effects. Training was also effective in increasing the discriminative use of requests as a function of context - and discrimination generalized to a control behavior. This was not replicated by our second subject. Histograms of session by session observations indicate carry over effects from one target behavior to the next and generalization across behaviors was discussed.

Acknowledgments

I would like to thank Dr. Zalman Amit and Dr. Edward Brussell for their help, support, encouragement, and .... patience.

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Introduction

For years, mental health professionals have considered the level of social adjustment of their patients as an index of mental health. However the definition of social adjustment, it's relative importance as a therapeutic goal and the techniques used to foster social functioning vary from one school of thought to another.

Traditional approaches have focussed on the individual's "inner-self" (intrapsychic conflict, feelings, attitudes, self-concept, personal attributes, etc...) and therapeutic goals have been conceptualized in terms of changes within the individual (insight, self-awareness, personal growth, etc...). In these systems of therapy, social adjustment, although an implicit therapeutic goal, is not tackled directly; instead, it is assumed that as a result of therapeutic personal gains, social functioning will automatically improve.

During the last decade, a new behavioral technique, Social Skills Training, (SST) has generated increasing interest among clinicians and researchers because of its promise as a direct means of improving social functioning.

Initial work in SST emphasized the importance of expressing feelings overtly, particularly negative feelings, and training was aimed at increasing the overt expression of feelings or assertive training (AT), (Wolpe, 1969; Wolpe & Lazarus, 1966). In presenting the rationale for AT, Wolpe states that the treatment "is required for patients whose interpersonal contexts have unadaptive anxiety responses that prevent them from saying or doing what is reasonable and right. If they are inhibited from doing things about which they feel strongly, the suppression of feelings may lead to a continuing inner turmoil which may produce somatic symptoms and even pathological changes in predisposed organs..." (Wolpe, 1969).

For the first time, unassertiveness was considered as a circumscribed problem of social functioning related to psychological discomfort; thus being identified as a therapeutic goal per se. In the assertive training paradigm various component techniques are combined to facilitate changes in the overt expression of feelings including: behavior rehearsal, modeling, instructions and coaching. Often, shaping

procedures as well as homework assignments are included in the therapeutic process.

Current Status

In Wolpe's initial rationale, assertive responses were viewed as reciprocal inhibitors to anxiety in social situations. Counterconditioning was the basic mechanism postulated to account for behavioral change. In this perspective, AT was considered a therapeutic tool applicable to a neurotic population. However, in more recent treatment studies, the AT paradigm has been extended to a variety of behavioral problems and populations such as: nonassertive college students (Hedquist, 1970; Rathus, 1972, 1973; Young, Rimm & Kennedy, 1973; McFall & Marston, 1970; McFall & Lillesand, 1971; McFall & Twentyman, 1973) college students hesitant about participating in group discussions (Wright, 1972), homosexual pedophilia (Edwards, 1972), marital discord (Eisler, Miller, Hersen & Jackson, 1974b) unassertive psychiatric patients (Hersen, Eisler & Miller, 1975; Eisler, Hersen & Miller, 1973a, 1973b) outpatient schizophrenics (Bloomfied, 1973) alcoholism (Eisler, Hersen & Miller, 1974a) dependent neurotic and psychiatric patients

(Goldsmith & McFall, 1975), nondating college students (Curran, 1975; McDonald, Lindquist, Kramer, McGroth & Rhyme, 1975).

In a review of the evolution of social skill training, Hersen and Bellack (1976) emphasize the current trend to consider assertive training not so much as a "mere inhibitor of anxiety in interpersonal contexts" as first suggested by Wolpe (1969), but as presenting definite operant features that are effective in improving social adjustment across diagnostic categories.

The operant features of skill training are best exemplified by the definition of social skills. Social skills are usually defined in terms of the effect of behavior on the environment; basically, a behavior that is effective in producing the desired or optimal results is socially skilled. This tendency to define social skills in operant terms is illustrated by Libet and Lewinson's definition of social competence "as the complex ability to maximize the rate of positive reinforcement and to minimize the strength of punishment from others", (Libet & Lewinson, 1973). Social skills

training then becomes a technique aimed at teaching specific skills in order to improve the social functioning of an individual in a given milieu. Basically, SST is seen as facilitating learning of complex social skills by breaking these into smaller, easier to learn units of behavior (Bandura, 1969).

As a teaching procedure, SST is clinically applied to any individual whose social adjustment is impeded by specific skill deficits, independent of his psychological diagnostic category. Although assertiveness is still a predominant target behavior in skill training procedures, these are applied to a broad category of behaviors, and the terms assertive training and social skill training are often used interchangeably.

To date, most of the experimental work reported in the SST literature involves the development of negative or "hostile" assertiveness such as the ability to refuse unreasonable requests. This emphasis may be accounted by various factors. First, SST is a relatively new technique and empirical work is at an early stage; the initial clinical work and experimental

studies were carried on assertiveness. Thus generating empirical questions pertinent to assertiveness. Second, social skills are difficult to define in specific terms and, therefore, difficult to assess. Previous studies on assertiveness provide a background of information, operational definitions, and assessment tools facilitating subsequent research.

McFall and Marston (1970), compared the effects of two treatment procedures: behavior rehearsal and behavior rehearsal plus feedback, to those of placebo therapy and no treatment. Treatment procedures were administered to unassertive College students in a semi-automated fashion over four 1-hour sessions. Results indicated significant improvements in assertive performance for both treatment groups as compared to the controls. There was also a nonsignificant trend for the rehearsal plus feedback group to show greater improvement. Dependent measures indicating significant change included self-reports of satisfaction and anxiety, pulse rate and assertive performance on a behavioral role playing test. A follow-up telephone test was used to evalu transfer of training effects two

weeks after treatment. Assertiveness was rated on five dimensions reflecting the efficacy of the subjects in handling and resisting unreasonable sollicitations of an Experimentor-Salesman. Results on this follow-up measure were unconclusive.

In a subsequent study, McFall and Lillesand (1971), compared the effects of two treatment procedures (overt rehearsal with modeling and coaching, covert rehearsal with modeling and coaching) to those of an assessment placebo control. Again a semi-automated procedure was used with unassertive college students; however, treatment was only applied during two 1-hour sessions. Once more, both AT groups showed significant improvements over the control group in self-report and behavioral measures. Generalization over situations was evaluated by administering three untrained role play situations. The authors did not find significant differences between groups on this measure of generalization. A telephone follow-up was carried out 5 days after treatment, and again no significant differences were found between the three groups.

McFall and Twentyman (1973), evaluated the

relative contribution of: behavior rehearsal, modeling and coaching. The authors conducted four small studies of 2, 1-hour sessions with unassertive college students. The main findings of these experiments are that a) behavior rehearsal and coaching resulted in significant improvements of behavioral assertion and self-report measures, b) there was no difference in the effectiveness of covert, overt or a combination of overt and covert rehearsal, c) modeling was found to add little to the effects of rehearsal alone and rehearsal plus coaching, d) and finally the addition of modeling to rehearsal or coaching made no significant contribution regardless of the type of model (tactful or abrupt) or the media (audio or audiovisual) utilized. Again findings of generalization were mixed. The authors reported generalization of training over untrained behavioral situations, but the telephone follow-up did not reveal any difference between control groups and treatment groups in the three first experiments while a significant training effect was found to differentiate groups in the fourth study.

In a study comparing the relative efficacy of behavior rehearsal to social learning counselling with unassertive college students, Hedquist and Weinhold (1971), concluded that both treatment groups as compared to a placebo control resulted in significant improvements in assertiveness. No significant difference were found between treatment groups. Changes in assertiveness were measured by the frequency of assertive responses defined as "overt verbal responses that required the subject to initiate a social action or reaction with another person or persons". The treatment procedures were carried over a period of six weeks. A six weeks follow-up evaluation was obtained by the means of interpersonal diaries; the results indicated that treatment effects were not significantly maintained over time.

Rathus (1972, 1973b) conducted two studies in which he evaluated the efficacy of assertive training on female college students. In the first study, the researcher compared one assertive training group to a placebo control group and to a no treatment control group. Assertive training consisted of: instructions,

behavior rehearsal, coaching, feedback and homework assignments. Treatment procedures were administered once a week for a 7 week period. The placebo condition involved discussions about fears and related topics. Results indicated that, as compared to controls, assertive training led to a significant increase in self-reported assertiveness as well as to a significant reduction of general fears.

In a subsequent study Rathus compared an assertive training group (behavior rehearsal plus modeling) to a placebo-control and to a no treatment control group. Again treatment procedures were administered once a week over a period of seven weeks. Results indicated that the subjects from treatment groups were rated as significantly more assertive than controls on the basis of five audiotaped responses to structured situations. The treatment group also showed significantly higher scores on self-reported assertiveness.

Young, Rimm and Kennedy (1973), also used female college students as subjects in a study comparing the relative efficacy of two variations of modeling (modeling and modeling with verbal

reinforcement) in modifying assertive behavior. The treatment conditions were compared to a placebo therapy control group and to a no treatment control group. All groups received two half hour treatment sessions. Both modeling procedures led to greater improvements in assertive performance on a behavioral role-play test, than either control group. However, there was no difference between the modeling groups, suggesting that the addition of verbal reinforcement did not augment the effect of modeling. Self-report measures confirmed a main treatment effect: subjects differentiated the two modeling procedures by rating the modeling plus reinforcement as being more "effective". Generalization over untrained situations was not confirmed.

Galassi et al. (in press) investigated the effects of a multifaceted group assertive training with non assertive college students. The researchers used a Solomon four-group design. Experimental procedures consisted of: behavior rehearsal, modeling, feedback and homework assignments. In addition, bibliotherapy, trainer exhortation and group support were provided. Feedback on performance was given through various sources:

videotapes, peers and trainer. Evidence for the effectiveness of training was obtained on two self-report measures and on three of four behavioral indices. Data obtained on role playing situations indicated significant differences between experimental and control subjects on amount of eye contact, length of scene and ratings of assertive content. Response latency was not affected significantly by treatment procedures.

In a series of interrelated experiments, Eisler and his colleagues evaluated the relative efficacy of various therapeutic components of assertive training with low assertive psychiatric patients. The main dependent measure used in these studies is the Behavioral Assertiveness Test (BAT). The BAT consists of fourteen interpersonal situations requiring assertive responses; subject's behavior is videotaped pre and post therapy and changes in assertiveness are rated by trained unbiased observers on various dimensions of assertiveness (e.g.: compliance or affect).

In a first study, Eisler et al. (1973b) evaluated the effects of modeling as compared to

unguided practice or Test-Retest. The subjects in the Practice-Control group were asked to repeat their responses to assertive situations while "trying to do their best", no specific instructions nor modeling was provided. Treatment procedures were carried out during four sessions. Results indicated that the modeling group improved significantly on five of eight behavioral components. No difference was found between the Practice-Control group and the Test-Retest group, suggesting that repeated exposure to a set of situations and unguided practice is insufficient in producing changes in assertive behavior.

Hersen, Eisler and Miller (1973) evaluated the relative efficacy of three treatment procedures: specific instructions alone, modeling alone and a combination of instructions and modeling. As well, a Practice-Control group and a Test-Retest group were included. Treatment procedures were administered during four sessions. Again performance on the BAT and self-report questionnaires were used as dependent measures. Results indicated that the combination of modeling with instructions was the most powerful treatment procedure; as compared to controls, the

subjects in the combined group showed greater improvement on six of the seven behavioral components of assertiveness. Modeling alone and instructions alone were also found superior to unguided practice or Test-Retest on various dimensions of assertiveness. However, instructions alone and modeling alone were differentially effective depending upon the specific target behavior (e.g. verbal vs. non-verbal) to be modified. Again no difference was found between the Test-Retest and Practice-Control groups supporting the view that mere practice in the absence of complementary techniques will not lead to gains in assertiveness. Self-report measures did not yield significant results.

Goldstein, Martens, Hubben, Van Belle, Schaaf, Wieroma and Geodhart (1973), conducted three experiments evaluating the efficacy of modeling in increasing "independent responses". In all three studies, pre and post independence scores were used as dependent measures. These scores were obtained on the basis of 10 base rate situations and 10 post-test situations. Four independent judges rated independent responses on a 1-5 rating scale.

In the first study 90 neurotic outpatients were randomly assigned to three groups: independence modeling (IM), dependence modeling (DM), and no modeling control. Modeling was provided via audiotapes and the subjects were presented with 40 situations in which the model responded in either a dependent fashion in the DM condition, or an independent fashion in the IM condition. Results indicated a significant effect for independence modeling as compared to no modeling, for both male and female patients. While dependence modeling increased significantly dependent responses in female patients, no similar effect was found for males.

In a second study, Goldstein et al. (1973) investigated the effects of model characteristics on independence training. In order to vary model characteristics independence training was provided with different instructional sets. In a first group: warm structuring, the model was introduced as an outgoing, sympathetic and warm person. In the second group: cold structuring, the model was introduced as a cold, rather unsympathetic person. Finally in a third group, no specific description of the model was given.

In addition a fourth condition: a no treatment control group was included. Results again indicated a significant modeling effect for the warm structuring and no-structuring conditions. However, no significant difference was found between the cold-structuring group and no-treatment control group, suggesting that negative instructions interfered with the modeling effect. On the other hand, there was no significant difference between the warm structuring and no-structuring groups, thus indicating that a positive set of instructions did not enhance modeling effects.

In a third experiment, a sample of chronic schizophrenic inpatients was used to evaluate the relative efficacy of component techniques in independence training. Four experimental conditions consisted of: modeling alone, instructions alone, modeling with instructions and no-treatment control. Results indicated that all three treatment conditions as compared to no-treatment control led to significant increases in independent responses. There was no difference between treatment groups, thus failing to support the enhancement of modeling with

instructions previously described (Hersen et al., 1973).

In a more recent study, Goldsmith and McFall (1975), empirically developed and evaluated experimentally an interpersonal skill training program for psychiatric inpatients. The researchers compared three conditions; interpersonal skill training, pseudotherapy control and assessment control. Skill training consisted of behavior rehearsal, coaching, feedback and instructions, and was administered during three 1-hour sessions. Changes in skill level were evaluated on an interpersonal behavior role-playing test and self-report measures.

Generalization over situations was assessed by presenting the subjects with untrained situation in the behavioral role-playing test. Generalization over time was evaluated eight months following treatment by comparing recidivism rates. Results indicated that as compared to both control groups, interpersonal skill training led to significantly greater pre-post differences on behavioral measures as well as on self-report measures. Significant treatment effects were also found to

differentiate the training groups from the control groups in untrained situations suggesting transfer of training over situations and finally recidivism rate although not significantly different, was lower for subjects in the training group than for controls.

As mentioned previously, early research on assertive training focussed on increasing explicit verbal messages particularly in situations requiring negative assertion (e.g. refusing unreasonable requests). Serber (1972) emphasized the importance of non-verbal components of assertiveness and the relevance of specific training on these dimensions of assertiveness. We have seen that there is considerable evidence supporting the efficacy of various component techniques in increasing both verbal and non-verbal components of assertiveness. However, until recently, very little attention has been directed towards the experimental investigation of specific behavioral components which differentiated non-assertive or non-socially skilled subjects from assertive or skilled ones.

In a study comparing highly assertive to non-assertive psychiatric patients Eisler et al.

(1973a) found that Low Assertive subjects (LA) differed from High Assertive ones (HA) on five specific behavioral components: HA subjects were significantly less compliant, requested more behavioral changes from their interpersonal partners, exhibited more affect, spoke louder and had shorter latencies of response than LA subjects in interpersonal situations. There was also a trend for HA subjects to respond at greater length than LA ones, not at a significant level however.

In a more extensive study, Eisler, Hersen, Miller and Blanchard (1975) evaluated the effects of situational contexts on interpersonal behavior in assertive situations. Once more, the researchers attempted to isolate specific behavioural components differentiating non-assertive subjects from highly assertive ones.

In this study, situational context was varied by having the subjects respond in situations requiring either negative or positive assertion, with male and female interpersonal partners who were either familiar or unfamiliar to patients. Results indicated that assertive behavior varied as a function of the interpersonal situation.

The authors concluded that the results were providing support for a stimulus-specific theory of assertiveness.

In the second section of this study, low assertive (LA) psychiatric patients were separated from high assertive patients (HA) on the basis of a behavioral measure of global assertiveness and a self-report measure. Subjects' performance on the Behavioral Assertiveness Test was evaluated on 12 specific dimensions of assertiveness. Results indicated that LA patients were differentiated significantly from HA ones on nine of these twelve measures of interpersonal behavior. Over all contexts, HA subjects gave lengthier replies, spoke louder, exhibited greater affect and smiled less frequently than LA subjects. In situations requiring negative assertion LA subjects were more compliant while HA subjects more often requested behavioral change from the interpersonal partner. In contexts requiring positive assertive responses, HA subjects delivered more praise to their partners and they offered spontaneously to do a favor for an interpersonal partner more frequently than did LA subjects. Again results indicated

significant situational effects of assertive behavior; for example LA subjects delivered more praise to males than females whereas, HA subjects praised both sexes equally.

Some of the more clinically relevant applications of skill training (in terms of individualization and length of treatment) have been evaluated with single case experimental methodology. For example Eisler et al. (1974a) used a multiple baseline design to evaluate the efficacy of instructions and feedback in increasing assertive responses in two male psychiatric patients. The first subject was a 28-year-old house painter who had a history of periodic rages (e.g. fired shotgun into ceiling of his house) following interpersonal situations in which he had felt inadequate in expressing his anger. The second subject was a 34-year-old alcoholic whose alcohol intake was increased by his inability to handle work responsibilities; specifically, he was a motel manager who 1) was unable to confront subordinates with poor performance, 2) was excessively compliant with his employer, 3) was unable to resist pressures from salesmen, thus buying unnecessary items, and 4) was unable to

deal with customers' unreasonable requests. During assessment, expressive deficiencies of each subject was evaluated individually and four specific target behaviors were isolated for each man (e.g. compliance, requests, etc...). Assertive components were shaped individually under timelagged behaviors as a direct function of training. Pre-post ratings of overall assertiveness also indicated gains in the predicted direction. Finally, pre-post changes in untreated situations that were problem-relevant suggested that assertive gains had generalized.

