SOCIAL SKILLS TRAINING FOR HEAD INJURED ADULTS

by

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B.S.W., The University of British Columbia, 1986

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF

THE REQUIREMENTS OF THE DEGREE OF

MASTER OF SOCIAL WORK

in

THE FACULTY OF GRADUATE STUDIES

(School of Social Work)

We accept this thesis as conforming

to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA

June 1987

Dorothy Mae Pope, 1987
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ABSTRACT

Social Skills Training for Head Injured Adults

Research has demonstrated numerous personality and behavioral disturbances resulting from head injury (Lezak, 1978). It is these changes rather than the physical disabilities that create the stress, in the long term for the relatives of the head injured (McKinley, 1981). Therefore, social skills training is an important part of intervention with this population.

This study evaluates a social skills training program "Stacking the Deck" (Braunling-McMorrow et al, 1986) which has been modified to include structured learning assignments. This is a single case evaluation (A - Baseline, B - Treatment) with replication. The subjects are four males with severe head injuries, ages 19, 22, 34, and 36. Social skills were described as requiring an action or reaction within six skill areas: compliments, social interaction, politeness, criticism, social confrontation, and questions/answers. Measures include the baseline developed in the "Stacking the Deck" program, Staff Questionnaire on Social Behavior (Spence, 1979) and the Social Skills Assessment Chart (Spence, 1980). Results indicate that this is an effective program for social skills training with the adult head injured population.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>CHAPTER 1. THE CONSEQUENCES OF HEAD INJURY</td>
<td>3</td>
</tr>
<tr>
<td>Psychosocial Functioning and Head Injury</td>
<td>11</td>
</tr>
<tr>
<td>CHAPTER 2. RESEARCH PROBLEM</td>
<td>22</td>
</tr>
<tr>
<td>Subjects</td>
<td>34</td>
</tr>
<tr>
<td>CHAPTER 3. RESEARCH DESIGN</td>
<td>39</td>
</tr>
<tr>
<td>Procedure</td>
<td>50</td>
</tr>
<tr>
<td>CHAPTER 4. METHODOLOGICAL ISSUES</td>
<td>74</td>
</tr>
<tr>
<td>Previous Work in Social Skills Training</td>
<td>84</td>
</tr>
<tr>
<td>CHAPTER 5. FINDINGS</td>
<td>92</td>
</tr>
<tr>
<td>CHAPTER 6. IMPLICATIONS AND CONCLUSIONS</td>
<td>125</td>
</tr>
<tr>
<td>APPENDIX</td>
<td>138</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>160</td>
</tr>
</tbody>
</table>
**List of Tables**

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 1</td>
<td>Important Variable to Consider in Evaluating Likely Outcome of Rehabilitation of Head Injured Adults</td>
<td>9</td>
</tr>
<tr>
<td>Table 2</td>
<td>Criteria For Determining Correct Responses</td>
<td>53</td>
</tr>
<tr>
<td>Table 3</td>
<td>Inter-rater Reliability in &quot;Stacking the Deck&quot;</td>
<td>72</td>
</tr>
<tr>
<td>Table 4</td>
<td>Inter-rater Reliability - Assessment Chart</td>
<td>73</td>
</tr>
<tr>
<td>Table 5</td>
<td>Player Progress Graph Subject 1</td>
<td>93</td>
</tr>
<tr>
<td>Table 6</td>
<td>Social Skills Assessment Chart Subject 1</td>
<td>94</td>
</tr>
<tr>
<td>Table 7</td>
<td>Average Number of Words per Response</td>
<td>99</td>
</tr>
<tr>
<td>Table 8</td>
<td>Player Progress Graph Subject 2</td>
<td>103</td>
</tr>
<tr>
<td>Table 9</td>
<td>Social Skills Assessment Chart Subject 2</td>
<td>104</td>
</tr>
<tr>
<td>Table 10</td>
<td>Staff Questionnaire Subject 2</td>
<td>110</td>
</tr>
<tr>
<td>Table 11</td>
<td>Player Progress Graph Subject 3</td>
<td>111</td>
</tr>
<tr>
<td>Table 12</td>
<td>Social Skills Assessment Chart Subject 3</td>
<td>112</td>
</tr>
<tr>
<td>Table 13</td>
<td>Staff Questionnaire Subject 3</td>
<td>116</td>
</tr>
<tr>
<td>Table 14</td>
<td>Player Progress Graph Subject 4</td>
<td>118</td>
</tr>
<tr>
<td>Table 15</td>
<td>Social Skills Assessment Chart Subject 4</td>
<td>119</td>
</tr>
<tr>
<td>Table 16</td>
<td>Staff Questionnaire Subject 4</td>
<td>121</td>
</tr>
</tbody>
</table>
ACKNOWLEDGMENTS

I would like to express my appreciation to my thesis committee, Prof. John Crane, Prof. Nancy Waxler-Morrison, and Mr. Bert Forman, Director of Social Services, G.F. Strong Rehabilitation Centre, for their guidance and encouragement.

A special thank you to Mr. David Kabool, Social Worker, G.F. Strong Rehabilitation Centre, for his assistance and for sharing his knowledge and expertise on head injuries.

I am especially grateful to the staff, patients and residents of G.F. Strong Rehabilitation Centre and King Edward House for their co-operation with this project.
INTRODUCTION

After a severe head injury, there is a critical period when survival is the main issue. Due to improvements in medical technology it is increasingly likely that patients with severe head injuries will survive. However, a considerable number will remain handicapped and these will place a burden on their families and a demand on rehabilitation services.

There is no question that head injury is a major health problem although the precise rate of occurrence is difficult to obtain. Based on recent population and prevalence statistics, authorities estimate 200-300 new head injuries per 100,000 population in the United States (Habermann, 1982). Lynch reports that one person in 200 in the United States will require medical care for head injury. Since many of these victims are young and will probably survive 30 to 40 years beyond the initial trauma (Jennett, 1975) there is an increasing number of individuals suffering late effects of traumatic head injury. Figures are not as readily available for Canadians suffering from head injuries but the numbers although probably not as large as in the United States are still significant.
The highest percentage of reported head injuries in Canada, United States and in Australia are the result of road accidents which include motor vehicles, pedestrians, and cyclists. Scotland, with its higher rate of alcoholism, has as many head injuries from assault as from road accidents in the young male population (Habermann, 1982). Head injuries may also result from stroke, falls and work related accidents.

Head injury results in both mental and physical deficits in which recovery can take many years. Services have not kept up with the needs of this newly disabled population that has very special needs. As a result, head injured persons with behavior problems are often placed in psychiatric or geriatric hospitals, not because such placements are seen as appropriate, but because other settings are not able to cope with the behavior disorders (Eames & Wood, 1985).

It is often the lack of appropriate social skills that cause the most problems for both the patient and his family. This study attempts to address the apparent lack of social competence in this population and evaluates a program designed for the teaching of social skills to the adult head injured population.
CHAPTER 1

THE CONSEQUENCES OF HEAD INJURY

There are different terms used to describe the condition of head injury, "brain injured", "head injured", and "brain damaged". For the purpose of this study, this population will be referred to as the 'head injured', 'the patient' or 'the individual'.

Many mildly head injured persons return to their former lifestyles after only a very brief stay in the hospital. Mildly injured patients tested on simple measures of learning and memory may show a rapid return to complete recovery within six months of injury. For the more severely injured patients recovery of cognitive functions appears to be at a maximum within the first six months of injury, but thereafter they show slower rates of change. However, individual recovery curves show large variance in patterns of recovery (Brooks et al. 1984). This study is concerned with those patients who remained in a coma for several days or weeks which is then followed by intensive care in an acute care hospital and later by an often longer stay in a rehabilitation hospital.
Types of Head injury

Head injury or trauma is the result of either an open or closed injury. In open head injury the skull and dura have been penetrated and direct tissue damage occurs. In this injury the risk of infection is high. Closed head injury (CHI) is more common and here the skull and dura have not been penetrated, however, the brain cells are affected indirectly by pressure resulting from swelling or by an interruption in the blood flow.

Head injuries can create diffuse or focal brain damage from the initial impact and from secondary brain damage. Habermann (1982) states that the initial impact often includes: a) a fracture of the skull which occurs in 80 percent of the cases (basilar fractures most common),

b) contusions of grey matter (occurs at the focal point of impact and on the undersurface of the temporal and frontal lobes (regardless of the site of impact),

c) diffuse white matter lesions (resulting from torn nerve fibers at time of impact).
Secondary brain damage is the result of:

a) raised intracranial pressure
b) intracranial hematoma and
c) ischemic brain damage which can be either focal or widespread (Habermann, 1982).

Newcombe states that many of the symptoms seen after closed head injury are due to contusions of the frontal lobes. Mid-brain injury might account for some cases of permanent intellectual and emotional disability, while damage to the floor of the third ventricle may provoke disturbances in sleep and sexual activity, sequelae that are difficult to quantify but are of major importance to the patient (Newcombe, 1981).

Studies of the effects of angle of impact upon cerebral injury have revealed that a greater amount of tissue damage occurs following a rotational (oblique) rather a linear (front-to-back and back-to-front) motion. The shearing effects in rotational impacts result in more substantial damage to both cortical and brain stem structures (Lynch, 1984).

Stroke, gunshot and other such wounds usually produce confined effects and therefore, damage is not as widespread as in the case of closed head injury.
Anoxia, poisoning and encephalitis may have similar effects and therefore people suffering from these conditions have the same needs as the head injured person. This is because groups of brain cells are destroyed and neuronal connections are disrupted thus integration of different brain processes is impaired. As a result the effects are complex and subtle and psychosocial and emotional changes dominate over physical ones. Cognitive and emotional handicaps are the main factors in long term disability. Newcombe reports that most of the recovery takes place in the first few months and that recovery after this time may be related to new ways of doing things. A social learning model of rehabilitation therefore makes more sense than a physical restoration model.

The Glasgow Coma Score (GCS) is used to define head injury and is based on the post-traumatic amnesia (PTA) period. The PTA is defined as the time from injury to recovery of full orientation to time, place and person. The PTA is believed to correlate with the re-establishment of continuous memory. This scale provides a standardized manner of categorizing eventual outcome of treatment of patients with head injuries. The Glasgow Outcome Scale consists of five levels of outcome, each of which has certain defining
characteristics (Jennett, 1976):

1. Death
2. Persistent Vegetative State
3. Severe Disability: The patient is dependent upon others for survival due to physical or mental disability or both. These patients are usually (but not necessarily) hospitalized.
4. Moderate Disability: At this level, the patient is independent in his/her daily functioning, can use public transportation and is able to work in protected settings. Deficits experienced in this stage are: dysphasia, hemiparesis, memory deficits, cognitive deficits and personality disorders.
5. Good Recovery: The patient is able to return to normal life and functions at or near the premorbid level.

According to Lynch (1984), recovery from head injury is related to:

a) Location of the injury. A person with a localized or relatively circumscribed traumatic lesion has a better prognosis than one would have if the lesion was of a bilateral or diffused nature. Lynch reports that a recent study of Miller & Miyamoto (1979) indicates that brain lesions that are deep or central
(using a horizontal frame of reference) are more likely to result in greater and lasting deficits than lesions that are superficial or peripheral. Lesions involving the brain stem can result in impairments of consciousness, alertness and attention while lesions involving the language centers can make communication with the patient difficult.

b) Chronicity of lesion. Studies indicate that most recovery occurs in the first six months from the date of onset. However, this is not to say that recovery does not occur after this six month period, but significant recovery that would result in a movement to another level in the Glasgow Outcome Scale is unlikely. However, the GOS categories are rather broad and patients may improve within these categories.

c) Age of patient. Studies indicate that the younger patient demonstrates a greater and more rapid improvement after cerebral trauma than do older patients.

d) Presence of Other Disabilities. Other disorders that may or may not be directly related to the trauma also have a bearing on the patient's recovery and directly affect the type of accommodation that may be available for the patient. These might include such things as paraplegia, quadriplegia, hemiparesis, and
substance abuse (drugs and/or alcohol).

e) Level of motivation. Lynch states that the level of motivation that the patients brings to the rehabilitation is an important factor in the recovery process. His table identifies variables to consider in the rehabilitation process (Lynch, 1984 p. 278)

TABLE 1
Some Important Variables to Consider in Evaluating Likely Outcome of Rehabilitation of Head Injured Adults

<table>
<thead>
<tr>
<th>Variable</th>
<th>More favorable</th>
<th>Less favorable</th>
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<tbody>
<tr>
<td>Angle of impact</td>
<td>linear</td>
<td>oblique</td>
</tr>
<tr>
<td>Type of injury</td>
<td>closed</td>
<td>penetrating</td>
</tr>
<tr>
<td>Location of injury</td>
<td>focal</td>
<td>diffuse</td>
</tr>
<tr>
<td>Brain stem involvement</td>
<td>minimal or none</td>
<td>significant/permanent</td>
</tr>
<tr>
<td>Cerebral dominance</td>
<td>mixed</td>
<td>lateralized</td>
</tr>
<tr>
<td>Chronicity of lesion</td>
<td>recent</td>
<td>old/remote</td>
</tr>
<tr>
<td>Age</td>
<td>under 65</td>
<td>over 65</td>
</tr>
<tr>
<td>Presence of other</td>
<td>disabilities</td>
<td>any</td>
</tr>
<tr>
<td></td>
<td>none</td>
<td>any</td>
</tr>
<tr>
<td>Motivation</td>
<td>high</td>
<td>low</td>
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</tbody>
</table>
An important variable that plays a major role in the patient’s recovery that was not mentioned by Lynch is the quality of the brain (related to socialization) prior to the injury (Newcombe, 1981). Obviously, levels of post-injury psychological functions will not ordinarily exceed those of pre-injury function. Indeed, these pre-existing circumstances may have contributed to the injury, and may increase the individual’s chance of a recurrent injury.

Studies indicated that it is often the young male risk takers that are often included in this population. According to McLaughlin and Shaffer (1985), the typical head injured person is between 19 and 30 years old, male, single, and injured in an automobile accident. In their study of 63 head injured adults, they reported that 55% were involved with drugs or alcohol at the time of the accident, 38% had significant relationships or marital problems and 51% had a history of disruptive or acting out behavior in multiple areas. This population also includes an over representation of the lower socioeconomic class. (McKinlay, 1981).
Psychosocial Functioning and Head Injury

Investigators in the area of traumatic head injury agree that the most consistent and disabling consequences of head injury are the impairments in psychosocial functioning (McLean et al. 1984). Reports have stressed the importance of mental changes and in particular personality changes. Fahy et al. (1967) found "psychiatric symptoms" in 17 out of 22 cases who had PTA of more than three days. Thomsen (1974) not only found personality changes in 42 out of 50 cases but noted that patients often lacked insight, and for this reason researchers have often interviewed relatives to obtain information about changes in the patient. Fordyce et al. (1983) found that increased emotional distress often parallels the patient's increased awareness of cognitive, and social and vocational limitations, which occur as overall cognitive confusion lessens. Similarly, McKinley found, in his study of relatives of 55 severely head injured adults (PTA greater than or equal to 2 days), that stress experienced by the relatives after three, six, and twelve months
post injury was associated with mental and behavioral changes in the patient.

Romano (1974, in Rosenthal, 1984) reported the use of denial as a defensive strategy for families of 13 head injured adults. Relatives denied the presence of the disability and the potential permanence of deficits. He found that initially this was a coping strategy but if denial continued it could result in the family’s failure to effectively assist their relative in regaining a productive role in society.

The personality and behavior changes that affect the patient’s ability to function within the family and community systems may be the result of:

a) Presence of cognitive deficits. Short term memory loss is more common than long term memory loss and affects the patient’s ability to re-learn tasks and re-acquire knowledge. There also may be problems in maintaining attention, processing complex information and in storing and retrieving information. Problem solving and abstract thinking can create difficulties for this population.

b) Change in affect. Damage to the frontal lobes may result in a variety of behaviors: aspontaneity, lethargy, flat or dull affect, irritability, loss of
initiative, lack of goal directedness and a loosening of inhibitions.

c) Loss of social contacts. This may result from the long periods of hospitalization associated with head injury. The patient may withdraw on his own because of a lowering of self-esteem and because of physical or mental deficits. On the other hand, social isolation may result from the withdrawal of friends because of inappropriate social behavior and ego-centricity on the part of the patient.

d) Depression. Recovery accompanied by gradual awareness can result in depression. Fordyce et al. (1983) found that increased emotional distress often parallels the patient's increased awareness of cognitive, social and vocational limitations, which occur as overall cognitive confusion lessens. The restoration of motor skills may return however, the individual may be unable to participate in strenuous physical exercise such as athletic activities. Depression may also result from the inability to drive an automobile, the restriction of alcohol, the scars and cranial defects that alter the body image and self concept. Learning disabilities related to the slow
processing of information may be depressing and may interfere with the resumption of academic pursuits. This has a significant consequence for the individual since the age of head injury (15-30) often coincides with the period of education and career development. This is depressing and frustrating for the family as well because of the individual's inability to resume the premorbid role in the family. The bread winner may now be dependent and the assertive partner may now be passive, or the child who is reaching independence may remain dependent. Many of these problems become more obvious after the patient has returned home and contact with the health care team has diminished. The family is often reluctant to contact the team and therefore is alone to deal with these overwhelming problems. Scarce resources may also contribute to the family's depression and frustration.

e) Inappropriate social behavior. The behavior of the head injured adult is often child-like. They are often unaware of the consequences and implications of their behavior. Sometimes these behaviors represent not so much a change of personality but rather an exaggeration of previous adverse traits. They may engage in verbal or motor perseveration, pathological
laughter and inappropriate sexual behavior.

