Evaluation of a social skills intervention for children with Asperger's syndrome

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ABSTRACT

Research has identified that deficits in social functioning are central to the presentation of Asperger's syndrome, and suggests that social skills training is a plausible and appropriate intervention to address these deficits. Social skills training with an identified Asperger's syndrome population and the development of a method for evaluating specific skill acquisition while participating within the group was undertaken for the present study. A multiple baseline across behaviours design was used to evaluate the effect of a social skills programme on three target behaviours in four boys with Asperger's syndrome. The eight week programme was highly structured and taught conversation related social skills which were presented as useful rules or strategies. Three target behaviours; attending, initiating, and reciprocity were measured using a behaviour coding system to evaluate specific skill acquisition. Results varied between subjects but demonstrated a specific treatment effect in six of the twelve total measures. Nonspecific treatment factors were also recognised as influential in the improvements identified. The results also raise the possibility that individuals with differentl subtypes of Asperger's syndrome may respond differently to social skills training. The results presented are consistent with the limited number of similar studies and lends support to the future use of social skills training groups for individuals with Asperger's syndrome.

CHAPTER 1

INTRODUCTION

Autism has both puzzled and fascinated those working in the area of childhood disabilities from the time it was first recognised. The image of the lonely child trapped under the glass dome of autism has been slowly replaced by an appreciation that those affected by autism represent considerable diversity. Asperger's syndrome is now recognised as part of this diversity.

Asperger (1944) described a group of children, most commonly boys, with a characteristic pattern of odd speech, absent or inappropriate non-verbal communication, repetitive activities, and most obviously, an impairment in reciprocal social interactions. He named the condition 'Autistic psychopathy'. His description shared many features with a syndrome described only a year earlier as 'Infantile autism' by Kanner(1943). While being contempoaneous the two description seem to have occurred independently. However, unlike the work of Kanner, Asperger's description was largely neglected by the world of child psychiatry and only in the last 15 years has it recieved attention within the clinical and research literature. This renewed interest is due, in part, to the work of Lorna Wing. Wing(1981a) presented a group of individuals with the clinical features described by Asperger (1944) thirty years earlier. She coined the term 'Asperger's Syndrome' and proposed that it should be considered part of the 'autistic spectrum' which also includes 'classic' autism as described by Kanner.

Individuals with Asperger's syndrome present with a number of core features. Many are preoccupied with special interests, which can tend to monopolise their time and attention. Much of their communication and social interaction may revolve around these interests. They may have a normal or above normal vocabulary, with fluent and coherent narrative speech. However, deficits in nonverbal aspects of communication typically result in a significant impairment in their use of language, (ie pragmatics). Their speech is described as pedantic, voluble, tangential and lacking in intonation (Fine, Bartolucci, Ginsberg, & Szatmari, 1991). Non-verbal deficits also result in a disruption to conversational reciprocity and difficulties interpreting the nonverbal communication of others. An impairment in social interaction is arguably the most

conspicuous feature in the general functioning of individuals with Asperger's syndrome. They seem to lack an understanding of the subtleties and implicit conventions needed for social relations. The nature of the social impairment is manifested in a variety of forms. Theses can range from individuals who are withdrawn and seemingly uninterested in social contact to those who want to make contact, but do so in a clumsy or stilted fashion. Additionally, such individuals may employ ineffective or inappropriate techniques for initiating and maintaining social contact.

The deficits central to Asperger's syndrome are not always apparent in early childhood and many children and their families persevere independently for quite some time before coming into contact with mental health services. This has the potential of stretching family resources to extremes. Parents may feel inadequate in their efforts to relate to their children or frustrated by the seemingly one-sided relationship they have. Families may eventually develope mechanisms to accommodate or compensate for their child's peculiarities. This can disguise some of the functional deficits while the child is in the home environment and real difficulties only arise once the child encounters new and often challenging environments, beginning school for example. School, in any case, can be a traumatic situation for a child with Asperger's syndrome. The child is usually part of main stream classrooms and other children with a keen awareness of oddity or awkwardness may tease or manipulate the child with Asperger's syndrome.

The limited etiological theories of Asperger's syndrome are drawn from theories developed to explain the presentation of the autistic spectrum. They highlight social cognition as a central component in the constellation of the core features. The significant impairment in the ability to interact with others is hypothesized to impact on social functioning and the normal processes of development. By adolescence, some individuals with Asperger's syndrome recognise that they are different from their peers. These individuals may seek solutions to the problems they are experiencing. They may wish to find a way of connecting with people, but feel at a loss to know where to begin. An intervention which works with these individuals to help them connect with others, may be a useful starting point in addressing some of these problems.

The focus of this research was to evaluate an intervention procedure which addresses the prominent social skills deficits in children with Asperger's syndrome. The overall structure of this thesis is as follows. Firstly, the relevant literature is reviewed. This reveals a small number of studies which have investigated this area and a general paucity of procedures to evaluate any improvements in the specific social skills taught to Asperger's syndrome children. Secondly, a discription is given of the method undertaken in the construction and implementation of a social skills group. The method of evaluating the group is also outlined in this section. Thirdly, the results of this evaluation are presented and finally are discussed with reference to the literature and methodological concerns.

CHAPTER 2

ASPERGER'S SYNDROME : A REVIEW OF THE LITERATURE

Asperger's syndrome has received research attention only in the last twenty years. In this time, however, literature has developed into a wide range of areas including descriptions of the syndrome, epidemiological investigations and theoretical considerations.

Wing(1981a) coined the term 'Asperger's Syndrome' and proposed that it should be considered part of the 'autistic spectrum'. This spectrum is a continuum of presentations of autism ranging from severe and compounded by profound mental retardation to mild or in otherwise high functioning individuals. The relationship between Asperger's syndrome and the autistic spectrum has since been the focus of considerable research attention. Clarification of this relationship has important implications for both etiological theory and intervention strategies. The research typically follows two directions. The first investigating the commonalities between disorders in the autistic spectrum and pursuing justification for Asperger's syndrome's inclusion in the cluster, and the second investigating differences and pursuing justification for the recognition of Asperger's syndrome as an independent diagnostic entity.

Research concerning the validity of the placement of Asperger's syndrome in this spectrum has focused on the core features of the spectrum, which are present in both Asperger's syndrome and autism. Wing and Gould, (1979) defined the autistic spectrum as a range of presentations that share a 'triad of impairments' in social interaction, communication and imaginative activities. They suggested that the most consistent deficit is in reciprocal social interaction. On a continuum of socially impaired individuals, the clinical picture that emerges will depend on the severity and constellation of other impaired functions and will include people with both Asperger's syndrome and autism, the former showing less global intellectual impairment and less language difficulties than the latter.

Szatmari, Archer, Fisman, Streiner, and Wilson, (1995) divided a group of high functioning individuals with pervasive developmental disorder into those with high functioning autism and those with Asperger's syndrome, on the basis of delayed and deviant language development. They found that the groups differed significantly in many pervasive developmental disorder symptoms, adaptive behaviours, and cognitive measures of language competence, but not in aspects of nonverbal communication, nonverbal cognition, or motor development. They concluded that the autism spectrum, including Asperger's syndrome, had core defining social and nonverbal characteristics. They also argued that subtypes on the continuum differed on the basis of variables which were relatively independent of these defining characteristics. This research established that the core features of the autistic spectrum are difficulty with reciprocal social interaction and nonverbal communication. It also justified the position of Asperger's syndrome in the continuum.

The soundness of this argument has lead some researchers to question the clinical usefulness of separating Asperger's syndrome from the rest of the spectrum (Schopler, 1985; Volkmar, Paul, and Cohen , 1985). Most authors, however, recognise the importance of the distinction for the purpose of prognostic predictions and intervention selection. This line of research has focused on features in the presentation of either Asperger's syndrome or classic autism which differentiate one from the other.

Szatmari, Bartolucci, and Bremner (1989a) compared the early learning histories of children diagnosed with Asperger's syndrome and high functioning autism. They found no substantive, qualitative differences between the groups but did find some differences in severity. Subjects with Asperger's syndrome showed less impairment in social responsiveness, communication deficits and restriction in range of activities. Fine et al. (1991) highlighted greater impairments in the use of intonation to denote special meanings or specific contexts in high-functioning autistic individuals compared to those with Asperger's syndrome. In another study, Ozonoff, Rogers, and Pennington (1991b) compared high functioning autistic individuals, diagnosed using, DSM-III-R criteria, with Asperger's syndrome subjects diagnosed using ICD 10 criteria. They found the Asperger's syndrome group demonstrated fewer autistic symptoms on the Childhood Autism Rating Scale (CARS) , had significantly higher verbal IQ and had less discrepancy between verbal and performance IQ. They also found the high

functioning autistic group performed more poorly on the executive function, verbal memory and theory of mind measures. They concluded that Asperger's syndrome can and should be differentiated from high functioning autism.

In a recent paper, Szatmari, et al. (1995) drew attention to the difficulties inherent in any investigation of Asperger's syndrome and high functioning autism. The basis of the research may rely on an unspecific or vague original differentiation and it is possible that the groups are compared on the very features that were used to distinguish them in the first place. Relatedly, Kerbeshian Burd, and Fisher, (1990) suggested that externally validating criteria such as familial transmission, a biological marker, or clinical course, may be of more use in the definition of disorders in the autistic spectrum. Of possible application in this matter is the findings of Klin, Volkmar, Sparrow, Cicchetti,. and Rourke (1995). Their research showed Asperger's syndrome was distinct from high functioning autism in its concordance with a neuropsychological characterisation of non-verbal learning disorder. Similarly Semurd-Clikeman and Hund (1990) present neurological evidence of predominantly right-hemisphere dysfunction in Asperger's syndrome which again corresponds with non-verbal learning disability.

The conclusion that can be drawn from this body of research is that Asperger's syndrome involves core deficits in social interaction and non-verbal communication which places it in the autistic spectrum. Although the boundaries between disorders in this spectrum are not always clear, Asperger's syndrome is arguably definable as a unique syndrome on the basis of generally better language functioning, and less impaired cognitive functioning, for example, higher verbal IQ and better executive function and verbal memory. It is important that Asperger's syndrome remain a separate diagnostic entity for the purpose of etiological research, and for the provision of or access to appropriate management and research.