Another example of single-case experimental methodology is illustrated by Eisler et al. (1974b) in a study evaluating the efficacy of assertive training on marital interactions. A simple pre-post design was used to evaluate the effects of AT on a) specific components of assertiveness, b) overall assertiveness, and c) maital interactions. The subjects were three male psychiatric inpatients who were extremely dependent and unassertive with their spouses. During pre and post assessment, the couples were videotaped while discussing conflictual material from their own marriages. Information obtained in

the initial interaction was used to select specific behavioral deficits in the husband's responses. Each subject received instructions, behavior rehearsal and feedback on specific components of assertiveness in need of change. Two of these subjects received AT in situations that were related to their marital conflicts while the third man received AT in situations that were unrelated to his marital situation. In all three cases, improvements in specific assertive behaviors as well as overall assertiveness were observed. For those two subjects who received AT in related situations, there appeared to be a generalization of training to the marital interactions while the third man did not show such generalization. There were some indications that transfer of assertive gains to the marital interactions was most likely when training was most closely related to marital difficulties.

Although it has been suggested that assertive training be applied to High School Students (Rathus & Ruppert, 1978c), the efficacy of AT on this specific subject population has remained unexplored until recently. McCullagh

and Vaal evaluated the efficacy of AT on 12 male unassertive Junior High School students. The subjects were selected on the basis of self-referral, referral from teachers, interviews and scores on the Modified Rathus Assertiveness Schedule (MRAS). Assertive training consisted of: instruction, modeling, peer, trainer audio or video feedback, and behavior rehearsal. Treatment procedures were carried over a period of twelve weeks at the rate of one 45-minute session per week. Pre and post measures of changes included the MRAS as well as the Junior Eysenck Personality Inventory (JEPI). Results indicated significant changes in both dependent measures of assertiveness.

In summary, although there are some methodological variations between these studies, overall results suggest some emerging patterns: A) Skill training (AT or SST) is more effective than placebo treatment or no treatment and leads to significant changes in specific target behaviors, B) Component techniques vary in their relative efficacy, modeling and instructions appear to be the most powerful ingredients in skill training. The evidence concerning their mutual enhancement is contradictory, C) There are

some suggestions that modeling and instructions produce differential effects on different verbal and non-verbal components of behavior, D) Unguided practice alone has been found insufficient in effecting behavior change, E) There is some evidence suggesting that social skills are situational e.g. vary as a function of the social context, F) Some basic components of assertiveness have been identified experimentally, G) Behavioral dependent measures appear to be consistently sensitive to change while self-report findings are contradictory, H) Evidence concerning generalization of training to novel situations is meager. However, there is some evidence of transfer of training from trained scenes to untrained but highly similar scenes.

Briefly, these results indicate that Skill Training is a promising therapeutic tool. However, various aspects of the research mentioned previously limit the conclusions that can be reached concerning the clinical relevance of this approach. A first criticism is that with few exceptions (Gittelman, 1965; McCullagh & Vaal, in press), most empirical work on SST has been restricted to adults, mainly College Students and

psychiatric inpatients. Little information is available concerning potential effects of SST with other age groups and other populations.

Second, findings were for the most part obtained though group comparisons where within - subject information such as individual rate of change or skill deficits were not acknowledged. Furthermore, by its very nature, a treatment procedure that is administered to a group of subjects is not specifically designed to respond to individual needs. Although it is most likely that an individualized selection of procedures and target behaviors will enhance treatment effects, it is still necessary to evaluate 1) the efficacy of skill training when applied in clinical situations, and 2) the extent to which specific behavioral changes obtained in experimental situations are to be equated with therapeutic gains.

Third, the majority of skill training research has been done with analogue studies where treatment procedures have been, for the most part, carried out over extremely short periods of time with very few sessions. This brevity of treatment procedures affects possible

conclusions concerning the clinical application of skill training on two main dimensions, clinical relevance of target behavior and generalization of training. When dealing with short-term treatment procedures, a dimension to consider is the different components of expressive behavior. There is some suggestion in the literature that some components of expressive behavior are more complex and therefore more difficult to acquire (e.g. request for behavioral change, Hersen et al., 1973). It is not unreasonable to assume that more complex skills might require more extensive training in order to be firmly established in the repertoire of an individual. Thus, brief treatment procedures might have led to significant short term improvements without necessarily being sufficiently extended to install complex skills in the individual's repertoire. A logical extension of this argument is that brief treatment procedures might have tended to favor the acquisition of simpler skills that, for clinical purposes might be irrelevant. For example, eye contact has been repeatedly selected as a target behavior in the skill training

literature (Eisler et al., 1973b; Eisler et al., 1973c; Eisler et al., 1974; Hersen et al., 1973; Galassi et al., in press) however in both studies conducted to isolate specific components of assertiveness (Eisler et al., 1973a; Eisler et al., 1975) eye contact was not found a significant factor differentiating unassertive subjects. In other words, there is no reason to believe that significant changes in any given skill will necessarily lead to therapeutic improvement. In fact, clinical improvement may well be largely dependent upon the more complex skills and therefore, to a certain degree, upon more extensive treatment procedures.

Another consequence of short treatment procedures is that it is likely to obscure the conclusions concerning the generalization of treatment effects. As we have seen previously, the evidence supporting the generalization of training effects is poor. This may be accounted for by the fact that treatment procedures were carried over too short periods of time for transfer to novel situations to occur and/or for treatment effects to last overtime. On the other hand, it is also possible that skill training is

too situation specific for transfer over situations to occur and/or that although rapidly effective, skill training will not lead to lasting improvements. It is therefore difficult to differentiate whether the evidence of generalization is unconclusive because of the brevity of treatment procedures or because of skill training per se.

A complementary criticism of the research in skill training is that little specific effort has been made to foster transfer of training to the natural environment. Typically, skill training in these studies was carried over standardized situations which are for the most part unrelated to the life situation of the subjects. Few if any empirical studies included behavioral homeworks which are usually included in the clinical applications of skill training in order to enhance training effects. Generalization cannot be expected if no specific efforts have been done to encourage transfer of training effects.

Failure to obtain evidence of generalization of training effects cannot be overlooked as eventually, clinical application of SST must engender generalization of effects to the natural

environment if we are to conclude to the clinical relevance of skill training. In view of these criticisms it appears that a different approach to the evaluation of SST with particular concern over the clinical application and generalization of SST is indicated.

The purpose of the present study was twofold: a) to evaluate the efficacy of SST when training procedures are highly similar to actual clinical application of SST and b) to evaluate generalization of training effects when such conditions are provided. An N of 2 within-subject multiple baseline design was used. In selecting this design, various factors were taken into consideration. Primarily, in order to provide close representation of clinical application of SST, certain criteria had to be met by this study: individual training over more extended periods of time and with a larger number of sessions than were offered in previous research; complete assessment of subjects' individual skill deficits and selection of target behaviors that are relevant to the subjects' needs; selection of role-play situations that are related to subjects' natural environment. As well, in order to

evaluate generalization of training effects, extensive assessment procedures are required. Briefly, efforts to evaluate efficacy and generalization of SST in its clinical application are time-consuming and can only be undertaken with single-case experimental methodology. Another factor influencing our choice of methodology is that within-subject experiments are recommended when subjects are not a homogeneous group (Leitenberg, 1973; Sidman, 1960; Jeffrey, 1974). Eventhough, our subjects were both unassertive, there was no reason to assume that they were representatives of a homogeneous group. Assertiveness is a broad category of behaviors and it is unlikely that unassertive subjects will all be deficient at the same level in the same specific skills. In fact in this study, both subjects were deficient in many skills of which they only had two in common: short durations of reply and poor affect.

In order to evaluate the efficacy of SST we needed a design which would permit the demonstration of causal relationships between variations in subject's behavior and introduction of experimental procedures (training). The two

most common within-subject design: ABAB reversal and multiple baseline could have fulfilled that purpose. Briefly, in the ABAB reversal technique baseline data are obtained on one behavior during the initial A phase, experimental procedures are introduced in the first B phase, then withdrawn in the second A phase and again reintroduced in the second B phase. With this design, causal relationships can be inferred when changes in behavior only coincides with the introduction of experimental procedures (B phases) and behavior is expected to reverse to its initial level when experimental procedures are withheld (second A phase).

In the multiple baseline design, data are obtained on three or more behaviors per subject. Following initial observations where no treatment procedures are applied, experimental procedures are introduced to a first target behavior (tb1) and restricted to this behavior; in a second phase, treatment procedures are dropped for tb1 but are aiming at tb2 and so on. As suggested by its name, in this design multiple independent baselines are obtained, one baseline per behavior. The baselines are obtained from observations of

behavior prior to the direct application of experimental conditions to that behavior. Since experimental procedures are introduced at different phases for each separate behavior, baseline periods vary in length with baseline of tb1 being the shortest. Baseline of tb1 is obtained on behavior prior to the application of experimental procedures to that behavior. Because tb2 does not receive direct attention of experimental conditions while tb1 is being trained, baseline of tb2 includes observations of that behavior during the phase where no experimental procedures were applied at all, as well as during the phase where tb1 was being trained. Baseline phase will be lengthened for tb3 as it includes observations on that behavior during initial no treatment phase and during the phases where tb1 and tb2 received experimental conditions. In this design it is assumed that behaviors are independent from one another. A causal relationship can be inferred when a specific tb which previously was stabilized during its respective baseline phase suddenly improves with the direct introduction of experimental procedures to that very behavior.

In this study, the multiple-baseline presented the following advantages: 1) it permitted to evaluate a closer representation of therapy than ABAB reversal because a) more than one skill could be trained and evaluated, b) those skills could be trained one at a time as in clinical work; 2) since a basic assumption in this study is that once sufficient training is provided, gains in skills will be maintained, ABAB reversal was clearly not indicated and 3) although we assumed that skills were independent, to our knowledge, no research is available to confirm or disconfirm that hypothesis; multiple-baseline makes available some process information by permitting to evaluate what happens or does not happen to other skills when another target behavior is being trained. The present study added two complementary sources of information to our design: 1) an attempt to replicate the experiment by using a second subject; "In contrast to groups statistical experiments in which groups replication seldom occurs, individual subject experiments that utilize more than one subject automatically contain intersubject replication. Each additional subject constitutes at least one

attempted replication of the experiment", (Sidman, 1960) and 2) evaluation of overall training effects with pre-post follow-up comparisons.

Finally in this study unassertive High School Students were used as subjects. As mentioned previously, that population has remained relatively unexplored. Because of the nature of our design, a fair amount of individual information could be obtained and although it could not be generalized to the High School population, this information could provide some background for future research.

Although there is no systematic research establishing a direct relationship between specific social skills and academic success, there is a progressive trend in educational psychology to consider interpersonal skills and competence in school as being interrelated. Shapiro (1973) suggests that interpersonal skills of students are likely to influence teachers' perception and expectancies concerning their academic potential. Teacher expectancies have in turn been demonstrated to influence among other things: academic performance (Meichenbaum, Bowers & Ross, 1969), teacher

pupil interactions (Good, 1970; Rist, 1970) and appropriateness of classroom behavior (Meichenbaum et al., 1969). This leads us to suggest that students with poor interpersonal skills are susceptible to suffer from negative teacher expectancies and from their corrolary impeding influence on academic functioning. In addition to potential negative effects on teacher expectancies, deficient social skills per se are likely to interfere with academic performance. In a study relating achievement and classroom behavior, Swift and Spivack (1969), isolated eight factors negatively related to academic success. Along with factors such as: poor work habits, lack of intellectual independence, expression of inability etc..., were included a high level of general anxiety and quiet-withdrawn behavior. Interestingly, both definitions of general anxiety ("display of outward nervousness during class and flustering and blocking when expressing ideas verbally" (Spivack & Swift, 1973)) and of quiet-withdrawn behavior ("the student is uncommunicative, oblivious, and lacking in social interaction" (Spivack & Swift, 1973)) are pointing out two

difficulties in social situations which have been considered in the literature as dimensions of assertion.

This more direct relationship between social skills and academic performance can be best understood by specifying certain demands typically made in school. Usually learning is equated with the acquisition of information and cognitive competence is evaluated on the basis of how this information is given back; with the assumption that if the information is well integrated, it will be expressed, either verbally or in the written form, in a coherent, well organized synthesis of the material. In both aspects of this process of taking and giving back information, social skills are involved.

Effective gathering of information requires more than listening to the teacher or careful reading of text books. In fact, students can maximize their information input by being active in the process of learning. This implies the use of additional learning tactics and resources such as asking questions, borrowing notes or books from peers, discussing ideas and comparing results, etc. Thus optimal gathering of

information requires various interpersonal skills. A student deficient in some or many of these skills has fewer means and opportunities of gathering information. As a result of his difficulty in "seeking out" information, his academic functioning and performance may be handicapped. Similarly, interpersonal skills can enhance or impede a student's actual performance or the "giving back" of information. Typically cognitive competence in High School is evaluated through various modes such as objective tests or papers, verbal presentations, group discussions, etc. With particular reference to the verbal modes of evaluation, interpersonal skills are often implicitly included as part of the evaluation criteria. For example, the evaluation of group particpiation usually includes frequency of verbal interventions and presentations are judged on format as well as content. Being judged as competent on these tasks requires such skills as being articulate, illustrating ideas clearly, defending a point of view, contrasting ideas, etc. A student who is deficient in these or similar skills will not be effective in reflecting his

ideas and knowledge, thus exhibiting a poor performance and most likely, obtaining lower grades.

In summary, SST appears particularly relevant to High School Students lacking or deficient in social skills for this milieu reprsents increased demands on interpersonal skills for both school adjustment and academic functioning.

METHOD

Subjects

Two male unassertive High School Students of 14 years old were the subjects in this study. Both subjects were registered in special classes for slow learners at the Montreal Catholic Schoolboard. The subjects were selected on the basis of teachers' referral, scores on the Modified Rathus Assertiveness Schedule (MRAS; Appendix 1), scores on the Self Assertion Scale (SAS; Appendix 2), interviews with parents and a role play assessment (Appendix 3). Criteria for teachers' referral were as follows: student of average intelligence, shy, withdrawn, participating only minimally in group discussions and activities, having few or no friends. To rule out the possibility of occasional or situational "shyness" only candidates corresponding consistently to this description for over a period of six months were selected. Furthermore, four teachers who knew the subjects but were unaware of their participation in this study were asked to rate both subjects with 20 other classmates on the Teacher Rating of Assertion Form (TRAF; Appendix 4).

With all four teachers the subjects obtained lower scores than their peers. Finally I.Q. scores were obtained with the WISC-R test of intelligence; both subjects were situated in the low average range. MRAS and SAS questionnaires are described in the dependent measure section.

Design

A N of 2 within-subject multiple design was used in this study. Three dependent target behaviors were identified for each subject on the basis of two criteria: a) subject's individual skill deficit as evaluated during the role-play assessment and b) empirical evidence indicating that selected behavioral components are clinically relevant i.e. that they differentiated significantly unassertive subjects from assertive ones (Eisler et al., 1973a; Eisler et al., 1975). According to a multiple baseline procedure, the subjects received a two week baseline period where no treatment was applied, followed by a two weeks or 4 session period where training procedures were aimed at and restricted to increasing target behavior 1. After four sessions, training procedures were no longer applied to target behavior 1 but were introduced

to increase target behavior 2. Finally after eight sessions training procedures were dropped for target behavior 2 and applied to target behavior 3. See Figure 1. The sequence of introduction of each target behavior was counterbalanced for the second subject in order to find out if the results would be replicated with a different sequence.

Insert Table 1 about here

In addition pre, post and a six-weeks follow-up measures were taken to evaluate generalization over time and performance in rehearsed situations was compared to performance in unrehearsed situations to evaluate generalization over context. Again, there was full randomization of situations to prevent order effects. Also, self-monitoring data on two behavioral homework assignments per subject were used to provide an index of generalization of training effects to the natural environment. For both subjects the first assignment was introduced at the beginning of training and the second during the third week, i.e., in the middle of training. The order of introduction of these assignments was

Table 1

Sequence of Introduction of Target Behaviors

Subject A

Sessions 1-4	Sessions 5-8	Sessions 9-12
Baseline	Duration of Reply (t.b.) 1	No Training
Baseline	Requests For Behavior Change (t.b.) 2	No Training
Baseline		Affect (t.b.) 3

Subject B

Sessions 1-4	Sessions 5-8	Sessions 9-12
Baseline	Spontaneous Positive Behavior (t.b.) 1	No Training
Baseline	Affect (t.b.) 2	No Training
Baseline		Duration of Reply (t.b.) 3

determined by the level of difficulty they represented for a given subject starting with the easiest one. Finally, in order to evaluate generalization of training effects across behaviors, behavioral rating of a fourth untrained behavior was obtained for each adolescent.

Setting

The experiment took place in a room with a two-way mirror. The subject and role-player sat facing one another with the video equipment being in a corner of the room. The experimenter observed the role-plays through the two-way mirror and entered the experimental room only to deliver feedback.

Material: Structured Situations

A total of 20 structured situations were used in this study as contexts for role-play (Appendix 6). One-half of the scenes consisted of situations where positive expression of feelings is appropriate and spontaneous positive behavior possible, and as such constituted a positive context. The remaining 10 situations consisted of scenes where negative expression of feelings is appropriate and requests for

behavior change possible thus providing a negative context for role-play. Rehearsed situations consited of 16 scenes (8 positive and 8 negative) which were used during training while unrehearsed situations consisted of four scenes (2 positive and 2 negative) which were only utilized for pre, post and follow-up assessment. In order to increase the likelihood of transfer of training effects to the natural environment, the structured situations were kept as closely related to the subjects' real life as possible.

Procedure

A. Assessment Phase

In a first meeting, subjects were asked to fill in the information, SAS self-report and the 5 situations questionnaires (Appendix 5, 2, 11). Once these questionnaires were completed, parents and subjects were given the following rationale for the project:

> "The program we are thinking of offering to your son is called Social Skill Training. SST is a behavioral technique that is aimed at teaching complex skills such as group participation or making friends. This procedure is currently used in clinical situation with adults and teenagers to help them feel more "adroits" in social situations. Many studies indicate that

this technique is effective with adults, however, the efficacy of SST has not been evaluated systematically with adolescents. The purpose of our projects is to evaluate systematically the efficacy of SST with teenagers".

Parents and subjects were asked for their consent to participate in the project and the experimental schedule, in terms of time demands for the subjects, was explained. Finally, each subject was presented individually with four role play situations (Appendix 3) and specific components of assertiveness were evaluated by the experimenter on a 1-3 rating scale. In second meeting, subjects were administered a WISC-R so that recent I.Q. scores were made available. Finally, in a third meeting prior to experimentation the subjects were provided a "dry run" in order to get habituated to the video tape equipment. This "dry run" mainly consisted of familiarizing the adolescents with the functioning of the equipment, letting them tape one another and observe themselves until they no longer giggled, made faces or comments on themselves or the other subject, but expressed their wish to terminate the session.