Given these consequences it is not surprising that families and society as a whole have difficulties in dealing with the head injured person. In the beginning, when the patient requires total care, the parents may see this as an opportunity to repeat the parenting relationship. However, wives have greater difficulty coping with their head injured husbands as they are often not willing to exchange their previous role for a parenting role. It is difficult to maintain a full marital relationship under these conditions and as a result a spouse may choose to distance herself/himself or divorce may be the option (McLaughin & Shaffer, 1985). This has been demonstrated by research as mothers of head injured adults are better able to cope with the burden of caring for their adult child than wives are able to care for their head injured husbands. Similarly, Rosenbaum & Najeson (1976) studied the reactions of wives of head injured soldiers in Israel and found that wives of head injured soldiers had a more restricted social life than either wives of individuals with spinal cord injuries or of control subjects.
Implications for Social Work Intervention

Psychosocial intervention is necessary since it is the psychosocial changes rather than the physical changes that create the problems for both the patient and family in the long term. More attention should be given to behavior modification for the head injured person and ongoing counselling and support should be available for the patient and family.

In general, society has been uncaring and unaware of the needs of the head injured population. This population has often been equated with the mentally retarded, emotionally disturbed and physically crippled (Rosenthal et al. 1983). These other populations receive specialized attention while the head injured person does not.

Paradoxically there are many resources available for children born with "brain damage" but if this occurs later in life, resources are not as readily available. This might result from the fact that this population as previously mentioned is often the young male risk takers who have been drinking and driving. But then the ethical issue arises, does society have the right to
punish this group for the remainder of their lives because of a mistake made in their youth?

This population because of the nature of their disability are not able to lobby on their own behalf. Similarly, the families of the head injured often lack initiative because of the stress of caring for their family member. Because this is a relatively new and increasing population, the Head Injury Association is also new and therefore does not have the same support (financial or political) as do other associations. The role of the social worker then becomes one of an advocate.

In order for programs to be successful there must be social and community support. There is a need for a person to act as a co-ordinator who can follow a patient and family from the time of the accident through recovery (2 to 3 years) and who, with a full knowledge of the patient’s history, would be able to mobilize the appropriate resources required (Merry & Panting, 1982). This role would appropriately be filled by a social worker who could act as a co-ordinator, counsellor and educator and at the same time provide liaison service with the community resources.

Since it is desirable for the patient to return to his family and community, it is necessary to provide some
type of social skills training to increase the chances for success in this adjustment period. The lack of social skills can affect the rehabilitation process, limit the placement possibilities, and interferes with vocational and social processes. Therefore, social skills training is an important step in social work intervention with this population.

Social Skills Training

Social skills training programs have been employed with various populations including the mentally handicapped, chronic schizophrenics and shy people (Bramston & Spence, 1985, Wallace & Liberman, 1985; Haynes-Clements & Avery, 1984). Considering the favourable outcomes of these studies and the needs of the head injured person it is surprising that there is relatively little research in the social skills training of head injured adults. However, McMorrow, Lloyd & Fralish (1985) applied, with some success, an adapted version of the program for teaching social skills to mentally handicapped adults called "Stacking the Deck" and this program will be addressed later in this study.
What is Social Skills Training?

Social skills training has become a major therapy for people with interpersonal problems. According to Peter Trower, social skills are the component normative behaviors that a person needs in his repertoire and it is the process by which the individual produces appropriate social behavior (Trower, 1982). The acquisition of social skills (social competence) is a complex procedure. It involves monitoring the immediate social environment, making cognitive decisions about appropriate responses according to the information received and the individual's goal, and then performing the chosen action skillfully. The final process involves the feedback the individual receives on his action, if he is on target he proceeds to his next action. Apologies are made at this time if these actions have offended anyone.

Social skills are learned by direct experience, or vicariously through models therefore, they can be taught to people who lack them. The form of instruction can vary but for the purpose of this research the following methods will be employed:
Instruction: A particular skill is broken down into a sequence of behavioral elements so that the individual can see exactly what is to be done.

Modeling: A skill is learned by observing others. In this study, the facilitator models the appropriate behavior based on Bandura's social learning theory. Modeling thus consists of learning by imitation.

Rehearsal: This gives the individual the opportunity to try out new or re-learned behaviors. Reinforcement was provided through coaching and praise.

The objectives of this study are to enhance the sending and receiving skills of head injured adults in six areas: compliments, social interaction, politeness, criticism, social confrontation, and questions and answers.

Summary

Recent advances in medical technology have led to an increase in the number of people surviving severe head injury. However, it is the personality and behavioral disturbances resulting from severe head
injury that create the problems, in the long term, for the relatives of the head injured and the head injured person himself.

These changes in personality are the result of: an impaired capacity for social perceptiveness (i.e. The patient's powers of self criticism are diminished and there is an increase in egocentricity and a loss of empathy.); an impaired ability to initiate conversation and activities of daily living; and a decreased ability to benefit from experience.

The consequences of head injury affect the patient, the patient's family and the community. The lack of appropriate social skills can make rehabilitation and return to the family and community difficult. Therefore, social skills training that may assist in the re-integration of the head injured person into the family and community is a necessary part of social work intervention and rehabilitation in general.
Chapter 2

Research Problem

The consequences of head injury have a profound effect upon the individual and his family. As previously mentioned, these problems are related to personality and behavioral changes and are often manifested in inappropriate social behavior. The hypothesis of this study is that social skills training will help to lessen this inappropriate behavior.

Much of the research to date in this area has been quantitative descriptive, in that the consequences of head injury have been described in detail. The lack of social skills has been identified as an ongoing problem for this population. The work of Eames and Wood (1985) in the United Kingdom is one of the few programs that address the inappropriate social behavior of this population.

The social skill training programs developed for other populations are not easily adapted to the head injured population because their needs are quite different. One major problem in working with the head injured population is their denial. This affects measurement as self measures are not reliable and it
also affects motivation; if there is no perceived problem there is no need for social skills training.

There are various models used in explaining and remediating social inadequacies. These models differ in their conceptualization of the central difficulty that is characteristic of social inadequacy. These models are:

a) social-skills deficit, in which the central difficulty is thought to be an inadequate repertoire of social skills.

b) conditioned anxiety, in which the central difficulty is thought to be conditioned anxiety that interferes with the performance of an adequate repertoire of social skills.

c) cognitive or social perception models, in which the central difficulty is thought to be related to cognitive processes, such as overly negative self-evaluations of social performance, negative covert self-statements and inadequate processing of relevant interpersonal stimuli, and

d) physical attractiveness, in which the central difficulty is thought to be negative judgments that others make about one's appearance (Arkowitz, 1977; Morrison and Bellack, 1981 in Nelson et al., 1983).
This study assumes that the social skills deficits of the head injured are related to an inadequate repertoire of social skills and difficulties related to cognitive or social perceptions.

Much of the social skills training has been used with the severely affected and withdrawn individuals such as chronic schizophrenics, the non-dater, the extremely shy, and the aggressive person. As a result three types of social skill training programs have been developed to meet these needs but they do not necessarily meet the needs of the head injured population.

The most popular form of social skills training in the United States is assertion training. This approach is recommended for those who are unassertive, including schizophrenics, the excessively shy, unliberated women (and men) and depressives who believe themselves to be helpless. Assertion is conceptualized as behavior falling on a midpoint between submission and aggression. Thus this program is also used with the over aggressive violent person. This type of social skill training would not be suitable for the head injured person because it does not address their particular needs. Although, it does address issues of depression and violence which are often associated with head injury.
it does not address the more common problems peculiar to head injury such as problems in maintaining attention, lethargy, flat or dull affect and loss of initiation.

Heterosocial skills training is generally defined as training for skills relevant to initiating, maintaining and terminating a social and/or sexual relationship with a member of the opposite sex. These skills may be needed by the head injured person, however this particular program does not address the more basic needs of this population that are required before this type of training can take place.

More basic social skills training programs have been developed for the most socially disabled, particularly the chronic schizophrenic, mentally retarded and long term prisoner. However, the measures used in these programs are not suitable for the head injured population. It is also important to note that although this population has brain damage they are not "mentally retarded". Therefore these programs would have to be adapted to suit the needs of this population. As a result there are not many programs to choose from that will address the needs of the head injured individual.

Therefore, this research evaluates one of the few programs that was designed to teach social skill to the head injured person. However, this research is to be
explanatory and will evaluate the usefulness of the modified "Stacking the Deck" program in teaching social skills to head injured adults.

The evaluation of the program included:

a) an in-depth analysis of whether the skills were acquired in the therapeutic intervention.

b) whether non-verbal skills improved.

c) whether the skills were displayed in an untrained setting.

d) an in-depth analysis of the suitability of the use of this program for "lower functioning" head injured individuals (most specifically where response time is slow and there is an obvious lack of initiation).

This particular program was chosen because it is believed it will address some specific behavioral and personality changes that are associated with head injury; problems in maintaining attention, problems in initiation, lack of goal directedness, withdrawal from social contacts, reduced ability for problem solving and abstract thinking.

The problem of maintaining attention and lack of initiations is addressed by the game format. It is assumed that the procedure of responding to questions and moving game pieces around the board will increase the attention of the players. This should also help
initiation because the player is questioned and movement around the board depends upon a correct answer. A prompt answer is desired so that other players do not have to wait unnecessarily for their turn.

Each situation (card) gives the individual an opportunity to problem solve. The structured learning assignments provide additional opportunities to practice problem solving skills.

The pre-determined individual goals (number of correct responses required) may help to address the lack of goal directedness. It is assumed that the subjects will want to continue playing the game to increase their number of correct responses. The rewards (gum and candy) may also address this issue.

The withdrawal from social contacts was previously mentioned as a problem for this population. This is often the combined result of self centeredness and their removal from their social setting due to hospitalization. The game itself and coffee afterwards provides a social setting where co-operation is encouraged and it provides an opportunity for the subjects to practice learned social skills.

It is assumed that the social contact of the game and presumed increase in social skills will increase self esteem and thereby work to lessen depression
associated with head injury.

**Knowledge Building Function of Research**

The intent of this research is to provide building blocks for further large between-group studies. The single system design will provide a needed specific knowledge on the effects of the intervention and it should indicate areas of intervention that may be improved upon. This study should provide information on the possibility of teaching social skills to the head injured individuals who lack them.

The generalization of many social skill training programs have been questionable (Twentyman & Zimering, 1979, in Trower, 1982) and this study may be further evidence of this. However, it is believed that this study will generate hypothesis for future studies (i.e. is a structured learning process (social learning theory) more effective than a cognitive approach to social skills training with head injured adults. This study may also suggest that further research is needed into ways of maintaining and generalizing learned skills.
Reasons for Conceptual Model

Since the single system design provides an opportunity for an in-depth evaluation of the intervention, it was employed in this study. A score is obtained each time the game is played so there is immediate feedback on performance. Although it is not possible to evaluate the effects of the intervention in the game separate from the intervention of the structured learning assignments, it is believed that these interventions should be combined because they both address different aspects of social skills training. However, the important aspect of the intervention is not which part works the best but rather is the intervention successful in improving the social skills of the head injured individual.

The "Stacking the Deck" program was employed because; it was proven effective in teaching social skills to this population, it employed standardized training procedures, it was cost effective, and it allowed for an in-depth assessment of skill acquisition in a number of social skill component areas.

Theoretical Orientation

The major concept in this study is that social skills are learned behavior and therefore, it is assumed that social skills can be taught to those who lack them.
Good skills are adaptive to the social environment while bad skills or lack of skills are maladaptive.

The orientations used to provide the basis of social skills training programs usually employ behavior modification, learning theory or cognitive theory. This study, which includes all aspects of the intervention, is based on social learning theory.

Albert Bandura (McConnell, 1980) believes that the primary mechanisms of social learning may be observing and modeling. Modeling is a socialization process in which you learn society's "rules and regulations" by being told what to do (and rewarded for doing so, or punished if you disobey) and by imitating the behavior of "model citizens". Modeling thus consists of learning by imitation.

According to Bandura, there are four inter-related processes involved in observational learning. Before the observer can learn much from a model he must actively attend to the model's behavior. This attention is affected by characteristics of both the model and the observer. Since head injured individuals have problems in maintaining attention this aspect of the training process was addressed according to the individual's needs (questions may have to be repeated, distractions removed or lessened wherever possible).
Bandura states that memory and motoric processes are also involved in learning (Papalia & Olds, 1979). Behaviors are learned by watching others but are perfected through practice. In this study the facilitator is the model who displays the correct behavior and gives the appropriate response to the situation cards. Using the same situation cards over and over again gives the subject the opportunity to perfect the skill through practice. Finally, there is a motivational aspect to observational learning. The performance of a behavior depends upon whether or not we expect to be reinforced or punished for doing so. Reinforcements used in the game and structured learning assignments were social reinforcements (praise and approval) and rewards (sugarless gum and chocolate bars).

It is assumed that the social learning theory will be a useful orientation with this population because it provides a structure that address the specific problems of the head injured individual namely; attention, memory, motivation and the opportunity to practice the skill (motoric process).
Limitations of the Research

The most obvious limitation of this research is its small sample size. However, the small number of available subjects necessitated the use of the single system design. Generalizations are limited by the AB design and these are discussed in Chapter 3. However, the more controlled ABA design was not possible here because it is almost impossible to remove the effects of the intervention and return to the baseline A.

The whole issue of the generalization of social skills may also be a limitation of this research. In the past, researchers have had mixed opinions of the generalization of social skills training. Some believe that homework assignments increase the potential for generalizations. As a result, homework assignments were included in the structured learning assignments. Others believe that social skills training appears to lead to a reasonable generalization to the natural environment when measured by self-monitoring (Urban & Schwarzenberg, 1980). However, this is not possible in this study because of the denial aspects that are associated with head injury.

Although, further limitations of this design are discussed in Chapter 3 on Research Design, the single
system design was chosen because the positive features of the design outweigh any negative features of the design.

Summary

In conclusion this evaluation will concentrate on:

1. The problems related to social interaction that result from the behavioral and personality changes that are associated with head injury.

2. The usefulness of social skills training with this population and generalization of the skills with particular reference to the structured learning assignments.

3. The usefulness of the "Stacking the Deck" program as a measure and a training program.

4. Limitations of this research and the implications for further research into social skills training with this population.
Subjects

The subjects were selected from the in-patient population at G.F. Strong Rehabilitation Centre and the out-patient population which resided at a group home (King Edward House). They had to be at least six months post injury and had to remain in the Vancouver area until the completion of the study. The subjects had to be between the ages of 19 and 40. All subjects chosen were male because there were no female subjects that fit the above criteria at the time the study was conducted.

Subject 1

Birthdate: June 30, 1967
Date of Accident: June 30, 1986
Glasgow Outcome Scale (GOS): Severe, coma 6 to 8 weeks

As a result of a fall, Subject 1 suffered a diffuse closed head injury with secondary cognitive deficits, left posterior polar vitreous hemorrhage, mild left afferent pupil defect, dense left homonymous hemianopsia, and possible mild right upper extremity reflex sympathetic dystrophy.
Subject 1 was admitted to a rehabilitation facility from an acute care hospital. He spent three months in the rehabilitation facility. Psychological testing was not carried out at this time because of his very significant attentional deficits. It was considered not possible to do objective neuropsychologic testing to serve as a baseline record. Prior to the accident he worked as a lot man for a car dealership. He was known to consume alcohol frequently and also used marijuana.

His sister described him as shy and conservative, prior to the accident, but she reported that this was no longer the case. Personality and behavioral problems were reported as inappropriate social behavior, lack of initiation, memory problems and lack of insight.

Subject 2

Date of Birth: November 8, 1952
Date of Accident: May 14, 1985
Glasgow Outcome Scale (GOS): severe, coma 4 to 6 weeks

Subject 2 suffered a brain stem and possible anoxic cerebral injuries resulting in a spastic quadripareisis and intellectual deficits as a result of a motorcycle accident. He was admitted to a rehabilitation facility from an acute care hospital. He remained in the
rehabilitation facility for eight months and was discharged to a group home for head injured persons.