2.1 Epidemiology

The prevalence of Asperger's Syndrome has been investigated in Swedish populations and found present at a rate of 26 per 10,000 (.26%) (Gillberg and Gillberg 1989) and 36 per 10,000 (.36%) (Ehlers and Gillberg 1993) ie around 1 in 300 children born. These findings suggest that Asperger's Syndrome is about three times more common than autistic disorder which is currently estimated to have a .08 - .13 %

prevalence (Steffenburg and Gillberg ,1986; Bryson,Volkmar, Sparrow, Cicchetti, and Rourke 1988; Sugiyama and Abe, 1989). When milder presentations or individuals with features of Asperger's syndrome are included, the prevalence rises to .71% (Ehlers and Gillberg, 1993). This suggests that individuals confronted with the difficulties associated with Asperger's syndrome are more common than was initially recognised.

Gender differences are invariably found in both autism and Asperger's syndrome. This difference is frequently considered to differ with respect to position on the spectrum. The ratio is reported to be lowest in autistic individuals with profound intellectual disabilities (3-4 : 1 male : female) (Wing 1981b, Gillberg 1984) and highest in Asperger's syndrome. Clinical reports suggest that males with Asperger's syndrome may outnumber females by as much as 5:1 (Wing 1981b, Gillberg 1989, Szatmari, Bremner,. and Nagy 1989b). However, Ehlers and Gillberg (1993)'s epidemiology study, suggests that the ratio may not be higher than 2-3:1. Gillberg (1995) suggests that the high rates reported may be a result of clinicians' tendency to diagnose Asperger's syndrome in boys rather than girls. A consistent genetic factor is also found in epidemiology studies. Frith (1993) has found that the likelihood that any of the autistic disorders will occur twice in the same family is 50 to 100 times greater than would be expected by chance alone. This suggests a genetic link between all disorders on the continuum.

2.2 Diagnosis

Asperger's syndrome first appeared in standardised nomenclature in the International Classification of Disease 10th edition(ICD-10) (WHO, 1992), and then in the Diagnostic and Statistical Manual 4th edition (DMS-IV) (APA, 1994). The DSM-IV and ICD-10 criteria correspond closely with each other and both drew greatly from the criteria used in the diagnosis of autism, that is, problems in each of the three ares of functioning termed by Wing and Gould (1979) the triad of impairment. Two independent research teams also proposed diagnostic criteria for Asperger's syndrome (Gillberg, 1991b; Szatmari et al., 1989b). The different systems share common features. These are; social deficits, evidenced by failure to develop peer relationships appropriate to developmental level, and a lack of social or emotional reciprocity; paucity of non verbal communication indicated by limited use of gesture and facial expression and

difficulty adjusting physical proximity; and restricted interests, shown as a preoccupation with one or more stereotyped and restricted pattern of interest and an inflexible adherence to specific non-functional routines. The major differences in the sets of diagnositic criteria concern verbal language. Asperger(1944), Wing(1981a), Szatmari et al.(1989b) and Gillberg(1991b) all noted the presence of verbal communication problems in people with Asperger's syndrome, including early language delay, semantic-pragmatic problems, prosody abnormalities and problems comprehending spoken language. Neither DSM-IV or ICD 10 criteria include verbal language abnormalities and both stipulate that there is no clinically significant general delay in the individual's developmental history.

Szatmari et al. (1989b) and Gillberg (1991b) specify the presence of 'speech and language problems' which includes the possibility of delayed development of language. Verbal language problems are evidenced in superficially perfect expressive language, odd prosody, peculiar voice characteristics and impaired comprehension including misinterpretation of literal or implied meaning. The omission of this feature seems to be a limitation in the DSM-IV and ICD 10 diagnostic criteria in view of the research findings. For example Wing(1988)'s finding that some individuals may begin life with classic autism and go on to develop the features of Asperger's syndrome. As mentioned, above Asperger's syndrome may be distinguished from autism on the basis of less impaired language and cognitive functioning, however, requiring no impairment or delay may well exclude a number of individuals from an otherwise appropriate diagnosis.

Of utmost importance in the consideration of diagnosis is the validity of the criteria. Ehlers and Gillberg (1993)'s, comprehensive epidemiology study compared rates using Gillberg and Gillberg(1989), Szatmari et al(1989b) and ICD-10(1992) forms of diagnosis and found each yielded a 90% concordance rate when definite and suspected cases were pooled (ie 0.64 - 0.71 % of population). These findings suggest that while there are differences in the criteria, all three of these diagnostic systems are identifying the same group of individuals. All descriptions have certain essential features in common. They all describe social impairment, impaired communication and a narrow range of interests. An elaboration on these central features is included below.

With regard to differential diagnosis, the most important distinction seems to be with autism as discussed above. There are also a number of disorders which are described separately from the autistic spectrum but whose similarity with Asperger's syndrome mean the validity of a distinction is questionable. Further research into the relationship between Asperger's syndrome and schizotypal personality disorder, semantic-pragmatic disorder, and nonverbal learning disabilities, is necessary.

2.3 Central features

The aspects of functioning which are central to the presentation of Asperger's syndrome reflect its placement in the autistic spectrum, the defining features of which are the triad of impairment.

The first impairment in the triad involves a deficit in imaginative activites. Asperger described repetitive activities and a resistance to change in the children with whom he worked. Wing(1981a) states that imaginative pretend play does not occur in some of those with Asperger's syndrome and in those who do have pretend play, it is confined to one or two themes, enacted without variation, constantly repeated. Tantam(1991) suggests that this description should be modified to account for individuals with Asperger's syndrome who make up stories, imaginary worlds or imaginary play companions. He considers these individuals lack the ability to take on a different persona, to dress up or deliberately act out of character, and suggests that they may be unable to understand this sort of behaviour in others.

Limitation in imagination may be associated with the development of special interests. These self-selected interests are both particularly narrow and unusually engrossing. These may involve topics (such as electronics, outer space, animal species, or an extreme fascination with computers), routines (putting objects in a particular place everyday), or collections (pictures of trains) (Tantam, 1991). They may often develop considerable skills in these areas of interest, (Kerbeshian et al. 1990) but have a tendency to dwell inappropriately on that topic in conversations and free time. In many children the areas of special interest will change over time, with one preoccupation replaced by another. In some children, however, the interests may persist into adulthood and there are many cases where the childhood fascinations have formed the basis for an adult career, including a good number of college professors (Bauer, 1996).

The second impairment in the triad affects communication. Individuals with Asperger's syndrome often have normal or above normal vocabularies, and narrative speech can be fluent and coherent. However, the content of speech is sometimes impoverished or giving the impression of being learned by rote (Wing, 1981a). Asperger(1944) described pedantic speech, consisting of lengthy disquisitions on favourite subjects and lacking an understanding of subtle verbal humour. Comprehension of grammatically complex or metaphorical language may be concrete (Minshew, 1992). Szatmari(1991) describes the communication deficits in Asperger's syndrome as a profound difficulty in the creation of social meaning through communication. He states the deficit manifests most commonly as an extreme difficulty in initiating and sustaining a conversation. He explains that language is not used for social 'chat' but rather as a means to a particular concrete end. In this way, it is the nonverbal aspects of speech which are most problematic in people with Asperger's syndrome.

Deficits in nonverbal aspects of communication are described by Asperger(1944) as little facial expression, monotonous vocal intonation, clumsy and inappropriate gestures, and the misinterpretation of the nonverbal communication of others. Prosody ie volume, intonation, inflection, and rate, are described as unusual. Pragmatic, or conversational, language skills often are weak because of problems with turn-taking, a tendency to revert to areas of special interest or difficulty sustaining the "give and take" of conversations and absence or limitation of eye contact (Tantam, Holmes, and Cordess, 1993). These deficits in nonverbal communication have led some researchers to consider the relationship between autism, Asperger's syndrome and semantic-pragmatic disorder (Bishop, 1989).

Social deficits reflect the third area of impairment and are frequently viewed as the hallmark of pervasive developmental disorders (Dahl, Cohen, and Provence, 1986). Social deficits are described as a qualitative impairment, 'these children are not only socially isolated but also show an abnormal range, or type, of social interaction that cannot be explained by other factors such as shyness, short attention span, aggressive behaviour, or lack of experience' (Szatmari 1991 p 82). It may be possible to define subtypes of Asperger's syndrome with respect to the presentation of social deficits.

In an early definition of the social functioning of individuals within the autistic spectrum, Wing and Gould(1979) defined three broad categories of social style; aloof, passive, and 'active but odd'. More recently Wing(1992) has included a forth category, as defined by Shah(1988). Individuals with this 'stilted social interaction' style were polite, apparently aware of other people and able to initiate and give and take in conversational exchanges. However, their social interactions are described as stilted, and as having a mechanical quality. Wing speculates that these individuals had learned the rules of social interaction by intellectual effort rather than by instinct. It seems possible that individuals with Asperger's syndrome may present with a passive, odd or stilted social style.

Ehlers and Gillberg (1993) point out that, while the Gillberg and Szatmari diagnostic criteria have much in common, the Gillbergs emphasise the children's obsessional and narrow pattern of interest and Szatmari et al. highlight their social isolation. Using Wing's social style categories, the Gillberg definition seems more in line with the passive style and Szatmari et al. seem more to be describing an active but odd presentation. This concept of socially based subtypes of Asperger's syndrome is also discussed by Tantam(1991). He describes two usefully distinguishable subtypes. One includes individuals who are passive in their social interaction with reduced, but not obviously unusual, non verbal expression and particular impairment in recognition of non verbal expression in others. The other group includes individuals who correspond to Wing and Gould's (1979) 'Active but odd' type. These individuals demonstrate more social initiation, odd and idiosyncratic non-verbal expression and less impairment in interpretation of non-verbal cues than the first group. Some form of subtyping may have prognostic implications and further work into this area is warranted.

To conclude this description of the central features of Asperger's syndrome, it is possible to identify an interaction between the areas of impairment. Limitations in imaginative activities can produce a one-sided quality in social interactions and mean that social functioning lacks a sense of flexibility and spontaneity. Because of deficits in nonverbal communication, such as eye contact or gesture, the ability to create social meaning through communication is restricted. Also, social interaction is dramatically impaired because of difficulties with initiating and sustaining a conversation, and

maintaining the give and take flow of a conversation. It is possible that social functioning is the primary deficit, central to the constellation of deficits, or the common final pathway stemming from all the other deficits. It is also possible that all are facets of some more fundamental abnormality. Theories from different research perspectives have developed to explain the nature of this underlying dysfunction.

2.4 Theories

Given the assumption that Asperger's syndrome is part of an autistic continuum, a comprehensive etiological theory of Asperger's syndrome should explain the pattern of central deficits, the genetic, neurological, and neuropsychological phenomena and also explain and predict similarities and variability between the definable syndromes on the continuum. No theory exists at this time which adequately covers all these areas. Work in each specific field is advancing however, and many theories combine features from a variety of levels.