B. Experimental Phase

The subjects were asked to come to Concordia

University twice a week for a period of eight consecutive weeks for a total of 15 sessions. Six weeks after the termination of training the subjects were asked to come to an additional follow-up session. During the first two weeks of the experimental phase, the subjects were seen individually for three separate 30 minutes baseline sessions. During each of these sessions the subjects were asked to role-play four situations with a trained role-player as interactive partner. Before each baseline session the following tape recorded instructions were provided:

> "Today Mike will read a description of four situations. Each time he will give you a card with the description of a situation and you will read with him. If you do not understand the situation, say so, and Mike will read it again. For each situation I would like you to pretend it is happening to you right now and I would like you to answer as you would normally do. Some situations might be much like situations that happened to you, others might be totally different. In any case, do as you would normally do, if it happened to you and pretend Mike is the person who has been described in the situation. After these instructions Mike will ask you to summarize what I have said to make sure everything is O.K.".

During role-play, the role-player delivered standard replies and no comments were made on the

subjects' performance. As well, no treatment was delivered during this initial period.

Training consisted of 12 individual 45 minutes sessions provided at the rate of twice a week, for a period of six weeks. Training techniques included: instructions modeling, behavioral rehearsal, video, self and experimenter's feedback. These techniques were restricted to only one target behavior at a time for four consecutive sessions according to the multiple baseline paradigm described in the design section. At the beginning of each training session, each subject was presented with standard audiotaped instructions and these were played back until the subject indicated understanding by giving a summary. The subject was then presented with a written description of a social situation to which he was asked to respond as closely to instructions as possible. To control for possible reading difficulties, the role-player also read outloud the description of these situations. Role-played situations led to extended interactions which lasted on the average 2 minutes and were ended naturally by either the subject or the role-player.

Following the initial performance the experimenter entered the experimental room and provided specific comments on the just completed role-play using the video tape to exemplify her comments, also the subject was asked to comment on his own performance and to evaluate it in relation to the instructions.

Subsequently, the role-player modeled the desired behavior exemplifying a slightly better performance than the subject's performance ("Coping model"). The experimenter left the room and both subject and role-player repeated again the same situation so that the subject could rehearse and apply some of the feedback and modeling he had received. Finally, the entire procedure was repeated again with a different situation. At the end of session 1 and session 6, each subject was asked to start one specific homework assignment at a time. These assignments are described in the self-monitoring section. No further instructions or training techniques were provided to foster generalization to the natural environment.

At the end of these 12 training sessions the subjects were presented with 12 situations.

to respond to, eight of these situations had been rehearsed at various times during training and the remaining four had only been assessed once during baseline. This post evaluation was conducted individually and lasted approximately 90 minutes per subject. During this evaluation, the subject received nothing but the instructions used during baseline. The same procedure was carried out again six weeks after termination of training for follow-up assessment. As mentioned previously, the order of presentation of the situations as well as the order of rehearsed vs unrehearsed situations was fully randomized for each stage of the evaluation.

Training Techniques

Instructions: Instructions consisted of specific and detailed descriptions of what behaviors were expected from the subjects. Instructions were audiotaped so they remained constant across sessions for both subjects. These were given at the beginning of each session and the tape was played back until the subject indicated understanding by giving a summary.

Instructions aiming at increasing appropriate affect were as follows:

> "When you talk with people, the way you say things is as important as the words you say. In order to be more convincing usually people try to express with their tone of voice and with the expression on their face what they mean. Today I would like you to try to express in your tone of voice and with your face what you are saying in words. That means that <u>if you want to be friendly and positive, take a lively expression and a lively tone of voice, smile and look at the person when you talk to him</u>. <u>When you are angry or displeased take a serious expression and a serious tone of voice and look at the person</u>".

Instructions aiming at increasing duration of reply were as follows:

> "When people meet they often try to talk together for a little while. Often when you want to be interesting you need a little time to describe what you did or what you like; also, when you want to convince someone, you need sometime to explain what you mean and how you see things. Today, I would like you to try to speak more, for as long as you can, do your best to maintain the conversation by speaking for longer periods of time".

Instructions aiming at increasing requests for behavior change were as follows:

> "When people do something that annoys you, that you don't like, it is important to tell them exactly what bothers you so they can stop doing it. If you don't say it they might not guess it and they might keep on doing it for as long as you know them. Usually telling people what you don't like helps them change, but if you want them to change faster it is helpful to say <u>exactly what</u>

annoys you, and at times to suggest what else they could do instead. For example: if someone cuts the line in front of you, you could say that you don't like their cutting the line, but you could also add that they should go back to the end of the line. Remember when you want someone to stop annoying you, if you tell them exactly what you dislike and suggest what else they could do, your chances of getting them to change are better".

Instructions aiming at increasing spontaneous positive offers were as follows:

"At times people are as nice to you as you are to them: If you offer a lot they offer a lot and if you don't, they don't. When you want to be friendly it becomes important to show that you like people and to offer them things. Also, when you like people but disagree with them it becomes important to offer alternatives that is, to suggest other ways to do things that maybe would please you and them, so that both of you are happy. Today, I would like you to try to offer more things, more favors, also, I would like you to offer more alternatives or solutions to a problem. What I mean by offering a favor is for example, if Mike says he is broke, you could offer to lend him money; what I mean by an alternative is for example, if Mike says he can't come because he has to babysit, you could suggest someone else who babysits and who could replace him. So try to offer as many things as you can and as many ideas as you can".

Feedback

The subject received three sorts of feedback: a) video playback of the just completed role-play, b) subject's self-labelling which the experimenter suggested should be specific to the target behavior

for that session, c) verbal reinforcement by the experimenter for the performance that met the criteria for that role-play and suggestions for subsequent rehearsal.

Modeling

Modeling consisted in the actual demonstration of the desired behaviors by the role-player. Modeled behaviors were used to illustrate the experimenter's suggestions for subsequent rehearsal and while resembling closely the subject's initial performance they exemplified a slightly better performance; in other words, coping models were used.

Role-Play and Rehearsal

Role-play consisted in having subjects respond in the experimental room to situations as if these were happening in their natural environment. The subjects acted as themselves in these situations with a trained role-player as interactive partner. The role-player was trained on a standard set of replies from which he could choose depending on their relevance to the subject's replies (see Appendix 7). Rehearsal consisted in having the subject and the role-player re-enact a given scene after modeling and

feedback had been provided to the subject.

Experimental Variables

A. Dependent Variables

The dependent variables or target behaviors consisted of three specific components of assertiveness per subject. Each target behavior was selected on the basis of two criteria: a) subject's individual skill deficits as evaluated during the assessment phase and b) empirical evidence indicating that selected behavioral components differentiated significantly unassertive subjects from assertive ones (Eisler et al., 1973a; Eisler et al., 1975). In other words, after assessment, various potential skill deficits were isolated for each subject; however, only those skills which have experimentally been demonstrated as differentiating unassertive subjects from assertive ones were selected as target behaviors. The target behaviors for subject: A were: 1) appropriate affect, 2) duration of reply and 3) request for behavior change, for subject: B were 1) appropriate affect, 2) duration of reply and 3) spontaneous positive behavior. The operational definitions of these independent variables were borrowed and adapted

from the original studies in which they have been isolated as significant components of assertiveness (Eisler et al., 1973a; Eisler et al., 1975).

a) Duration of reply: The length of time (in seconds) that the subject spoke to his partner was recorded for each scene. Speech pauses of greater than 3 seconds terminated timing until the subject began to speak again.

b) Appropriate affect: Subject's affect was scored on a 5-point scale with 1 indicating a very flat, unemotional tone of voice and 5 indicating a full and lively intonation appropriate to each situation.

c) Request for behavior change: Verbal content requesting new behavior from the interpersonal partner was scored in terms of frequency. The subject had to show evidence that he wants his partner to change his behavior in negative contexts (for example: "I would like you to give me the money you owe me back").

d) Spontaneous positive behavior: Verbal content indicating that the subject volunteers to perform some act for the partner or offers a viable alternative solution (for example: why don't we go in my house for a while, it will give us

time to warm up and we might want to play some more after). Spontaneous positive behavior were evaluated in terms of frequency.

B. Dependent Measures

The efficacy of SST was evaluated on three major sources of data: a) rating scales including two self-report questionnaires, b) behavioral ratings of both global assertiveness and of specific components of assertiveness, and c) self-monitoring data on homework assignments. Self-report data and behavioral ratings were obtained on three occasions; pre, post, and six-weeks after treatment. In addition, behavioral ratings of four specific components per subject (3 trained behaviors and one control behavior) were compiled throughout the six treatment weeks. As well, self-monitoring data was obtained on a daily basis during the entire experimental phase and for a week prior to follow-up assessment.

Rating Scales

1. Modified Rathus Assertiveness Schedule (MRAS)

The Rathus Assertiveness Schedule has been considered one of the most valid and reliable self-report instruments for measuring assertiveness (Rathus, 1973a; Flowers, 1975).

A modified version of this adult scale has recently been adapted for High School Students by Vaal (1975) (Appendix, 1). Test-Retest reliabilities of r: 0.76 for the 30 items MRAS and r: 0.83 for the 19 items MRAS were obtained over a two months period. Support for the validity of the MRAS was provided by comparing the sample used in Vaal's study to Rathus' original sample; there were no significant differences between the two samples. The MRAS is a 30 item inventory where the respondent is asked to answer on a 6 point scale ranging from -3 (very uncharacteristic of subject) to 3 (very characteristic of subject) with no 0 point (Appendix 1).

2. SAS: Self-Report

The SAS scale is a 30 item self-report questionnaire where the respondent is asked in a forced-choice situation to check true or false after each item. This scale includes 20 items related directly to various dimensions of assertion and 10 items irrelevant to assertion. The irrelevant items were included so that the respondent remains blind as to the specific purpose of this scale. The order of

relevant and irrelevant items was randomized as well as the true-false order of relevant items. The 20 relevant items fell into the following categories: 1) expressing ideas in group situation, 2) initiating social interactions, 3) giving negative feedback, 4) assertion in service situations, and 5) turning down requests. Scores on the SAS were obtained from the total number of assertive responses on the relevant items. This scale was specifically developed for the present study by the experimenter. A variety of sources were employed in developing the list of items including students' reports (e.g. item 18), clinical experience and a review of the literature. Many items were adapted from adult scales, mainly the Assertion Scale developed by Gambrill and Richey (1975) and the Rathus Assertiveness Schedule (Rathus, 1973a). In order to provide comparative information, the SAS was administered to 48 randomly selected students who were registered in the slow stream 9th grade at the same High School as our subjects. To control for possible sex differences only male students were kept as a comparative sample. This sample

included 22 adolescents ranging in age from 13 years 10 months to 16 years 11 months with a mean age of $\bar{x}$: 14.09. Their mean score on the SAS was of $\bar{x}$: 14.35 assertive responses with a s.d. of 2.26. A test-retest reliability of r: 0.73 was obtained with this sample at two months interval. For test-retest reliability the Pearson Product by Moment Correlation coefficient was used.

Videotape Ratings

Videotape Ratings of interactive behavior have been shown to reach acceptable levels of inter-observer agreement and correlate well with assertiveness in the natural environment (Eisler et al., 1975). As well, ratings of specific components of assertion have been widely used in research as sensitive measures of change in assertiveness (Eisler et al., 1973a; Eisler et al., 1973b; Hersen et al., 1973; Eisler et al., 1974a; Eisler et al., 1974b; Curran, 1975; Eisler et al., 1975). In this study, five trained independent raters evaluated videotapes of pre, post and follow-up assessment as well as videotapes of the subjects' performance in all the treatment sessions. Two of these raters were asked to

evaluate global assertiveness while the remaining three rated specific components of assertiveness. Training was provided separately for those two groups of raters in order to insure that the evaluation of each dimension of assertiveness (global vs specific) remained independent from one another. Training of raters lasted 8 hours and consisted in defining experimental behavioral categories (Appendix 8), and in providing a neutral practice tape to rate. When using a rating scale raters were asked to consider the 1 to 5 scale as an equal interval scale. For example, the distance between 1 and 2 equals 2 and 3 which equals 3 and 4, which equals 4 and 5. At the end of this training inter-rater agreement ranged between r: 0.88 and r: 0.98.

Insert Table 2 here

Table 2

Inter-Rater Agreement on

Neutral Training Tape

A: Specific Components of Assertiveness:

Affect:.....r: 0.88

Duration of reply:.....r: 0.98

Request for behavior change:.....88%

Spontaneous positive behaviors:.....88%

B: Global Assertiveness:..... r: 0.93

For evaluation of experimental tapes raters were not provided any additional instructions. Although, there were often more than one rater viewing a given tape at the same time, the raters were not allowed to communicate between themselves. They were shown the videotapes only once per dimension evaluated. In order for the raters to remain blind as to the specific tape they were evaluating, the order of presentation of all videotapes was fully randomized.

Pre, post and follow-up assessment tapes were each divided into three 5 minutes sections per subjects so that a total of 9 short tapes per subjects were fully randomized.

Insert Table 3 here

There were 6 session by session tapes each containing two sessions for both subjects. Again these tapes were randomly presented to the raters. Inter-rater agreement was obtained by having two independent raters evaluate the same tapes while rating the same dimension. In order to increase reliability, subject's behaviors were rated one at a time for each

Table 3

Randomized Order of Presentation of Videotapes

Tapes For Each Subject: Total 45 Minutes Per Subject

Pre: 15 minutes: 3 x 5 min. sections = 1a, 1b, 1c

Post:15 minutes: 3 x 5 min. sections = 2a, 2b, 2c

Follow-up:15 minutes: 3 x 5 min. sections = 3a, 3b, 3c

Order of Presentation For:

Subject A: 1c, 3a, 2c, 1a, 2a, 3b, 1b, 2b, -

Subject B: 1a, 2a, 1c, 3a, 2c, 1b, 3b, 3c, 2b.

video playback, and reliability checks were made throughout the entire rating procedure. Inter-rater agreement on global assertiveness was obtained on all pre, post and follow-up. tapes and was of r: 0.84 for subject A and r: 0.85 for subject B. Inter-rater agreement was obtained separately for every specific components of assertiveness for each subject on 1/3 of the pre, post and follow-up tapes and ranged between 75% agreement, and B: 0.99

Insert Table 4 here

Finally, inter-rater agreement was obtained on 25% of all session by session tapes and ranged between r: 0.64 and r: 0.98. With the exception of frequency data (spontaneous positive behaviors and requests for behavior change) where inter-rater agreement was evaluated in percentage, Pearson Product by Moment correlation coefficients were used.

Insert Table 5 here

Table 4

Inter-Rater Agreement On

Pre Post Follow-up Tapes

A: Specific Components of Assertiveness:			
Affect:	SA:	r:	0.95
	SB:	r:	0.90
Duration of reply:	SA:	r:	0.99
	SB:	r:	0.98
Request for behavior change:	SA:		75%
	SB:		83%
Spontaneous positive behaviors:	SA:		83%
	SB:		83%
B: Global Assertiveness:	SA:	r:	0.84
	SB:	r:	0.85

N.B. Inter-rater agreement was evaluated on 1/3 of the data for all specific components of assertiveness and on all the data for ratings of global assertiveness.

Table 5

Inter-Rater Agreement On

Session by Session Tapes

A: Specific Components of Assertiveness:

Duration of reply:.....r: 0.98

Affect:.....r: 0.64

Spontaneous positive behaviors:..... 81%

Requests for behavior change:..... 69%

B: Global Assertiveness:.....r: 0.67

N.B. Inter-rater agreement scores were obtained on 25% of the session by session tapes for both subjects.

Self-Monitoring Data

As mentioned previously, so that one index of generalization to the natural environment could be obtained, our subjects were asked to carry out two homework assignments and to record on a daily basis the frequency of these behaviors. There were two homework assignments per subject and these were introduced one at the beginning of training and one in the middle of training. The subjects were asked to rate assignments according to level of difficulty and these behaviors were presented in a hierarchy starting with the easiest one. These assignments consisted of: 1) asking questions in class, and 2) initiating interaction with peers for subject A and of: 1) initiating interaction with peers, and 2) volunteering answers in class for subject B. The subjects were provided with an operational definition of these behaviors as well as with some examples (see Appendix 10). The only instructions provided were: "Try to increase this behavior as much as possible and put a check mark on the sheet every time you do it". In order to increase the reliability of the data, the subjects were shown how to use the self-

monitoring sheets (Appendix 9) and were also asked to rate the level of difficulty of each behavior and the level of satisfaction experienced afterwards. As well, the subjects were asked to summarize on the back of the sheet each recorded behavior. Finally, prior to every training session (e.g. twice a week) the experimenter reviewed with the subjects all the self-monitoring sheets taking away data that did not meet criterion. Criteria for asking questions in class were that the subject on his own initiative asked a pertinent question in class such as: "When is the next exam?", or "What is an equation?". Questions that were not pertinent such as: "What time is it?", or questions that were not asked during class were eliminated. As well, double questions such as: "Who was King Arthur and when did he die?" were only recorded as one question since they represented only one active intervention in class. Criteria for volunteering an answer in class were that the subject on his own initiative attempted to answer a question raised by the teacher in class. Answers had to reflect a genuine attempt to respond to the question, independently of their

being correct or not. For example: Q.: "What is an island?" A.: "It is a piece of water surrounded by land", would be accepted while Q.: "What is an island?" A.: "It is what you described yesterday!", would not be counted as an answer. Answers that were provided individually to the teacher after class were not used as data. As well, answers that were directly sollicited from the teacher were not included as data. Criteria for initiating interactions with peers were that the subjects on their own initiative would use verbal behavior to initiate an interaction with a peer. For example borrowing notes, inviting someone to your place or asking to join a group would be considered as initiating interactions. On the other hand, joining someone without speaking to him/her, watching other people play ping-pong or responding to someone saying Hello to you, would not be considered initiating interactions. As well, short interactions such as barely saying Hi! when someone is passing by were not included as data.

Results

Training effects as well as their duration over time were evaluated by pre, post, follow-up comparisons on 6 dependent variables: two self-report questionnaires (MRAS and SAS) and ratings of four behaviors (global assertiveness and 3 specific target behaviors). Process information was obtained with session by session observations on 4 behaviors: 3 target behaviors per subject and 1 untrained or control behavior. Generalization of training effects across situations was evaluated by comparing performance in rehearsed vs unrehearsed situations on 3 dependent measures (ratings of global assertiveness and observations on two specific components). Generalization of training effects across behaviors was evaluated by comparing performance in one trained or target behavior to an equivalent untrained or control behavior. Information concerning the relevance of application of content behaviors (requests for behavior change and spontaneous positive behaviors) was obtained by evaluating the frequency of those target behaviors (t.b.) as a function of the context (positive or negative situations). Finally, an index of transfer of

training effects to the natural environment was obtained with self-monitoring data on two dependent measures per subjects (frequency of initiating interactions with peers and frequency of asking questions in class or volunteering answers in class).

