3	6	74
11.	1	2	76
12.	3	6	82
13.	2	4	86

CODE	FREQ	PCT	ADJ CUM PCT
15.	1	2	88
16.	1	2	90
20.	2	4	94
27.	1	2	96
31.	1	2	98
35.	1	2	100

MEAN = 6.660000

STD ERR = 1.178242

MEDIAN = 3.500000

MODE = .0000000

STD DEV = 8.331426

VARIANCE = 69.41266

KURTOSIS = 2.316317

SKEWNESS = 1.647923

RANGE = 35.00000

MINIMUM = .0000000

MAXIMUM = 35.00000

VALID CASES = 50

MISSING CASES = 0

L R N T P S

LETTERS RECEIVED - TOTAL PLANS (DUR)

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	29	58	58	3.	2	4	94	7.	1	2	100
1.	12	24	82	4.	1	2	96				
2.	4	8	90	5.	1	2	98				

MEAN = .8400000 STD ERR = .2027565 MEDIAN = .3620690
 MODE = .0000000 STD DEV = 1.433705 VARIANCE = 2.055511
 KURTOSIS = 6.014125 SKEWNESS = 2.351890 RANGE = 7.000000
 MINIMUM = .0000000 MAXIMUM = 7.000000

VALID CASES = 50

MISSING CASES = 0

L R C N R

LETTERS RECEIVED - CONTENT NON REHABILITATIVE

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	46	92	92	1.	3	6	98	2.	1	2	100

MEAN = .9999996E-01 STD ERR = .5150788E-01 MEDIAN = .4347831E-01
 MODE = .0000000 STD DEV = .3642157 VARIANCE = .1326531
 KURTOSIS = 14.05420 SKEWNESS = 3.725603 RANGE = 2.000000
 MINIMUM = .0000000 MAXIMUM = 2.000000

VALID CASES = 50

MISSING CASES = 0

C N X R P R

CANTEEN RECEIVED (PR)

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
1.	1	2	2	2.	1	2	34	3.	1	2	60
2.	9	19	21	2.	6	13	47	3.	18	38	98
2.	1	2	23	3.	3	6	53	4.	1	2	100
2.	4	9	32	3.	2	4	57				

M I S S I N G D A T A

CODE	FREQ	CODE	FREQ	CODE	FREQ
100.	3				

MEAN = 2.485955 STD ERR = .8873075E-01 MEDIAN = 2.530000
 MODE = 3.050000 STD DEV = .6083074 VARIANCE = .3700379
 KURTOSIS = -1.148829 SKEWNESS = -.2147926 RANGE = 2.550000
 MINIMUM = 1.250000 MAXIMUM = 3.800000

VALID CASES = 47

MISSING CASES = 3

07/24/76

FILE = SYRESGP - CREATED 12/18/75

CNXSPR

CANTEEN SPENT (PR)

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	2	4	4	2.	1	2	40	3.	1	2	72
1.	1	2	6	2.	1	2	43	3.	1	2	74
1.	1	2	9	2.	1	2	45	3.	1	2	77
1.	1	2	11	2.	1	2	47	3.	1	2	79
1.	1	2	13	2.	1	2	49	3.	1	2	81
1.	1	2	15	2.	1	2	51	3.	1	2	83
2.	1	2	17	2.	1	2	53	3.	1	2	85
2.	1	2	19	2.	1	2	55	3.	1	2	87
2.	2	4	23	2.	1	2	57	3.	1	2	89
2.	1	2	26	2.	1	2	60	3.	1	2	91
2.	2	4	30	2.	1	2	62	4.	1	2	94
2.	1	2	32	2.	1	2	64	4.	1	2	96
2.	1	2	34	2.	1	2	66	4.	1	2	98
2.	1	2	36	2.	1	2	68	5.	1	2	100
2.	1	2	38	2.	1	2	70				

M I S S I N G D A T A

CODE	FREQ	CODE	FREQ	CODE	FREQ
100.	3				
MEAN	= 2.161058	STD ERR	= .1393036	MEDIAN	= 2.070000
MODE	= .0000000	STD DEV	= .9550170	VARIANCE	= .9120575
KURTOSIS	= .7947764	SKEWNESS	= .3665950	RANGE	= 4.830000
MINIMUM	= .0000000	MAXIMUM	= 4.830000		
VALID CASES	= 47	MISSING CASES	= 3		