Biological theories

There are a number of biologically based theories proposing an explanation of Asperger's syndrome , these include genetic, neurological and neuropsychological approaches.

An underlying genetic basis is suggested by epidemiological studies. Gillberg(1991a) indicated a familial pattern in various autistic symptoms, including Asperger's syndrome. He proposed that, at the core of all disorders in the autistic spectrum, is a single condition caused by genetic factors that is affected to varying degrees by organic brain damage. With this in mind, it is possible to conceptualise Asperger's syndrome as the core underlying genetic condition, and classic autism as a situation when Asperger's syndrome is coupled with environmentally influenced brain damage or brain damage caused by another distinct genetic factor.

Most neurological findings identify the temporal lobes and/or the right hemisphere as implicated in the deficits of Asperger's syndrome. McKelvey, Lambert, Mottron, and Shevell (1995) presents CT, MRI and SPECT scans revealing right hemisphere dysfunctions in three cases of Asperger's syndrome. SPECT results from two different studies have shown reduced cerebral blood flow in the temporal

lobes (George, Costa, Kouris, Ring, and Ell,. 1992; Gillberg, Bjure, Uvebrant, Vestergren, and Gillberg, 1993). Some research has focused on the similarity between Asperger's syndrome and some of the consequences of acquired lesions of the right cerebral hemisphere (Molina, Ruata, and Soler, 1986). Semurd-Clikeman and Hynd(1990) discuss the high similarities between Asperger's syndrome and what Rourke and Finlayson (1978) termed a nonverbal perceptual-organisation-output disability (NPOOD). Rourke and Finlayson concluded that NPOOD children have a dysfunctional right hemisphere, which leads to this social-emotional disturbance.

In a review of the pathological basis of Asperger's syndrome, Tantam(1988a) presents the hypothesis that Asperger's syndrome results from right hemisphere abnormality and classic autism incorporates abnormalities from both the right and left hemispheres. These structural abnormalities Tantum links to distinct behavioural deficits in the different group, ie social impairments from the right hemisphere and language deficits from the left. A similar conclusion is reached by Gillberg (1995). He proposes that bilateral temporal lobe dysfunction underlies the etiology of the autistic spectrum and that Asperger's syndrome results from unilateral temporal lobe dysfunction (and possibly frontal lobe dysfunction) and right-sided abnormality in particular.

Neuropsychological investigations using the Wechsler intelligence scales (Wisc, WISC-R, WAIS, WAIS-R), have been used to identify underlying processing dysfunction. Individuals with Asperger's syndrome are consistently found to have normal or above, full IQ scores. Rumsey and Hamburger (1988), Szatmari, Tuff, Finlayson, and Bartolucci (1990) and Ehlers, Nyden, Gillberg, Dahlgren-Sandberg, Dahlgren, and Hjelmquist (1995) have found a consistent, uneven, profile in individuals with Asperger's syndrome which involves normal (or superior) comprehension, low picture arrangement, object assembly and coding scores and a total verbal score higher than performance. Hermelin and O'Connor (1986) have proposed that areas of cognitive proficiency may stem from an implicit recognition of inherent patterns and rules. Ozonoff and McEvoy (1994) suggest the results, as well as the inflexibility of cognitive style reflected on the Wisconsin Card Sorting Test, might stem from specific executive function deficits and frontal lobe dysfunction. Bartak (1995) suggests individuals with Asperger's syndrome may have a deficit in the processing of

information to do with people and their behaviour and a deficit in the process of extracting meaning from any kind of perceptual input, without having the specific verbal deficit underlying classic autism.

Psychological theories

Psychological theories which seek to explain the nature and etiology of both autism and Asperger's syndrome include psychodynamic, behavioural, affective, and cognitive perspectives. The usefulness of psychodynamic (pathological child-parent relationship) and behavioural (wrongly learnt patterns of social behaviour) theories are limited, because they fail to explain the constellation of features associated with autism and to account for the neurological and genetic factors outlined above. Happé and Frith (1996) point out that cognitive theories differ from other theories by bridging the gap between brain and behaviour and giving by explanatory and predictive accounts of complex behaviour patterns. Autism, as a developmental disorder with a biological basis and a behavioural definition, seems to necessitate a cognitive explanation to link these two components.

Possibly the most widely accepted theory of autism proposes that individuals with autism lack a theory of mind (Baron-Cohen, Leslie and Frith, 1985). This means the individual cannot think about another person's beliefs (first-order theory of mind) or think about another person's knowledge of a third person's beliefs (second order theory of mind). They consider the underlying dysfunction to be a deficit in the capacity to 'mentalise'. This means an inability to symbolically represent concepts' including the mental states of others through a process of metarepresentation (Leslie, 1987). Leslie(1987) proposed that the mechanism of metarepresentation may be innate and discrete and that damage to this function could occur in an individual with otherwise normal intelligence. This suggests theory of mind deficits could be absent in Asperger's syndrome.

In contradiction to this expectation, some recent research has demonstrated that subjects with Asperger's syndrome can perform adequately in tasks requiring theory of mind abilities (Dahlgren and Trillingsgaard, 1996; Bowler, 1992; Ozonoff, Pennington, and Rogers, 1991a & b). In these studies the performance of subjects with Asperger's syndrome in both first and second order theory of mind tasks, was comparable to age

and IQ matched high functioning autism, chronic schizophrenic and normal control subject groups.

There are two possible explanations for these findings. Firstly, that Asperger's syndrome does not involve a theory of mind deficit, in which case the theory is of limited use for explaining a primary cognitive basis for the autism continuum. Or secondly, that Asperger's syndrome does involve a theory of mind deficit but that other, intact cognitive functions, allow subjects to circumvent the deficit in the relatively undemanding test procedure. This position is supported by the findings from an additional component in Bowler's(1992) study. He found that individuals with Asperger's syndrome failed to make use of embedded mental state constructions when asked to give reasons for their (correct) solutions to the theory of mind tasks. From this he posits that although people with Asperger's syndrome can compute correct solutions to problems requiring theory of mind, they do so by routes that are slow and cumbersome, disrupting the timing of their responses and making them appear odd in everyday social interactions. According to this line of thinking , people with Asperger's syndrome represent a subgroup of the autistic continuum, whose relatively unimpaired cognitive skills have enabled them to circumvent their lack of intuitive knowledge of social behaviour to a sufficient degree to pass the kinds of problems presented in theory of mind test situations, but not in real life.

The theory of mind hypothesis can be used to account for the language and social deficits central to the presentation of Asperger's syndrome. Happé(1994) suggests that good rote language, syntax, or vocabulary may be present but impairment in communication results because this language is used as a code but not to establish understanding of another's thoughts or to express intention. Difficulty relating socially may be due to an inability to understand other people's beliefs, attitudes and feelings and to anticipate what others will say or do in various situations.

From another perspective, some theorists have proposed that an emotional deficit is the underlying mechanism. Hobson (1986 a,b) suggested that normal infants are innately programmed to be sensitive to and to comprehend other people's emotional states from direct observation of their physical expression and that in Asperger's syndrome there is an impairment in that function. Gillberg(1992) describes Asperger's

syndrome as a "disorder of empathy". He points out that individuals with autism and Asperger's syndrome can feel, but that they have difficulty making sense of the emotions of self or others. He suggests the primary disturbance is in the ability to conceptualise other people's inner worlds and to reflect on their thoughts and feelings. In this way this affective theory parallels the theory of mind concept. The concept of 'logic-affective state' developed by Hermelin and O'Conner (1985) may also be a useful link between these theories with respect to Asperger's syndrome. They argue that people with Asperger's syndrome use logical cognitive processes to solve problems that are normally dealt with in the affective and emotional domains.

In conclusion, the theories concerning a dysfunction underlying the deficits central to Asperger's syndrome remain speculative. The theories presented above suggest there may be a neurological deficit present in all autistic spectrum presentations which may have a genetic basis. This may result in a central cognitive dysfunction, which limits the individual's ability to process information concerning other people and also impairs the individual's ability to comprehend the mental and emotional experiences of others. These theories highlight the difficulties individuals with Asperger's syndrome have relating to others and interpreting the innate rules of human interaction. This suggests that social functioning is a primary area of concern and should be the focus of therapreutic intervention.

2.5 Treatment

The first question which needs to be asked in a discussion of treatment is to what extent is any treatment indicated? Such a question might best be tackled by looking at the course or outcome observed in Asperger's syndrome. This is not well known, given limited research and the relative recency of this diagnosis, but evidence suggests that the prognosis is very much better than in classic autism and that many people with Asperger's Syndrome lead, normal successful lives in adulthood (Gillberg,1991b ; Szatmari, et al.., 1989b). However, it is also clear that many have a poor psychosocial prognosis and that anxiety, depression, and suicide are common, particularly in adolescents with Asperger's Syndrome (Wing, 1981; Frith, 1991; Gillberg, 1992).

Despite social impairment, some high-functioning people, even among those who appear aloof, long to have friends. They may have little concept of what friendship involves, but they know they want some kind of positive relationship with someone of their own age outside the family (Newson, Dawson, and Everard., 1982). Individuals with Asperger's syndrome may periodically seek human contact but lack the intuitive skills necessary to completely make contact with others (Volkmar, Paul, Cohen, and Bregman., 1989). Thus, an intervention to improve psychosocial functioning can be justified, based on the individuals' desire for change and the risk of a disturbing outcome when no intervention is undertaken. Additionally, the relatively high prevalence of Asperger's syndrome indicates an effective treatment option may be in growing demand.

There is no empirically validated effective treatment strategy for Asperger's syndrome. As with any treatment approach, the needs of the individual(s) need to be given specific attention within the context of a theory based treatment rationale. Treatment hypotheses must be driven by what is known about the syndrome through clinical observations and the etiological theories derived from them. The clinical presentation of individuals with Asperger's syndrome indicates that, despite demonstrating a range of disabilities, the major areas of difficulty are impaired ability to relate socially and poor non-verbal communication. Therefore, the intervention which will have the most hope of improving overall quality of life is arguably one which improves social functioning and/or interpersonal communication. The absence of a clear understanding of the neurological substrates which contribute to this dysfunction, limits the possibility for medical or neurological intervention in the near future. Therefore a psychological intervention which corrects or compensates for the social dysfunction is the treatment strategy most likely to achieve this goal.