Self-Report Questionnaires

1) MRAS: On the MRAS, Subject A obtained -43 prior to training, a score which situated him below the lower range of this measure of assertiveness. At post evaluation his score had increased to +9 situating him within the average range and at follow-up, Subject A received a +28 score on the MRAS which situated him at the upper range limit of this test. In difference scores this represents an increase of 52 points post training with an additional 19 points at follow-up for a total of 71 points gained from pre-assessment to follow-up for Subject A. Subject B on his part showed a less drastic increase in score as he obtained 0 pre, +6 post, and +29 at follow-up. In difference scores this represents an increase of 6 points post training with an additional 14 points at follow-up for a total gain of 20 points from pre

to follow-up assessment.

2) SAS: On the SAS, Subject A obtained 6 at pre evaluation, this score situated him below the average range of his peers on this test. At post evaluation he obtained 20 situating himself above the upper range of his peers on the SAS and at follow-up Subject A maintained a score of 20; 20 is the maximum score on this test. Subject B followed a similar increase as he went from a score of 6 pre, to 17 post and 18 at follow-up.

Insert Table 6 here

Behavioral Ratings

A. 2-Way Analysis of Variance (ANOVA)

Pre, post and follow-up differences as well as performance in rehearsed situations versus unrehearsed situations were analyzed by means of separate analysis of variance on three dependent measures: ratings of global assertiveness, duration of reply (in sec.), and ratings of affect. Hence, 3 x 2 factorial designs with repeated measures were used with A: time as the first 3 level factor and B: situations as the second 2 level factor.

Table 6

Self-Report Questionnaires:

Results

Questionnaire	Raw Scores			Difference Scores		
	Pre	Post	Follow-Up	Pre-Post	Pre-Follow-Up	Post-Follow-Up
A: Modified Rathus						
S:A	-43	+9	+28	52	71	19
S:B	0	+6	+20	6	20	14
B: Self-Assertion						
S:A	6	20	20	14	14	0
S:B	6	17	18	11	12	1

N.B. MRAS has a mean of 0 with - 28 S.D.
SAS has a mean of 14.35 with - 2.26 S.D.

As there was an unequal number of rehearsed situations (8) vs unhearsed ones (4) per cell, scores on rehearsed situations were reduced from 8 to 4 by randomly pairing them 2 at a time and using the mean. Since our analysis included replication within a level of a factor on the same subject the possibility of Type I error was increased. To compensate for this, we chose the above procedure over analysis for unequal n as it represents a more conservative analysis by reducing the degrees of freedom.

1. Global Assertiveness

Ratings of global assertiveness indicated a significant main time effect for both subjects ($F(3.92)$, $P \leq 0.05$ for Subject A, and ($F(15.33)$, $P \leq 0.01$ for Subject B) with no difference between performance in rehearsed and unrehearsed situations and there was no interaction between the time and practice factors.

Insert Table 7 here

Post hoc comparisons using the Tukey test indicated that for Subject A although there was an increase in performance post treatment, the main treatment effect was attributable to the performance at follow-up. On the other hand, for Subject B post hoc comparisons

indicated that ratings obtained at the post therapy as well as at the follow-up phases were significantly greater than scores obtained before treatment.

Table 7

2-Way Anova

Factor		M.S.	d.f.	F	P
1) Global Assertiveness:					
S:A	Time	2.9	(2,18)	3.92*	0.05
	Practice	0.74	(1,18)	1.	N.S.
	Time x Practice	0.79	(1,18)	1.07	N.S.
S:B	Time	14.34	(2,18)	15.33**	0.01
	Practice	0.71	(1,18)	0.82	N.S.
	Time x Practice	0.11	(1,18)	0.13	N.S.
2) Appropriate Affect:					
S:A	Time	10.93	(2,18)	57.53**	0.01
	Practice	0.01	(1,18)	0.05	N.S.
	Time x Practice	0.16	(1,18)	0.84	N.S.
S:B	Time	7.88	(2,18)	40.63**	0.01
	Practice	0.194	(1,18)	0.0034	N.S.
	Time x Practice	0.003	(1,18)	0.02	N.S.

N.B. Time = Pre Post Follow-up

Practice = Rehearsed situations vs unrehearsed situations

Table 7

2-Way Anova

Factor		M.S.	d.f.	F	P
3) Duration of Reply:					
S:A	Time	52.53	(2,18)	8.06**	0.01
	Practice	13.93	(1,18)	2.14	N.S.
Time x Practice		0.87	(1,18)	0.13	N.S.
S:B	Time	6.68	(2,18)	6.42**	0.01
	Practice	2.33	(1,18)	2.28	N.S.
Time x Practice		0.08	(1,18)	0.08	N.S.

N.B. Time = Pre Post Follow-up

Practice = Rehearsed situations vs unrehearsed situations

(see Table 8). Post and follow-up ratings did not differ from one another.

2. Appropriate Affect

Ratings of appropriate affect indicated a significant main time effect for both subjects ($F(57.53)$, $P < 0.01$ for Subject A and ($F(40.63)$, $P < 0.01$ for Subject B) with no difference between performance in rehearsed situations and performance in unrehearsed ones. Again there was no interaction between factors (see Table 7). Further analysis indicated that for both subjects post and follow-up performance was significantly greater than performance prior to treatment and for both subjects performance in follow-up was greater than post-evaluation (see Table 8).

3. Duration of Reply

Again with duration of reply a significant main time effect was observed for both subjects ($F(8.06)$, $P < 0.01$ for Subject A and ($F(6.42)$, $P < 0.01$ for Subject B) and once more there was no difference between performance in rehearsed versus unrehearsed situations. No interaction was found between the time and practice factors (see Table 7). In post hoc analysis, for both subjects' performance in post and follow-up phases was

superior to performance prior to treatment and there was no difference between post and follow-up scores.

Insert Table 8 here

B. 3-Way Analysis of Variance (ANOVA)

Training effects were evaluated by comparing pre, post and follow-up total scores in the frequency of content components of assertiveness (e.g. requests for behavior change and spontaneous positive behaviors) and were analyzed by means of analysis of variance. Also the frequency of a trained or target behavior was compared to that of a control behavior and the effects of context (positive situations vs negative situations) in which these behaviors took place were also analyzed. Hence, a 3 x 2 x 2 factorial design with repeated measures was used with A: time (pre, post and follow-up) as the first factor with 3 levels; B: behavior (target behavior vs control behavior) as the second factor with 2 levels and C: context (positive situations vs negative situations) as the last factor with 2 levels.

Table 8

Post Hoc Comparisons

Summary

Tukey tests: $q(3,21) = 3.56$ at 0.05

Behavior:	$q^*(3,21)$	Msq. Error:	T_1	T_2	T_3
1) Global Assertiveness:					
S:A	3.56	6.74 :	24.75	32.75	33.38
S:B	3.56	0.84 :	18.25	34.38	37.5
2) Appropriate Affect:					
S:A	3.56	0.19 :	15.5	28.88	33.5
S:B	3.56	0.19 :	11.88	22.63	27.38
3) Duration of Reply:					
S:A	3.56	6.52 :	33.09	61.83	72.78
S:B	3.56	1.04 :	21.33	33.28	34.6

N.B. A) T_1 = Total pre scores

T_2 = Total post scores

T_3 = Total follow-up scores

B) q^* at 0.05 level of significance

C) Underlined totals are those which do not differ significantly

superior to performance prior to treatment and there was no difference between post and follow-up scores. Hence, with global assertiveness, duration of reply and appropriate affect, results indicate significant gains post training (except with global for S:A); gains were maintained or increased at follow-up in all those dimensions.

Insert Table 8 here

B. 3-Way Analysis of Variance (ANOVA)

Training effects were evaluated by comparing pre, post and follow-up total scores in the frequency of content components of assertiveness (e.g. requests for behavior change and spontaneous positive behaviors) and were analyzed by means of analysis of variance. Also the frequency of a trained or target behavior was compared to that of a control behavior and the effects of context (positive situations vs negative situations) in which these behaviors took place were also analyzed. Hence, a 3 x 2 x 2 factorial design with repeated measures was used with A: time (pre, post and follow-up) as the first factor with 3 levels; B: behavior (target behavior vs control behavior) as the second factor with 2 levels and C: context (positive situations vs negative situations) as the last factor with 2 levels.

1. Spontaneous Positive Behavior/Requests for Behavior Change

Although there was an increase in the total number of content behaviors, there was no significant time effect in the frequency of those behaviors for either subjects. Comparisons between target beahvior and control behavior indicated that for Subject A no difference was observed between frequency of target behavior and of control behavior. A significant behavior by context interaction ($F(35.41)$, $P \leq 0.01$) indicates however that while the control behavior was used at a much higher frequency in positive context, the target behavior was used with higher frequency in negative context (see Figure 1). As well, a significant three-way interaction ($F(6.75)$, $P \leq 0.01$) indicates that this discrimination was greater at the end of the training phase and was maintained at follow-up (see Figure 2).

There was a significant main behavior effect ($F(13.89)$, $P \leq 0.01$) for Subject B with the trained behavior being used at a higher frequency than the control one. No interactions were observed for Subject B and no main context effects

were observed for either subjects.

Insert Table 9 here

Session By Session Data

Performance of our subjects was evaluated for every session of the experimental phase. Thus session by session data includes all baseline, training and follow-up sessions. The scores of each specific target behavior as well as of one control behavior were obtained independently for both subjects, and with the exception of frequency scores these scores were averaged across situations per week of the experimental phase. These observations were graphed into histograms.

Subject A

For [illegible] e first target behavior (t.b.) [illegible] eply. The average reply wa[illegible] 36 seconds during the [illegible] the introduction of [illegible] eplies were increased t[illegible] econds for week 1 and 9.8[illegible]2. When training techniques were no long[illegible] applied for this behavior, replies

Table 9

3-Way Anova

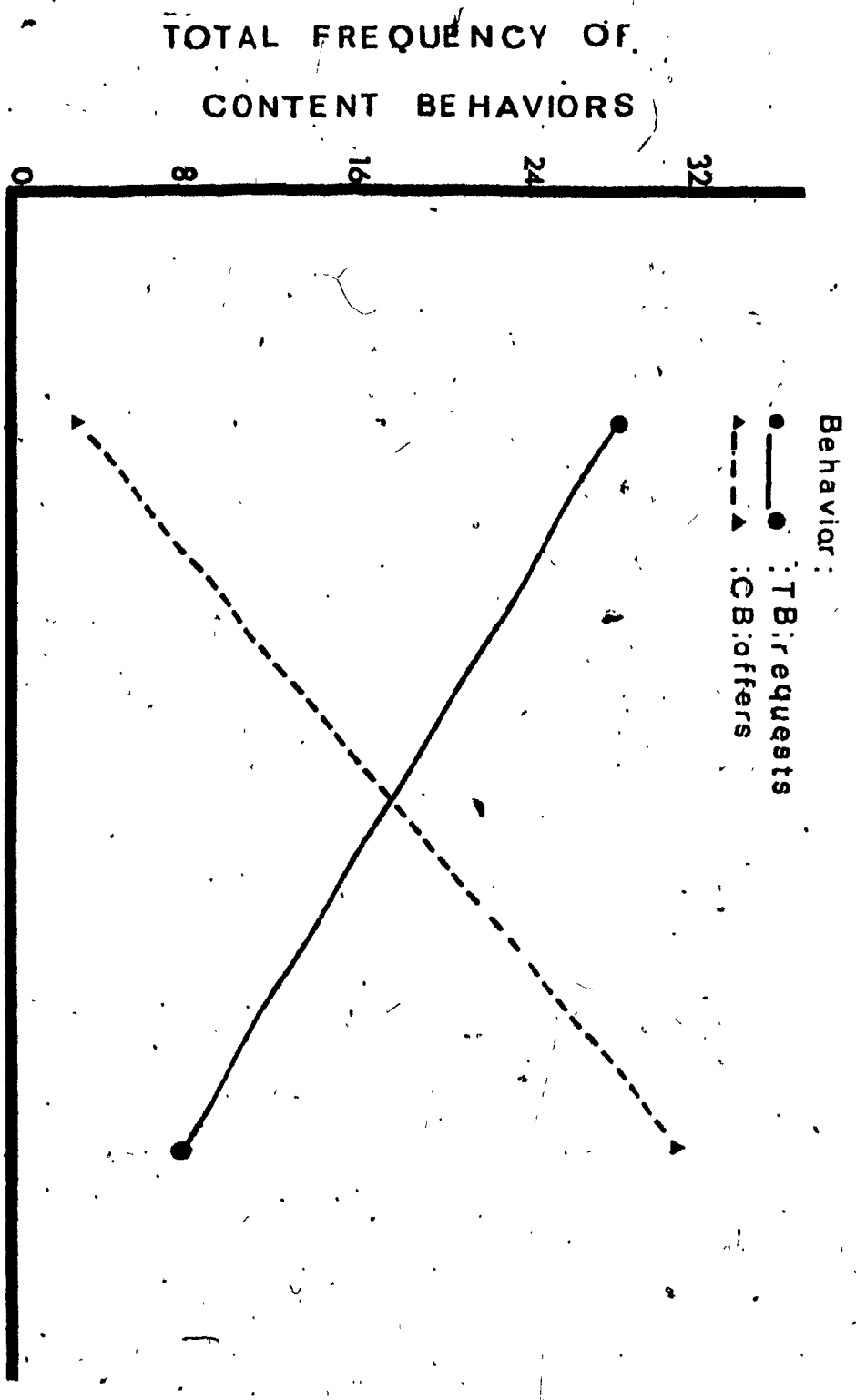
	Factor	M.S.	d.f.	F	P
Request for behavior change/ spontaneous positive behavior					
S:A	Time	2.52	(2,60)	3.04	N.S.
	Behavior	0.06	(1,60)	0.07	N.S.
	Context	0.89	(1,60)	1.07	N.S.
	Time x Behavior	0.62	(3,60)	0.75	N.S.
	Time x Context	0.45	(3,60)	0.54	N.S.
	Behavior x Context	29.39	(1,60)	35.41**	0.01
	Time x Behavior x Context	5.6	(2,60)	6.75**	0.01
S:B	Time	1.63	(2,60)	2.6	N.S.
	Behavior	8.68	(1,60)	13.89**	0.01
	Context	1.12	(1,60)	1.78	N.S.
	Time x Behavior	0.73	(3,60)	1.17	N.S.
	Time x Context	0.53	(3,60)	0.85	N.S.
	Behavior x Context	0.68	(1,60)	1.09	N.S.
	Time x Behavior x Context	0.44	(2,60)	0.7	N.S.

N.B. Time = Pre Post Follow-up

Behavior = Target behavior vs control behavior

Context = Positive situations vs negative situations

Figure 1. Total frequency of the content target behavior for Subject A (requests for behavior change) compared to total frequency of the content control behavior (spontaneous positive offers) in relation to the context in which those behaviors were used.


TOTAL FREQUENCY OF
CONTENT BEHAVIORS
0
8
16
24
32
CONTEXT
-
+
Behavior:
:TB:requests
:CB:offers

the exception of affect, all target behaviors were at their peak level of performance during the phase at which experimental procedures were specifically applied to those behaviors. As well, although performance in any given t.b. was not necessarily maintained in the weeks following application of training techniques, performance was either maintained or increased at follow-up. Observations on the control behavior are contradictory in that while for Subject A there is an overall increase in behavior during the training phase, the frequency of the control behavior remained unchanged for Subject B throughout the experiment (see Figure 5).

Self-Monitoring Data

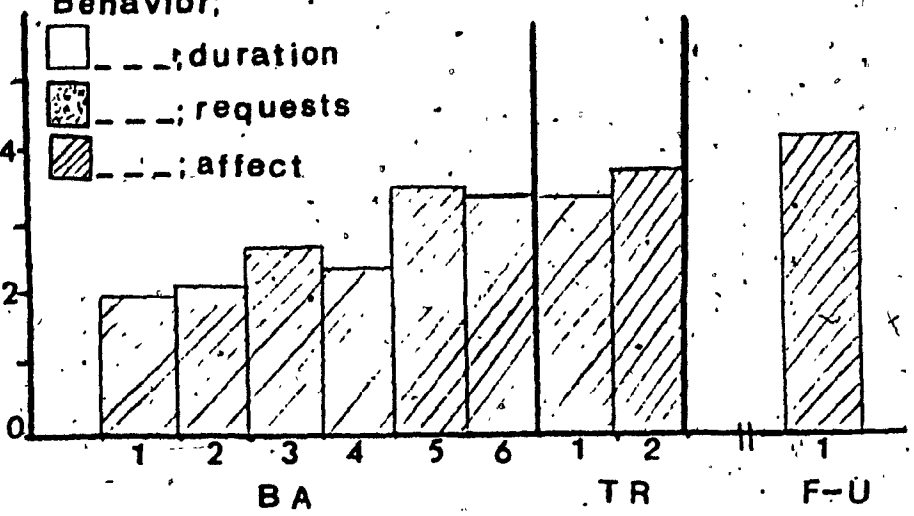
As mentioned in the method section, self-monitoring data were gathered by the subjects on a daily basis from the beginning of baseline until the last training session and again for two weeks prior to follow-up evaluation. For these weeks, data is complete for Subject A, but Subject B lost his observations of the second baseline week. Frequencies of initiating interaction were averaged across week, while frequency of school related behaviors were averaged

across school days in a given week. Self-monitoring data were graphed into histograms.

Figure 3. Session by session behavioral observations. Magnitude of three separate target behaviors for Subject A in relation to variations in experimental procedures: Baseline observations (BA) training of the specific target behavior (TR), no subsequent training of that behavior (NTR), and observations obtained at a six-weeks follow-up (F-U). Magnitude of behavior was averaged across situations per week for t.b. 1 (duration of reply) and for t.b. 3 (appropriate affect), and the total frequency of t.b.2 (requests for behavior change) was averaged across week.