07/24/76

FILE = SYRESGP - CREATED 12/18/75

CNXBPR

CANTEEN BALANCE (PRE)

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	3	6	6	0.	1	2	45	2.	1	2	74
0.	2	4	11	0.	1	2	47	2.	2	4	79
0.	1	2	13	0.	1	2	49	2.	1	2	81
0.	1	2	15	0.	1	2	51	3.	1	2	83
0.	2	4	19	1.	1	2	53	3.	1	2	85
0.	3	6	26	1.	1	2	55	3.	1	2	87
0.	1	2	28	1.	1	2	57	4.	1	2	89
0.	2	4	32	1.	1	2	60	5.	1	2	91
0.	1	2	34	1.	1	2	62	5.	1	2	94
0.	1	2	36	1.	1	2	64	11.	1	2	96
0.	1	2	38	1.	1	2	66	26.	1	2	98
0.	1	2	40	1.	2	4	70	35.	1	2	100
0.	1	2	43	1.	1	2	72				

M I S S I N G D A T A

CODE	FREQ	CODE	FREQ	CODE	FREQ
100.	3				

MEAN	=	2.452977	STD ERR	=	.9293517	MEDIAN	=	.3100000
MODE	=	.0000000	STD DEV	=	6.371313	VARIANCE	=	40.59363
KURTOSIS	=	15.68253	SKEWNESS	=	3.952223	RANGE	=	35.16000
MINIMUM	=	.0000000	MAXIMUM	=	35.16000			

VALID CASES = 47

MISSING CASES = 3

07/24/76

FILE = SYRESGP * CREATED 12/18/75

CNSRPR

CANTEEN SPENT:RECEIVED RATIO (PRE)

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	2	4	4	1.	1	2	32	1.	3	6	74
0.	1	2	6	1.	1	2	34	1.	1	2	77
0.	1	2	9	1.	1	2	36	1.	2	4	81
0.	1	2	11	1.	1	2	38	1.	2	4	85
0.	1	2	13	1.	2	4	43	1.	1	2	87
0.	1	2	15	1.	1	2	45	1.	1	2	89
1.	2	4	19	1.	1	2	47	1.	1	2	91
1.	1	2	21	1.	2	4	51	1.	1	2	94
1.	1	2	23	1.	1	2	53	1.	1	2	96
1.	1	2	26	1.	2	4	57	1.	1	2	98
1.	1	2	28	1.	4	9	66	2.	1	2	100
1.	1	2	30	1.	1	2	68				

M I S S I N G D A T A

CODE	FREQ	CODE	FREQ	CODE	FREQ
10.	3				

MEAN	=	.8614866	STD ERR	=	.4708622E-01	MEDIAN	=	.9524998
MODE	=	.9900000	STD DEV	=	.3228068	VARIANCE	=	.1042042
KURTOSIS	=	.6090831	SKEWNESS	=	-.6334302	RANGE	=	1.580000
MINIMUM	=	.0000000	MAXIMUM	=	1.580000			

VALID CASES = 47

MISSING CASES = 3

SEATING SCORE - TOTAL

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	4	11	11	5.	3	9	54	9.	2	6	83
1.	6	17	29	6.	3	9	63	10.	2	6	89
3.	1	3	31	7.	1	3	66	11.	2	6	94
4.	5	14	46	8.	4	11	77	12.	2	6	100

MEAN = 5.285714 STD ERR = .6463491 MEDIAN = 5.000000
 MODE = 1.000000 STD DEV = 3.823853 VARIANCE = 14.62185
 KURTOSIS = -1.265439 SKEWNESS = .1487350 RANGE = 12.00000
 MINIMUM = .0000000 MAXIMUM = 12.00000