However, pharmacotherapy does have a role to play in the management of Asperger's syndrome. Medication may be directed to co-existing psychiatric conditions or accessory symptoms such as short attention span, anxiety or depression. Szatmari (1991) discusses the use of stimulants, antidepressants and climipramine in the treatment of these three respectively. He states that psychopharmacological treatments need to be targeted to specific behaviours, and frequent evaluations of the usefulness of the medication should be done.

Social skills training

Social skills training can promote the acquisition of skills necessary for social functioning, which are deleteriously absent from the skill repertoire of individuals with Asperger's syndrome. Wing(1992) describes the stilted socialising style of some individuals with Asperger's syndrome as having a quality indicating that these individuals had learned the rules of social interaction by intellectual effort rather than by instinct. Hermelin and O'Connor (1986) have proposed that these areas of cognitive proficiency may stem from an implicit recognition of inherent patterns and rules. From these observations, it seems possible, that individuals with Asperger's syndrome build up a repertoire of rules to apply in certain situations. They may use these rules when others would respond to an instinctive understanding of the underlying social meaning, gathered from nonverbal cues or emotional information. Therefore a social skills training intervention, which delineates and presents rules of social interactions in a clear and structured fashion, would be building on the existing skills of the participants and would improve their social functioning by increasing the number of response options available to them. A group situation would provide an opportunity to practice the rules as they are presented in a structured and tolerant environment.

Despite a growing awareness that Social Skills Programmes may be beneficial for individuals with Asperger's Syndrome, literature discussing such groups is extremely limited. However, one recent study describes a programme run with boys with Asperger's syndrome, (Marriage, Gordon, and Brand., 1995) A number of other researchers have run groups with individuals described as high functioning or near normal autistic individuals (Ozonoff and Millar, 1995; Williams, 1989; Parson and James, 1986: Mesibov, 1984). Much of the programme specifics, outcome findings, discussion, and suggestions are also relevant to an Asperger's syndrome group. Each of these studies is discussed below.

Mesibov(1984) ran a programme with 15 older adolescents and young adults with a diagnosis from the DSM-III of Infantile Autism, residual state. The individuals in his study were described as having oddities of communication and social awkwardness, and with IQ's ranging from 55 to 100. This programme was ongoing (two years at the time of the report). The long term goal of the group was to improve the specific interpersonal skills of the participants. This was to be attained

through the establishment of long-term relationships between the participants and the mastery of short term training objectives which included; learning how to meet a new person, paying more attention when others are talking, staying on the topic when having a conversation, and talking about topics of interest to the other person. The success of this programme was not measured empirically. Parent and participant feedback was highly supportive. Mesibov mentions that the group participants showed improvement in initiation and conversation maintenance skills during roleplay situations, but specific measures were not taken. Mesibov concludes that a more rigorous data-collection component is the obvious next step to help determine, more specifically, which aspects of the training programme are the most useful and what skills are the most improved.

Another long term group was described by Williams(1989). He ran a social skills training group with 10 autistic children with a mean IQ of 93.5 (range 52-114), over 4 years. The group was held once a week and involved recreational games, roleplaying exercises, modeling, direct instructions (e.g. 'look at his face'), discussion and brainstorming. The staff running the group decided not to provide rules of social interaction, due to concern that the children might follow the rules slavishly. Instead, opportunities were provided for the children to try their own tactics. Williams(1989) did not evaluate the extent to which the group participants learnt the specific skills, but he did measure changes in overall social functioning, by administering the social behaviour questionnaire of Spence(1980) at the start of the group and at the end of the thirteenth term. He reports significant improvement in some areas of functioning, including initiating conversations with staff and appropriate facial expression. Because the interval between measures is so large it is difficult to draw any conclusion about the influence the programme had in the achievement of these improvements. Williams outlines the major benefits of the group as being that the children made friends amongst themselves, and qualitative information from the staff indicates that the children had become more proficient at making eye contact, introducing themselves and starting a conversation. The length of this study was an advantage, in that the group was able to cover an extensive range of social skills and return to and revise skills periodically.

More recently, Ozonoff and Millar (1995) presented a social skills programme which focuses on teaching Theory of Mind ability. Their autistic subjects had a mean IQ of 91.8 (range 76 - 106). Their intervention consisted of 7 session teaching social skills and 7 sessions teaching perspective taking and theory of mind skills. The social skills training involved discussing a specific social skill each week and breaking it down in to simple, concrete components. The skill was then modelled and participant practice of the skills was videoed and reviewed by the group. Ozonoff and Millar (1995) evaluated the effectiveness of the programme with an impact measure of general social functioning and with specific measures of ability in theory of mind tasks. Results showed substantially improved performance of theory of mind tasks but not in more general ratings of social competence. In fact, the posttreatment correlations between parent and teacher Social Skills Rating Scale (Gresham and Elliott, 1993) score and theory of mind performance were negative, which suggests placing high weight on perspective taking skills may not be effective.

Marriage et al. (1995) ran a programme with 8 boys ages 8 - 12 who were diagnosed with Asperger's Syndrome. Sessions consisted of a warm up exercise, role playing, videotaping and viewing behaviour, a game, a show and tell session, and a practical exercise. They ran a parent group concurrently and the children were given homework each week. The acquisition of the specific skills was not measured and measures of overall social functioning showed negligible differences between pre and post rating. However, feedback from parents and their own observations indicated gains in the group setting, both in self-confidence and in some concrete social skills. The authors supported the implementation of such groups and recommended the utility of a parent group and the appropriateness of a segregated group.

Parsons and James (1986) present a therapy paradigm for teaching social skills to 'near normal' autistic children with ages ranging from 6.5 to 18. In their review of the clinical presentation, they singled out conversational pragmatic problems as being most prominent. Their social skills training focused on improving topic maintenance through the use of discussion, modelling, behavioural rehearsal and self evaluation techniques.

This study differs from the others because the effectiveness of the treatment was evaluated by assessing the extent to which the participants developed the specific skill taught in the programme, ie. topic maintenance. Parsons and James(1986) rated transcribed conversations between autistic individuals and 'an interactant'. Responses the participant made to a question were coded as 'inappropriate' or 'appropriate'. They displayed the ratings for each of the participants over the course of the study and considered them to demonstrate that the therapy was successful for making changes in behaviour. Despite this demonstration that the participants were learning the content of the programme, improvements were generally not maintained at follow-up. This suggests that the problem lies in the maintenance and generalisation of the skills. Qualitative measures of the efficacy of the programme, using 'social validators' indicated the participants improved to some extent and that that the group was of value.

In conclusion it would appear, that despite supportive qualitative impressions, the benefit of social skills training for individuals with Asperger's syndrome is unclear. The quantitative measures of the effect of training on the general social functioning of the individuals participating, produced inconsistent and in some cases discouraging results. A variety of explanations for this finding are possible. For example the participants may fail to acquire new skills from the training programme, they may learn the social skills but not generalise to other settings, the skills may not be maintained after the group or they may learn the skills but have insufficient opportunities to practice them. It is difficult to reach any conclusions about this effect without knowing whether the participants are learning the material in the first place. Despite Mesibov(1984)'s initial recommendation for 'rigorous data-collection to determine which aspects of the training programme are the most useful and what skills are the most improved (p 402)', quantitative evaluation procedures of specific skill acquisition is conspicuously lacking from these studies.

Perhaps of most benefit for ongoing research is the information accumulated through qualitative impressions. This can act as a useful guide to the practicalities of running a group. This information suggests that sessions should be weekly and run for 8 -12 weeks at a time, they should last no more than 90 minutes and should be split up into a structured programme. Procedures which seem of most value are:

beginning each session with an informal chat, breaking social skills down into basic principles or rules and using behavioural rehearsal progressively through a sequence of practice first with a trainer then with one another.

2.6 Aims of the present study

Current research suggests Asperger's syndrome involves a core deficit in social functioning which includes more specific deficits in verbal and non-verbal communication. Because social deficits are so central to the presentation of Asperger's syndrome, social skills training appears to be a plausible and appropriate intervention. Directions for further research suggested by the litureature include social skills training with a specifically Asperger's syndrome population and the development of a method for evaluating specific skill acquisition while participating the group. The current study was undertaken to address these issues. A social skills training programme was developed for this research and the following hypothesis was tested to evaluate the efficacy of the programme content and procedures. The Research hypothesis predicted that, a didactic, structured programme, which teaches conversational skills as rules or principles, is an affective intervention strategy for improving specific, conversation based, social behaviour in preadolescent boys with a diagnosis of Asperger's syndrome. In addition, the utility of the the behavioural measure of social skills was evaluated.

CHAPTER 3

METHOD

3.1 Design

This research employed a multiple baseline across behaviours design using 4 single subject studies. The three target behaviours investigated were; attending, initiating, and reciprocating. Behaviour was measured for a three week baseline period for one week prior to the first group session, and during the first two introductory sessions. Subsequently, interventions designed to increase the frequency of the three target behaviours were sequentially introduced every two weeks.

3.2 Participants

The subjects were four pakeha boys aged between nine and twelve years. The names Ricky, Sam, Michael and Joseph shall be used in order to maintain confidentiality (table3.1). All boys were referred from the Christchurch Child and Family Specialty Service and Child and Family Inpatient Unit. Each of the participants fulfilled diagnostic criteria for Asperger's Syndrome according to the Diagnostic and Statistical Manual of Mental Disorders, Forth Edition (DSM IV). Diagnosis was made collaboratively by a psychiatrist and a clinical psychologist specialising in the child and adolescent area. Intellectual functioning was assessed in two subjects using the Wechsler Intelligence Scale for Children -Revised (WISC-R) and was found to be in the low average and average ranges. The IQ of the remaining participants was estimated to be low average to above average based on academic achievement and clinical judgement (table 3.1).

Table 3.1 Demographic information of participants.