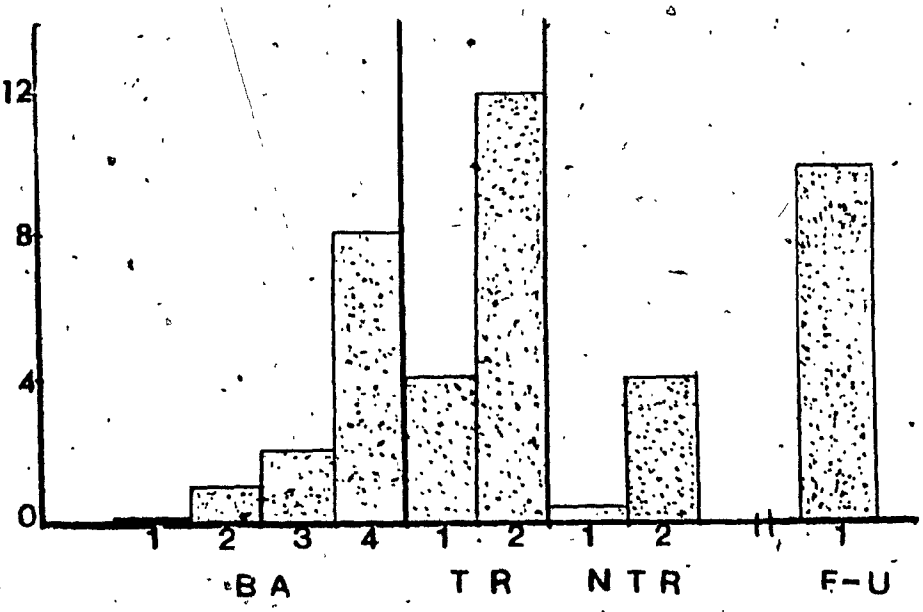
T B,3

$\bar{x}$ (rating)



T B,2

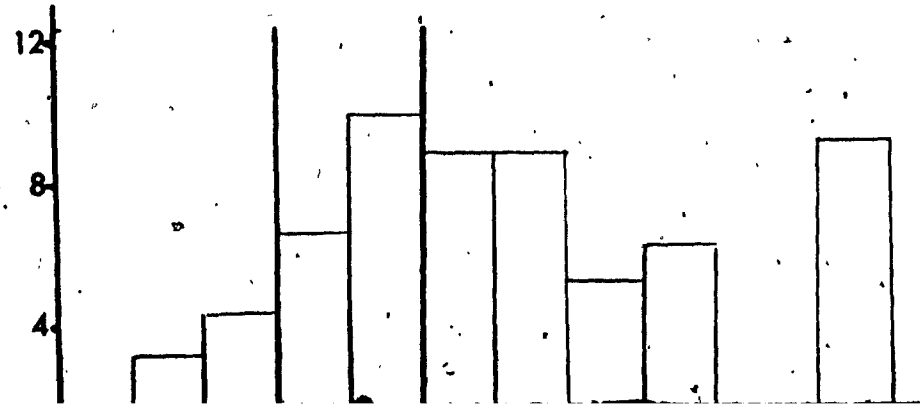
(Freq.)

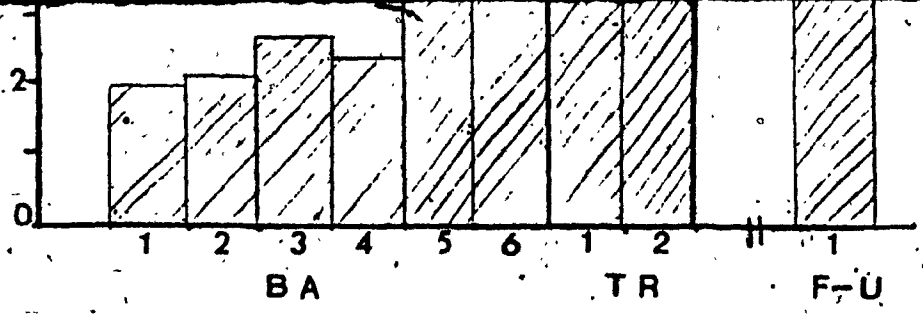


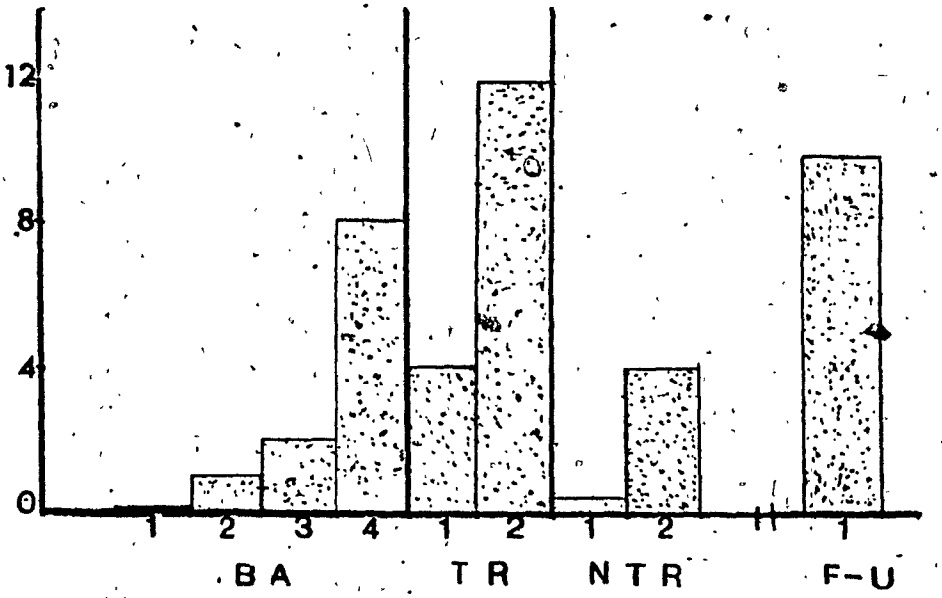
1 of

T.B.,1

$\bar{x}$ (sec.)




2
0
1 2 3 4 5 6 1 2 1
BA TR F-U


T B, 2
(Freq)
12
8
4
0
1 2 3 4 1 2 1 2 1
BA TR NTR F-U

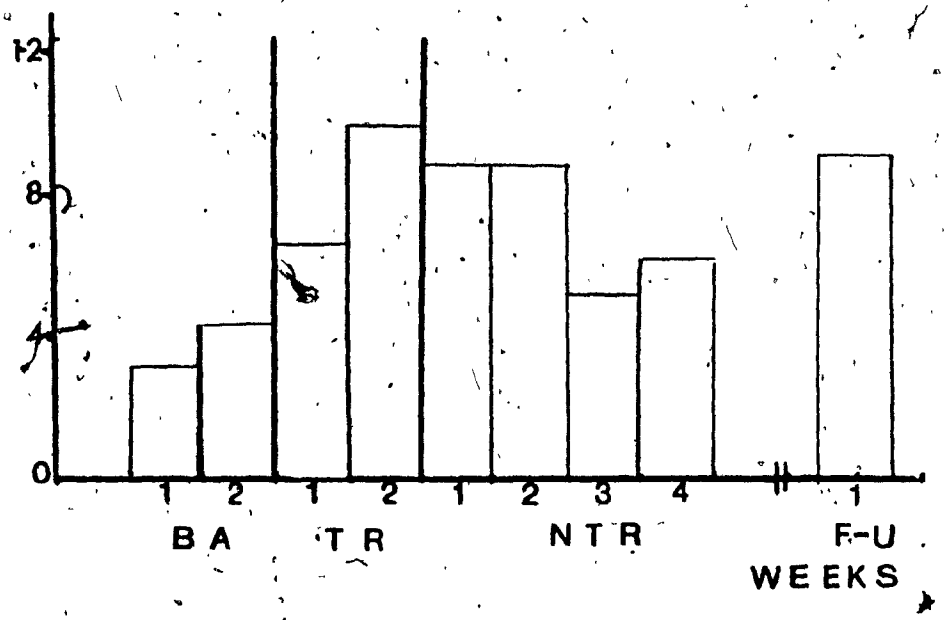
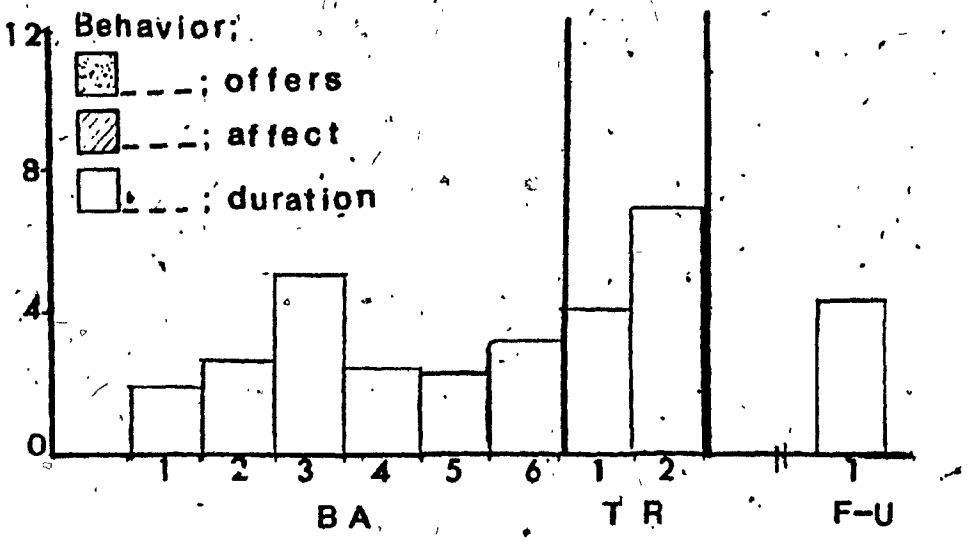

T. B, 1
x̄ (sec,)
12
8
4
0
1 2 1 2 1 2 3 4 1
BA TR NTR F-U
WEEKS

Figure 4. Session by session behavioral observations. Magnitude of three separate target behavior for Subject B in relation to variations in experimental procedures: Baseline observations (BA), training of the specific target behavior (TR), no subsequent training of that behavior (NTR), and observations obtained at a six-weeks follow-up (F-U). Magnitude of behavior was averaged across situations per weeks for t.b. 2 (appropriate affect), and t.b.3 (duration of reply), and the total frequency of t.b. 1 (spontaneous positive behaviors) was averaged across weeks.

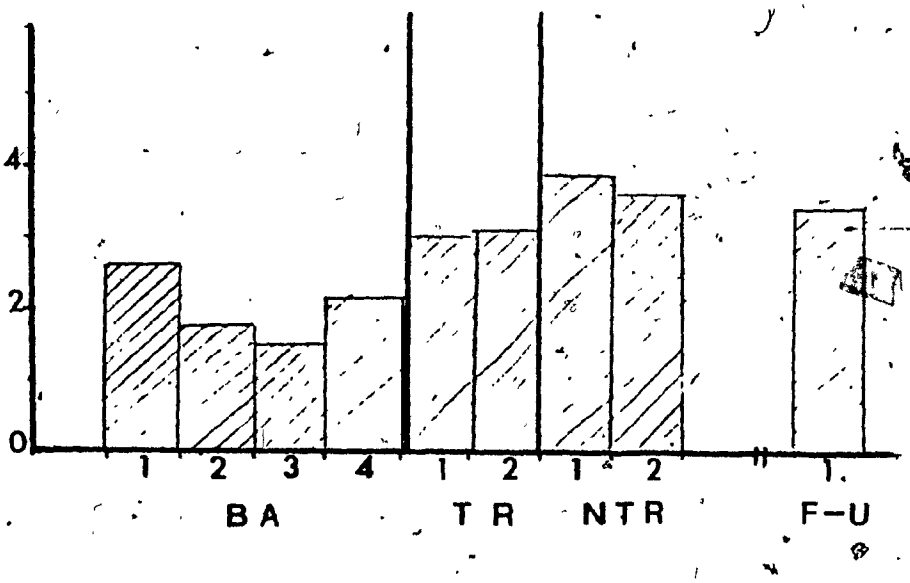
T B:3

$\bar{x}$ (sec.)



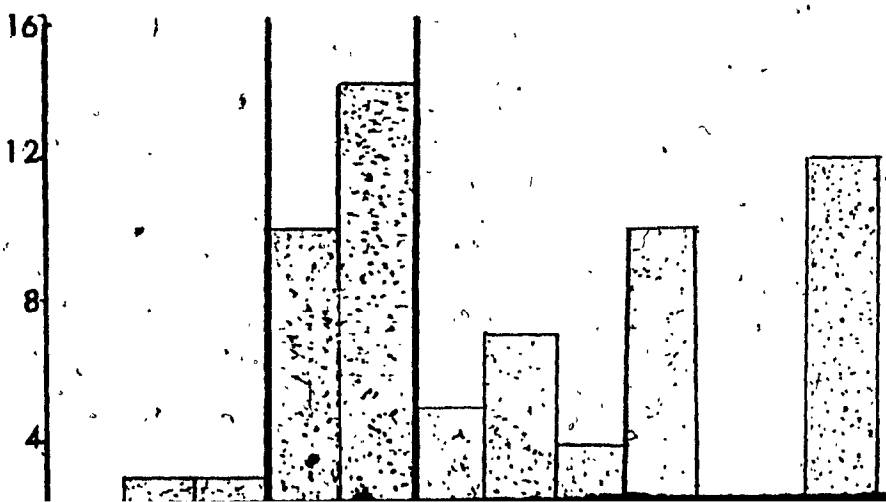
T B:2

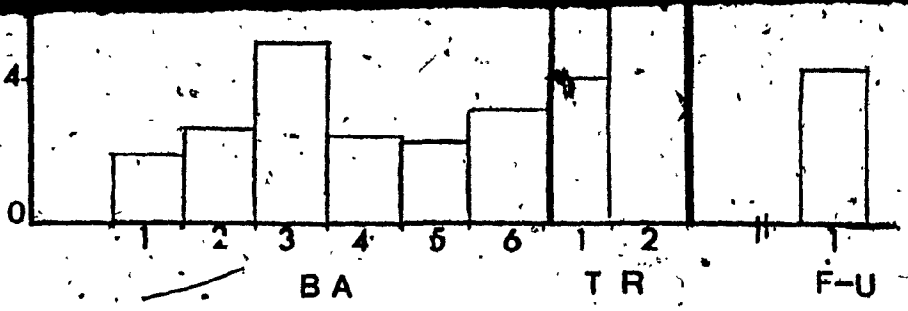
$\bar{x}$ (rating)

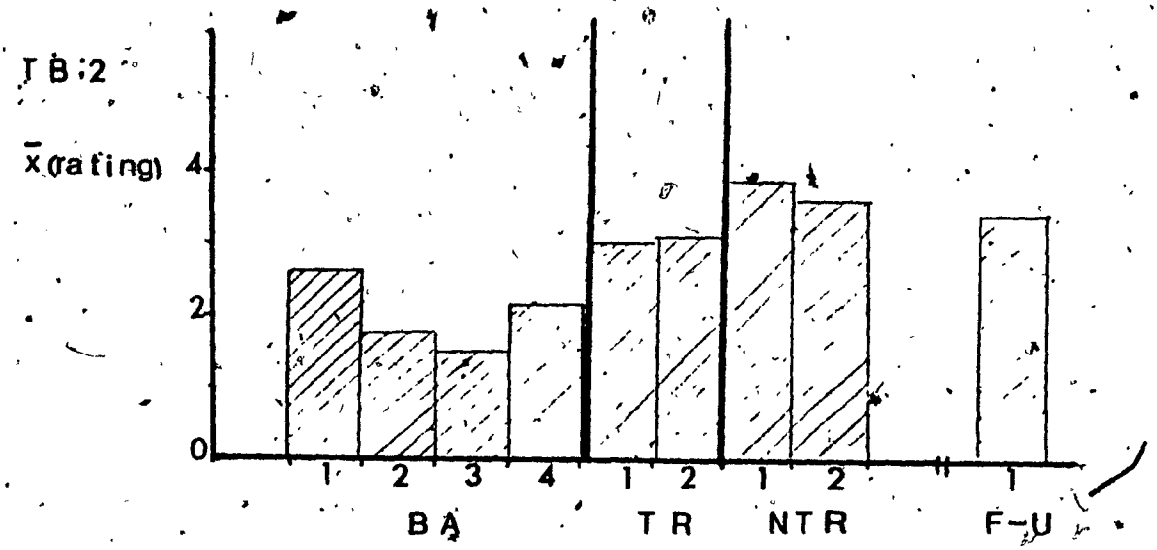


T B: 1

(Freq)