VALID CASES = 35

MISSING CASES = 0

XSET

MEAN SEATING SCORE

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	4	11	11	1.	2	6	49	2.	3	9	89
0.	1	3	14	1.	2	6	54	2.	1	3	91
1.	1	3	17	1.	3	9	63	2.	2	6	97
1.	1	3	20	1.	2	6	69	2.	1	3	100
1.	1	3	23	1.	3	9	77				
1.	7	20	43	1.	1	3	80				

MEAN = 1.053141 STD ERR = .8409655E-01 MEDIAN = 1.137500
 MODE = 1.000000 STD DEV = .4975219 VARIANCE = .2475281
 KURTOSIS = .8218461E-01 SKEWNESS = -.7898107 RANGE = 2.000000
 MINIMUM = .0000000 MAXIMUM = 2.000000

VALID CASES = 35

MISSING CASES = 0

TPP

POSITIVE STATEMENT - POSITIVE FEEDBACK

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	24	69	69	2.	1	3	89	5.	1	3	94
1.	6	17	86	3.	1	3	91	7.	2	6	100

MEAN = .8571428 STD ERR = .3126006 MEDIAN = .2291667
 MODE = .0000000 STD DEV = 1.849370 VARIANCE = 3.420168
 KURTOSIS = 4.762651 SKEWNESS = 2.398310 RANGE = 7.000000
 MINIMUM = .0000000 MAXIMUM = 7.000000

VALID CASES = 35

MISSING CASES = 0

TNN

NEGATIVE STATEMENT - NEGATIVE FEEDBACK

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	20	57	57	3.	3	9	86	11.	2	6	97
1.	5	14	71	6.	1	3	89	15.	1	3	100
2.	2	6	77	7.	1	3	91				

MEAN = 1.942857 STD ERR = .6216580 MEDIAN = .3750000
 MODE = .0000000 STD DEV = 3.677778 VARIANCE = 13.52605
 KURTOSIS = 3.831164 SKEWNESS = 2.160035 RANGE = 15.00000
 MINIMUM = .0000000 MAXIMUM = 15.00000

VALID CASES = 35

MISSING CASES = 0

TPN

POSITIVE STATEMENT - NEGATIVE FEEDBACK

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	23	66	66	2.	6	17	89	7.	1	3	100
1.	2	6	71	3.	3	9	97				

MEAN = .8571428 STD ERR = .2531909 MEDIAN = .2608696
 MODE = .0000000 STD DEV = 1.497898 VARIANCE = 2.243697
 KURTOSIS = 5.568931 SKEWNESS = 2.174599 RANGE = 7.000000
 MINIMUM = .0000000 MAXIMUM = 7.000000

VALID CASES = 35

MISSING CASES = 0

TNP

NEGATIVE STATEMENT - POSITIVE FEEDBACK

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	22	63	63	2.	5	14	91	11.	1	3	100
1.	5	14	77	3.	2	6	97				

MEAN = .9142857 STD ERR = .3364956 MEDIAN = .2954546
 MODE = .0000000 STD DEV = 1.990735 VARIANCE = 3.963025
 KURTOSIS = 15.93316 SKEWNESS = 3.743464 RANGE = 11.00000
 MINIMUM = .0000000 MAXIMUM = 11.00000

VALID CASES = 35

MISSING CASES = 0

TP0

POSITIVE STATEMENT - NO FEEDBACK

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	10	29	29	9.	1	3	71	25.	1	3	91
1.	2	6	34	14.	1	3	74	30.	1	3	94
2.	4	11	46	18.	1	3	77	46.	1	3	97
3.	2	6	51	20.	2	6	83	49.	1	3	100
5.	3	9	60	21.	1	3	86				
8.	3	9	69	22.	1	3	89				

MEAN = 9.400000
MODE = .0000000
KURTOSIS = 1.958603
MINIMUM = .0000000

STD ERR = 2.165117
STD DEV = 12.80900
SKEWNESS = 1.610239
MAXIMUM = 49.00000

MEDIAN = 3.250000
VARIANCE = 164.0706
RANGE = 49.00000

VALID CASES = 35

MISSING CASES = 0

TN0

NEGATIVE STATEMENT - NO FEEDBACK

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	6	17	17	12.	1	3	63	30.	1	3	86
1.	5	14	31	13.	1	3	66	38.	1	3	89
2.	4	11	43	14.	1	3	69	41.	1	3	91
3.	1	3	46	17.	1	3	71	78.	1	3	94
7.	2	6	51	18.	1	3	74	91.	1	3	97
8.	1	3	54	19.	1	3	77	106.	1	3	100
9.	1	3	57	25.	1	3	80				
11.	1	3	60	28.	1	3	83				