Child	age in years	Full IQ	verbal IQ	performance IQ
Ricky	9	85	95	75
Sam	11	101	108	92
Michael	12	NA		
Joseph	12	NA		

The social interaction style of the participants varied considerably. Ricky closely resembled Wing & Gould's (1979) 'active but odd' social style and Tantam's (1991) second hypothesised subtype. Joseph and Michael both closely resembled Tantam's (1991) first subtype while Sam's interaction style fitted somewhere between the two styles

3.3 Procedure

Programme development

This study suggests that part of the link between social and communication deficits is that non-verbal or pragmatic deficits restrict the process of conversation thus limiting interpersonal effectiveness. Three areas of nonverbal communication were selected as pivotal to conversation; attending, initiation, and reciprocity. The programme to address these areas was developed by the author and comprised of teaching relevant skills in each area. These skills were reduced to specific components and presented to the boys as rules of interaction. These rules were intended to represent an appropriate behavioural response in a given social interaction. The rules could also be used if spontaneous production was limited by a lack of understanding of the social meaning of a conversation. The structure followed a format suggested by the relevant literature (refer to chapter 2). Components of the programme included methods adopted from a variety of sources (primarily: Minskoff, E. H.,1980 and King, C. A. and Kirschenbaum, D. S. 1992). The strategies and rules which were followed were developed from Spence (1980) and Norton (1991). Games were included at the end of each session to provide the participants with an opportunity to apply the skills taught during the session in a semistructured and enjoyable situation. The games used were either traditional group games, a number of games adapted from those described in Cartledge and Milburn (1986), or others developed by the author. The boys in the group shared an interest in electronics and machinery so playing with a slot car set was implemented as a reward for completing the group each week. It was also used to provide an entirely unstructured activity from which the participants could be taken to complete the weekly behavioural assessment.

Social skills group

Structure

The group sessions were held on a Thursday afternoon from 3.45 - 5.00 and ran for eight weeks. The group trainers were the author (PD) and a senior clinical psychologist. Each session followed a set format beginning with an informal chat while having afternoon tea followed by a short game to facilitate remembering each other's name. Homework from the week before was reviewed before introducing the new topic. The procedures used to teach the social skills each week were; a brainstorming and discussion session, reviewing the basic points or rules from a poster, group trainers modeling correct and incorrect application of the rules, and finally, participant behavioural rehearsal followed by a feedback session. Following this, the group played a game relevant to the session topic, and then played with a slot car set. While the group played, each participant was assessed individually using the standardised behavioural task which was video taped. The final component of each session involved a positive feedback session and discussion of next week's home work.

Component Skills

Each week, a different conversational skill was discussed. The first two sessions involved an introduction to the group and an overview of conversational skills. The next two sessions involved the teaching of attending, looking and listening skills. The following two sessions were focused on teaching participants to initiate and start conversations, and the final two sessions concentrated on teaching participants turn taking in a conversation and saying goodbye (for full details of the programme content, refer to appendix A). During each session the participants were provided with pages from a workbook to complete at home. It was intended that this would aid practicing the skills while also functioning to promote skill generalisation (see appendix B).

Parents' Group

An informal education and support group was run concurrently with the parents of the boys. They were provided with information about Asperger's

Syndrome, with group discussions exploring diagnosis, etiology, medication, behavioural management, school involvement, and relevant occupational therapy issues. These sessions were facilitated by a chil psychiatrist, a social worker and an occupational therapist. Parents were also encouraged to discuss their personal experiences and to provide support and ideas for each other.

3.4 Measures

Behavioural Measure

Acquisition of the three target behaviours (attending, initiation, and reciprocity) was assessed using a conversation behaviour task. A structured conversation between each boy and the group trainer, (PD) was a component of the group procedure. At the end of each session, in a random order, each boy was asked to have a short talk with the trainer in a separate interview room. Each conversation began with a greeting followed by the trainer suggesting the topic of the conversation eg, 'Let's talk about pets for a few minutes'. The same conversation topic was used for each child and a different one was introduced each session. The topics were:

- Families,
- where you live,
- pets,
- school,
- birthdays,
- summer,
- getting up in the morning,
- sport,
- Christmas.

To enhance standardisation, the trainer followed a prescribed format in each conversation. This was:

1. After announcing the topic for discussion, wait for the participant to begin to respond,
2. If the participant has not initiated any response after a pause of 15 seconds, ask one question. Eg 'have you got any pets?',
3. Once a conversation begins the trainer may contribute in any of the following ways:
    - answer any questions the participant asks,
    - contribute with topic relevant statements where appropriate for reciprocity,
    - ask questions only when necessary for reciprocity,

4. After two minutes, the trainer states 'it's time for me to go now' and waits briefly for a terminating comment from the child before saying goodbye.

Video recordings of these conversations were scored by two blind raters using a coding system. This system assessed a variety of conversation components which were combined to produce one final score for each target behaviour. There were two phases to the coding process. Phase one involved timing the conversation to obtain a total length of time the subject was oriented to the trainer. Phase two involved listening to the content of the conversation and coding each comment (or inappropriate lack of comment) that the subject made. The coding system is included in appendix C.

The raters attended a training session together. They were give an information sheet (appendix D) and this was discussed with them. Three videoed conversations were randomly selected for use in the training session. The conversations were reviewed, and coding was discussed until consensus was reached. An inter-rater reliability of at least 90% on all measures was achieved by the end of this training. Following the training session, the raters proceeded to code each video independently. Videos were viewed in the same order by both raters, with video order randomised according to session and child order. In addition, the order of rating phase one and two was alternated in order to reduce rating bias. A data sheet was used to record phase one and two ratings for each conversation (refer to appendix E).

After all conversations were coded by both raters, inter-rater reliability was calculated from a sample of eight conversations (25%) which were randomly selected from all the conversations (excluding those used in the training sessions).

CHAPTER 4

RESULTS

4.1 Interrater reliability

A subsample of 25% of the total sample of conversation protocols (8 of 31) was randomly chosen for analysis of interrater reliability. This is presented in table 4.1 which shows the percentage of agreement between raters for each of the three target behaviours. Because agreement was judged to be satisfactory, an average of the two scores was used in the analysis.

Table 4.1

Interrater reliability for behaviour rating system

attending	initiation	reciprocity
90.5%	84%	74%

4.2 Composite score generation

The data gathered from the behaviour coding was collated using the following procedures to obtain a single score for each target behaviour. Rates and percentage of time were calculated using a decimalised proportion of time because conversations varied in length

Attending score. This score represented the proportion of time the participant spent with his head oriented to the trainer, and was expressed as a percentage.

Initiation score This was generated using information from two different forms of initiating behaviour. Firstly, the average number of initiating questions or statements per minute was calculated and expressed as a rate. Secondly, an extra point was added for either an unprompted greeting or terminating comment.

Reciprocity score. This score reflects the combined results of behaviours which contribute to, and those which detract from, the overall reciprocity of the conversation. The total number of comments coded as an interruption, unrelated utterance or instance when the subject did not reply to a question or comment made by the trainer, was subtracted from the total number of comments which enhanced reciprocity, ie replying to a question or responding to a comment.

4.3 Behavioural results

The results for each subject are presented in table 4.2 and in figures 4.1 - 4.4.

Table 4.2

Results of behavioural measure of attending, initiating and reciprocity obtained by each child.

Child	Session	Attending	Initiation	Reciprocity
[1]Ricky	pregroup	17.5	3.2	0.8
	1	29.5	3.5	2
	2			
	3			
	[2]4		3.4	3.3
	5	10.5	3	-0.3
	6			
	7			
	8	14	5.5	-1.1
Sam	pregroup	49.5	3.8	1
	1	73	4.3	0.5
	2	63	4	0.35
	3	80.5	1.2	2.8
	4		2	1
	5	90	5.6	0.8
	6	65.5	2.3	1.1
	7	75.5	1.6	1.8
	8	78	4.3	0.5
Michael	pregroup	93	2.3	2
	1	99	1.4	5
	2	100	2	3.8
	3	99.5	1.4	3.3
	4		1.5	4.5
	5	91.5	2.4	5.1
	6	95	2.5	6.7
	7	91.5	1.8	8.7
	8	94.5	3.4	7.4
Joseph	pregroup	0	0	1.7
	1	2	0.4	2.6
	2	15.5	0.5	5.3
	3	42.5	1	8.5
	4		.5	3.5
	5	78	2.45	4.3
	6	9	1.8	2.3
	7	4	1	6.2
	8	90.5	2.3	8.8

[1] Ricky was unable to attend four of the group sessions, this explains the missing data in his results

[2] Technical problems meant that the attention score could not be measured for any of the subjects on the forth session of the group

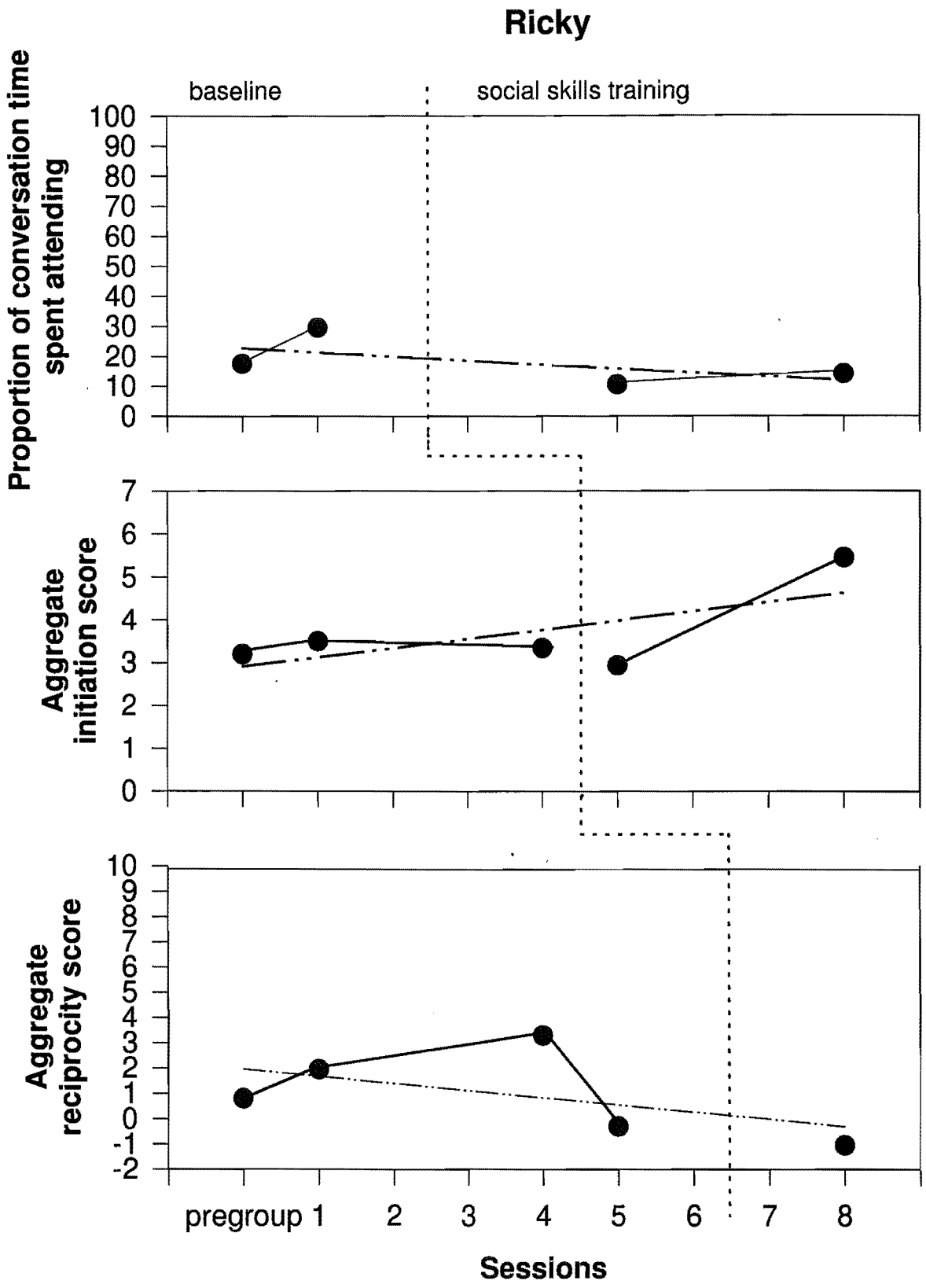

Figure 4.1

Behavioural assessment during baseline and social skills training for Ricky. A multiple baseline analysis of proportion of time attending, initiation score, and reciprocity score.