He had grade 10 education, and was employed as a heavy duty machine operator. He was separated from his wife prior to the accident and has two pre-school children who live with his wife. Prior to his accident he was a heavy drinker and smoker and was reported to have used a variety of drugs. His pre-morbid life style was described as self-centered machismo and he was known for his risk taking behavior.

Personality and behavioral problems resulting from the head injury are reported as; memory deficits, verbal abusive behavior, lack of insight, problem solving difficulties, easily frustrated, lack of confidence, and poor interpersonal skills.

Psychological testing reported a score of 75-79 for the Wechsler Adult Intelligence Scale Revised and a score of 64 in the Wechsler memory scale.

Subject 3

Date of Birth: May 15, 1950
Date of Accident: May 19, 1985
Glasgow Outcome Scale (GOS): Severe coma 26 days

Subject 3 suffered a closed head injury, abdominal
injuries, fracture of the pelvis, and multiple fractures of lower extremities as a result of a motor vehicle accident. He was divorced from his wife prior to the accident. His two children live with his ex-wife. He has grade 12 education and worked for the railway. His fellow workers described him as a likeable man with a tendency not to follow orders at times. He was reported to have a tendency to over indulge in alcohol which resulted in beligerant behavior.

Behavioral and personality problems resulting from the accident are reported as; lack of insight, lack of initiation, difficulty in problem solving, difficulty in planning, memory problems, inappropriate stereotyped responses. However, Subject 3 reports that he believes his memory is essentially normal and that cognitively he is much the same as prior to the accident.

In psychological testing, he received a score of 86 in the Wechsler Adult Intelligent Scale Revised and 72 Wechsler Memory Scale. He was reported to have major problems in logical expression and social judgement from a conceptual standpoint.

Subject 4

Date of Birth: October 20, 1964
Date of Accident: May 5, 1985

G.O.S: Moderate (length of coma not available)

Subject 4 suffered a closed head injury (diffuse) with left frontal lobe and left thalamic and right temporal hemorrhages, as the result of a motor vehicle accident. He was admitted to a rehabilitation facility from an acute care hospital and remained there for four months. He was discharged home and later to a group home for head injured persons.

He had a grade 12 education and worked as a cook prior to the accident. The behavioral and personality problems resulting from the head injury were reported as; memory problems, impaired speech (monotone and nasal quality, slight slurred), slow information processing, problem solving difficulties and poor inter-personal social skills.

In psychological testing he scored 70-79 on the Wechsler Memory Scale Revised and 69 on the Wechsler Memory Scale. There was a general decrease in overall intellectual capabilities.
Chapter 3
Research Design

This research is an exploratory-descriptive study which seeks to thoroughly describe a particular phenomenon. The major purpose of this type of study is to refine and develop concepts and hypothesis. The experimental manipulation of the independent variable (intervention program) is used to demonstrate the plausibility of this specific program. However, this is different from experiments in that it does not use randomization procedures or experimental and control groups (Fellin, Tripodi, Meyer, 1969). In this study, the single system design was used to address the questions that the exploratory-descriptive design can cope with. These are:

1. Can the design be developed in operational form and implemented?
2. Can the design be applied in normal practice?
3. Can the change be reliably measured?
4. Does change occur?
5. What variation in change exists over the current treatment population?
The researcher's control over the phenomena studied is limited by the type of design employed. In this study, as mentioned, the single subject design was used to evaluate the effects of an intervention on a single individual. It is often called single case design, experimental single case research design, or the N = 1 design. In this design each subject serves as his/her own control. Properties of this design give validity to their use with an individual who is able to serve both experimental and control functions (Kratochwill, Mott, & Dobson in Bellack & Hersen, 1984).

The baseline (A) phase is the control aspect of this design and the intervention (B) is the experimental function of the design. A change in behavior which is not consistent with the baseline and which is associated with the intervention strengthens the conclusion of the causal relationship between the target behavior change and the intervention.

The single subject design has been attacked as a less rigorous method of research. However, there has been important methodological and conceptual advances in this area of research recently. This design has added to the development of measures that can be used repeatedly over the therapeutic process, such as direct observation, rating scales, checklists, self-monitoring
and various psychophysiological recordings. According to Belleck and Hersen, these repeated measures taken over time allow for an analysis of individual variability as well as monitoring of potential response covariation within a single client. Increasingly, researchers and other scholars in the field are recognizing the importance of single case design for the development of a knowledge base in the field (Bellack & Hersen, 1984).

The single system design is an important addition to research for many reasons. It provides an important knowledge base that is unobtainable through the large N-between group design in research. It is uniquely suited to the evaluation of treatments involving a single client and thus is particularly useful in the fields of social work and clinical psychology. The single subject design is useful when group comparisons are not possible because of the lack of a large number of subjects with a particular problem or disorder. The design is also useful for conducting research studies on clinical problems that do not match the type of clients recruited for comparative group outcome studies. This design addresses the ethical and legal considerations that are often raised about the no-treatment group of classical design research.
The single system design uses repeated measures to establish trends and analyze change. These multiple data points provide detailed data on how the intervention affects the target behaviors over time. Unlike classical experimental designs which typically evaluate the strength of the intervention effects after the intervention is over, the single subject design provides ongoing, continuous feedback on these effects and this in turn shapes intervention strategies (Polster & Lynch, 1982).

Grinnell (1981) stresses in order to obtain reliable data extraneous circumstances must be controlled by maintaining stable environmental conditions, employing repeated and reliable measurements throughout the study, and by charting a stable baseline. He points out that there must be a systematic and repeated introduction of the intervention and that there must be a stable rate of behavior during each introduction of the intervention. The stable baseline is one in which the frequency of behavior is steady and remains at a constant level over time, usually three or five sessions or else the frequency is changing in some identifiable orderly manner. No planned intervention occurs in the baseline, rather only planned observation of the target problem. Since these steps were followed in this study we can
hypothesize that the changes in behavior are associated with the interventions and are not the result of normal fluctuations in the frequency of behavior.

In addition to distinguishing differences that occur between baseline and intervention, the single subject design offers the possibility of making causal inferences—did the intervention produce the observed outcome? However, Bloom and Fisher (1982) point out that several criteria are needed for inferring causality in single system designs. The change in the target problem must occur after the intervention. This can be verified by charting baseline and intervention data. There must be a repeated co-presence of the application of intervention and desired change of the target problem and this problem cannot change for the better in absence of the intervention. There must not be any other continuously co-present factors that could be causally related to the outcome. Finally, Bloom and Fisher state that the conceptual and practical plausibility of the inference should be grounded in scientific knowledge or at least not contrary to it.

Single system design is criticized for weakness in generalization. Although some intervention works with one client, it is hard to prove that it will likely be true for another client. However, there is still
sufficient basis for asserting a limited form of
generalizability with this design, but the
generalization must be based on how much alike the
essential client dimensions are.

Replication with the single system design is
achieved through careful specification of: the
setting, the client characteristics that occur during
the experiment, and the independent and dependent
variables. It is also necessary to isolate the
therapeutic components in order to establish a
functional relationship between the independent and
dependent variables. Internal validity is achieved by
the replication of effects across clients. However, the
number of replications has been debated. According to
Bloom and Fisher, at least two and probably four
replications are necessary to test the hypothesis that
the independent variable is responsible for the change
in the dependent variable. This replication is critical
if results are to be generalized beyond the individual
case.

Unlike classical experimental designs, the primary
emphasis in the single system designs is not the proof
or disproof of hypotheses, but on the observation and
analyses of the effect of intervention on specific
target behaviors. However, both single system design and
group designs stress the selection and definition of target behaviors which is a critical step in the research process. In traditional group designs, the evaluation of intervention programs usually means that the intervention cannot be changed once the study has begun. However the single subject design is more flexible and the intervention can be changed depending on the needs of each case. The major distinguishing characteristic of single system designs involves the planned comparison of a pre-intervention or baseline period of observation with observations of the intervention period and post-intervention periods in some cases. Unlike classical experimental control group designs in which comparison is made between groups, single system design involves a comparison between time periods for the same client. The underlying assumption here is that if the intervention had not occurred the baseline behavior would continue.

However, even though single subject design and classical research are quite different they complement each other. As mentioned previously, the single subject design is useful for formative program evaluation as research is focused on evaluating and improving a specific program. Classical research is more useful for summative evaluation research focused on evaluation that
can be generalized to apply to other programs or situations to affect decision making (Scriven, 1967 in Bloom & Fisher, 1982). There is an inter-relationship between single subject design and classical research as several successful replications of the single system design can be used to form the basis for large group research. The single subject design can be used to provide basic data for generating hypotheses for more complex classical designs.

The A B Design

The A (baseline) B (intervention) is the basic single system design and is widely applicable to many types of problems and settings as well as to all levels of intervention. The simple logical structure permits a planned comparison between two elements. It clearly demonstrates when the target behaviors have changed. The differences that emerge between the baseline and after the intervention provide a tentative look at possible causal factors. This design provides an ongoing feedback on the behavior during baseline and intervention periods and permits an appraisal of the effectiveness of the intervention.

There are other more rigorous single system designs but they are not feasible for this study and therefore
Limitations of the A B Design

This design can only provide clear information on change between baseline and intervention. It does not permit control of any alternate explanations for why results occurred as they did. However, multiple measures of the problem can help to overcome this. There is a tendency for practitioners and researchers to downplay the A B design because it does not permit the functional analysis that more complex designs do. There are two techniques in the intervention—the game and the structured learning assignments, but the A B design does not distinguish which one or which combinations were more effective. However, this simple design can be readily employed by any practitioner and provides vital information that cannot be obtained in any other way. According to Bloom and Fisher it provides the basic foundation and the fundamental building blocks for a large array of logical ways of inferring causal efficacy of the interventions. However, by following the previous mentioned criteria for inferring causality in single system designs these limitations can be reduced and each successful replication further supports the
effectiveness of the intervention.

Advantages of Single System Design

Some of the advantages have been mentioned and will only be summarized here. Although this design can refute or offer support for the hypothesis that the intervention effected change, it cannot confirm it. The result can lead to a better formulated hypothesis. This design is used to evaluate the effects of an intervention on a single individual or group. Intervention failure can be quickly observed during monitoring of data and changes can be made. If the additional intervention leads to success Hersen and Barlow (1976) state they can be further replicated for transferability. If not successful the distinctive characteristics of that client can be studied to try to discover elements that may have caused the result and this information can be used in replication studies. Single system design provides an important knowledge base that is unobtainable with traditional classical designs. It overcomes the ethical problems of withholding treatment.
The simple logical process provides options for practitioners to be involved in research. The single system design plays an important role in the investigation in diverse areas of psychology, education, social work and other related fields. This design is compatible with any form of practice, at all levels of intervention and across a broad range of theoretical orientations. The ultimate goal of single system design is to improve practice which is compatible with the goal of this study which is to evaluate the effectiveness of a specific program.

Summary

In summary, the design is not a problem if: repeated measures are employed, extraneous circumstances are controlled, a stable baseline is charted prior to the introduction of the independent variable and replications are made for generalizations to other similar individuals. Consequently when this type of design is employed along with a high inter-rater reliability and when errors in judgment are controlled for, then the resulting data contributes to research and practice.
PROCEDURE

Before the baseline measurements are discussed it is necessary to look at the measure or game "Stacking the Deck" because it is unique. "Stacking the Deck" is played by incorporating general social skill situations into the table game "Sorry". This game involves successive turns and progressive movement around the game board towards "home". The relatively simple rules were modified so that no player missed a turn and no extra turns were allowed. Players were only allowed to move when they responded correctly. Therefore, game rules that required an exact number in order to move (e.g. drawing a card with a particular number to move out of "start" or into "home") were dropped so that movement was permitted on any card. A game of "stacking the deck" ends when all the cards in the curriculum deck have been used. Thus, the lead player is declared the winner, regardless of whether his pieces reached the goal. Reaching "home" was not the primary object of "stacking the deck". This program is unique because it is both an assessment tool and a therapy program.
Developing a Baseline of Social Skills

"Stacking the Deck" was used as an assessment tool to determine each player's baseline level of social competency. This was accomplished by playing a series of four or five games at the beginning, in which the facilitator provided no feedback regarding the players' responses. Players were allowed to move their game pieces whether they responded correctly or incorrectly. Although the facilitator used the Facilitator Recording Sheet and Scoring Sheet during baseline games, the players did not record responses on the Player Scorecards or plot their own progress on the Player Progress Graphs until the training began. Using the program in this manner permitted the facilitator to evaluate each player's entry level of skill and provided a baseline measure against which to compare improvements during training.

PLAYING THE GAME

Establishing Criteria for the Game

Once the players were seated at the game table, the facilitator informed each player how many correct responses he needed for that game. To keep track of
correct responses, each player was given a Player's Scorecard numbered from 1 to 12 (corresponding to his 12 game turns) on which the facilitator circled the number needed to win. This number was determined individually on a game-by-game basis so that a player's rate of correct responses increased. This progressive sequence was used to motivate the players to improve as they continued to play the game.

The facilitator began each game by shuffling the deck and selecting a player to start. Players then took turns in a clockwise fashion around the board. Each turn began with the facilitator reading the card, from the top of the deck, to the player and gave him approximately 10 seconds to begin a response (with the exception of Subject 1 who was given more time to respond and the question was repeated up to three times if he was distracted by activity around him). Players were not allowed to assist others with a response. The facilitator checked the Facilitator's Scoring guide to determine whether the player's response satisfied the correct response to that type of situation. (See Table No.2).
<table>
<thead>
<tr>
<th>Skill area</th>
<th>Category</th>
<th>Characteristics of a Correct Response</th>
</tr>
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| (C) Compliments | (A) actor | 1. Tells the other person what you like and/or  
| | | 2. How you feel about it. |
| | (B) reactor | 1. Acknowledges the compliment and/or  
| | | 2. Relates back to the other person. |
| (S) Social Interaction | (A) actor | 1. Initiates a conversation and/or  
| | | 2. Helps keep the conversation going. |
| | (B) reactor | 1. Lets the other person know you are listening and/or  
| | | 2. Helps keep the conversation going. |
| (P) Politeness | (A) actor | 1. Addresses the issue and/or  
| | | 2. Uses appropriate language (e.g. Thank you, excuse me etc.) |
| | (B) reactor | 1. Uses appropriate language and/or  
| | | 2. Offers an explanation. |
| (CR) Criticism | (A) actor | 1. Tells the other person what you don’t like and/or  
| | | 2. Says something nice (e.g. "You look better in red"). |
| | (B) reactor | 1. Tells the other person what you think and/or  
| | | 2. Says something nice. |
| (SC) Social Confrontation | (A) actor | 1. Tells the other person what you think about the problem and/or  
| | | 2. How you feel about it. |
| | (B) reactor | 1. Tells the other person what you think about the problem and/or  
| | | 2. What can be done about it. |
| (Q) Questions/Answers | (A) actor | 1. Asks an appropriate person (if applicable) and/or  
| | | 2. States the question completely. |
| | (B) reactor | 1. Answers the question and  
| | | 2. If the answer is no, gives an explanation. |
Each card contained a two or three letter code keyed to the guide that specified which skill area the posed situation is in and whether an action or reaction was required. If the facilitator determined that the response was correct, the player was praised (good answer, outstanding job, great, etc.) and was allowed to move one of his game pieces the number of spaces indicated by the large number in the middle of the card. Then the player was told to mark his Player Scorecard by putting a line or "x" through the appropriate number. Assistance was provided if necessary.

If the answer did not satisfy the criteria on the Facilitator Scoring Guide, the facilitator simply informed the player that the answer is incorrect (in a neutral, nonapologetic tone) and reread the situation on the card and modeled a sample correct answer from the corresponding Facilitator Response Sheet. The player was not allowed to move any of his game pieces. The same correct response was modeled until the players were responding correctly to that card on a regular basis. At that point the facilitator began to vary the correct responses given. The facilitator then used the Facilitator Recording Sheet to record whether the response was correct or incorrect. A game was finished
when all the 48 cards were used. At that point, the player with the most pieces in "home" or closest to "home" was declared the game winner. The prize was usually a package of sugarless gum or a chocolate bar.

The structured learning assignments (Goldstein, Sprafkin & Gershaw, 1976) were incorporated into the program in order to improve the non-verbal behavior and to increase the chance of generalization to the natural environment. The authors of the structured learning program developed their program to assist mentally ill patients returning to the community.

The structured learning theory employs modeling, role play, and social reinforcement to enhance learning. According to Goldstein et al., there are three stages to modeling; attention, retention and reproduction. The attention and retention aspects were addressed by listening to tapes, and then evaluating the tapes by following each specific learning point. Each subject had a card of learning points and each had a chance to determine if the learning points were followed. These same cards with learning points were used to enact a given situation, each subject took turns role playing a situation. Everyone had the opportunity to participate in a role play and evaluate a role play according to learning points followed. Social reinforcements of
praise and approval were given, by the facilitator, accordingly.