4
0
1 2 3 4 5 6 1 2 1
BA TR F-U


TB;2
x̄(rating)
4
2
0
1 2 3 4 1 2 1 2 1
BA TR NTR F-U

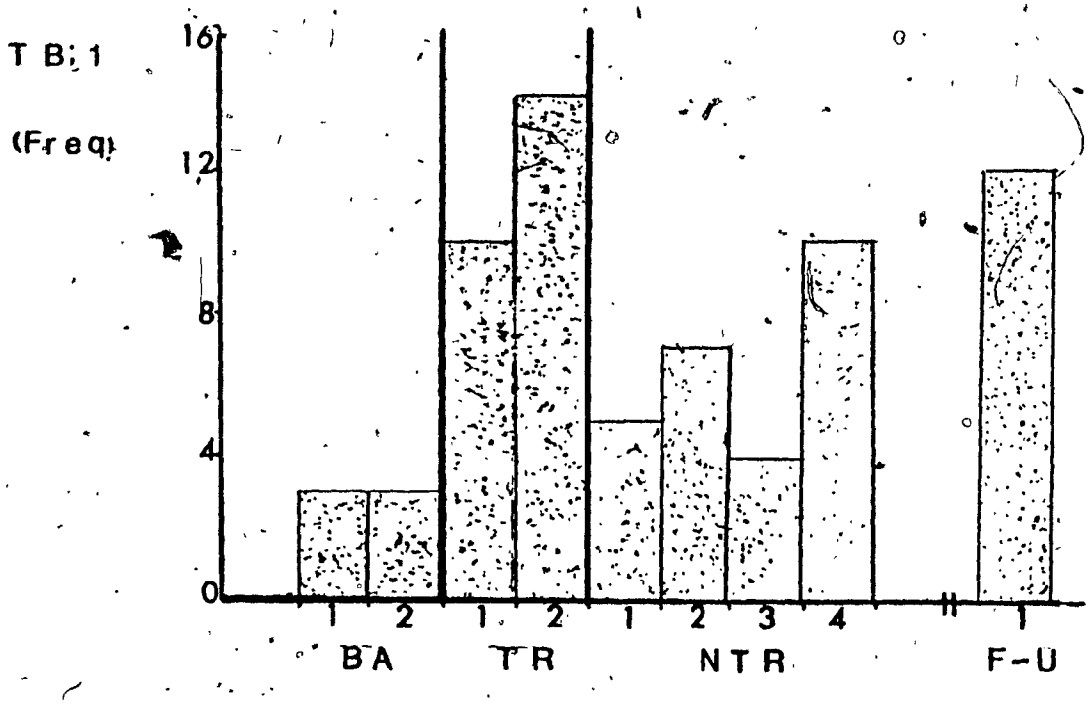
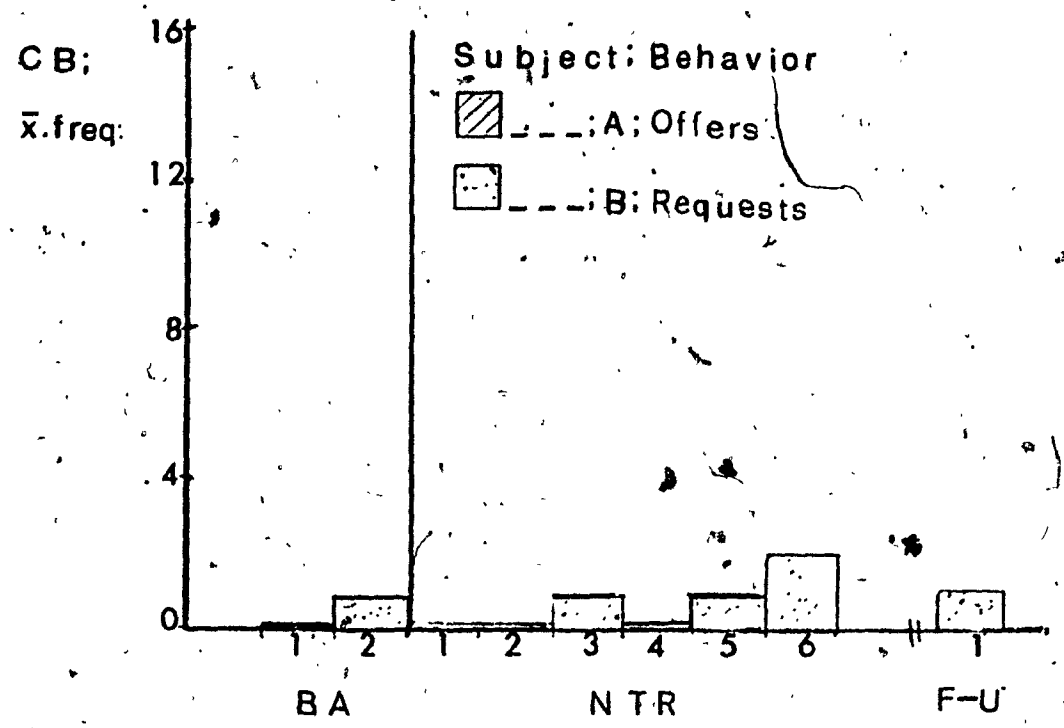
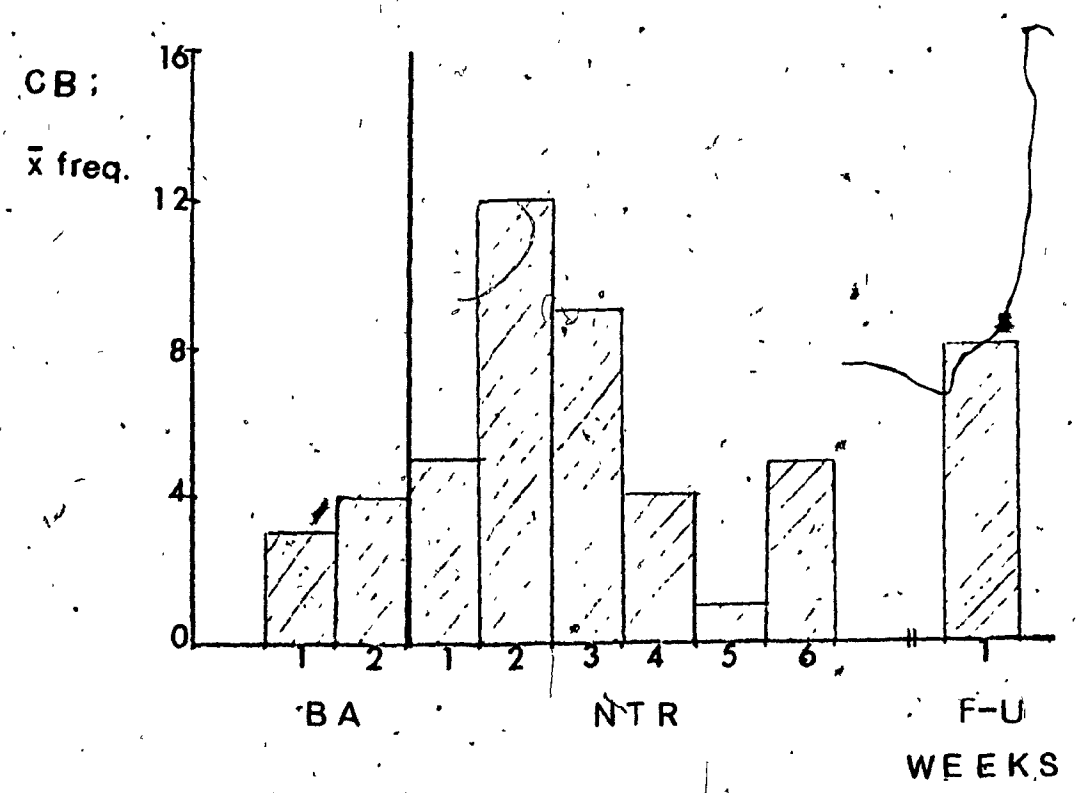

TB;1
(Freq)
16
12
8
4
0
1 2 1 2 1 2 3 4 1
BA TR NTR F-U
WEEKS

Figure 5. Session by session behavioral observations. Magnitude of the control behaviors of each subject as a function of the experimental procedures: Baseline observations (BA), no training of that behavior while other target behaviors were being trained (NTR), and observations obtained at a six-weeks follow-up (F-U). Magnitude of behavior for those control behaviors was the total frequency of emitted behavior per week.


CB;
x̄.freq.
16
12
8
4
0
Subject; Behavior
; A; Offers
; B; Requests
1 2 1 2 3 4 5 6 1
BA
NTR
F-U


CB;
x̄ freq.
16
12
8
4
0
1 2 1 2 3 4 5 6 1
BA
NTR
F-U
WEEKS

Subject A

For Subject A, the first homework assignment was to ask questions in class. Average daily frequencies of questionning behavior were of 0 during the first baseline week and of 0,2 during the second baseline week. During the first three training weeks when the subject was expected to increase the frequency of that behavior, daily frequencies were respectively of $\bar{X}$: 1.75/day, 0/day, and 1.6/day. During the three following weeks the frequencies of this assignment continued to increase and were respectively $\bar{X}$: 1.75/day, 2.33/day, and 3.5/day. Finally, during the follow-up weeks average frequencies of questions asked by Subject A in class were respectively $\bar{X}$: 2.8/day and 3.5/day. The second homework assignment for Subject A was to initiate interactions with peers. Average frequencies of this behavior per day were of respectively: $\bar{X}$: 0.4, 0.5, 0.14, 0, 0.86 for the 5 baseline weeks. During the three following weeks, when the subject was expected to increase the number of interactions with peers, frequencies were respectively of $\bar{X}$: 1.14 int/day, 1.56 int/day, and

Table 11

Homework Assignments

Summary

Target Behavior/Time	BW_1	BW_2	TW_1	TW_2	TW_3	TW_4	TW_5	TW_6	FW_1	FW_2
For S:A										
1) ask Q. in class: (X freq/sch. day)	0	0.2	0.75	0	1.6	1.75	2.33	3.5	2.8	3.5
2) Initiate Int.: (X freq/day)	0.4	0.5	0.14	0	0.86	1.14	1.56	0.75	1.14	1

N.B. The cutting lines indicate the time at which assignments were introduced;

B = baseline phase, T = training phase, F = follow-up phase, W = week

Table 11

Homework Assignments

Summary

Target Behavior/time:	BW_1	BW_2	TW_1	TW_2	TW_3	TW_4	TW_5	TW_6	FW_1	FW_2
For S:B										
1) Initiate Int.: (X freq/day)	1	-	1.57	1.66	1.6	1.71	1.86	1.86	1.43	3.33
2) Volunteer A. in class (X freq/sch. day)	0	-	0	0	0	1.75	0	1.11	2	4.25

N.B. The cutting lines indicate the time at which assignments were introduced

B = baseline phase, T = training phase, F = follow-up phase, W = week

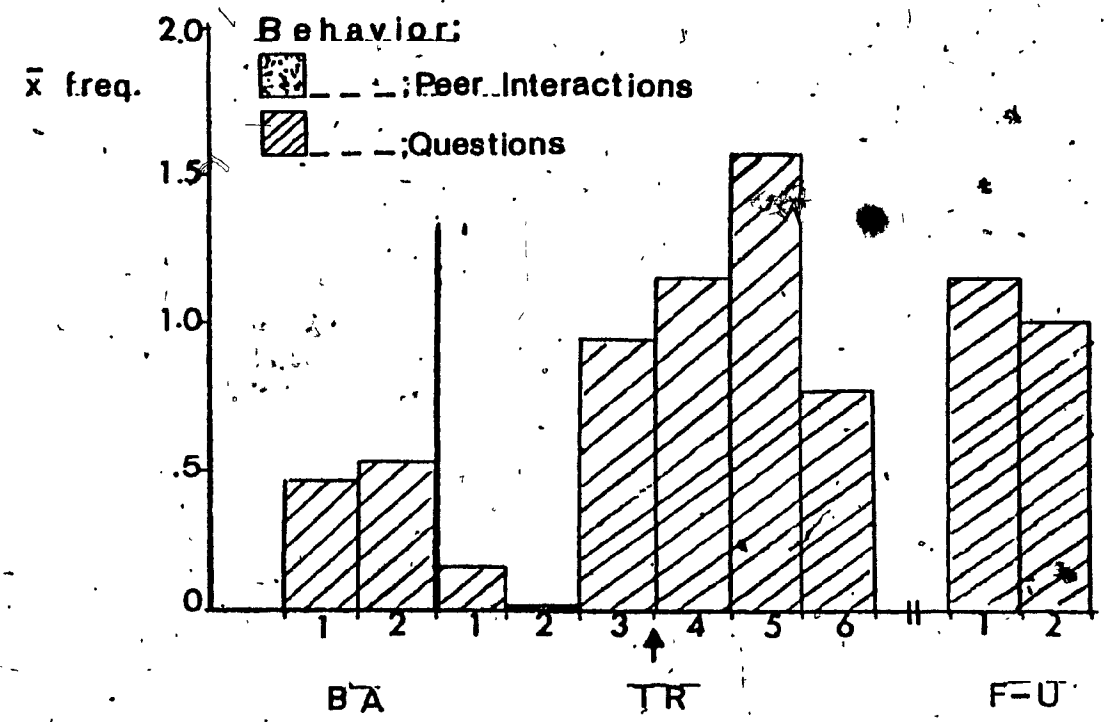
0.75 int/day. At follow-up the frequency of this behavior was maintained with a frequency of $\bar{X}$: 1.14 for week 1 and of $\bar{X}$: 1 for the second follow-up week.

Subject B

For Subject B, the first homework assignment to initiate interaction with peers was of mean frequency per day of 1 during baseline, was increased to 1.57, 1.66, and 1.6 during the three weeks when the subject was expected to increase his behavior continued to increase during the subsequent three weeks ($\bar{X}$: 1.71 int/day, 1.86 ing/day, and 1.86 int/day). At follow-up, the behavior was maintained during the first week ($\bar{X}$: 1.43 int/day) and drastically increased during the second week ($\bar{X}$: 3.33 int/day). The second homework assignment to volunteer answers in class was kept at an average frequency of 0 throughout the baseline weeks. During the three weeks when Subject B was expected to increase the number of answers he volunteered in class, the mean frequencies of this behavior were respectively of $\bar{X}$: 1.75, 0, and 1.11. Mean frequencies were increased to $\bar{X}$: 2 and $\bar{X}$: 4.25 during the two follow-up weeks.

Histograms of homework assignments indicate that for both subjects, assignment behaviors remained relatively unchanged until specific instructions aiming at increasing the behavior were provided to the subject (see Figures 6 and 7). When those instructions were provided, there was a direct increase in behavior and that behavior was either maintained or continued to increase during consecutive experimental weeks as well as at follow-up. In summary, for both subjects, results on the two self-report questionnaires indicate an increase in score post training and this increase is either maintained or improved at follow-up. Results on behavioral ratings of global assertiveness, duration of reply, and affect are consistent in indicating a significant main time effect as well as no difference between rehearsed and unrehearsed situations. With the exception of ratings of global assertiveness for Subject A, post hoc comparisons indicate that time effects are attributable to results obtained post training. Follow-up scores were always equal to or significantly greater than post training scores. Results on content components of assertiveness do

Figure 6. Self-monitoring data. Mean frequency per week of two social behaviors (asking questions in class, initiating interaction with peers) emitted in the natural environment by Subject A. Mean frequency of each separate behavior is illustrated in relation to the three separate experimental phases: Baseline observations (BA), training phase where SST is applied to target behaviors in the laboratory (TR), and follow-up phase six weeks after termination of training (F-U). The arrow (↑) indicates the time of introduction of specific instructions concerning those social behaviors to be carried in the natural environment.


Behavior:
x̄ freq.
;Peer Interactions
;Questions
2.0
1.5
1.0
.5
0
1 2 1 2 3 4 5 6 1 2
BA
TR
F-U

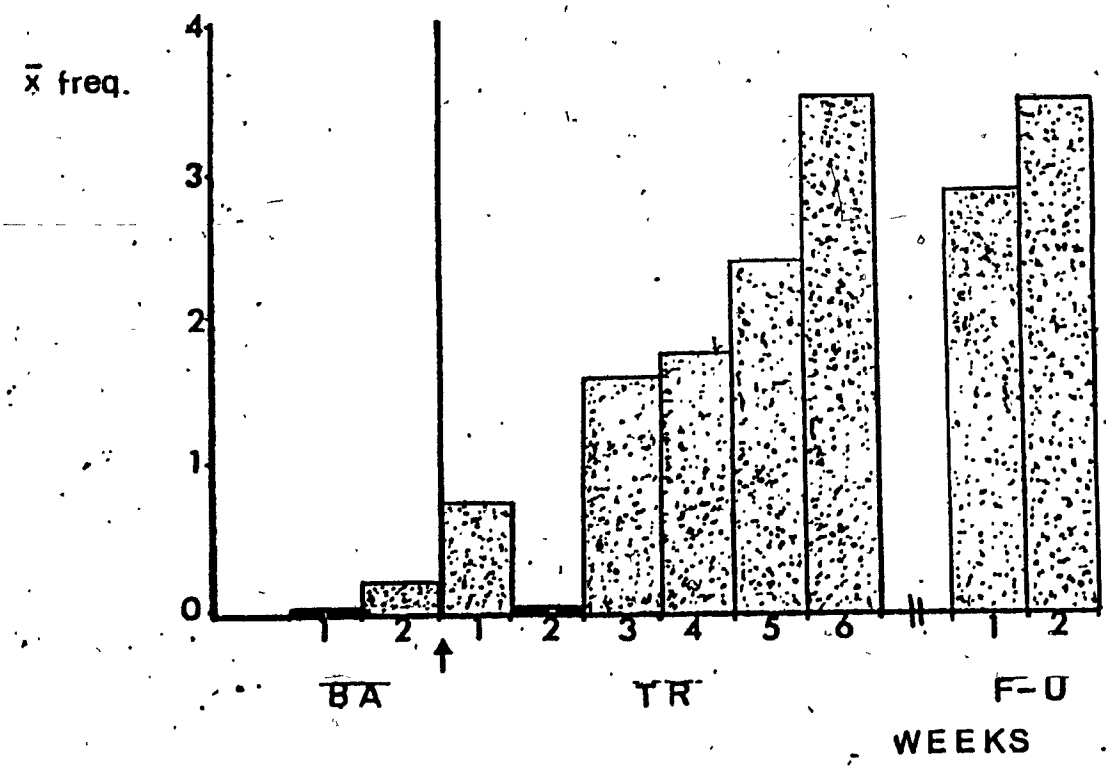
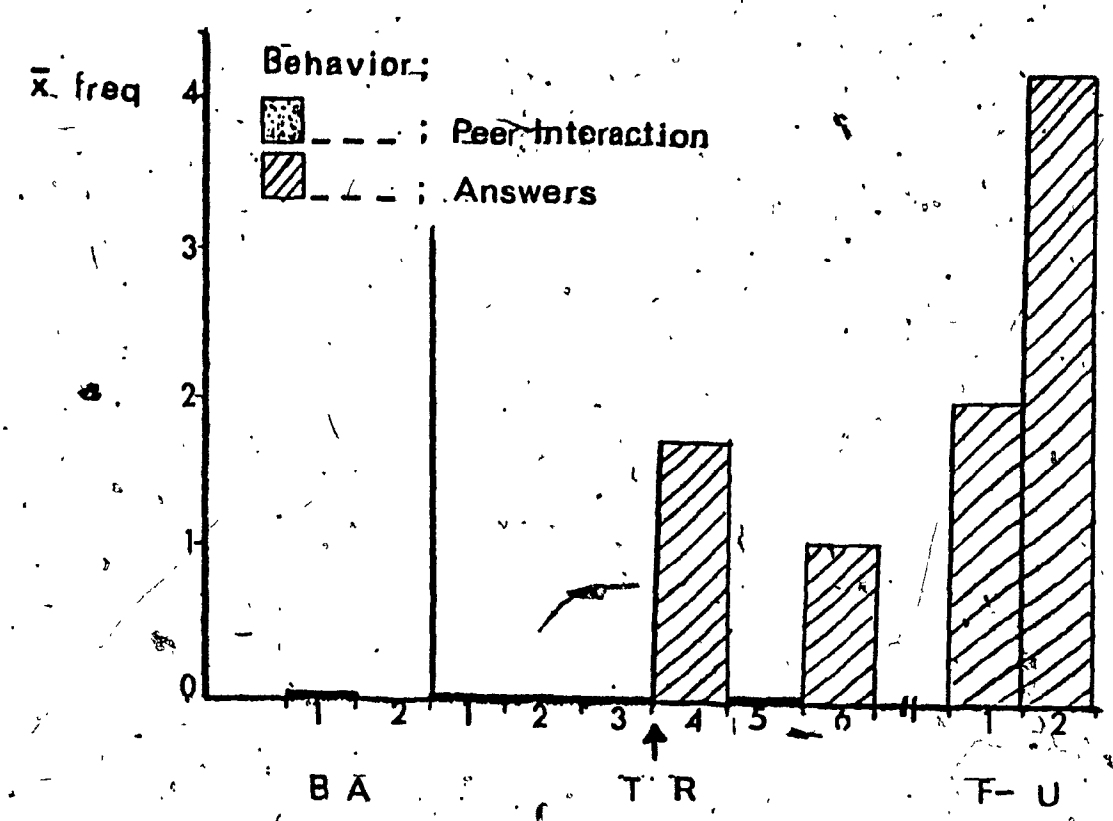
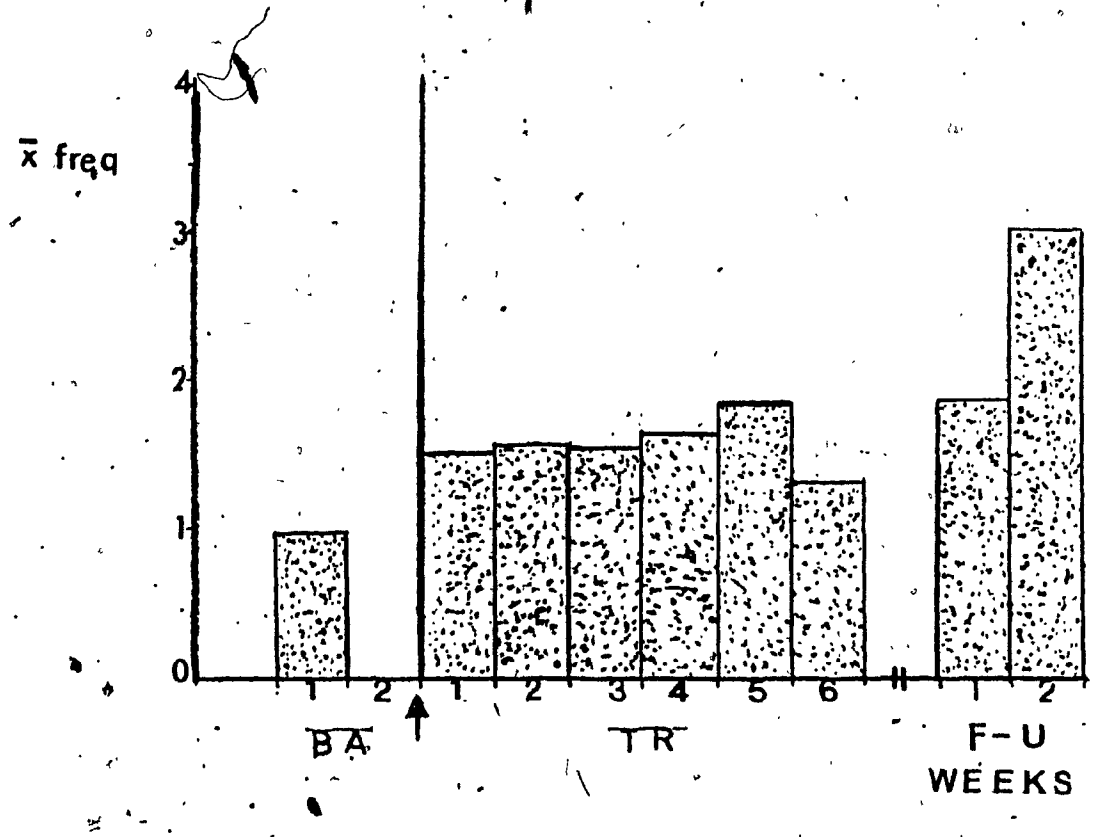