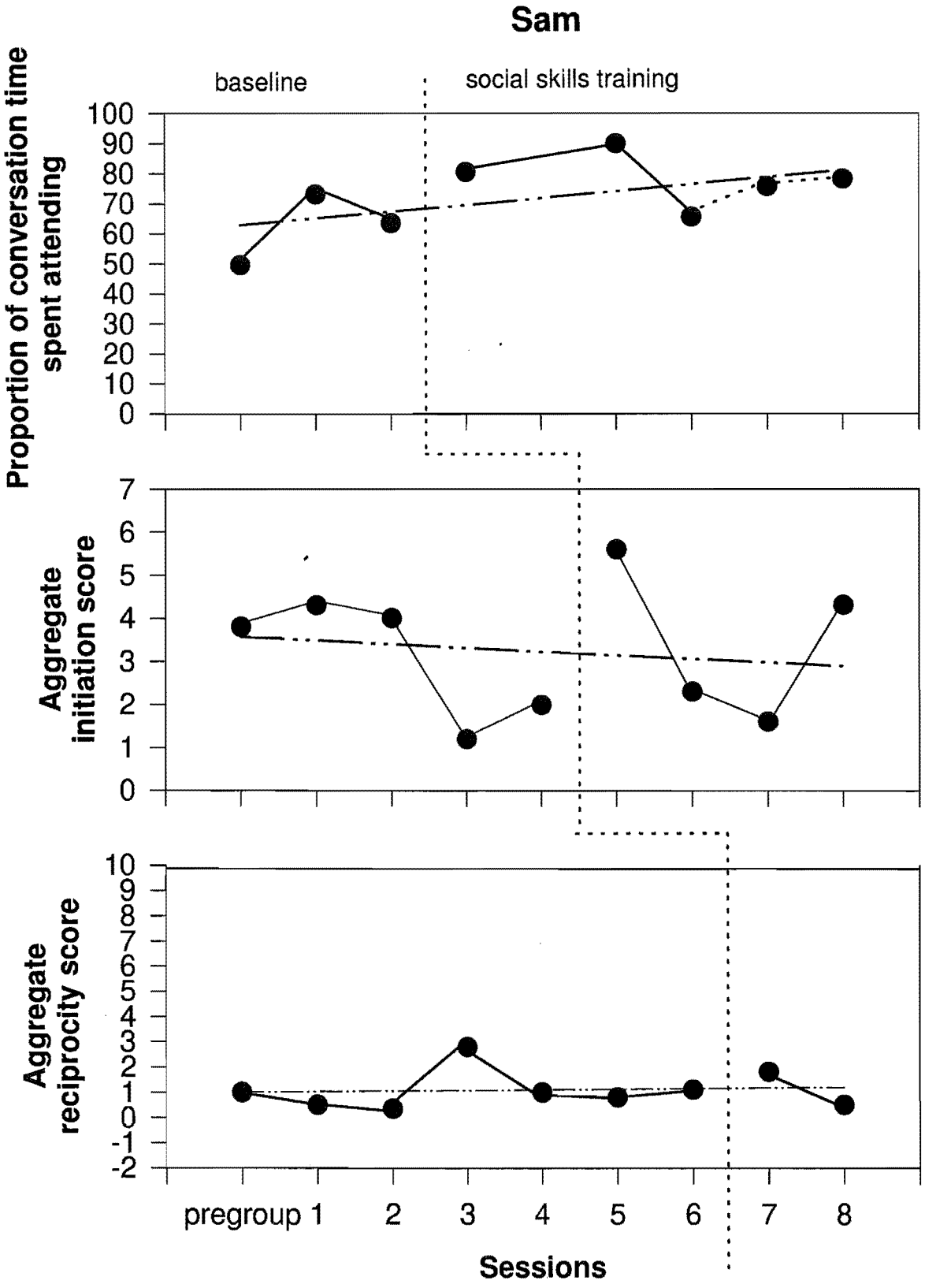

Figure 4.2

Behavioural assessment during baseline and social skills training for Sam.
A multiple baseline analysis of proportion of time spent attending, initiation score, and reciprocity score.

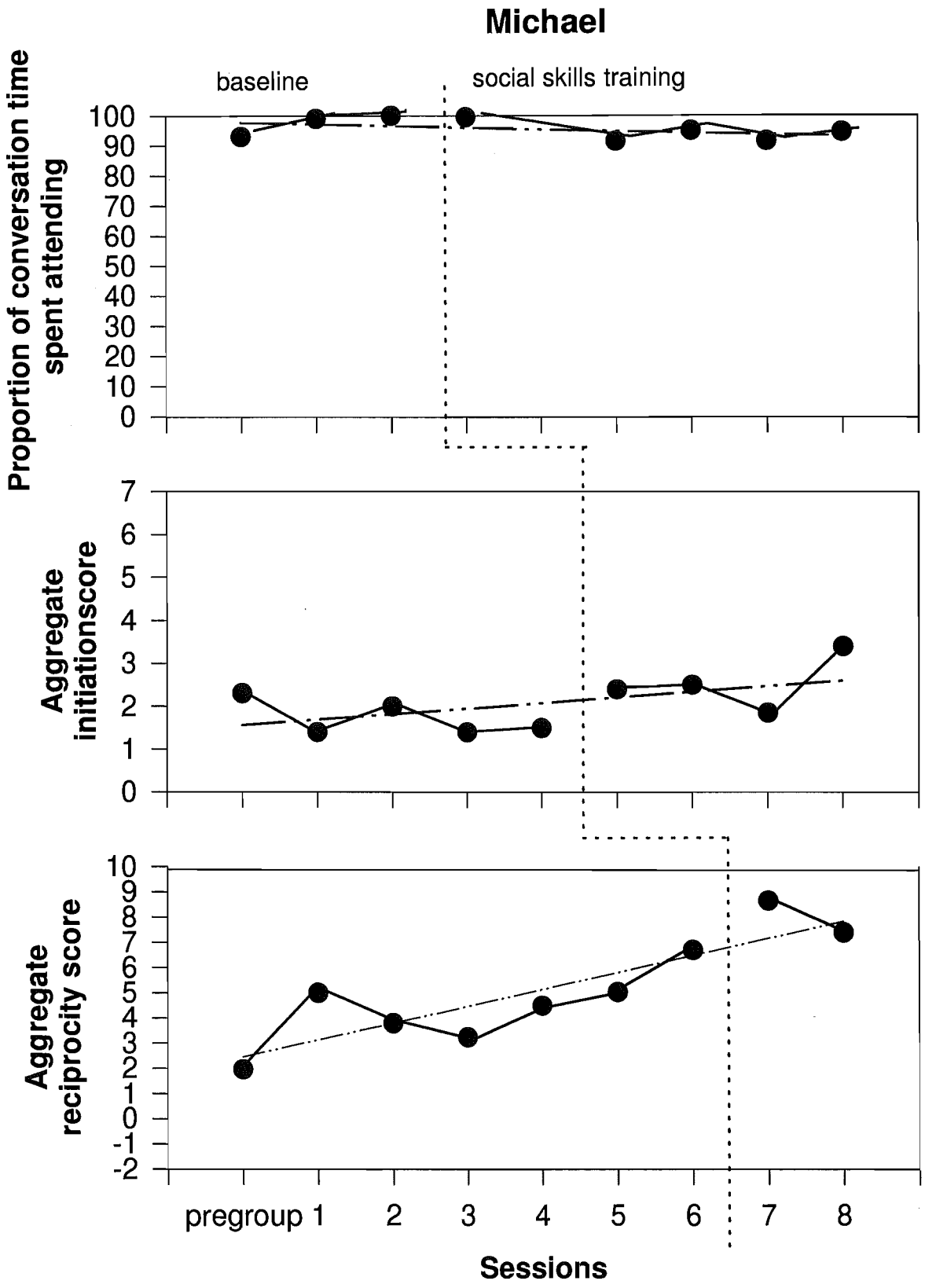

Figure 4.3

Behavioural assessment during baseline and social skills training for Michael. A multiple baseline analysis of proportion of time attending, initiation score, and reciprocity score.