Each subject participated in three structured learning sessions with the exception of subject 4 who only participated in one of these sessions because of other commitments. These sessions were interspersed between games. The game was not played during these sessions. The learning points of the skills study are:

Skill 1. Starting a Conversation
1. Choose the right place and time.
2. Greet the other person.
3. Make small talk.
4. Judge if the other person is listening and wants to talk with you.
5. Open the main topic you want to talk about.

Skill 2. Carrying on a Conversation
1. Open the main topic you want to talk about.
2. Present your thoughts and feelings on the topic.
3. Ask for the other person's reactions.
4. Respond to the other person's reactions.
Skill 3. Ending a Conversation
1. Summarize your's and the other person's main points.
2. Draw a conclusion.
3. Ask for the other person's reaction.
4. Respond to the other person's reaction.
5. Make a closing remark.

Skill 4. Listening
1. Look at the other person.
2. Show your interest in the other's statement - e.g. nod you head etc.
3. Ask questions on the same topic.
4. Add your thoughts and feeling on the topic.

Skill 13. Expressing Anger
1. Pay attention to those body signals which help you know what you are feeling.
2. Decide which outside events may have caused you to have these feelings.
3. Decide if you are feeling angry about these events.
4. Decide how you can best express these angry feelings.
5. Express your angry feelings in a direct and honest manner.
Skill 22. Responding to Anger

1. Listen openly to the other person's angry statement.
2. Show that you understand what the other is feeling.
3. Ask the other person to explain anything you don't understand about what he said.
4. Show that you understand why he is feeling angry.
5. If appropriate, express your thoughts and feelings about the situation.

These particular skills were chosen because the conversation and listening skills appeared to address some of the non-verbal and cognitive functions of communication. The skills on expressing and responding to anger were chosen because this was identified as a particular problem for some of the subjects. Subject 1 only worked on the conversation and listening skills and Subject 4 was only able to attend one of the structured learning sessions.

Research Control over Phenomena Studied

The researcher's control over the timing of data collection in relation to the occurrence of the independent variable is important. In all cases the independent variable (the situation cards in the deck accompanied by the facilitator's response as to a
correct or incorrect answer) occurred only after a baseline was established. Therefore, it is assumed that the pattern of behavior in the baseline would continue if there was no intervention.

Data Collection

The "Stacking the Deck" program provided for the majority of the data collected. Spence's Social Skills Assessment Chart and the Staff Questionnaire on Social Behavior were used as pre and post intervention measures.

In developing the "Stacking the Deck " program, Foxx et al. (1983) indentified six social skill component areas: compliments, social interaction, politeness, criticism, social confrontation and questions/answers. A revised set of training cards were developed for the use with the head injured population (Braunling-McMorrow et al. 1986) after; reviewing the social skills literature that pertains to head injury, polling the professional and paraprofessional staff at a rehabilitation centre, and after observing interactional behavior among game players.
Eight game cards were developed for each six component areas (a total of 48 cards), with four cards for each area depicting "actor" situations and four cards for "reactor" situations. The "actor" situation cards required subjects to initiate an interaction (e.g. to give a compliment) whereas "reactor" situations required them to respond to an interaction initiated by someone else (e.g. respond to a compliment).

The face validity of the situation cards appeared to be high. However, two situations were changed because they were not relevant to a group home situation. The new questions that were substituted addressed the same skill area. Question 5, "You needed to use the elevator and the person using it last did not shut the door so it wouldn't work. What do you do?" This was changed to "You say something that makes your friend angry. What should you do?". Question 11," You are in a session and a therapist walks by the door. You have wanted to talk to that therapist all day. What do you do?" was changed to: "You are in a store and need to find a gift for your mother. How would you ask for help?" Question 48," You are in your room and spill a glass of water and need someone to help you clean it up. What do you say?" was changed to: "It's your first day on a job and you are introduced to the supervisor you
might say hello and________." This change was used with subjects 2, 3, and 4 and the original situation was used with subject 1.

Inter-rater reliability for the baseline and training "games" ranged from 91.6 percent to 100 percent (see Table No. 3).

Social Skills Assessment Chart (Spence, 1979)

The Social Skills Assessment Chart was used as a further measure of each subject's social competence. This scale was designed to establish an individual's skill level on 32 specific social skills. Skills are categorized into subgroups, such as perception of emotions, basic non-verbal skills, quality of speech, content of speech, listening skills, and basic conversation. Each behavior (e.g., eye contact, social distance, posture) was rated on a 5-point scale according to written descriptors. According to Spence (1979), this scale was found to have good interrater reliability and content reliability. But specific information on the development of this scale was not available because it is in an unpublished Doctoral Thesis. Therefore, for the purpose of this study this scale can only be assessed on its face validity. This
scale was chosen because of its apparent face value.

This scale was used to assess each subject pre and post intervention. Because this scale is so specific it should provide an accurate picture of each subject's level of social skills. The part of the scale on perception of emotions was not used with any of the subjects. The inter-rater reliability ranged from 80 percent to 100 percent (see Table no.4)

**Staff Questionnaire on Social Behavior**

This questionnaire was used to assess general social competence during day-to-day interactions within the institutional setting. It was designed for use with adolescent offenders within an institutional setting and refers to both basic and complex social skills during interactions with peers and adults. The 24 items are rated on a 5-point scale. The validity of the test was established by Spence (1979) who demonstrated significant correlations of test items with a general rating of social-skills performance. Spence reports that 10 institutional staff rated the face validity of each item as being applicable to an intellectually handicapped population. She states that all items were found to be of relevance. This measure was chosen
because of its face validity and its ease of use. It was assumed that staff could implement this without any previous behavioral training. Although this measure may not provide an accurate measure of generalization of skills, it will be used because it does provide some global information. The same staff person used this scale to rate subjects 2, 3, and 4 one week prior to training and one week after the training was completed.

Data Analysis

Results from the "Stacking the Deck" intervention will be presented in graph form with the baseline separated from the intervention phase by a broken line. Each game is plotted separately on the graph. The statistical analysis employed the proportion/frequency approach that compares a "typical" pattern of events during baseline with the outcome emerging from the intervention using expanded binomial distribution tables (one-tailed t-test). The number of baseline observations is too small to use Bartlett's test for autocorrelation. However, Bloom and Fisher (1982) state that we can assume that the data is not autocorrelated if there is no increasing or decreasing trend in the baseline. Since none of the baselines in this study indicated any increasing or decreasing trend, it was
assumed, on visual inspection, that they were not autocorrelated and the expanded binominal distribution tables were used. The significant level of .05 was selected for this study.

Summary tables were used for the number of words per response at baseline and at the last game. The number of words per response were recorded for this period for each subject. This was done from a video recording of each session. All words were counted, with contractions being counted as a single word. Counting was done by two raters and 100 percent agreement was reached. Although words per response were considered to be a corollary measure because it would reflect the complexity of the subject's response, it was not the target of training.

Response time (time required to begin response) for subject 1 was measured throughout the baseline and intervention. The response time was measured from the video recording using a stop watch. Two measures were taken and the average time for each response was recorded. The times reported are those of the first and last intervention sessions. It was assumed that response time would improve in each session.

A variety of responses from each subject are given from the baseline and intervention phases. It is
assumed that more appropriate response will be given as the treatment progresses. Observations on each subject's behavior will be reported because it is assumed that the game will provide an opportunity for inter-personal communication (i.e. co-operation, competition, friendly conversations).

The pre and post intervention measures will be presented on the Social Skills Assessment Chart. Each portion of the circle represents a score on a 5-point scale according to very specific categories. The value at the centre of the circle is 1 and it increases from there towards the outer edge of the circle which is valued at 5. The pre-measures are marked in green and post-measures are marked in red. If the pre and post measures receive the same value then the appropriate areas is shaded in green and red stripes. This chart is very useful because the pre and post measures can be display on the same chart. This provides a quick visual assessment of the subject's progress.

**Staff Questionnaire on Social Behaviour**

This questionnaire is divided into three sections; peer relationships, staff relationships, and general social behavior. The sum of the scores in each section was recorded for both the pre and post measures. In
peer relationships, there are 8 items therefore, a maximum score is 40. A score below 25 was considered to indicate a significant lack of social skills. A score between 25-34 indicated that improvement was necessary and a score of 35 or more reflected adequate social competence with peers.

In staff relationships there are 7 items therefore a maximum score is 35. A score below 20 was considered to indicate a significant lack of social competence in this area. A score between 21-29 indicated that improvement was needed while a score of 30 or more reflected adequate social competence in staff relationships.

In general relationships, there are 9 items therefore the maximum score is 45. A score below 28 was considered to indicate a significant lack of social competence in this area. A score between 29-39 indicated improvement was needed while a score of 40 or more reflected adequate social competence in this area.

Other social situations in which the subjects had difficulty were also reported for the pre and post measures. The desired outcome measured using this scale would be an increase in the post test score and a decrease in the number of social situations in which the subject had difficulty with. As previously mentioned,
the general social skills performance was not reported because this portion of the scale was not completed. This scale was not used with subject 1.

**Analysis Methods**

The intervention will be evaluated in terms of effort, effectiveness and efficiency. To establish the effectiveness of the intervention, the positive impact that the intervention has on each subject's level of social skills will be evaluated.

Effectiveness is presented as the comparison made about the level of social skills before and after the intervention. The focus is on outcome of training, particularly the analysis of observable changes, in relation to the training program and other extraneous influences. In evaluating the effectiveness of the intervention it is necessary to look at effort and efficiency.

Effort refers to the amount of work that goes into the program whereas, efficiency refers to how much effectiveness was attained given the amount of effort and time required (Bloom & Fisher, 1982). Efficiency is a ratio that compares costs and benefits, it refers to getting the best outcome for the least cost (in terms of personal and material costs).
Inferences Expected from the Data

Although the single system design is not able to control all variables that act upon the subject, Bloom and Fisher report that inferences can be made if the specific intervention was chosen because it was likely to affect the problem. Replications increase both internal and external validity. With these things in mind it is expected that the data generated will provide the bases for a detailed evaluation of the effectiveness of the intervention.

It is expected that each subject's social skills will improve, the number of words spoken will increase and response time will lessen. However, it is important to note that inferences can only be made to other head injured individuals when their circumstances are similar.

Pilot Testing of Program

This program was pilot tested in order to become familiar with the program and measures and to check on the validity of the measures. The situation cards were considered to be an adequate sample of situations that could arise in the day to day functioning of the subjects in a rehabilitation setting or in a group home. Staff from both of these setting concurred.
This program was tested with four subjects, three males and one female. The male subjects were only five and four months post injury and therefore it is difficult to relate their gains to the intervention. However, they were chosen because they represented the head injured population and were likely to remain in the rehabilitation for the time required to test the program.

The female subject was able to answer all the situation cards correctly in the baseline and throughout the intervention. She continued to participate apparently because she enjoyed the game and she also was eager to participate in the structured learning assignments. Interestingly she enjoyed playing the game as much as the other subjects and did not appear to become bored with it.

All subjects played 13 games, four of which were baseline games, and the remainder were intervention games. Male subject A had an average baseline score of 6.2 and by the fifth game of the intervention he answered all 12 situations correctly. Male subject B had an average baseline score of 7.2 and by the third game of the intervention he answered 11 situations correctly. Male subject C had an average baseline score of 4.5 and by the fifth game of the intervention he had
answered 11 situations correctly. By the seventh game of the intervention he answered all 12 situations correctly.

All subjects also attended three structured learning sessions where the game was not played. These pilot subjects were videoed and the inter-rater reliability was similar to that of the study. Two of the male subjects were also rated on the Social Skills Assessment Chart. This chart was found to be an adequate representative of social functioning and was therefore included in the study.

Since all of these subjects significantly improved their social skill level and appeared to enjoy the game, the program was employed with the four male subjects of the study.

Ethical Issues

It is assumed that participation in this program will lead to improved social competence and thus will facilitate the reintegration of the head injured person into the family and community. There are no risks involved in this program. However, as in all research there is always the possibility that the treatment may not work but if this was to be the case the subjects would not suffer any psychological or physical stress
from having taken part in this program.

The identity of the subjects will be known only to the researcher and one other rater. The identity of the subjects beyond this point will be safeguarded.
### TABLE 3

**INTER-RATER RELIABILITY IN "STACKING THE DECK"**

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Chapter 4
Methodological Issues

The selection of a method of measurement for the purpose of measuring the level of social skills that the head injured adult possess is difficult because of the consequences of head injury.

Self reporting was not considered as a suitable measure for evaluating the social skills of the head injured population because the head injured person’s power of self-criticism is diminished and there is an increase in egocentricity (Bond, 1984). The lack of insight and denial of disability also make self-reporting unreliable. There are methodological problems in assessing social, emotional and behavioral sequelae of head injury and the effect these have on the family and social life because accounts given by the relatives and patient differ. The patient may lack insight and relatives, who are under considerable stress, may give distorted accounts. The accounts given by patients and relatives not only differ but do so selectively with emotional/behavioral difficulties often alleged by relatives and denied by patients. The extent to which the patient denies difficulty, which relatives report as being present in the patient, was not found to
be related to cognitive deficits (McKinlay & Brooks, 1984). Relatives of a head injured person were found to have significant and persistent psychiatric and social dysfunction as a result of the high burden in caring for this family member (Livingston, Brooks & Bond, 1985) and thus their evaluation may not be reliable. Because of these concerns neither self-reports or family evaluations were employed in the evaluation of the head injured's social competence. This is not to say that families are unaware of their family member's lack of appropriate social skills but rather that their opinions were not used as part of the measure.

Since the patient and family members may have a distorted view of the actual level of social competence the head injured person possesses, trained observers were used to assess the social skill level of the head injured person. However, the use of trained raters does not ensure that the results will be free of errors in judgment. To reduce errors in observation, the raters were instructed to be aware of some potential errors.

The error of leniency is caused when raters tend to rate those patients whom they know well, or in whom they are ego-involved, higher than they should be (Gilford, 1954). The rater may rate too easy or too
hard. The leniency error then, is the constant tendency for a rater to rate too high or too low for whatever reasons. In order to decrease errors of leniency raters were instructed to follow the facilitator's scoring guide and the facilitator's response sheet. During the course of the study, periodic retraining sessions were conducted as required.

The error of central tendency is caused when raters hesitate to give extreme judgments and thus tend to displace individuals in the direction of the mean of the total group (Gilford, 1954). This is perhaps more common in rating individuals whom the raters do not know very well. Since raters used in this study know the subjects and since the scoring for responses is specifically outlined, the errors of central tendency should be controlled.

The halo effect is the result of the rater's general mental attitude towards the individual. One result of the halo effect is to force the rating of any trait in the direction of the general impression of the individuals rated and to that extent to make the ratings of some traits less valid. Another result is to introduce a spurious amount of positive correlation between the traits that are rated. It involves irrelevant criteria with which judgments are
contaminated. According to Gilford, halo effects are more prevalent if traits are not easily observable, not singled out or not clearly defined. However, social skills or lack of them are easily observed and since each skill and required response is clearly defined errors related to the halo effect should be controlled.

Gilford states that logical errors in rating are due to the fact that observers are likely to give similar ratings for traits that seem logically related in the minds of the raters. These errors can be avoided in part by calling for judgments of objectively observable actions rather than abstract ones. Since social competence is observable and because the specific type of response is outlined for each situation, logical errors in ratings should be controlled in this study.

The content error occurs when a rater has a tendency to rate others in the same or opposite direction from his/herself in a trait. This is a general class of errors involving the rater's attitude towards specific traits. It may result from a bias of one contrast or another. The raters were instructed to take precautions to avoid these errors.

Gilford states that the proximity error injects undue covariances among rated trait variables. The reason for this source of spurious correlation is
the nearness in space or in time for the rating of two traits. This error might be counteracted to some extent by placing similar traits farther apart and the more obviously disparate ones closer. It would be better to rate one trait at a time. This can easily be accomplished in the game by stacking the situations accordingly in the deck and by rating one trait at a time in the social skills assessment chart. Consequently the raters were instructed to avoid these errors when ever possible.

Inter-rater reliability is used to verify the reliability of the data by having a second person independently observe the target behavior. This was accomplished by having a second rater rate a video recording of each session.

Frequency measures are the most common measures employed and involve counting the number of times a specific behavior occurs. In order to do a frequency count the behavior must be observable (have a clear beginning and ending so as a second behavior may be counted). It must take a relatively constant amount of time when it occurs so that the units counted are similar (Bloom & Fisher, 1982).

Frequency measures are not always useful. When the major issue is the length of time a behavior occurs,
duration measures are used. These are simple to use and require recording the length of time that the behavior occurs. The beginning and ending of the behavior must be clear as well as the time frame in which the behavior occurs.