x̄ freq.
4
3
2
1
0
1 2 1 2 3 4 5 6 1 2
BA
TR
F-U
WEEKS

Figure 7. Self-monitoring data. Mean frequency per week of two social behaviors (initiating interaction with peers, volunteering answers in class) emitted in the natural environment by Subject B. Mean frequency of each separate behavior is illustrated in relation to the three separate experimental phases: Baseline observations (BA), training phase where SST is applied to target behaviors in the laboratory (TR), and follow-up phase six weeks after termination of training (F-U). The arrow (↑) indicates the time of introduction of specific instructions concerning those social behaviors to be carried in the natural environment.


x̄ freq
Behavior;
; Peer Interaction
; Answers
4
3
2
1
0
1 2 1 2 3 4 5 6 1 2
B A
T R
F- U


x̄ freq
4
3
2
1
0
1 2 1 2 3 4 5 6 1 2
BA
TR
F-U
WEEKS

not indicate a significant time effect for either subjects. However, the trained behavior was used at a signficantly greater frequency than the control behaviors by Subject B. There was a signficant behavior by context interaction for Subject A as well as a significant time x behavior x context interaction for this subject. For the session by session data, although there was an overall increase in all t.b. for both subjects, carry over effects from one target behavior to the next were observed. As well, while Subject A showed a gradual slope of acquisition of the control behavior, Subject B maintained the control behavior at a constant level. Finally, data on homework assignments indicate an increase in behavior that coincides with the time of introduction of specific instructions pertinent to those behaviors.

Inferential statistics were used to evaluate overall efficacy and several aspects of generalization of SST. For these purposes they presented the advantages of 1) providing estimate of significance of change and 2) permitting scrutiny of interaction between factors (generalization). Descriptive statistics were used to permit visualization of the rate of change and how it related to introduction of training.

Discussion

As mentioned previously, although SST has been repeatedly evaluated as effective in increasing assertiveness, evidence concerning generalization of training effects to the natural environment, across time, situations or behaviors is either lacking or inconclusive. These gaps could be attributed to group application of SST where for lack of time and facilities, training effects could not be maximized for each individual subject, and where generalization might not have been fostered sufficiently. Nonetheless, as long as generalization of SST cannot be confirmed, its utility in clinical work remains to be established.

This study attempted to reflect clinical application of SST. With these objectives in mind, the present design was atypical of SST research on several dimensions: a smaller sample size was used; subjects received individual training; training procedures were amongst the most extensive used in this area of research; subjects were initially referred for clinical assistance prior to selection; efforts were made to evaluate generalization of training affects

across time, behaviors, and situations; as well, attempts were made to evaluate generalization to the natural environment on behaviors pertinent to the subjects; training was provided on specific components of assertiveness that were pertinent to the subjects' needs; and specific efforts were made to insure subjects' understanding of instructions.

In addition, the small sample size used in this study permitted a more complete gathering of information. For example, the design used included evaluation of both overall training effects with pre, post, follow-up comparisons and of specific training effects with the session by session information; contrary to most studies, data was not based on a sample of subjects' performance but on its totality throughout experimentation; as well, content components were evaluated in terms of frequency so that again total performance could be reflected by the data; and finally, data concerning generalization to the natural environment were obtained on a daily basis throughout experimentation.

Difference scores on both self-report questionnaires indicate that with our subjects,

there was an increase in self-perception of assertiveness at the end of training and that this improvement was either maintained or increased at follow-up. This suggests that with these adolescents, SST was effective in improving self-perception of assertiveness and that improvement lasted over time. Results on observers' ratings of global assertiveness seem to indicate that for Subject B, training was effective in increasing overall assertiveness and that change lasted over time. On the other hand, although Subject A's performance was rated as more assertive post training, this improvement only reached statistically significant levels at follow-up.

This is interesting in that although change in global assertiveness cannot be directly attributed to training for Subject A, it suggests that change had started to take place during and, that the process was continued by the subject during those six weeks between post assessment and follow-up. This hypothesis is supported to a certain extent by the fact that whenever a main time effect was observed in behavioral ratings with both subjects, total follow-up scores were numerically and at times significantly

larger than post scores (see Table 6). Also, both subjects indicated a continued increase in self-perceived assertiveness at follow-up; this might suggest that with our subjects, not only was self-perception consistent with overall behavioral change, but that it might have been discriminative enough to detect smaller changes in behavior which took place between post and follow-up assessment. On the other hand, only ratings of appropriate affect indicated for both subjects a significant increase between post and follow-up. It might be interesting to evaluate with a larger sample of subjects in future research if: 1) self-perception is discriminative enough to detect overall slight improvements in behavior and/or 2) self-perception is predominantly influenced by significant changes in any given component of assertiveness, and/or 3) changes in certain specific components of assertiveness are more susceptible to influence self-perception -- and if so, to isolate these components.

Results on duration of reply indicate that training was effective in increasing the average length of reply for both subjects and that this increase was maintained over time. Also, training

seemed to be effective in improving appropriate affect with our subjects. The extremely high F ratios for the time factor in affect appear to be attributable to the combined increase between pre and post performance and between post and follow-up performance. This, although limited to two adolescents, is very encouraging for the clinician to observe in that it suggests that once affect has been improved, subjects could be capable of continuing progress on their own, at least on that dimension of assertiveness. This, however, should be verified with a large sample of subjects for affect as well as possibly for other components of assertiveness. In the eventuality that continued progress was confirmed, cost analysis could be carried to evaluate optimal length of training and optimal combination of training techniques necessary to insure probable continuation of progress at minimal cost.

Another encouraging finding is that consistently, results on global assertiveness, affect, and duration of reply did not indicate differences between performance in rehearsed situations and unrehearsed ones. These results suggest that generalizations of training effects

across situations was obtained with our subjects.

In spite of overall increase with time in frequency of requests for behavior change (Subject A) and of spontaneous positive behaviors (SubjectB), there was no main time effect on these content components of assertiveness for either subjects. The fact that training did not result in increasing the frequency of these target behaviors, raises two main possibilities: 1) SST might have been ineffective in changing these content components with our subjects or 2) these components of assertiveness might have been more complex and more difficult to establish in our subjects' repertoire, thus requiring more training sessions than other target-behaviors before significant changes could be observed.

Concerning the first possibility, it is interesting to point out that SST has been shown as being effective with less extensive training in changing requests for behavior change by Eisler et al. (1973), and Hersen et al. (1973). It should be noted however, that these authors used a slightly different measure of this t.b. in that change was evaluated in terms of an occurrence-nonoccurrence dichotomy while in the

present study total frequency of t.b. was used. It could be that frequency of content behaviors is not as sensitive a measure as the occurrence-nonoccurrence dichotomy used by Eisler and Hersen.

It is also possible that the total frequency of content behaviors was limited by constraints inherent to the kind of extended interactions used in this study. What is meant here is that although a small variability was tolerated, the role-player was instructed to deliver a constant number of replies of 5 with a maximum of 6 within each situation, after which he would either agree to the requests or accept the offers made by the subject. It is possible that as a result of a fixed number of replies, a plateau effect was created in the total possible content behaviors that could be made. Another interesting possibility is that the kind of expected outcome might have influenced the frequency of content behaviors. In other words, as outcome was consistently positive in this study, subjects might have learned to expect a positive outcome independently of their persistence in requesting change or offering ideas, thus not feeling the need to continue to increase the frequency of these

behaviors and again a plateau effect would be created. As the specific effects of outcome of behaviors on the frequency of those behaviors were not the focus of the present experiment, they were kept constant throughout the study. Nonetheless, it would be interesting for future research to evaluate the effects of outcome of behavior particularly with regards to persistence in those behaviors.

As results were consistent in indicating training effects and generalization of these effects across situations for all other t.b. for both subjects, the second alternative that content components are more complex skills to acquire, deserves further attention. At this point in time, it becomes particularly interesting to note that while Subject A obtained significant behavior by context and behavior by context by time interactions with no main behavior effect, Subject B obtained a significant behavior effect with no interaction whatsoever. These results are puzzling in that: a) they are apparently contradictory in that while Subject A seems to indicate generalization of training across behaviors, Subject B does not, and b) how could one

infer generalization of training effects if those were not observed in the first place by a main time effect?

A closer look at the graphical representation of the behavior by context interaction indicates that Subject A utilized spontaneous positive behaviors at a much higher frequency in positive context and requests for behavior change at higher frequency in negative context (see Figure 1); thus suggesting that Subject A practised a selective use of behavior as a function of context. Although selective use of behavior is not surprising on logical grounds, as Subject B did not practise selectivity in behavior (Figures 3 and 4), it appears that we cannot take for granted that selectivity in behavior will be applied by subjects. Furthermore, the three-way interaction indicates that selectivity in behavior was established post training and was maintained at follow-up (see Figure 2). In other words, while Subject A used positive behaviors and requests for behavior change of approximately the same frequency independently of the context prior to training, he practised selective application of those behaviors at the post level and maintained

it at follow-up. It would thus seem that: a) selectivity in behavior is an independent skill not always present in subjects' repertoire and that b) training for Subject A resulted not so much in changing overall frequency of behavior, but in refining the selectivity of these behaviors. As well, the fact that no main behavior effect was found indicates that there was generalization of training effects across behaviors, so that while Subject A learned to apply the target behavior in its appropriate context (negative), he also started to apply the control behavior applied in its appropriate context. Generalization of training effects to the control behavior is apparent in the histograms of session by session observations (see Figure 5).

On the other hand, results indicated that Subject B utilized the target behavior at a much higher frequency than the control behavior. The graphical representation of the respective frequencies of these behaviors in relation to time (see Figure 5) indicates that while the frequency of control behavior was kept at approximately the same level throughout the experiment, the target behavior increased progressively with time. It

would be tempting to suggest that the predominant use of the target behavior over the control one resulted from training, however, no time by behavior interaction was found to support this hypothesis. Nonetheless, these results are stimulating in that they could suggest that if there were in fact training effects on content components, direction of change was divergent with our subjects (e.g. discriminative use of behavior versus predominant use). This divergence in results for content components is in sharp contrast with the consistency of results obtained with other specific skills. Changes in duration of reply and affect were uniform to predictions (e.g. lengthier replies and more appropriate affect) and were replicated by our second subject in all aspects: main treatment effect that was maintained or improved over time and generalized across situations. This might suggest that while individual variability is an ever-present factor in the acquisition of any skill, it might have been greater for content components of assertiveness than for duration of reply, or affect. A logical extension of this idea is that if indeed individual variability is greater

with content components of assertiveness, could it not be that these behaviors are in fact not single units of behaviors, but composites of a variety of skills? For example, the selectivity of behavior found in this study could well be one of the sub-components of the content behaviors examined in this study. The possibility that content components of assertiveness are complex skills deserves to be explored by future research.

Although training was effective in improving these aspects of assertiveness (global, duration, affect) on pre, post comparisons, session by session observations indicate that change could not be directly attributed to the direct introduction of training techniques. Instead, carry over effects from one behavior to another were observed (see Figures 3 and 4) and with the introduction of training techniques for t.b. 1, gradual increases in t.b. 2 and t.b. 3 were observed. Carry over effects could be explained by a variety of factors taken individually or in combination: 1) effects of SST might not be skill-specific, e.g. effects of SST on any given target behavior might not be restricted to that skill, but would generalize across skills. For

example, modeling used to exemplify one specific skill might at the same time illustrate more competent performances in other skills as well. 2) skills, contrary to our assumption, might not be independent from one another and improvements in any given skill might lead as well to gain in other skills; for example, lengthier replies could favor more frequent requests for behavior change. 3) unspecific factors such as: increased expectancies, placebo, increased familiarity with the demands of the study, increased rapport with the role-player, etc.., could have accompanied gains in the previous t.b. and contributed to gains in the next skill.

Briefly, the first two possibilities suggest that because of the nature of the procedures used and/or of the skills trained, there was generalization of training effects across skills. If indeed generalization across skills was confirmed by further process studies, it would be necessary to answer the following questions: is there generalization because techniques are not skill specific? and/or because skills are inter-dependent? what component(s) in the technique is (are) not skill-specific? Are all skills

interdependent? If not, which ones are? Using those technical components or those skills, how can we maximize generalization across skills? A troublesome aspect of this process information is that carry over effects indicate that increases in t.b. 2 and t.b. 3 could not be solely attributed to the introduction of SST. Does that mean as well that significant differences obtained in pre-post comparisons cannot be solely attributed to SST? If carry over effects resulted essentially from non-skill specific technique and/or interdependence of skills, it can be argued that these are in fact effects of SST and that results obtained in pre-post comparison are only attributable to SST. On the other hand, if carry over effects were created by non-specific factors, significant pre-post changes cannot be solely attributed to SST per se. We cannot debate that non-specific factors were absent from our results. However, an abundant body of research has already documented the efficacy of SST when those factors are controlled for. As well, with the exception of data on content components, results were replicated by our second subject. Hence, if non-

specific factors were to account for a large part in our results, it is doubtful that such consistency between our subjects would have been obtained.

Of particular interest for the clinical implications of this study are the self-monitoring observations since they represent one of the few attempts to evaluate generalization of training effects to reality. Self-monitoring data indicates that subjects gradually increased the frequency of class participation behaviors and of initiated peer interactions. It should be noted that: a) usually, increases in behaviors correspond to the time of introduction of specific instructions concerning these behaviors (training week 1 and training week 4), b) behaviors continued to increase gradually until the end of training, and c) behaviors were either maintained or increased at follow-up (see Figures 6 and 7). Hence, it does seem that training effects did generalize to the natural environment, and that once again subjects were capable of maintaining change or even improving it on their own. It could be argued that increases in those behaviors were attributable to instructions rather than to

training per se, however, it should be reminded that not only were these instructions minimal, but that our subjects had approximately 8½ academic years during which it is most likely that similar instructions were provided by teachers, peers, or parents. These results are encouraging in that they suggest that SST has facilitated the utilization of other school and socially related behaviors with our subjects and that, in that sense, transfer to the natural environment was obtained.

Although not the focus of the present study, it is also encouraging to note that inter-rater agreements was fairly reliable and constant throughout the study (see Tables 1, 2, and 3). Scrutiny of those agreement scores indicate that: a) agreement scores on pre-post follow-up tapes were closely related to training agreement scores, b) that agreement scores on pre-post follow-up tapes were on the average higher than agreement scores on the session by session observations, and c) that the highest and most constant reliabilities throughout the experiment were obtained on duration of reply.

This information suggests that evaluation of

our subjects was kept fairly reliable throughout the experiment. As well, although there was full randomization of both kinds of tapes, pre, post and follow-up tapes were somehow evaluated more reliably than session by session tapes. It could be that with our subjects, differences in performances in target behaviors were greater in pre-post or pre-follow-up comparisons than, let's say, between session 7 and 4, thus contrasts in performance levels might have been sharper in pre, post follow-up tapes, permitting more discrimination in ratings from observers than with session by session tape. This again might be worthwhile for future research to explore as it might suggest ways to increase reliability of data. The fact that duration of reply was consistently high, independently of the time at which inter-rater agreement was obtained or the kind of tapes being evaluated, is consistent with previous research (Eisler et al., 1973; Hersen et al., 1974), and suggest that duration of reply is a highly reliable dependent measure for this kind of research.

In summary, pre-post follow-up comparisons indicated that with our subjects SST was effective in improving self-perception of assertiveness, global assertiveness, duration of reply, and appropriate affect. Interestingly, contrary to recent reviews, there was not a tendency for treatment effects to drop off during the six weeks follow-up, but training effects were either maintained or increased in this phase. As well, training affects were found to generalize from trained situations to untrained ones for global assertiveness, affect, and duration of reply. Efficacy of SST in increasing total frequency of content behaviors (requests for behavior change/spontaneous positive behaviors) could not be verified. Instead, it was suggested that SST resulted in refining selectivity in behavior for Subject A, but this was not replicated by our second subject. The possibility that dontent components might not be single-units of behavior was discussed.