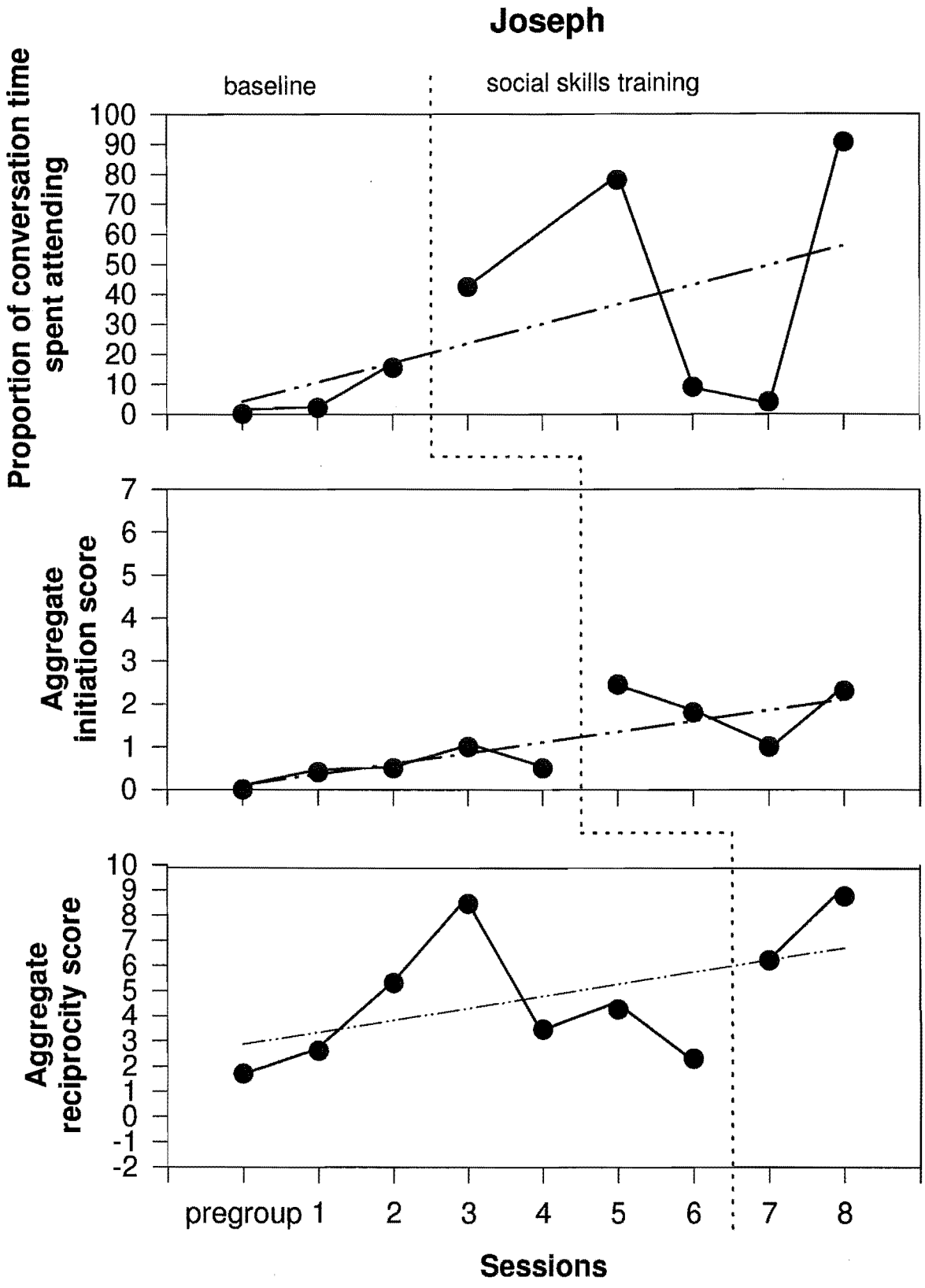

Figure 4.4

Behavioural assessment during baseline and social skills training for Joseph. A multiple baseline analysis of proportion of time attending, initiation score, and reciprocity score.

Ricky's results are depicted in figure 4.1. Interpretation is limited by the absence of nearly half the data points. Ricky's attending behaviour was low during baseline, it was found he was attending to the trainer for only between 17 to 30 % of the total conversation. Following intervention his attending score dropped to a low of 10% of the total conversation. His initiation behaviour was consistent at baseline during which he obtained a score of approximately 3 for each session. Immediately following intervention, Ricky's initiating score dropped slightly but showed a large improvement on the final session with a score of 5½. Ricky's reciprocity score varied during baseline. It reached a high of 3.3 and a low of -.3. Following the intervention his reciprocity score dropped further to -1. Only Ricky's initiation behaviour showed a positive trend.

Sam's results are depicted in figure 4.2. His attending behaviour was variable during baseline, and ranged between 50 and 73% of the total conversation. Following intervention his attending score increased to 80% and remained high, never dropping below 65% and reaching a high of 90%. His initiation behaviour consistently scored around 4 for the first three weeks of group then dropped to a score between 1 and 2 for the next two weeks. Immediately following intervention, Sam's initiating score rose dramatically to 5.6 but remained variable throughout the intervention stage. Sam's reciprocity score was generally stable throughout baseline producing a score around 1 each week, except the third session in which his score rose to 2.8. After intervention his score remained constant around 1. Sam's attending behaviour followed a positive trend throughout the group while the other behaviours were highly variable or remain unchanged.

Michael's results are depicted in figure 4.3. A ceiling effect is demonstrated in Michael's attending behaviour. It is consistently near the upper limit in all sessions. His initiation behaviour showed reasonable consistency in baseline during which his scores ranged from 1.4 to 2.3. In the two weeks following intervention Michael's initiation scores were slightly higher than in baseline (2.4 -2.5) and remained high reaching a highest score of 3.4. Michael's reciprocity score was not stable during baseline and actually increased throughout this time from 2 to 6.7. Directly after intervention his score increased further to 8.6 and remained high at 7.4. Positive trends can be seen in both the initiation and reciprocity scores.

Joseph's results are depicted in figure 4.4. During the first two assessments Joseph was attending for a very low proportion of the conversation, 0 to 2 %. By the last day of baseline measurement this had increased slightly and he attended for 15% of the time. His attending behaviour fluctuated considerably following intervention. The first two measures, on the 3rd and 5th sessions, showed a considerable increase in attending behaviour, with Joseph attending up to 78% of the time. This dropped dramatically for the next two weeks down to under 10% attending and increased again to a peak attending rate of 90% in the last session. Joseph's initiating behaviour also started at a low rate. Baseline measures demonstrate a slight increase over sessions from a score of 0 to 1. His initiation behaviour shows a consistent increase in the sessions following intervention with a high score of 2.5 immediately following intervention with scores never dropping below 1. Joseph's reciprocity score varied during baseline. Most scores during these sessions ranged between 2 and 5. However, he obtained a score of 8.5 on the third week of the group. Following intervention his reciprocity score showed a general increase with a high score of 8.8 on the last day. Joseph's results showed positive trends in all target areas.

4.4 Qualitative results

General clinical impressions of the effectiveness of the group correspond with the results discussed above. Improvements in specific skills, eye contact, initiation and reciprocity were demonstrated in the boys behavioural rehearsal while group discussions became somewhat more interactive. Components of the group which proved most successful were the discussion, rehearsal of the specific skills, and the use of the slot car set. The boy's contributions to the discussion were often accurate and provided a good indication of their social knowledge. Some of the boy's answers to questions raised in the discussion reflected the nature of their social deficits. For example a question about the purpose of eye contact, recieverd answers such as; 'because it is polite', or 'because otherwise people think you are not listening'. No mention was made by the boys of the nonverbal information communicated through eye contact. The slot car set was particularly popular and facilitated some positive social interactions, such as passing on of instructions, between the boys when they were using it. During a number of the informal chat sessions the boys were asked to discuss their feelings about the group.

None reponded with great enthusiasm but all four boys indicated they were happy to be involved with the group and that it was 'okay'.

Feedback from the parents' group was very encouraging. The parents were enthusiastic about being involved and commented that they enjoyed the group and found it valuable. Group facilitators noticed changes in the parents' attitudes toward their sons over the.course of the intervention. These changes included a greater acceptance of the diagnosis, a better understand of their son's behaviour and an appreciation of the importance of helping their sons achieve greater independance. Friendships between some parents developed and it is hoped that contact will continue for both parents and boys.

CHAPTER 5

DISCUSSION

5.1 Interpretation of theresults

A multiple baseline design was employed in this study. Such a design allows for the simultaneous measurement of several concurrent behaviours (Barlow and Hersen, 1984). This is of particular value in the study of social behaviour as the effective use of social skills naturally requires the combination of several different behaviours. With multiple baselines designs the treatment variable is usually not applied until a baseline stability has been achieved (Barlow and Hersen, 1984) Because of time limitations it was not possible to take more pregroup, baseline measurements and a stable baseline was achieved in only three of the twelve graphs (figure 4.1 - 4.4).

The results from a multiple baseline study reflect three main effects. First, a specific treatment effect (positive or negative) occurs when an increase or decrease in a target behaviour coincides with the implementation of the relevant intervention. It is assumed that the intervention has caused the change. Second, a non-specific treatment effect (positive or negative) occurs when an increasing or decreasing trend in a target behaviour does not coincide with any specific intervention. And finally an interaction effect occurs when a change in one target behaviour coincides with the implementation of a non-relevant intervention. Upward trends during baseline may reflect non-specific treatment effect. It is usually not possible to conclude a specific treatment effect from an improvement in behaviour when baseline already showed an upward trend. This is because the behaviour may have continued to improve without intervention. In some instances, however, despite a baseline incline, the increase in score following intervention was so large a direct treatment effect seems possible.

The hypothesis of this study predicted that a didactic, structured programme, which taught conversational skills as rules or principles, would increase the occurrence of specific, conversation based, social behaviour in the group participants. Results which demonstrate an increasing trend in a target behaviour, suggest that the group was effecting the participant's social behaviour in a nonspecific way. Unless the target behaviours increased concurrently with the specific interventions, little can

be concluded about the direct effect of the intervention procedure. This means that a positive, specific intervention effect, rather than nonspecific, is necessary before the hypothesis can be accepted. In the following discussion, the results obtained for each child will be discussed individually in terms of the three effects defined above. The implications of these results with respect to the research hypothesis will then be discussed. Next, the significance of the results in the context of the literature, will be reviewed and finally conclusions about the utility of the behavioural measure will be made.

Ricky showed a very low rate of attending during all the interviews. No data is available immediately following the attending intervention and the proportion of time he attended actually dropped in the second half of the sessions. Similarly, Ricky started with a low reciprocity score and over the course of the programme this dropped further. In the final session his reciprocity score was -1, indicating his behaviour was more often preventing conversational reciprocity than facilitating it. The decline in both attending and reciprocity seem to reflect more of a trend than an intervention effect. The trend may be due to non-specific negative treatment factors. In comparison to the other target behaviours, Ricky's initiation score was high at the onset of assessment and remained so throughout baseline. This indicates he was already using a number of comments or questions to initiate conversation. A large increase on the last session of the programme did not coincide with intervention implementation but is suggestive of a positive non-specific treatment effect.

Like Ricky, Sam's initiating behaviour was comparatively high and stable at the onset of measurement. His initiation score dropped considerable on the third session of the programme, possibly reflecting a negative interaction effect. A large increase following intervention, may possibly reflect a specific treatment effect. However, the fluctuations in his behaviour, limit the appropriateness of such a conclusion. Sam's reciprocity scores, again, like Ricky's was low throughout baseline and did not show any improvement following intervention. An increase in reciprocal behaviour on the third session may reflect a positive interaction effect. Sam attended fifty percent of the time during the first conversation and this improved during baseline. The proportion of time he spent attending rose following intervention, again, possibly reflecting an

intervention effect, although, given the trend in baseline this may also stem from nonspecific treatment factors.