Interval measures combine both frequency and duration measures and were used in this study. They present a clearer overall picture of the behavior. Here the observation is divided into intervals and the rater states whether or not the specific behavior occurred in each interval. This is a flexible rating system that can be used with any type of behavior (Bloom & Fisher, 1982).

Inter-rater reliability for interval measures is determined by comparing the proportion of intervals in which two raters agree on the occurrence and non occurrence of the behavior. An agreement is an interval in which both observers agree that a behavior occurred or did not occur. And each interval in which only one observer scored a behavior is considered to be a disagreement. Reliability is determined by dividing the number of intervals in which both raters agreed by the number of agreements plus disagreements and multiplying by 100. There are no clear figures for inter-rater reliability but a good or high reliability is considered
to be between 80 percent and 100 percent.

Types of Observations

Agreement between the observers or raters is important and the type of observation used is also a methodological concern. The researcher must determine if the process of observing and recording has an effect on the people being observed. At the same time the data collections must be both reliable and valid. Three types of observation are; the complete participant, the participant-as-observer, and the complete observer.

The observer that takes the role of the complete participant interacts as naturally as possible with those being observed. However, the research worker's identity and purpose are not revealed to the subjects. It is possible to lose objectivity as the observer becomes part of the group. But this method does offer possibilities for learning about aspects of behavior that might otherwise escape the field observer (Arkava, & Lane, 1983).

In the participant-as-observer role, the subjects are aware of the observer's role. This method allows for formal observation but the subjects are aware of this process and may tend to mask some behaviors. On
the other hand, in the complete observer role there is no interaction with the subjects. The behavior is observed and interpreted.

For the purpose of this study the observer’s role was that of the complete observer as the behavior was observed and interpreted. However, in the "Stacking the Deck" program there is the opportunity for the observer (facilitator) to actually play the game with the participants. This method was used with Subject No. 1 on one occasion. In this case, the observer acted as a participant in that the questions were answered and the game pieces were moved accordingly. However, at this time the behavior of Subject No. 1 was also observed and interpreted.

Behaviors used as an outcome measure have a particularly good chance of being objectively recorded because they lend themselves to clear, precise and specific definitions. Behavior must be observable and countable by someone. For the purposes of the study behavior included talking, gestures, voice, content of speech and observable non-verbal aspects addressed in Spence’s Social Skills Assessment Chart which are clearly outlined.

According to Bloom and Fisher, recording the behavior is not an end in itself. They state that the
recording process should be a relatively simple process that enhances the intervention program by increasing the motivation of those involved. The selection of an instrument depends upon the nature of the problem, the capabilities and motivation of the recorder and the complexity of the situations. They add that the method of recording should be portable enough to be used where the behavior occurs. It should be unobtrusive as to not distract or embarrass those being observed. The method must also be likely to be used and be pleasant or enjoyable to use.

Both the "game" and the structured learning assignments fit these guidelines. The recording process was simple to use and employed specific scoring guides. The players' motivation was increased with the use of the player's scorecard. Since each player was recording his own score, they were not distracted by the facilitator's recording. The easy format of the recording ensured its use. The eagerness and enthusiasm of the players each session testified to the pleasantness of this process.

**Analogue Measures**

Another methodological issue in this study is the use of analogue measures. An analogue measure is
described as a measure that requires a client to respond in a contrived or controlled setting to situations that are found in the natural environment. Both the situations in the "game" and the role plays of the structured learning assignments were examples of this.

The danger with analogue measures according to Ney (1977), is that there is no clear evidence that they tap the actual behaviors that a person would engage in in real life (Bloom & Fisher, 1982). However, the use of analogue measures may be supported in this study because the situations in the "Stacking the Deck" program were developed from real life situations and more importantly because the use of the game itself provided a real life situation that required the appropriate use of social skills.

Staff Questionnaire on Social Behavior

A methodological issue in this study involved the use of the Staff Questionnaire for two reasons; the categories were not clearly defined and there may be some errors in recording. Spence noted some problems with this scale. She found that despite changes in the use of a wide range of basic social skills within the natural setting, the generalization measure of general social competence on the staff questionnaire failed to
demonstrate significant changes over time. However, in spite of her findings it was believed that this scale may still have some potential in the group home setting.

**Use of Video Equipment**

The observation should not be obtrusive, distract or embarrass those being observed. The presence of a video camera can do all of these things and therefore it must be used with care. In this particular study, the use of the video camera did not appear to have an effect on the subjects because this was often part of their routine in the rehabilitation centre and in the group home.

**Previous Work in Social Skills Training**

Braunling-McMorrow et al. (1986) state that the three subjects in their study improved in their social appropriate responses and that this was generalized to the natural setting. However, the House Staff evaluations indicated that ratings did not change and that one person's score was lower following training. The authors are uncertain as to why the staff reported
no improvement in any of the subject's skill levels. These evaluations were based on a five point Likert-type scale which rated each subject on 15 behaviors. Unfortunately the scale is not reproduced in the article and therefore it is difficult to ascertain if the scale is at fault or if in fact the generalization is not as good as the authors indicate. The authors' generalizations were based on performance during dinner which was recorded on video.

Similarly, Spence (1985) found that despite changes in the use of a wide range of basic social skills within the natural setting, the generalization measure of global social competence on the staff questionnaire failed to demonstrate significant changes over time. In spite of these problems this scale was used in this study with Subjects 2, 3, and 4. The same staff person assessed each subject at the group home on both the pre and post measures but the post measure was not completed (the overall assessment rating was omitted). Other methodological problems associated with this scale included many eraser marks which may indicate that there was a problem deciding on which level to grade the subject. Therefore this scale may not provide an accurate measure of social skills because it lacks specificity and because the post measure was not
completed. However, as previously stated there are not many suitable measures that address social skills training with the head injured population and therefore this measure was included. Results from this measure must be regarded accordingly.

Behavior at dinner may provide a natural setting in which to observe social behavior but it is likely that more time will be spent eating and as a result may only provide an opportunity for polite dinner time conversation. Consequently for this study a group discussion session was chosen in order to evaluate social skills. Part of the reason for choosing this group discussion format was because some of the staff at the group home stated that this was an area of deficit. As a result a video of a group discussion conducted one week prior to the collection of baseline data was used for the pre measure and a group session conducted one week following training was used as a post measure for social skills acquisition.

It was not possible to obtain a pre-baseline video on subject No.1, therefore his behavior in the baseline was used as a measure for the Social Skills Assessment Chart. It was believed that his behavior here was an adequate example of his social behavior. This is because the baseline data collection session was indeed
a social situation. A video of a post group session was used to evaluate generalization for Subject No. 1.

In the "Stacking the Deck Program" there was a lack of attention to non-verbal social skills and therefore this program was modified to include structured learning assignments. Measurements were added to address non-verbal behaviors (Social Skills Assessment Chart).

These measures included basic non-verbal skills (facial expression, posture, gestures, eye contact, social distance, fiddling movements, smiling and laughter, head movements) which were measured pre and post training.

The "Stacking the Deck" program did not provide specific instructions for implementation with "lower functioning" individuals. For example, if a subject has a problem with initiation can the question be repeated? Can the question be repeated if the subject was distracted for any reason? For the purpose of this study, questions were repeated 2 or 3 times if the subject was distracted or if no response was given within ten seconds for subject No. 1 only (note that subject No. 1 played the game with two others who were not considered for this study because they were not six months post injury). If other subjects (No. 2, 3, or
4) were distracted it was due to other talking, and the facilitator stopped and asked those talking to please be quiet and give ____ a chance to respond to the question. The question was repeated at this time.

This work of Braunling-McMorrow et al (1986) is relatively new and not as well known as the work of Eames & Wood (1981, 1985). Eames and Wood made use of a token economy to radically change the inappropriate behavior of many head injured individuals. However, their success is based on extensive treatment periods of a year or more. In their work, "Rehabilitation after severe brain injury: a follow-up study of a behavior modification approach" (1985) they evaluated 24 patients with severe head injury that had disturbed behaviors preventing rehabilitation or care in ordinary settings and thus were treated in a token economy. Their long-term follow-up study indicated that post-traumatic behavior disorders can be lastingly improved, and that lengthy rehabilitation can have surprisingly good effects.

Their Kemsley Unit is a very structured enclosed unit organized as a token economy, and uses a wide range of physical, cognitive, behavior, occupational and social techniques for treatment and training. The behavioral treatment is based on the positive reinforcement (with tokens, goodies, privileges, and
above all, interest, attention and praise) of all appropriate and adaptive behaviors.

The Eames and Wood study demonstrated that severely brain-injured patients who were previously not accepted in rehabilitation programs could be successfully treated by combining formal rehabilitation with behavior modification techniques. However, behavior modification needs very lengthy application to achieve changes that are likely to endure. As a result their rehabilitative treatments were able to continue for much longer than usual, and extended into social, leisure and even occupational areas. Their results suggest that a period of 15 to 18 months is optimal for most (Eames & Wood, 1985).

The length of time necessary in their program makes the rehabilitation process more expensive and therefore may not be feasible. On the other hand, the appeal of the "Stacking the Deck" program is its apparent cost effectiveness, in that several individuals can be trained simultaneously by one facilitator. It also provides an indepth assessment of skill acquisition in a number of social skill component areas. This program was adapted for this study because of these factors.

However a methodological concern in this study that has not been addressed as yet is the design itself.
The single subject design was chosen because of the small number of subjects involved and because the characteristics of this design fit the purpose of this study. These issues were addressed in chapter 3 on Research Design and will not be repeated here.

Summary

Inter-rater reliability and reduction of errors in judgment are major methodological issues in this study. Raters were informed of potential errors and precautions were taken to avoid proximity errors, content errors, the halo effect, errors of central tendency, and leniency errors wherever possible.

It was assumed that the main methodological issue may be the problems of transferring the learned behavior to the "real world". Consequently the structured learning assignments which provided homework were employed to help overcome this problem. There are also some methodological problems with the global Staff Questionnaire but it does address the issue of maintaining skills.

The Eames & Wood's behavior modification, although very successful, was not considered because of the high cost and lengthy treatment time required. The "Stacking the Deck" program was modified to include structured
learning assignments in order to address some of the non-verbal aspects of social skills and to increase the possibility of generalization.

It is believed that the type of observation and the recording methods used in this study will assist in the knowledge building process.
CHAPTER 5

FINDINGS

Subject 1

Table no.5 shows that subject 1's correct responses to the situation cards in the "Stacking the Deck" program ranged from one to five in the baseline. During the intervention phase he was able to improve his number of correct responses until he obtained a perfect score in the final game. $P \leq .001$ (t-test)

Social Skills Assessment Chart (Table No.6)

In voice quality, clarity and rate were scored as 4 in the pre test and 5 in the post test. Volume and tone and pitch received 3 in the pre test and 4 in the post test.

In non-verbal responses, social distance was not scored with this subject because he was often in a wheelchair sitting at a table. His social distance was always appropriate but it would be difficult to say if his appropriate behavior was related to good social skills or the seating arrangement. In fiddling movements he received a score of 2 in the pre measure and 4 in the post measure. In the pre test smiling and
TABLE 5

PLAYER PROGRESS GRAPH SUBJECT 1
THE QUALITY OF THIS MICROFICHE IS HEAVILY DEPENDENT UPON THE QUALITY OF THE THESIS SUBMITTED FOR MICROFILMING.

UNFORTUNATELY THE COLOURED ILLUSTRATIONS OF THIS THESIS CAN ONLY YIELD DIFFERENT TONES OF GREY.
TABLE NO. 6

SOCIAL SKILLS ASSESSMENT CHART

SUBJECT 1

green - pre-test
red - post-test
laughter, and head movements were scored at 3 and received 4 in the post test.

In the basic non-verbal skills, facial expression, posture, gestures and eye contact were rated as 2 in the pretest and gestures and eye contact received 3 in the post test. Facial expression and posture received 4 in the post test.

In the basic conversation skills, subject 1 received a score of 1 in frequency of initiations and frequency of question asking in the pre test and the score in each of these categories in the post test was 3. Information content and length of reply to questions scored 2 in the pre test and information content went to 4 in the post test and length of reply to questions went to a score of 3.

In listening skills, acknowledgments were scored as 2 in the pre test and 3 in the post test. Reflections received 1 in the pre test and 3 in the post test. Question-type feedback and personal self-disclosures received 1 in the pre-test and 3 in the post test.

In content of speech, relevancy of conversation went from 3 in the pre test to 4 in the post test, interest content and repetitions went from 2 in the pre test to 4 in the post test and interruptions remained at 4 in the pre and post tests.
Responses to "Stacking the Deck"

In the baseline period, subject 1 averaged 5.3 words per response and increased to 11.12 in the last session (see Table no.7). The response time (time it took to respond to situation) during the baseline period was 29.15 seconds and the response time in the last session was 2.47 seconds. In the sessions at the beginning of intervention, questions had to be repeated as many as 2 or 3 times, however, towards the final sessions the situations were only stated once and the reply was immediate.

The responses to the situation cards never displayed any rote pattern. The responses often varied and showed improvement in social competence as training sessions progressed.

In the beginning Subject 1 spent much of his time blowing on his hand and rocking back and forth in his wheelchair. He either stared straight ahead or kept his head down and stared at his lap. In the third intervention session (game 7) his behavior began to show some improvement. However, eye contact was not good, he continued to look down and rock back and forth in his chair. But he blew on his hand less. He began to respond more and asked questions himself (how much is
this one worth?). He was most eager to receive a large number so he could move his game piece accordingly.

Responses became more appropriate as the intervention progressed. In the beginning incorrect responses were often the result of no response and correct responses were often a few words. Examples of questions and responses are:

Another resident tells you that he fell this morning and hurt his leg. What would you say? Answers were as follows: (in order of occurrence)

1. "Hit the road there Wayne."
2. "I'd say life's a bitch and then you marry one eh!"

You are on an activity with an activity therapist and he says its time to go back to the centre, you want to stay longer. What do you say?

1. "What's with you there dude?"
2. "I would say why do we have to go, I want to stay longer.
3. "I would say excuse me there - but do we have to go right now because I am having a good time."

Another resident tells you that they appreciate your opening the door for them. What do you say?

1. "Don't thank me just buy me something."
2. "Don't thank me just buy me something."
3. "No problem - any time."

4. "I probably say you are very welcome."

You are out on an activity and another resident looking at a girl walking down the street says, "She's not bad looking for a fat person." What do you say?

1. "Isn't she eh"

2. "Yah, she's not bad looking:

3. "It is not very nice to say that about fat people."

4. "That's not very nice to say - what if you were fat."

By game 9 (sixth game of intervention) questions did not have to be repeated. Subject 1 answered all questions unless he was distracted. However, questions were not repeated at this point. If answers were not prompt they were marked as incorrect. Eye contact was better. He no longer blew on his hand or rocked back and forth in his chair. In game 15, his mother was present for part of the session. She sat at the back of the room behind subject 1. He did not appear to be distracted by this. Games 15 and 16 were played in a different room and again this did not distract the subject.
TABLE NO.7

AVERAGE NUMBER OF WORDS PER RESPONSE

<table>
<thead>
<tr>
<th>Subject</th>
<th>Words in Baseline</th>
<th>Words in Last Game</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject 1</td>
<td>5.3</td>
<td>11.12</td>
</tr>
<tr>
<td>Subject 2</td>
<td>10.13</td>
<td>14.86</td>
</tr>
<tr>
<td>Subject 3</td>
<td>5.5</td>
<td>11.21</td>
</tr>
<tr>
<td>Subject 4</td>
<td>4.0</td>
<td>8.7</td>
</tr>
</tbody>
</table>
Structured learning Assignments

These assignments were to be completed as homework. However, since the first assignment was not returned the remainder were completed in the intervention session. Listening skills and conversation skills were the topics covered in three sessions. In starting a conversation, subject 1 had difficulty getting past the small talk. He was able to judge if the other person was listening, however, the main topic was often similar to the small talk which he opened the conversation with. At first he could not supply his own topic of conversation and items had to be suggested for him, such as his family, and the town where he grew up.

Subject 1 had no difficulty carrying on a conversation with his peers. He could also end the conversation with no difficulty. However, he was the best at the Listening Skills. The improvement here was in looking at the other person and showing interest by nodding his head. These two particular skills did appear to carry over to the game situation. The written part of the assignments was difficult for him and he required assistance. Phrases were used rather than sentences. He always rated his performance as good. He appeared to enjoy the interaction and role play with his peers.
Subject 2

Response in the baseline (Stacking the Deck program) for Subject 2 was variable and this continued into the intervention phase until game 9. During the baseline phase correct responses ranged from 4 to 11 with an average of 7. However, in the middle of the intervention phase the correct responses remained consistent around 11 and 12 (see Table No.8) \( P < .01 \) (t-test). The number of words per response averaged at 10.13 during the baseline phase and averaged at 14.86 per response in game 18 (see Table No.7).