MEAN = 16.79999
MODE = .0000000
KURTOSIS = 3.803847
MINIMUM = .0000000

STD ERR = 4.399542
STD DEV = 26.02805
SKEWNESS = 2.119823
MAXIMUM = 106.0000

MEDIAN = 7.250000
VARIANCE = 677.4587
RANGE = 106.0000

VALID CASES = 35

MISSING CASES = 0

TOTAL APPROPRIATE FEEDBACK

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	19	54	54	5.	1	3	83	18.	1	3	97
1.	2	6	60	7.	2	6	89	21.	1	3	100
2.	4	11	71	8.	1	3	91				
3.	3	9	80	14.	1	3	94				

MEAN	=	2.828571	STD ERR	=	.8759012	MEDIAN	=	.4210526
MODE	=	.0000000	STD DEV	=	5.181901	VARIANCE	=	26.85210
KURTOSIS	=	4.139361	SKEWNESS	=	2.204424	RANGE	=	21.00000
MINIMUM	=	.0000000	MAXIMUM	=	21.00000			

VALID CASES = 35

MISSING CASES = 0

TIN

TOTAL INAPPROPRIATE FEEDBACK

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	18	51	51	3.	4	11	86	9.	1	3	97
1.	2	6	57	4.	2	6	91	14.	1	3	100
2.	6	17	74	5.	1	3	94				

MEAN	=	1.771428	STD ERR	=	.4903878	MEDIAN	=	.4722222
MODE	=	.0000000	STD DEV	=	2.901174	VARIANCE	=	8.416807
KURTOSIS	=	7.258943	SKEWNESS	=	2.537467	RANGE	=	14.00000
MINIMUM	=	.0000000	MAXIMUM	=	14.00000			

VALID CASES = 35

MISSING CASES = 0

TTP

TOTAL POSITIVE STATEMENTS

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	11	31	31	10.	1	3	69	27.	1	3	86
2.	5	14	46	11.	1	3	71	29.	1	3	89
3.	1	3	49	14.	1	3	74	33.	1	3	91
5.	3	9	57	20.	1	3	77	34.	1	3	94
6.	1	3	60	24.	1	3	80	45.	1	3	97
9.	2	6	66	26.	1	3	83	59.	1	3	100

MEAN	=	10.97143	STD ERR	=	2.506961	MEDIAN	=	4.666666
MODE	=	.0000000	STD DEV	=	14.83138	VARIANCE	=	219.9697
KURTOSIS	=	1.509553	SKEWNESS	=	1.488976	RANGE	=	59.00000
MINIMUM	=	.0000000	MAXIMUM	=	59.00000			

VALID CASES	=	35	MISSING CASES	=	0

TTN

TOTAL NEGATIVE STATEMENTS

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
0.	6	17	17	9.	1	3	54	30.	1	3	83
1.	4	11	29	12.	3	9	63	35.	1	3	86
2.	2	6	34	16.	1	3	66	38.	1	3	89
3.	1	3	37	17.	2	6	71	55.	1	3	91
4.	2	6	43	18.	1	3	74	91.	1	3	94
7.	1	3	46	20.	1	3	77	113.	1	3	97
8.	2	6	51	29.	1	3	80	115.	1	3	100

MEAN	=	19.45714	STD ERR	=	5.084223	MEDIAN	=	8.250000
MODE	=	.0000000	STD DEV	=	30.07866	VARIANCE	=	904.7261
KURTOSIS	=	3.620375	SKEWNESS	=	2.115279	RANGE	=	115.0000
MINIMUM	=	.0000000	MAXIMUM	=	115.0000			

VALID CASES	=	35	MISSING CASES	=	0

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