Session by session information indicated that although performance was at its peak level at the time of introduction of training techniques, carry over effects were observed with both

subjects from one behavior to another. Possible generalization across skills and/or presence of non-specific factors have been discussed as possibly responsible for those carry over effects. Self-monitoring data suggest that there was transfer of training to the natural environment.

The results concerning the generalization of training effects are in contrast with many previous studies where generalization could not be verified. This could partly be explained by the fact that in this study efforts were made to provide each subject with an optimal combination of training procedures which were tailor made to his particular needs.

Extensive conclusions about the present study are limited because of sample size, however, this study provides some indications that: a) SST could be an effective treatment procedure for low skilled adolescents which could yield improvement in self-perception as well as in behavior and that b) resulting improvement could be clinically meaningful in that positive change could transfer to the natural environment and generalize across situations, last over time - and possibly generalize across behaviors. On a

different level, this study resembling actual clinical practice, could serve as an example of methodology that could be used to evaluate ongoing therapy more systematically.

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Appendix 1-11

Appendix 1; Modified Rathus Assertiveness Scale

DIRECTIONS: Indicate how each of the following statements best describes you by using the code given below.

-3 extremely descriptive of me
-2 quite descriptive of me
-1 slightly descriptive of me
+1 slightly nondescriptive of me
+2 quite nondescriptive of me
+3 extremely nondescriptive of me

____ 1. Most people seem to be more aggressive and assertive than I am.
____ 2. I have hesitated to talk to students of the opposite sex outside of class because of "shyness".
____ 3. When the food served at a restaurant or Drive-In is not the way I want it, I complain about it to the waiter or waitress.
____ 4. I am careful to avoid hurting other people's feelings, even when I feel that I have been hurt.
____ 5. If a salesman has gone to considerable trouble to show me something which is not what I want, I have a difficult time in saying "No".
____ 6. When I am asked to do something, I insist upon knowing why.
____ 7. There are times when I look for a good, strong argument.
____ 8. I work to get ahead as well as most students in my position.
____ 9. To be honest, people often take advantage of me.
____ 10. I enjoy starting conversations with new people and strangers.
____ 11. I often don't know what to say to good looking persons of the opposite sex.
____ 12. I will hesitate to make phone calls to places of business.
____ 13. I would rather apply for a job by writing letters than by going through with personal interviews.
____ 14. I find it embarrassing to return something I bought.
____ 15. If a close and respected relative were annoying me, I would hide my feelings rather than express my annoyance.
____ 16. I have avoided asking questions for fear of sounding stupid.

Appendix 1: Modified Rathus Assertiveness Scale

DIRECTIONS: Indicate how each of the following statements best describes you by using the code given below.

-3 extremely descriptive of me
-2 quite descriptive of me
-1 slightly descriptive of me
+1 slightly nondescriptive of me
+2 quite nondescriptive of me
+3 extremely nondescriptive of me

_____ 17. During an argument I am sometimes afraid that I will get so upset that I will shake all over.

_____ 18. If a well known person makes a statement which I think is incorrect, I will have the others hear my point of view as well.

_____ 19. I avoid arguing over prices with clerks and salesmen.

_____ 20. When I have done something important or worthwhile, I manage to let others know about it.

_____ 21. I am open and honest about my feelings.

_____ 22. If someone has been spreading false and bad stories about me, I see him (her) as soon as possible to "have a talk" about it.

_____ 23. I often have a hard time saying "No".

_____ 24. I tend to bottle up my emotions rather than make a scene.

_____ 25. I complain about poor service in a restaurant and elsewhere.

_____ 26. When I am given a compliment, I sometimes just don't know what to say.

_____ 27. I some people near me in a theatre were talking rather loudly, I would ask them to be quiet or to go some other place and sit.

_____ 28. Anyone attempting to push ahead of me in a line is in for a good fight.

_____ 29. I am quick to express an opinion.

_____ 30. There are times when I just can't say anything.

Appendix 2: Self Assertion Scale

Answer this questionaire as honestly as you can, all the information will remain confidential. Answer all the questions even if some of them might not seem to apply to you, answer in the way that is most like you.

	True :	False :
1) I enjoy watching T.V.		
2) In group discussions I have no difficulty in expressing my ideas.		
3) I share most of my activities with friends.		
4) Asking a friend to go to the movies with me is not an easy thing to do. I feel clumsy in doing so.		
5) Reading mystery stories is a great pleasure for me.		
6) When someone "bugs" me I tell him to stop it.		
7) I am too shy to borrow notes from a peer.		
8) When I feel someone is unfair to me I tell him/her.		
9) I have no difficulty in finishing my homework on time.		
10) I avoid asking questions in class because I am afraid to look stupid.		
11) When someone asks me to do something for them I ask why.		
12) I think that girls are boring.		
13) I rarely sit down with anyone in the cafeteria even when I feel like it.		
14) I have lots of friends.		
15) Violence on T. V. makes me feel uncomfortable.		
16) I haven't decided yet what I want to do as a career.		
17) I think that teachers are not aware of students' needs.		
18) When asked a question in class, I "freeze", I have difficulty to answer even when I know the answer.		
19) When I invite a friend to go somewhere and he is too busy I ask him to come at another time.		
20) Most of my free time is spent alone.		
21) In group projects I always end up doing most of the least pleasantwork.		
22) I think that having the Olympics in Montreal is a good idea.		

Appendix 2:

	True :	False :
23) When someone gets in trouble by their own fault I don't feel I should try to help them out.....		
24) When someone starts conversation with me I often dont Know what to say next.....		
25) Most of the time I feel comfortable in groups and I participate as much as anybody else.....		
26) Making friends is easy for me.....		
27) When someone wants to borrow something from me I have a hard time saying no.....		
28) I am not as "out going" as the other students of my class.....		
29) I feel very shy when I have to ask a favor from someone.....		
30) I disliked answering to this questionaire.....		

(True or False)

Appendix 3: Role-Play Assessment

SS:	1	2	3	4
Situation I:				
1) eye contact	123	123	123	123
2) affect	123	123	123	123
3) speech fluency	123	123	123	123
4) speech duration	123	123	123	123
5) ask behavior change	123	123	123	123
6) persistance	123	123	123	123
7) convincing	123	123	123	123
8) spontaneous offers	123	123	123	123
Situation 2:				
idem	idem	idem	idem	idem
Situation 3:				
idem	idem	idem	idem	idem
Situation 4:				
idem	idem	idem	idem	idem

Assessment Role Play Situations:

Situation 1: The teacher is explaining something new and there is something that you don't understand; show me how you would ask him a question...

Situation 2: There is a student in your class that you don't know yet but that you would like to meet. You go over to hime and you say....

Situation 3: You are sitting in the cafeteria next to a group of classmates. They are discussing about the Olympics. Show me how you would try to get into the conversation.....

Appendix 4: Teacher's Rating of Assertiveness Form

Teacher's Name: _____

Student's Name: _____

Class: _____

Date: _____

RATING SCALE: On the following rating scales, different characteristics are rated from one to five with the number three being the average or medium point on each item. Could you please circle the number you find most descriptive of this student.

Academic performance very much above average	1	2	3	4	5	Academic performance very much below average
In class, volunteers answers very frequently	1	2	3	4	5	Never volunteers an answer
In group discussions, never presents his ideas	1	2	3	4	5	Is a very active member, frequently presents his ideas
Always meet academic deadlines on time	1	2	3	4	5	Never meet deadlines on time
Shows leadership and initiative in new situations	1	2	3	4	5	Very dependent, adapts with difficulty
Does not engage in any extra curriculum activity	1	2	3	4	5	Engages in numerous extra curriculum activities
Very positive attitude towards school	1	2	3	4	5	Very negative attitudes towards school
When asked a question, answers easily	1	2	3	4	5	Answers with great difficulty

Appendix 4: Teacher's Rating of Assertiveness Form

Teacher's Name: _____

Student's Name: _____

Class: _____

Date: _____

RATING SCALE: On the following rating scales, different characteristics are rated from one to five with the number three being the average or medium point on each item. Could you please circle the number you find most descriptive of this student.

Rude and aggressive with other students	1	2	3	4	5	Is easily pushed over by other students
School attendance very regular	1	2	3	4	5	Very irregular
Very shy, withdrawn	1	2	3	4	5	Very outgoing
Never asks questions when he seemingly does not understand	1	2	3	4	5	Always asks questions when he does not understand
Very meticulous in his work	1	2	3	4	5	Very sloppy in his work

Appendix 4: S.N.A.S. TEACHER'S FORM

Popular with peers	1	2	3	4	5	Have no apparent friend
Very comfortable in presenting work or projects to a group	1	2	3	4	5	Very uncomfortable in presenting to a group

.....

-Among the following items please circle the 5 adjectives that best describe the student:

Flexible-Rigid
Sharp -Dull
Shy -Confident
Leader -Follower
Strong -Fragile
Happy -Sad
Popular -Loner
Boyant -Boring-
Silent -Outspoken
Nervous -Calm
Outgoing-Withdrawn
Friendly-Unfriendly

.....

Remarks and Comments: _____

_____

THANK YOU

Appendix 5: General Information Sheet

NAME:_____

BIRTHDATE:_____

AGE:_____

HOME: Add._____ Tel:_____

SCHOOL: Name_____ Add._____ Tel:_____

GRADE:_____ Principal:

EVER FAILED A GRADE?_____ WHICH?_____ REASON?_____

ATTEND ANY SPECIAL CLASS?_____ WHICH?_____ TEACHER:_____

.....

LIST THE DIFFERENT CLASSES THAT ARE PART OF YOUR PROGRAM:

1)_____ 4)_____
2)_____ 5)_____
3)_____ 6)_____

CHECK (✓) THE CLASSES WHERE THERE ARE GROUP ACTIVITIES, GROUP DISCUSSIONS.

NAME 2 CLASSES WHERE YOU FEEL MOST COMFORTABLE

1)_____, teacher:_____, marks:_____
2)_____, teacher:_____, marks:_____

NAME 2 CLASSES WHERE YOU FEEL MOST UNCOMFORTABLE

1)_____, teacher:_____, marks:_____
2)_____, teacher:_____, marks:_____

WHAT DO YOU USUALLY DO DURING FREE PERIODS?

At school: 1)_____, 2)_____, 3)_____ 4)_____
At home : 1)_____, 2)_____, 3)_____ 4)_____

.....

Previous psychological intervention?_____ where?_____ how long?_____

Comments:_____

Any medication?_____, description_____

Any favorite sport(s)_____ ?Team sports?_____

Appendix 6: Structured Situations

A: Positive Context: Unrehearsed situations

+1) There are three of your classmates in the cafeteria and you know them pretty well. They are talking about the next hockey game. One of them is complaining that he won't be able to listen to it because their T.V. is broken. He says: "Well, I guess I won't be able to see it, our T.V. set doesn't work"...

+2) The Easter Holidays are close by. You are talking with a classmate. While you are discussing your plans for the holidays, he says: "Most of my friends are going away for the holidays, it sure will be boring"...

A': Positive Context: Rehearsed situations

+3) There is a new student in one of your classes, you don't know him yet but you would like to know him more and maybe, become friends. You go over to him and he says: "Hi! My name is Don, I'm new around here"...

+4) You missed last math class and you need to borrow notes from a classmate. You go over to him and ask him to lent you his notes. He says: "Well, I'm not sure, the exam is next week and I will need them soon"...

+5) One of your classmates is in the hospital with a broken leg. You go to visit him and while you are talking he says: "Everything is so boring here, there's nothing to do, even the food is bad"...

+6) Some of the neighbourhood friends and yourself are playing street hockey just in front of your house. Soon, some of them want to stop playing because they are too cold. But you feel like playing some more. One of them says: "Gee, let's stop, I am freezing"...

+7) A friend of yours asks you if you would like to see a movie next Saturday. You have no specific plans for that afternoon, you would like to do something with that friend, but you don't have the money to see a film. He says: "Hey, how would you like to see a movie next Saturday afternoon"...

+8) You and a friend were supposed to go swimming. You phone your friend just before leaving your house and he says he can't go because his cousin just arrived from Toronto, so he must stay there because he "can't leave him alone just like that"...

+9) You notice an interesting book on the desk of a friend. You tell him the book really looks interesting and he says: "Yes, it is - why don't you read it. I have finished it, take it"...

+10) You are playing street hockey and the score is even, one member of your team makes a very nice goal and your team now has the lead. You tell him...

+11) You are walking in the street and you are in a hurry. You bump into an old friend of yours whom you have not seen for a long time. You really would like to talk with him, know what's happening and what he is doing now, talk about the old days - but you don't have the time right now. He says: "Hi there, how have you been?"...

B: Negative Context: Unrehearsed situations

-1) You are doing some work in class and the student sitting next to you always peeps over your shoulder to see what you are doing. This annoys you a great deal, you say...

-2) You lent your notes to a classmate, when he brings them back some important pages are missing. He says: "I hope you don't mind, I can't find these pages"...

B': Negative Context: Rehearsed situations

-3) You are in a group discussion and each time you present your ideas, Don interrupts you to say his own ideas, you say...

-4) There are four of you trying to organize a project for your class. One student in the group always tells people what they should do, keeping the best work for himself. He turns to you and says that you should do something that you really don't feel like doing. He says: "... you don't mind doing that do you?"

-5) You are with a group of friends and you are discussing about the 1976 Olympics. When you present your ideas one of them starts

laughing and in a very insulting way says: "You never make sense when you talk"... but it looks like everybody else has understood.

-6) There is a student in your class who always borrows money from you but never gives it back. Once more he comes to you and is very pushy, he says: "Hey, I saw you had some money, how about lending me 0.50¢"...

-7) You are having lunch in the cafeteria and there is a classmate who sits in front of you. While you are talking, he starts taking some of your french fries without asking you, saying: "You don't mind" but you do mind because he has been doing that quite often.

-8) You are waiting for a friend to go see a movie and as usual he is late. When he arrives you are upset. You say...

-9) There is a kid sitting next to you in the math class. In every class, he spends half the time whispering to you what happened to him last week-end or last night. This annoys you, you miss a lot of the explanations in math and it gets you in trouble with the teacher. You say...

-10) You are waiting in line to be served at the cafeteria. There is a lot of people and the service is slow. A student about your age cuts the line just in front of you and then turns back to you and says... "The line is so long, you don't mind, do you..."

Appendix 7: Exemples of Role Player's Standard Set of Replies

Replies to situation:

#-2: I hope you don't mind I can't find these pages
I can't find them
It's really a lot of trouble to copy them again
Don't make such a big fuss
These pages are not important anyhow
I know I was supposed to give them back but I lost them...

+2: Most of my friends are going away for the holidays
Four days is sure a longtime
I don't know what I will do
I don't feel like watching T.V. all the time
Well I'm not sure I would like that
Well, I don't know
How are we going to get together?

+6: Gee, let's stop I'm freezing
But I'm cold
I don't think I will feel like playing then your mother might mind
Well I don't know
My mitts are wet and my feet are cold

-4: You don't mind doing that do you?
Things are running smoothly that way
The job has to get done
Everybody has to do his share
Somebody has to do it
We can't let everybody pick and choose they would all take the easiest thing to do
It must be organised by someone.

Appendix 8: Training of Raters

Operational Definitions of target behaviors

1. Duration of reply: Using a stopwatch, you measure the lenght of time a S speaks uninterrupted in one reply. Speech pauses of more than three seconds terminate the reply.

2. Appropriate affect: Using a rating scale of 1 to 5 you evaluate the affect of the S. The affect is the non-verbal communication of the S and it includes his facial expression, posture and tone of voice. Whether affect is appropriate or not depends on the context.
For example: in a positive context, the S's affect is appropriate when he is smiling and has a pleasant expression. In a negative context, the S's affect is appropriate when he is firm and serious while expressing negative feelings.
1: means a flat, unemotional tone of voice, a passive posture, a blank expression and poor eye contact.
5: means a full and lively expression, a lively tone of voice, active posture and a good eye contact.

3. Requests for behavior change: Means the verbal content when requesting new behavior from the interpersonal partner. You will count the frequency per situation that the S clearly says that he wants his partner to change his behavior. For example: "I would like you to give me my money back". or "Stop borrowing money from me" or "Go to the back of the line" are all request for behavior change. The mere expression of displeasure is not a request for behavior change ("I don't like that..." or "You are no good").

4. Spontaneous Positive behavior: Means the verbal content when the S volunteers to perform some act for the interpersonal partner - or where the S offers an alternative to a problem. You will count the frequency per situation that the S clearly indicates that he offers a service, a thing or an alternative. For example: "Why don't you come to my place." or "Take my notes, I don't need them now" or "This project is not working as it is, why don't we organize it differently" - or "If you want me to, I could get a sandwich for you".

5. Global Assertiveness: Being assertive means being capable of expressing both positive and negative feelings. It means that you can express positive feelings warmly and unambiguously and it means that you can express negative feelings firmly, standing for your rights but not aggressively. You will use a 1 to 5 rating scale where 1 means that the S is very unassertive, he doesn't stand for himself, is "wishy washy" and does not express what he feels no matter if it is positive or negative. A 5 would mean that the S is very assertive and he expresses himself clearly, he stands for his rights and expresses both positive and negative feelings convincingly. What is asked of you is your overall perception of the S's assertion.

Appendix 9: Self Monitoring Sheet

NAME:

DATE:

Behavior:

	how many times? (✓ each time)	how difficult? (1 2 3 4 5)	how satisfying? (1 2 3 4 5)
Ask questions in class I			
Volunteer answers in class II			
Initiated interaction* III			

N.B. 1) Make a ✓ every time you do one of these behaviors.
2) For every behavior, every time write down how difficult it was and how satisfying it was by writing one number;

Difficulty: 1 = very difficult
2 = difficult
3 = neutral
4 = easy
5 = very easy

Satisfaction: 1 = very dissatisfied
2 = dissatisfied
3 = neutral
4 = satisfied
5 = very satisfied

3) For every initiated interaction write on the back of the sheet what it was.

*definition of initiated interaction on the following sheet.

Appendix 10: **Initiated Interactions**

To initiate an interaction means to starta contact with someone.-Every time you go over to someone,to ask a favor or to offer something or just to talk with him you initiate an interaction,you are starting it.For exemple,you initiate an interaction when:

1)You go over to someone to ask what time it is or if he likes the new teacher.

2)You phone a friend to invite him or her to go somewhere or to come at your place.

3)You see someone you know in the cafeteria and you go sit with him.

4)You ask a classmate to help you out with math or to lend you his notes.

5)Youask a friend to go with you to see a movie or to the shopping center.

CAN YOU THINK OF OTHER EXEMPLES?

Remember: you are not initiating an interaction when someone else starts it...