Social Skills Assessment Chart (see Table no. 9)

In voice quality there was no recorded improvement in clarity, rate, volume, and tone and pitch. Clarity and rate scored 5 in both the pre and post tests, while volume, and tone and pitch scored 4 in the pre and post tests.

In non-verbal responses head movements scored 4 in both pre and post tests. Smiling and laughter were marked at 3 in the pre test and 4 in the post test. A score of 5 was assigned to fiddling movements in both the pre and post tests.

In basic non-verbal skills, facial expression was recorded as 3 in both the pre and post tests. Posture
was rated as 4 in the pre test and 5 in the post test. Gestures and eye contact received a score of 4 in both the pre and post tests.

In the basic conversation skills, the length of reply to questions remained at 3 for both the pre and post tests and information content remained at 2 for both tests. Frequency of question asking was scored as 1 in the pre test and 2 in the post test. Frequency of initiation received 2 in the pre test and 3 in the post test.

In listening skills, acknowledgments were 2 in the pre test and 3 in the post test and reflections received 1 in the pre test and 3 in the post test. Question-type feedback remained the same with a score of 3 and personal self-disclosures remained the same at 2.

In the content of speech, relevancy of conversation scored 2 in the pre test and 5 in the post test. Interest content received 3 in the pre test and 5 in the post test. Interruptions remained the same at 4. Repetitions were scored at 4 in the pre test and 5 in the post test.

In the quality of speech, dysfluencies remained the same at 5 in both tests and hesitations and pauses remained the same at 4 in both tests. Latency of
TABLE 8
PLAYER PROGRESS GRAPH SUBJECT 2
TABLE NO. 9
SOCIAL SKILLS ASSESSMENT CHART

SUBJECT 2

green - pre-test
red - post-test
response received 2 in the pre test and 4 in post test. The amount spoken remained at 3 in both tests.

Responses in "Stacking the Deck"

Subject 2 was a verbally aggressive person but the quality of responses improved throughout the intervention. Some examples of this follow, with the question given first and the responses in order of occurrence:

You are watching TV and your roommate comes in and changes the channel. What do you say?

1. "Turn that thing back. I am watching it - if he doesn’t do that he would wear the cane."
2. "Excuse me, can you put that back. I was watching that. You can’t come in here and change it. If you want to watch something else you should have been here earlier."
3. "I’d say switch that damn thing back. I’m watching a show. You should have been here half an hour ago."
4. "Hey I was watching that show. What the heck do you think you are doing."
5. "Tell him to turn it back I was watching that show."
Another resident uses a lot of dirty words when he talks, and you do not like it. What can you do?

1. "Tell him to shut his fucking mouth - if he wants to use dirty words I can."

2. "Ask him if the dirty words are necessary all the time because you would rather not hear them because you can use enough yourself - you don’t need to hear them."

3. "Tell him if you can’t stop that swearing I won’t talk to him any more - it is as simple as that."

4. "Ask him to stop swearing - there is no reason for all those dirty words."

A resident repeatedly asks you to get his cigarettes for him. You know he can get them himself. What do you say?

1. "Nothing printable. Who was your bush you know what last year - get them yourself."

2. "Your cigarettes are right where you left them - I’m not going to get them for you."

3. "No, I’m not going to get your cigarettes - you can get them yourself."

4. "Get them yourself."

5. "You know where your cigarettes are and I’m not your slave, can you get them yourself please?"
You overhear someone say to a staff member, "Get me that ashtray. I need it." What might you say to your friend?

1. "Nothing printable - What the hell is a matter with you? Do you have a board tied to your ass?"
2. "If you need it can't you get it yourself.

You are talking to a resident who has a memory problem, and they ask you what you are making in art. This person asked you the same question yesterday. What do you say?

1. "The same thing I was making yesterday - I told you yesterday."
2. "The same thing I was making yesterday."
3. "I told you what I was making yesterday."
4. "I told you what I was making yesterday - I'm making the same thing if you can't remember write it down."
5. "Excuse me, I know you have trouble remembering I'll tell you again but please write it down so you will remember."

Someone asks your friend how they are doing today, and your friend gives them a long explanation. What do you say to your friend?

1. "My goodness he just asked how you are doing not for a two hour story."
2. "Could you please shorten that up we'll be here for half an hour."

3. "Could you please – you can tell him how you are but could you please make it a little shorter."

Subject 2 appeared to enjoy the game format. He joked about a low point he received after he had given a long answer. He especially liked the praise given for a correct answer. He would always try to get a few extra points by sliding on spaces meant for other players. He would then laugh and joke about it. He showed co-operation in moving other players markers when they were near him and by helping to put the game away after the session was over.

However, his behavior towards other people depended on what he thought of them. He expressed this on a few occasions and demonstrated it in some of his replies. For example the question, You are in a store and a little kid comes up and asks what is wrong with you (either because of your wheelchair, cane, or the way you walk). What do you say? He replied, "A little kid – if it was anyone else they would hear about it." He stated that if he didn't like someone he wouldn't talk to them and that if he didn't like someone he didn't have to be nice to them. Some of these concerns were addressed in the structured learning assignments.
Structured Learning Assignments

Subject 2 evaluated others according to the learning points to be followed and then followed these same learning points when he role played a situation. He provided examples for role plays. He rated himself as excellent in the conversation skills and listening skills and only fair in expressing anger. However, he had difficulty with the written part of the exercise. (writing and spelling poor).

Staff Questionnaire

In peer relationships, Subject 2 scored 29 in the pre test and 28 in the post test. In staff relationships, he scored 19 in the pre test and 23 in the post test. In general social behavior, he scored 34 in the pre test and 35 in the post test. (see table no. 10)

The comments recorded in which the subject had difficulty in the pre test were: repetitive stories, low frustration tolerance, and abusive attitude. The comments on the post test were: initiating outside the house.
TABLE NO. 10

STAFF QUESTIONNAIRE

<table>
<thead>
<tr>
<th>Subject 2</th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer relationship</td>
<td>29</td>
<td>28</td>
</tr>
<tr>
<td>Staff relationship</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td>General social behavior</td>
<td>34</td>
<td>35</td>
</tr>
</tbody>
</table>

Subject 3

During the baseline phase in the Stacking the Deck program, Subject 3 scored between 5 and 8 correct responses and by game 7 was getting 11 of the 12 responses correct. In game 16 he had a perfect score. This went down to 11 in games 17 and 18. \( P < .01 \) (t-test see Table No.11)

In the baseline phase Subject 3 averaged 5.5 words per response. This changed significantly to an average of 11.21 words per response in game 18. (see Table No.7)
TABLE 11
PLAYER PROGRESS GRAPH Subject 3

Number of Correct Responses

Games
Baseline

11 10 9 8 7 6 5 4 3 2 1 0

11 10 9 8 7 6 5 4 3 2 1

11 10 9 8 7 6 5 4 3 2 1
TABLE NO. 12

SOCIAL SKILLS ASSESSMENT CHART

SUBJECT 3

green - pre-test
red - post-test
Social Skills Assessment Chart (See Table No.12)

In quality of speech, dysfluencies received 5 in the pre and post tests and hesitations and pauses remained at 4 for the pre and post tests. Latency of response and amount spoken received a score of 3 in the pre test and a score of 4 in the post test. In voice quality, clarity and rate remained at 5 for both tests. Volume received 4 in the post test and 5 in the pre test while tone and pitch remained at 4 for both tests.

In non-verbal responses, head movements received a score of 4 in the pre test and 5 in the post test. Smiling and laughter received 3 in the pre test and 4 in the post test. Fiddling movements remained at 5 for both tests.

In basic conversation skills, the length of reply to questions remained the same at 3 for both the pre and post tests. While information content, frequency of question asking, and frequency of initiations were scored as 2 in the pre test and 3 in the post test.

In listening skills, acknowledgements received 3 in the pre test and 4 in the post test. Reflections were scored as 1 in the pre test and 4 in the post test. Question-type feedback and person self-disclosures scored 3 in the pre tests and 4 in the post tests.

In content of speech, relevancy of conversation and
interest content received 4 in the pre tests and 5 in post tests. Interruptions remained at 4 for both tests. Repetitions scored 4 in the pre test and 5 in the post test.

Responses in "Stacking the Deck"

The responses to the situation cards in the Stacking the Deck program improved with intervention. Some examples of this follow.

You are talking to a resident who has a memory problem, and they ask you what you are making in art. This person asked you the same question yesterday. What do you say?

1. "Your memory's bad and I think you're deaf too."

2. "Excuse me but you asked me the same question yesterday do you mind writing it down so you won't forget it."

3. "Excuse me you asked me the same question yesterday, why don't you write it down so you won't forget."

You are out on an activity and another resident looking at a girl walking down the street says, "She's not bad looking for a fat person." What do you say?

1. "You're blind".
2. "You're not bad looking for a skinny kid."
3. "I would tell him not to be so bloody rude".
4. "Beauty doesn't go in sizes."

You are watching TV and your roommate comes in and changes the channel. What do you say?

1. "Punch him in the face".
2. "Excuse me I was watching that show do you mind turning it back?"
3. "Excuse me but I was watching that show."
4. "I was watching that show do you mind turning it back?"

A resident repeatedly asks you to get his cigarettes for him. You know he can get them himself. What do you say?

1. "Excuse me but do you have a piano tied to you ass."
2. "I know you can get them yourself so why don't you get them yourself."

Subject 3 appeared to enjoy the game format. He was always the first to arrive. He co-operated in the game by moving game pieces for other players and he helped set the game up and and he helped put the game away at the end of the sessions.
Structured Learning Assignments

Subject 3 participated in 3 structured learning assignments. He followed the learning points in evaluating others and in his own role play. In the beginning he had difficulty with the role play and providing examples for starting a conversation. However by the second session he provided many examples and had no difficulty starting, carrying on or ending a conversation. This was the same for responding to and expressing anger. He always rated his performance as good.

Staff Questionnaire

There was no change in peer relationships they remained at 32 for the pre and post tests. He scored 23 in the pre test for staff relationships and 27 for the

TABLE NO.13

STAFF QUESTIONNAIRE

<table>
<thead>
<tr>
<th>Subject 3</th>
<th>pre</th>
<th>post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer relationships</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>Staff relationships</td>
<td>23</td>
<td>27</td>
</tr>
<tr>
<td>General social behavior</td>
<td>36</td>
<td>36</td>
</tr>
</tbody>
</table>
post test. The general social behaviour remained at 36 in the pre and post tests.

The comments on the pre test which identified social situations in which the subject had difficulty were: assertiveness, and handling conflict. Assertiveness and initiating outside the house were reported as difficult areas in the post test.

Subject 4

Subject 4 scored between 8 and 10 during the baseline phase. This went up to 11 in games 6, 7 and 8 and up to 12 in games 9 and 10. The number of correct responses dropped to 6 in game 11 and rose to 12 in games 12 and 13. $P < .01$ (see Table No.14).

The average number of words per situation during the baseline phase was 4 and in game 13 the average number of words per response was 8.7 (see Table No.7).

Social Skills Assessment Chart (see Table No.15)

In the quality of speech, dysfluencies remained at 5 for both the pre and post tests. Latency of response, hesitations and pauses, and amount spoken remained at 4 for both the pre and post tests.

In voice quality, clarity and rate were scored at 5
TABLE 15
PLAYER PROGRESS GRAPH SUBJECT 4

[Graph showing player progress over time, with axes labeled 'Games' on the vertical axis and 'Number of Correct Responses' on the horizontal axis.]
in both the pre and post tests. Volume was scored at 4 in the pre test and 5 in the post test. Tone and pitch remained at 4 in both tests.

In non-verbal responses, head movements and fiddling movements remained at 5 in both the pre and post tests. Smiling and laughter remained at 4 in both the pre and post tests.

In basic non-verbal skills, facial expression remained at 4 in both the pre and post tests. Posture was scored as 4 in the pre test and 5 in the post test. Gestures received 5 in both tests. Eye contact was scored as 4 in the pre test and 5 in the post test.

In basic conversation skills, length of reply to questions, information content, and frequency of question asking were scored at 3 for both pre and post tests. Frequency of initiations received 2 in the pre test and 3 in the post test.

In listening skills, acknowledgements, question-type feedback and personal self-disclosures, were scored as 3 in the pre test and 4 in the post test. Reflections were recorded as 1 in pre test and 4 in the post test.

In the content of speech, relevancy of conversation, and interest content were recorded as 3 in the pre test and 5 in the post test. Interruptions
remained at 4 in both the pre and post tests. Repetitions received 4 in the pre test and 5 in the post test.

**Staff Questionnaire**

In peer relationships Subject 4 scored 27 in the pre test and 28 in the post test. In staff relationships, he scored 22 in the pre test and 21 in the post test. In general social behaviour he received 34 in the pre test and 33 in the post test.

**TABLE NO.16**

<table>
<thead>
<tr>
<th></th>
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<th>post</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subject 4</strong></td>
<td></td>
<td></td>
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<td>Peer relationship</td>
<td>27</td>
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<td>Staff relationship</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td>General social behavior</td>
<td>34</td>
<td>33</td>
</tr>
</tbody>
</table>

The social situations in which Subject 4 had
difficulty with in the pre test were reported as judgmental, distrusting, and relates poorly to women. The remarks in the post test were interference with others and sarcasm. Subject 4 answered most questions correctly even in the baseline. The more significant results in this case were the number of words spoken per response. In the baseline response the number of words for each response was very limited. Many of the responses were two or three words ("I agree." "Get it yourself." "I tried." Thank you." "Your welcome." "Thank the cook." "Tell him"). However, later in the intervention sentences became longer. The response to some of the situations follows.

Another resident tells you that he fell this morning and hurt his leg. What do you say? He replied, "Sorry to hear that I hope your leg is better."

You are in a restaurant and the person you are with tells the waitress that she is beautiful. What do you say? He replied, "Would you mind keeping your comments to yourself."

A resident repeatedly asks you to get his cigarettes for him. You know he can get them himself. What do you say? He replied, "I would be more than happy to get them but please in the future get them yourself."
However in game 11 Subject 4 replied to this situation incorrectly. Someone is wearing a new shirt that you do not like. He asks you how you like his new shirt. What do you say? He replied, "Thank you" and only answered one more question correctly in this game. As a result his score was 6. This is an excellent example of the advantage of an immediate evaluation that is involved in the single system design. It is evident that this score is very different from all his other scores. As mentioned previously, this design can not control intervening variables but it does suggest that something unusual is happening.

The first thought was that he was bored with the game and did not want to play any more. However, he started this session very keen and willing to participate. He even joked at the beginning of the game saying whoever won the gum had to share it with all the others. He also returned for two more games after this session and received perfect scores. Therefore, his continued participation and resulting scores discounts this theory of boredom.

Immediately after this session I checked with the house staff to see if anything unusual was happening with Subject 4. They revealed that he had been expecting a large insurance settlement from his accident
and that he had just received word earlier that morning that there was to be no settlement. Consequently he was rather "down" and this may have influenced his behavior in the game.

Subject 4 also expressed a great deal of denial. He believed that his social skills were just fine. He also believed that he was more intelligent than the others in the group. The other players explained to him that it was not his shirt that the question was talking about and being corrected by them may have been difficult for him to accept.

The behavior of Subject 4 may have been the result of all or any of these factors and any other factors that are known only to him. However, the advantage of the single system design is that it immediately identifies any change in the dependent variable and further investigation and intervention can be made accordingly.
Chapter 6

Implications and Conclusions

The task now is to look at the results of this study as they relate to the objectives specified in Chapter 2 on Research Problems. The objectives were to enhance the sending and receiving skills of head injured adults in six areas: compliments, social interaction, politeness, criticism, social confrontation and questions and answers. This evaluation was to consider the problems that head injured people have with social interaction, the usefulness of social skills training with this population, the usefulness of the modified "stacking the deck" program, and limitations and implications for further research.

Sending and Receiving Skills

Each subject clearly enhanced his sending and receiving skills as specified in the "stacking the deck" program and each was able to obtain a perfect score.
Problems of Social Interaction

This intervention was successful in dealing with some behavioral and personality problems associated with head injury. Initiation was increased in the case of Subject 1 as his response time was reduced from 29.15 seconds to 2.47 seconds. The increase in the number of words per response may also be an indication of increased initiation on the part of all subjects.

Participation might be used as an indication of motivation. Attendance was voluntary and in all cases subjects came to all sessions with the exception of Subject 4 who had a job training program that conflicted with this study on three occasions. However, Subject 4 made every effort to attend when he could. His return after his poor performance in game 11 may be further indication of his motivation to continue with the treatment.

The game format worked well in maintaining the attention of each subject. This was evident as each person not only paid attention during his turn but also remained attentive throughout the game. They watched each other’s moves and counted spaces moved to make sure no cheating was involved.

This study attempted to reduce the self
centeredness that is often associated with head injury. This was to be accomplished by encouraging co-operation. Co-operation was displayed as the subjects assisted in moving the other player's game piece at times. Co-operation was also displayed in putting the game away and in the sharing of the reward at the end of the game.

The intervention provided an equal social opportunity for all subjects. They seemed to enjoy the game format and expressed appreciation of the program at our last session and might have continued to play indefinitely. Two subjects involved in the pilot testing were most willing to participate and even asked on discharge if they were going to play the game any more. This was particularly interesting because they were native Indian and the "Stacking the Deck" program reflected white middle class values. Although the situation cards and expected responses reflected a white middle class environment, they could be easily adapted to represent any culture. It is important to be aware of the subject's culture because the purpose of the intervention is to assist with the reintegration of the head injured person into his / her family and community. However, it appears that the game format provided a desirable social interaction.
Denial has been identified as one of the biggest blocks to successful rehabilitation of the traumatically head injured person. Subject 4 expressed the most denial and he believed that he functioned better than the other participants. However, his scores proved this to be otherwise. This confrontation with reality may have been disturbing to him and hence his poorer showing on the Staff Questionnaire. The advantage of the intervention is that it readily indicated that other variables may be operating and therefore steps can be taken to address them.

The intervention provided the opportunity for problem solving but there was no direct measure to indicate that the subjects actually improved in this specific skill. However, all subjects' responses to the situation cards improved in complexity and no subject provided a rote response. Subject 2 and Subject 3 began to use the structured learning assignments to address their problematic issues, such as how to complain to a staff person about the choice of a restaurant for a dinner outing.

It was assumed that an increase in performance would lead to an increase in self-esteem. The subjects indicated that they were proud of their improvement in their scores. The personal goal for everyone was to
answer all the situations correctly. Consequently the recording and display of the individual's progress (progress charts and praise) may have increased the subject's self-esteem (this is assumed as there is no direct measure of this). This appeared to have worked to lessen depression that is associated with head injury as all subjects were eager and cheerful throughout the game. Even Subject 4 came back cheerful and willing to continue with the intervention after his poor showing in game 11.

In summary this intervention addressed the problems of social interaction associated with head injury namely; social isolation, denial, loss of self esteem, decreased ability for problem solving and an increase in ego-centricity.

Usefulness of Social Skills Training

The idea of social skills training for the head injured adult is exciting because the need is so great. However, the training must show some chance of success or carry over if it is to be of value.

In this study each subject significantly increased his social skills repertoire. They were able to act or react to each of the six skill areas. However, knowing the appropriate social skill does not necessarily mean
these skills will be used in the natural setting. The Social Skills Assessment Chart indicated that there was improvement in many skills. But the generalization of many Social Skills Training programs is questionable as previously mentioned and this study raised similar doubts. Even though the Social Skills Chart indicated that there was improvement one week after intervention this is a very limited follow up. A more extensive follow up is necessary to ensure generalization. Similarly, Spence (1984) and McMorrow et al. (1986) had difficulty with generalization in their studies. Therefore the weak generalization may be the result of this particular intervention but it may also be related to a weakness of social skills training in general. This weakness in generalization may indicate a need for continued intervention. It may be necessary to incorporate the intervention into the regular routine of the head injured person. Examples of this continued intervention are discussed later under implications for practice.

Other problems relating to generalizations of behavior experienced in this study may be related to the self-fulfilling prophecy. It is necessary to explain this concept briefly and how it may be related here.

The self-fulfilling prophecy, by which people act
as they are expected to, has been documented in many
different situations. In their "Oak School" experiment
(Rosenthal & Jacobson, 1968), some teachers were told at
the beginning of the term that some of their pupils had
shown unusual potential. However, these "bloomers" had
actually been chosen at random. Several months later
these children showed unusual gains in IQ and the
teachers seemed to like the "bloomers" better. Rosenthal
and Jacobson believe that the students improved because
the teachers expected them too. This principal can also
work in a negative way.

The self-fulfilling prophecy can act negatively in
this study if the staff evaluation and corresponding
interactions were based on the behavior expected.
Similarly in this vein, I was told that Subject 1 was
not suitable for this study because he would not be able
to participate. In talking with his mother after game
15, she was amazed by his performance and indicated that
she too had doubts about his abilities to participate.
The point here is that people with head injuries may be
excluded from programs because they are perceived as
incapable. It must be emphasized that the social skills
in this study were learned through constant repetition
in both the structured learning assignments and in the
game.
Usefulness of Modified "Stacking the Deck" Program

As previously mentioned, the game format was useful because it addressed the specific needs of the head injured person; problems in maintaining attention, lack of initiation, denial, depression, low self-esteem, lack of opportunities for socialization, and decreased ability in problem solving.

The failure of many social skills training programs to report greater generalization of behaviors is a result of the lack of similarity between the training and the natural setting (Foxx et al., 1983). Although this program used analogue situations, the nature of the table game itself simulated real life situations and encouraged peer interaction, co-operation, competition and problem solving. Peer interaction was evident as the subjects congratulated each other on a good response and laughed when a correct complex response only received one or two points.

The encouraging results of this study are not the only advantages of this program. Other advantages are:

1) the availability of standardized training procedures

2) the cost efficiency of group training in that it only requires one person to do the training and three or four individuals can be trained at one time.
3) the use of a training session that approximates a natural environment

4) the ability to train individuals that have vastly different skill levels at one time.

The assessment aspect of the program (baseline) was useful because it provided a standard with which to measure improvement. Consequently changes in behavior could be immediately noted as in the case of Subject 4.

It was useful for indicating cognitive problems that may have been denied or not readily apparent as demonstrated with subject 4 and the question of the shirt.

The intervention can be successful with "lower functioning" people if questions are repeated and the subject is given time to respond as in the case of Subject 1.

Limitations of Study

This study employed the single system design and conclusions are limited because of the limits of the design. However, the replications (4 cases with similar results) strengthen the generalization of the findings. The intervention did increase the social skills of all four subjects.
The generalization measures are weak because there was only one follow up measure one week after treatment. The two measures (Social Skills Assessment Chart & Staff Questionnaire) used to assess the generalizations should have strengthened the findings but the application and the use of the Staff Questionnaire itself is questionable.

**Implications for Practice**

The favourable results suggest that this could be an effective program for teaching social skills to head injured adults. The situation cards could be adapted to address the specific deficit of the individual. The cards could be changed frequently to ensure maintainence of skills. The staff could suggest situations for the cards based on day to day performance of the individual.

It is difficult to determine why the subjects behaved differently for me and the staff. It could be the result of the self-fulfilling prophecy or the subjects may have responded more appropriately for me because I spent time with them and demanded and expected correct responses. Therefore in order to ensure that the skills are maintained and transferred to other settings it may be necessary to have the co-operation of the staff. If all concerned were to constantly remind
the head injured person what appropriate behavior is expected and then expect this behavior to be forthcoming, the skills may be retained.

The learning and maintaining of skills could be facilitated by having all the staff aware of the intervention and by working as a team to praise or reward good social skills and to note inappropriate skills on a daily basis.

The structured learning sessions could be recorded on video and each person could evaluated their performance according to the learning points. The structured learning assignments can be used to provide additional training in areas that are particularly weak. This was particularly effective in improving the non-verbal behavior of Subject 1. These weak areas could be identified by the situation cards and by the staff working with the individual. Consequently this study indicated that the structured learning assignments can enhance the "Stacking the Deck" social skills training program. This coupled with the apparent participants' enjoyment of the program make this a desirable form of intervention.
Implications for further Research

Within the limits of the design and sampling method, this study confirmed the findings of the Braunling-McMorrow, Lloyd & Fralish study of 1986. The areas of continuing concerns are similar, in that there is a need for continued study in the generalization and maintenance of learned behaviors. The replication of effects in this study suggest that further research making use of large group experimental designs to confirm the effects of the intervention are necessary.

In order to determine the long term consequences of the intervention additional observations of the subject's behavior in a natural setting could be built into a further study and follow up observation periods could be included. Since the exploratory-descriptive design does not address some important questions, there is a need for further research that would make use of other designs. The questions that this design is not able to address are:

1. To what extent is the change a result of the intervention?
2. What components in the intervention lead to the change?
3. Is the result influenced by the placebo effect
or the choice of the therapist?

Possible future designs that could be used are reversal designs and multiple baseline designs. Examples of these designs are described in Bloom and Fisher (1982) and consequently will not be described here.

This study also confirmed that the effects of social skills training can be reliably measured. Consequently this has implications that can be generalized to other types of intervention at the social/behavioral/affective level that are usually considered too difficult to measure. Similarly this study demonstrated the ease at which the single system design can be incorporated into practice and this has implications for the integration of research and practice.
APPENDIX

Social Skill Situations

NOTE: The suggested response here is to be used along with the criteria for determining the correct response (Table 2).

1. Another resident is having a birthday. You like the new shirt he was just given. What would you say? (C, A)
   
   That’s a nice looking shirt.

2. Someone tells you that he likes your shoes, but you don't like them yourself. What do you say? (C, R)
   
   Thank you. I do not really care for them myself.

3. A resident tells you that they just had a wonderful vacation. What do you say? (SI, R)
   
   That’s great. What did you do?

4. Someone tells you they don’t like the way you are staring at them. What do you say? (CR, R)
   
   I am sorry; I didn't realize that I was staring.

5. You say something that makes your friend angry. What should you do? (SC, A)
   
   I am sorry you are angry, but that's how I feel about it.

6. You are in a restaurant and when ordering, the waitress says she can't understand you. What do you do? (CR, R)
   
   I am sorry; I will repeat myself.

7. You are busy trying to get some work done and another resident comes up to you and wants to talk. What do you say? (P, A)
   
   Excuse me, I need to finish this. Can we talk later?

8. You have an appointment with a therapist and when you get there on time she is talking to someone else. What do you do? (P, A)
   
   Say, "Excuse me, are you ready for our session?"

9. You are on an activity with an Activity Therapist and he says it's time to go back to the Centre (or House). You want to stay longer. What do you say? (Q, A)
   
   I would like to stay longer, may we?
APPENDIX

10. A resident repeatedly asks you to get his cigarettes for him. You know he can get them himself. What do you say? (CR,A)
   I know you can get them yourself, so I wish you would.

11. You are in a store and need to find a gift for your mother. How would you ask for help? (Q,A)
   Would you please help me find a gift for my mother.

12. A resident laughs at another resident who just tripped over his cane. What might you say to the person laughing? (SC,R)
   I do not think it's very nice to laugh at other people's problems.

13. You are out with a group and another resident looking at a girl walking down the street says, "She's not bad looking for a fat person." What do you say? (SC,A)
   I do not like it when you call someone fat. Please do not say that when I am around.

14. You are in a store and a little kid comes up and asks what is wrong with you (either because of your wheelchair, cane or the way you walk). What do you say? (Q,R)
   I was in a bad accident.

15. You see another resident accidentally dump out everything in his wallet. What do you do? (P,A)
   Offer to help pick it up.

16. You are watching TV and your roommate comes in and changes the channel. What do you say? (SC,R)
   Excuse me, I was watching the other channel.

17. You need to ask a staff member a question and see him in his office alone. What do you say? (Q,A)
   Excuse me, may I talk with you?

18. You are in a group of people, and there is a pause in the conversation. What do you say to get the conversation going again? (SI,A)
   Hey, I hear it's supposed to rain later today.

19. You are at the dinner table and another resident has just given you the salt that you asked for. What do
you say? (P,R)
Thank you.

20. You are talking to a resident who has a memory problem, and they ask you what you are making in art. This person asked you the same question yesterday. What do you say? (Q,R)
   I am making a ceramic pot.

21. Someone is wearing a new shirt that you do not like. He asks you how you like his shirt. What do you say? (CR,R)
   It is not one of my favorites. I like your blue one better.

22. Someone tells you that they like your new stereo. What do you say? (C,R)
   Thank you, I really like it too.

23. You are at dinner and really like what is being served. What might you do?
   To the cook - I really like the dinner. (C,A)

24. Another resident uses a lot of dirty words when he talks, and you do not like it. What can you do? (SC,A)
   I really do not like to hear foul language. Would you not use it in front of me?

25. Another resident is always bragging about things he does or has. What do you do when he starts to tell you another story? (CR,A)
   I do not mean to offend you, but I am getting tired of all these stories.

26. A resident asks you why you are at the Centre. What do you say? (Q,R)
   Since my accident, there are a lot of things I need to learn how to do again.

27. Another resident tells you that they appreciate your opening the door for them. What do you say? (C,R)
   You are welcome.

28. Another resident looking very sad says he just got some bad news from home. What do you say? (SI,R)
   Ask if he would like to talk about it.

29. You are driving back from a movie and another resident asks the activity therapist to stop for ice cream. You do not want to stop. What do you say?
APPENDIX

(SC,R)

I do not feel like having ice cream; please drop me off at the Center before you go.

30. You are in a restaurant and the person you are with tells the waitress that she is beautiful. What do you say? (CR,A)

   It embarrasses me when you say those kind of things to people you do not know. Please do not say them when I am with you.

31. You want to talk to a certain person, but when you see them they are talking to someone else. What do you say? (Q,A)

   Excuse me, may I talk to you when you are finished.

32. You see a resident take a pack of gum out and take a piece. You would also like to have a piece. What do you say? (Q,A)

   May I have a piece of gum?

33. You overhear someone say to a staff member, "Get me that ashtray I need it." What might you say to your friend? (CR,A)

   You may wish to ask that in a nicer way.

34. Someone tells you that they are uncomfortable talking to you because they feel as though you are examining them from head to toe. What do you say? (CR,R)

   I am sorry I did not realize that I was doing that.

35. You walk into the dining room and two people are talking. You would like to join them. What do you say? (SI,A)

   Excuse me, I thought I might join your conversation.

36. Another resident tells you that he fell this morning and hurt his leg. What would you say? (SI,R)

   I am sorry to hear that, are you okay?

37. Someone asks your friend how they are doing today, and your friend gives them a long explanation. What do you say to your friend? (SC,R)

   I am not sure that that person wanted to know all that. Maybe next time you should make it shorter.

38. You were in the bathroom for a long time. When you come out you notice someone has been waiting to use the bathroom. You think it's nice that they waited. What
APPENDIX

doyou say? (C,A)
I am sorry I took so long. Thank you for waiting.

39. Another resident has bumped into you and says that he is sorry. What do you say? (P,R)
That's okay.

40. You meet a girl downtown and would like to get to know her better. What might you say to her? (SI,A)
I was wondering if you would like to go out with me.

41. Someone you do not like asks you if you are going away this weekend. What do you say? (Q,R)
Yes, I am going out of town on Saturday.

42. You are in a crowded restaurant, and the waitress who is busy takes several minutes before coming to your table for your order. What do you say when she does come and apologize for taking so long? (P,R)
I understand that things are really busy; we would like to order now.

43. A resident tells you they are really anxious about calling home tonight. What do you say? (SI,R)
I am sure they will be happy to hear from you. How long has it been since you have talked with them?

44. A resident tells you that they are happy that you have stopped using foul language around them. What would you say? (C,R)
Thank you. I am trying.

45. You are at a party and someone offers to go get you a beer. What do you say? (P,R)
Thank you, but I do not care for one right now.

46. A friend just got a haircut that you like. What do you say? (C,A)
I really like that haircut on you.

47. Someone down the hall is making a lot of noise, and you want to rest. What do you say? (SC,A)
Excuse me, but I am trying to get some sleep; would you be a little more quiet?

48. You are in your room and spill a glass of water and need someone to help you clean it up. What do you say? (SI,A)
Find someone and say, "I spilled some water in my
room. Would you help me clean it up?" OR

48. It's your first day on the job and you are introduced to the supervisor. You might say hello and ________? (S1,A)

   It's nice to meet you.
SOCIAL SKILLS ASSESSMENT CHART
## APPENDIX

<table>
<thead>
<tr>
<th>SOCIAL SKILL</th>
<th>PERFORMANCE RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VOICE QUALITY</strong></td>
<td></td>
</tr>
<tr>
<td>Tone and Pitch</td>
<td></td>
</tr>
<tr>
<td>Extremely unpleasant, high pitched, squeaky voice or totally lacking in expression. Very monotonous and boring.</td>
<td>High frequency of high pitch or monotonic speech, but less severe. Unpleasant to listen to.</td>
</tr>
<tr>
<td>Volume</td>
<td>Voice is frequently excessively loud or excessively quiet.</td>
</tr>
<tr>
<td>Rate</td>
<td>Always speak excessively fast or excessively slowly. Very hard to follow.</td>
</tr>
<tr>
<td>Clarity</td>
<td>Speech always extremely hard to understand. Words extremely mumbled and poor pronounced.</td>
</tr>
<tr>
<td>SOCIAL SKILL</td>
<td>1</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td><strong>NON-VERBAL</strong></td>
<td><strong>RESPONSES</strong></td>
</tr>
<tr>
<td>Social Distance</td>
<td>Extremely inappropriate to situation. Is always excessively close or distant in interactions.</td>
</tr>
<tr>
<td>Fiddling Movements</td>
<td>Extremely inappropriate. Constant shifting of position, movements of arms and legs. Constant touching of face, hair, hands etc.</td>
</tr>
<tr>
<td>Smiling and Laughter</td>
<td>Total absence of smiling or laughing, or continuous, inappropriate smiling.</td>
</tr>
<tr>
<td>Head Movements</td>
<td>Total absence of appropriate head movements or continuous head nodding or shaking.</td>
</tr>
<tr>
<td>SOCIAL SKILL</td>
<td>1</td>
</tr>
<tr>
<td>--------------</td>
<td>---</td>
</tr>
<tr>
<td><strong>PERCEPTION OF EMOTIONS</strong></td>
<td>[SCORES FROM TESTS OF PERCEPTION OF EMOTIONAL EXPRESS!!]</td>
</tr>
<tr>
<td>Facial Expression</td>
<td>1-2</td>
</tr>
<tr>
<td>Posture</td>
<td>1-2</td>
</tr>
<tr>
<td>Gestures</td>
<td>1-2</td>
</tr>
<tr>
<td>Voice Quality</td>
<td>1-2</td>
</tr>
<tr>
<td><strong>BASIC NON-VERBAL SKILLS</strong></td>
<td></td>
</tr>
<tr>
<td>Facial Expression</td>
<td>Extremely inappropriate to situation. Excessive glaring, grinning or frowning. Continuous.</td>
</tr>
<tr>
<td>Posture</td>
<td>Extremely inappropriate to situation. Severe and continuous slouching, shoulders drooped etc.</td>
</tr>
<tr>
<td>Gestures</td>
<td>Total absences or severe excess of gestures.</td>
</tr>
<tr>
<td>Eye Contact</td>
<td>Total aversion of gaze during conversations, or intense, continuous staring.</td>
</tr>
<tr>
<td>SOCIAL SKILL</td>
<td>1</td>
</tr>
<tr>
<td>-------------</td>
<td>---</td>
</tr>
<tr>
<td>BASIC CONVERSATION SKILLS</td>
<td>Length of Reply to Questions</td>
</tr>
<tr>
<td>Information Content</td>
<td>Conversation always contains minimal information. Content is generally unrelated to the topic of concern.</td>
</tr>
<tr>
<td>Frequency of Question Asking</td>
<td>Always total absence of question asking during general conversation or when trying to gain information or to hand over conversation.</td>
</tr>
<tr>
<td>Frequency of Initiations</td>
<td>Always total absence of initiations during conversation. Fails to initiate statements or questions to maintain conversation.</td>
</tr>
<tr>
<td>SOCIAL SKILL</td>
<td>1</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------------------------------------------</td>
</tr>
<tr>
<td>LISTENING</td>
<td></td>
</tr>
<tr>
<td>SKILLS</td>
<td></td>
</tr>
<tr>
<td>Personal</td>
<td>Total absence of personal self-disclosure statements or excessive</td>
</tr>
<tr>
<td>Self-disclosures</td>
<td>excessively personal self-disclosure, e.g. about illness or sexual</td>
</tr>
<tr>
<td></td>
<td>activities.</td>
</tr>
</tbody>
</table>
| Question-type      | Total absence of question-type feedback while other person is      | Very low frequency of question-type feedback, or rarely appropriate.         | Sometimes provides question-type feedback while in the listening role, but   | Slight inadequacy in level of appropriate question-type feedback.              | High frequency of appropriate question-type responses when in the listening role, e.g. "Oh? Really? Did you?"
| Feedback           | talking or questioning responses are inappropriate and irrelevant  |                                                                              | frequency not adequate.                                                      |                                                                              |                                                                              |
|                    | to conversation.                                                  |                                                                              |                                                                              |                                                                              |                                                                              |
| Reflections        | Total absence of reflections while in the listening role.         | Very low frequency of reflections when in the listening role.                | Inadequate but occasional use of accurate reflections.                       | Frequent use of reflections in listening role, but tend to be slightly       | Frequent use of reflections appropriate to the content of conversation, while in the listening role. e.g. "mm, ahh, I see."
<p>| Acknowledgements   | Total absence of acknowledgements, when in the listening role.    | Very low frequency of acknowledgements when in the listening role.           | Inadequate but occasional use of acknowledgments                             | Frequent use of acknowledgements in listening role but slightly inadequate.  | Frequent use of acknowledgements, appropriate to the content of conversations, while in the listening role, e.g. mm, ahh, I see. |</p>
<table>
<thead>
<tr>
<th>SOCIAL SKILL</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>3</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CONTENT OF SPEECH</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repetitions</td>
<td>Excessive and inappropriate repetition of statements or information during conversations.</td>
<td>Frequent, inappropriate repetitions.</td>
<td>Sometimes repeats information or phrases when inappropriate.</td>
<td>Repetitions usually only when appropriate, but slight excess during clarification.</td>
<td>Repeats information or phrases only when appropriate.</td>
</tr>
<tr>
<td>Interruptions</td>
<td>Very high frequency of persistent and irritating butting in, while other people are speaking.</td>
<td>Frequent, inappropriate interruptions.</td>
<td>Occasional inappropriate interruptions.</td>
<td>Infrequent interruptions. Usually allows other person to complete speech before taking the lead.</td>
<td>Never interrupts unless appropriate, and makes excusing statements first.</td>
</tr>
<tr>
<td>Interest Content</td>
<td>Always extremely boring and uninformative. Or may be totally preoccupied with self. Excessive talking about self.</td>
<td>Content is often very boring. Fails to select appropriate topics of conversation according to interests of listener.</td>
<td>Content of speech is occasionally boring to the listener.</td>
<td>Content is usually quite interesting. Selects appropriate topics of interest to listener.</td>
<td>Always interesting and informative. Selects topics appropriate to situation.</td>
</tr>
<tr>
<td>Relevancy of Conversation</td>
<td>Always wanders off the topic of conversation. Extreme digressions. Rapid switching of topics without apparent connection.</td>
<td>Frequently wanders off the subject. Frequent discussion of topics inappropriate to situation.</td>
<td>Occasional inappropriate digressions and irrelevant topics during conversations.</td>
<td>Content usually relevant and appropriate to situation. Very occasional digressions.</td>
<td>Always sticks to relevant and appropriate topic of conversation.</td>
</tr>
<tr>
<td>SOCIAL SKILL</td>
<td>1</td>
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<td>4</td>
<td>5</td>
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<tr>
<td>QUALITY OF SPEECH</td>
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<tr>
<td>Amount Spoken</td>
<td>Extremely minimal. Mainly one word replies and very brief statements. Hardly speaks at all.</td>
<td>Very minimal or excessive. Fails to give others opportunity to speak. Monopolizes conversation.</td>
<td>Moderate excess or inadequate quantity of speech. Usually appropriate amount of speech. Occasional slight excess or inadequate amount.</td>
<td>Amount spoken always appropriate to situation. Appropriate length and frequency of utterances. Does not monopolize conversation.</td>
<td></td>
</tr>
<tr>
<td>Latency of Response</td>
<td>Always extremely slow in responding. Long, abnormal delay in response to questions or initiations.</td>
<td>Frequently very slow in responding during conversations. Makes others feel awkward.</td>
<td>Sometimes rather slow in response during conversations. May be slight delay in response, but infrequent and not very obvious or may tend to rush response and become muddled. Fails to allow adequate time for formulation.</td>
<td>Rapid response during speech. Formulates words quickly. No obvious delay.</td>
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</tr>
<tr>
<td>Hesitations and Pauses</td>
<td>Frequent and excessive pauses or hesitations in speech. Sounds extremely jerky and broken. Hard to follow.</td>
<td>Frequent moderately severe pauses or hesitations, or infrequent but very prolonged pauses or hesitations.</td>
<td>Occasional moderate pauses or hesitations. Doesn't seriously impair flow.</td>
<td>Speech usually unbroken but occasional minor pauses or hesitations.</td>
<td>Speech flows well. No obvious pauses or hesitations in speech.</td>
</tr>
<tr>
<td>Dysfluencies</td>
<td>Continuous severe dysfluencies e.g. stuttering, stammering, umms, ahs, etc. Very difficult to understand.</td>
<td>Frequent dysfluencies. Speech quite hard to understand.</td>
<td>Sometimes shows dysfluencies, of moderate severity.</td>
<td>Occasional slight dysfluencies, particularly in stressful situations.</td>
<td>No obvious dysfluencies. Speech easy to understand.</td>
</tr>
</tbody>
</table>
APPENDIX

SOCIAL SKILLS TRAINING WITH CHILDREN AND ADOLESCENTS

by

Sue Spence

STAFF QUESTIONNAIRE: ON SOCIAL BEHAVIOUR

Name: ..........................................................  Staff Member: ..........................................................

Date: ..........................................................

Please observe the above named closely and circle your opinion of the level of social functioning in the following areas: —

<table>
<thead>
<tr>
<th>Rating</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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</thead>
<tbody>
<tr>
<td><strong>Situation</strong></td>
<td>Peer relationships</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Has friends amongst peers</td>
<td>none</td>
<td>no close friends</td>
<td>one close friend</td>
<td>several friends at least one close</td>
<td>many friends at least two good ones</td>
</tr>
<tr>
<td>2. Talks freely with peers</td>
<td>never</td>
<td>rarely</td>
<td>sometimes</td>
<td>rarely</td>
<td>often</td>
</tr>
<tr>
<td>3. Joins in activities with peers</td>
<td>never</td>
<td>rarely</td>
<td>sometimes</td>
<td>rarely</td>
<td>often</td>
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<tr>
<td>4. Is bullied by others</td>
<td>very often</td>
<td>often</td>
<td>sometimes</td>
<td>rarely</td>
<td>never</td>
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<tr>
<td>5. Will volunteer in group situations</td>
<td>never</td>
<td>rarely</td>
<td>sometimes</td>
<td>rarely</td>
<td>often</td>
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<tr>
<td>6. Avoids peer interaction</td>
<td>always</td>
<td>often</td>
<td>sometimes</td>
<td>rarely</td>
<td>never</td>
</tr>
<tr>
<td>7. Becomes aggressive or loses temper when teased by peers</td>
<td>always</td>
<td>often</td>
<td>sometimes</td>
<td>rarely</td>
<td>never</td>
</tr>
<tr>
<td>8. Will start up a conversation with peers appropriately</td>
<td>never</td>
<td>rarely</td>
<td>sometimes</td>
<td>often</td>
<td>very often</td>
</tr>
<tr>
<td><strong>Situation</strong></td>
<td>Staff relationships</td>
<td></td>
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<td></td>
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<tr>
<td>9. Initiates conversations with staff at appropriate times</td>
<td>never</td>
<td>rarely</td>
<td>sometimes</td>
<td>often</td>
<td>very often</td>
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<tr>
<td>10. Approaches staff appropriately with requests or questions</td>
<td>never</td>
<td>rarely</td>
<td>sometimes</td>
<td>often</td>
<td>very often</td>
</tr>
<tr>
<td>11. Talks freely to members of staff about general topics</td>
<td>never</td>
<td>rarely</td>
<td>sometimes</td>
<td>often</td>
<td>very often</td>
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<tr>
<td>12. Is verbally aggressive towards staff</td>
<td>always</td>
<td>often</td>
<td>sometimes</td>
<td>rarely</td>
<td>never</td>
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<tr>
<td>13. Becomes angry when criticised by staff</td>
<td>always</td>
<td>usually</td>
<td>sometimes</td>
<td>rarely</td>
<td>never</td>
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</tbody>
</table>
### APPENDIX

<table>
<thead>
<tr>
<th>Situation</th>
<th>Rating</th>
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<tbody>
<tr>
<td>14. Refuses staff requests and instructions</td>
<td></td>
</tr>
<tr>
<td>15. Argues inappropriately with staff if prevented from doing something he/she wants to do</td>
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<tr>
<td><strong>General Social Behaviour</strong></td>
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<tr>
<td>16. Engages/disengages eye contact appropriately in conversation</td>
<td></td>
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<td>17. Facial expression is appropriate to situation</td>
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<td>18. Response to questions</td>
<td></td>
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<tr>
<td>19. Posture</td>
<td></td>
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<tr>
<td>20. Uses tone and pitch for emphasis</td>
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<tr>
<td>21. Clarity of speech</td>
<td></td>
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<tr>
<td>22. Fidgets and fiddles with hands during conversation</td>
<td></td>
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<td>23. Laughs and smiles appropriately</td>
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<tr>
<td>24. Fluency of speech</td>
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</table>

| 14. Refuses staff requests and instructions                                                   | 14. 15. |
| 15. Argues inappropriately with staff if prevented from doing something he/she wants to do | 15. 15. |

<table>
<thead>
<tr>
<th>1. 2. 3. 4. 5. 6. 7. 8. 9. 10.</th>
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<tbody>
<tr>
<td>extremely poor</td>
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</tbody>
</table>

Please state any other social situations in which the above named has difficulty:
APPENDIX
FACILITATOR SCORING SHEET

This form shows the sequence of card numbers and the players who should receive them over a series of four games. Write the name of the curriculum and each player's name in the spaces provided. Under each number, mark a plus (+) if the response was correct or a minus (−) if the response was incorrect. Record the number of correct responses for each player when each game is over.

<table>
<thead>
<tr>
<th>NAME</th>
<th>Game One</th>
<th>NUMBER CORRECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilitator</td>
<td>Card 1 5 9 13 17 21 25 29 33 37 41 45</td>
<td>Score</td>
</tr>
<tr>
<td>Player 1</td>
<td>Card 2 6 10 14 18 22 26 30 34 38 42 46</td>
<td>Score</td>
</tr>
<tr>
<td>Player 2</td>
<td>Card 3 7 11 15 19 23 27 31 35 39 43 47</td>
<td>Score</td>
</tr>
<tr>
<td>Player 3</td>
<td>Card 4 8 12 16 20 24 28 32 36 40 44 48</td>
<td>Score</td>
</tr>
</tbody>
</table>

| Game Two | |
|----------|----------|----------------|
| Player 1 | Card 13 17 21 25 29 33 37 41 45 1 5 9 | Score |
| Player 2 | Card 14 18 22 26 30 34 38 42 46 2 6 10 | Score |
| Player 3 | Card 15 19 23 27 31 35 39 43 47 3 7 11 | Score |
| Facilitator | Card 16 20 24 28 32 36 40 44 48 4 8 12 | Score |

| Game Three | |
|-----------|----------|----------------|
| Player 2 | Card 25 29 33 37 41 45 1 5 9 13 17 21 | Score |
| Player 3 | Card 26 30 34 38 42 46 2 6 10 14 18 22 | Score |
| Facilitator | Card 27 31 35 39 43 47 3 7 11 15 19 23 | Score |
| Player 1 | Card 28 32 36 40 44 48 4 8 12 16 20 24 | Score |

| Game Four | |
|-----------|----------|----------------|
| Player 3 | Card 37 41 45 1 5 9 13 17 21 25 29 33 | Score |
| Facilitator | Card 38 42 46 2 6 10 14 18 22 26 30 34 | Score |
| Player 1 | Card 39 43 47 3 7 11 15 19 23 27 31 35 | Score |
| Player 2 | Card 40 44 48 4 8 12 16 20 24 28 32 36 | Score |
FACILITATOR RECORDING SHEET

This form is used to score player responses when the game is played by shuffling the cards. Write the name of the curriculum, the number of the game, and each player's name in the spaces provided. On each player's turn, mark a plus (+) if the response is correct and a minus (−) if the response is incorrect. Record the number of correct responses for each player when each game is over.

<table>
<thead>
<tr>
<th>Game</th>
<th>Player</th>
<th>1</th>
<th>2</th>
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<th>7</th>
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<th>Number Correct</th>
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## APPENDIX

### PLAYER SCORECARD

**NAME**

The number circled is the number you need to win. Put an "X" in a box when you answer right.

<table>
<thead>
<tr>
<th>GAME</th>
<th>1</th>
<th>2</th>
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### PLAYER SCORECARD

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<table>
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<tr>
<th>GAME</th>
<th>1</th>
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### PLAYER SCORECARD

**NAME**

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</table>
APPENDIX

Homework Report

Name: ________________________ Date ____________

Fill in during this class

1. Homework assignment:

2. Learning points to be followed:

Fill in BEFORE next class

3. Describe what happened when you did the homework assignment.

4. Learning points you actually followed:

5. Rate yourself on how well you used the skill (check one)
   a. Excellent __________
   b. Good ______________
   c. Fair _______________
   d. Poor _______________

6. Describe what you feel should be your next homework assignment.
REFERENCES


Behavior Analysis, 16, 157-170.