Michael's attending behaviour demonstrated a ceiling effect. This means Michael was already using effective attending behaviour and so improvements could not be measured. Michael's low and stable initiation score indicates he was consistently making only a small number of comments or questions to initiate conversation. Following intervention this score rose slightly and remained higher, which is suggestive of a small, positive, intervention effect. A positive, nonspecific treatment effect can be observed in Michael's reciprocity scores. Over the course of the programme, he used an increasing number of questions and comments which contributed to the flow of the conversation, and this increase occured before the relevant intervention had been implemented.

The graphs of Joseph's results demonstrate that all target behaviours were occurring infrequently at the onset of the programme. A small increase in Joseph's initiation score seems to reflect a small, positive, intervention effect. His attending behaviour showed a small increase at baseline and a large increase following intervention suggesting an intervention effect. The considerable dip in his attending behaviour on the sixth and seventh sessions can not be considered a negative interaction effect, as it does not coincide with the implementation of a specific intervention. Rather, this dip must be viewed as stemming from unmeasured extraneous factors. The large fluctuations in his results suggest Joseph maybe particularly influenced by such factors. His reciprocity scores also show considerable variability with what appears to be a positive interaction effect on the third session. In the context of this variation, the results following intervention are hard to interpret but are also suggestive of a positive intervention effect.

The attending results show considerable variability across subjects, Michael was measured as attending consistently during ninety percent of all conversations, while Ricky attended for no more than thirty percent. When the initiation and reciprocity graphs for each participant are compared with the others a pattern in presentation can be seem. Ricky and Sam have similar profiles of less overall improvement, greater amount of initiation behaviour and low rates of reciprocity. In

contrast, Michael and Joseph both show greater overall improvement, and present with a profile involving lower amounts of initiation and greater reciprocity. It is possible these presentations are a function of age differences in the participants. They may also stem from social subtype differences such as those described by Tantam's (1991). Joseph and Michael both closely resembled Tantam's (1991) first subtype. They were more passive in their social interaction and their verbal expression was limited but not obviously unusual. Ricky fitted Tantam's second subtype or Wing and Gould(1979)'s 'active but odd social style. He made more social initiation, but used repetitive sometimes bizarre, language, had odd and idiosyncratic non-verbal expression and an obsessional pattern of interest. Sam's presentation fitted somewhere between the two, his language was pedantic and mechanical and his conversations had a very one-sided quality. The possibility that individuals who present with different social subtypes may respond differently to social skills training has implications for intervention selection.

To summarise, an intervention effect can be observed in six of the twelve graphs. This effect was usually small and often in the context of a slight upward trend. This means that the hypothesis is only partially confirmed because the didactic, structured intervention can be seen, in only fifty percent of the situations, to have a direct, effect on the rate in which target behaviours were performed. The results suggest that nonspecific treatment factors, and not the structured procedure alone, may play an important role in improvements which are achieved in a social skills training group. The results also raise the possibility that individuals with different social subtypes of Asperger's syndrome may respond differently to social skills training. The conclusion that can be drawn from these findings is that teaching social skills to individuals with Asperger's syndrome, by presenting the skills as rules or strategies, can be an effective method of increasing the performance of those skills but that other factors may enhance or restrict the aquisition process. It is possible to speculate on the nature of these nonspecific factors. They may be related to the behavioural measure, ie familitarity with the assessment procedure. They may also stem from the group itself and involve factors such as familiarity with the group members, increase in self efficacy resulting from success in behavioural rehersal and effects of a supportive environment. It is also possible that the children in the group knew the skills already and the social skills focused setting acted as a trigger or reminder to use the skills. Finally, it is possible that

participant related factors have an influence on skill acquisition. This study presents the possibility that social presentation may correspond with response to the programme. Perhaps an approach to teaching which differs from that used in this programme would be more effective for individuals who present, like Ricky and Sam, with a more 'active but odd' social style.

Comparison with other social skills training studies (Marriage et al., 1995; Ozonoff and Millar, 1995; Williams, 1989; Parson and James, 1986: Mesibov, 1984) is difficult because, in most cases, the results reflect different levels of measurement. The current study did not measure impact on general social functioning[1], and most other studies did not measure the direct effect of intervention on the acquisition of a specific behaviour. The one study which did measure this, (Parsons and James, 1986), also found variability in the presentation and improvement trends which increased over the course of the programme. From their results, Parsons and James (1986) concluded that positive improvements in conversation skills did occur during the treatment. Parsons and James (1986) targeted only one behaviour, topic maintenance, which allowed for a longer period of data collection, but did not facilitate a comparison of specific and nonspecific treatment effects. The current study is unique in this way and must be viewed as exploratory research. With respect to the other groups, the current study seems to have yielded similar results, in that changes were small and seemed to stem, from both intervention procedures and nonspecific factors. Williams (1989) reports topic related general improvements and unexpected improvements such as the disappearence of echolalia in some of the children. Mesibov (1984) describes improvements in the initiation and maintenance of conversations in his subjects as well as improvements in participant's self concept, measured using the Piers-Harris Children's Self Concept Scale (Piers, 1969). The general social functioning outcomes yeilded in these studies were inconsistent and in some cases discouraging. Results from the current study suggest social skills training can effectively improve the occurance of specific behaviours at the time of the group which, like Parsons and James(1986)'s findings, suggests that failure to generalise contributes to poor outcome results. Some researchers have posited that improvements may result from only nonspecific factors. Mesibov (1984) concluded that the social envioronment of the group and the

[1] The Social Skills Rating System (Gresham and Elliott, 1990) was to be used for this purpose but was, unfortunatly unavailable for pregroup measurement

opportuniuty to make friends was more valuble than the teaching of social skills and Williams (1989) suggests it is possible to concieve an effect produced simply by bringing the children togther for 45 minutes each week. The results of the current study, especially those from Michael and Joseph, contradict this opinion and offer support for the use of an intervention which includes specific teaching procedures.

A unique feature of this study was the method employed to assess the specific effects of treatment. This was achieved through the use of the behavioural measure of specific conversation related social skills. Results from the study highlight weaknesses and strengths of this measure. Firstly, the large variability in attending results suggests either, individuals with Asperger's syndrome may present with considerable diversity in their use of attending behaviour, or that the behavioural procedure was an inaccurate measure of attending behaviour. In view of literature findings which identify use of eye contact as significantly impaired in Asperger's syndrome (Tantam et al., 1993), is seems likely that the use of head orientation to assess attending behaviour was not an accurate measure of the eye contact. Secondly, the interaction effect demonstrated in a third of the graphs suggests the behaviours targeted in the measure were not completely independent. Strengths of the measure include good interrater reliability and some demonstration of an intervention effect. This suggest that the procedure was accurately accessing representative aspects of the target behaviours.

5.2 Limitations of the study

A number of limitations can be identified in the research methodology, the programme content, and the behavioural measure. First, the study would have been strengthened if the participants had been independently rather than collaboratively diagnosed. Second, the lack of follow-up is a weakness. Follow-up assessment was planned but not carried out at the time this thesis was written. This measure may have provide information regarding maintenance of improvements or skill consolidation. Third, the programme was short in comparison to similar studies. This reduced the opportunity to practice what was presented and limited the range of skills taught. Other essential social skills such as interpreting ones own and other's emotions, and dealing with teasing, could have been included in a longer programme. Finally, the method used in the behavioural measure for estimating attending behaviour appears some what problematic. Impairments in the use of eye contact is

the most prominent deficit in the attending behaviour of individuals with Asperger's syndrome Participant's use of eye contact could not be accurately recorded with a single camera and more accurate methods would have been benificial.

5.3 Suggestions for future research

The current study improves on previous research by using a measure of specific skill aquistion, and a multiple baseline design. There is clearly room for improvement in future studies, however, findings indicate the need for further investigation into the possible social subtypes of Asperger's syndrome and their corresponding variations in treatment response. They also identifiy that the non specific treatment effects of a social skills group can influence overall effectiveness and further elucidation of factors contributing to these effects will be valuable. The behavioural measure has demonstrated practicality of application in this study, however improvements in the method of measuring eye contact are indicated. Tantam et al. (1993) described a method of measuring eye contact which made use of three stragegically positioned cameras, this proceedure may prove useful in future research into skill aquisition in social skills training. The use of a concurrent parents' group is clearly indicated by this study but similar groups in the future may benifit from greater contact between the social skills group and the parents'group.

Research into Asperger's syndrome must respect the uniqueness of the individuals concerned and dignify them with a tolerance for their differences. However, the difficulties experienced by individuals with Asperger's syndrome need also to be acknowledged. The experience of Asperger's syndrome has been described as being like 'an extra terrestrial stranded without an orientation manual' (Sinclair, 1992, p 302). This is a poignant indication of the real impact social deficits can have on an individual with Asperger's syndrome. Clearly, further work into improving this situation is important. The results from this study support the use of structured teaching of social skills in a group situation for individuals with Asperger's syndrome. They suggests this may be an effective component in the process of improving the quality of life for these unique individuals.

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Trainer's Manual for the Making Friends Group

Informal chat with afternoon tea - Talk about things we have done that week, at school, up and coming events. To start, the trainers may do most of the talking or talking one to one with the boys. The aim is to get the boys talking to each other, may need to direct eg, 'Peter can you think of a questions for Mark?'
Periodically through the programme this time could include a discussion of how the boys are finding the group. Are they enjoying it, is there anything they don't like?

Bean bag name game is a quick introduction game to play at the beginning of each session. The bean bag is thrown from person to person. The player throwing the bag must say the name of the player to whom they are passing.

Reflect on performance After each boy has practice the skills, discuss his performance with the group, focus on the positive aspects emphasise any of the earlier skills he may have used.

Brainstorm Trainers contributions to brainstorming sessions can act as a model. Individual boys can be asked to contribute. All suggestions should be taken seriously and encouraged. A guideline for useful answers is written in brakets.

Session 1

Greet children and parents
Afternoon tea

Introduce **trainers**
Introduce children give out **name tags**
Play **bean bag name game.**

First sheets of **workbooks** and discuss them.

Run through the **session outline** poster
the **procedures** poster
confidentiality issues

Brainstorm **Let's start by brainstorming some ideas**
How are we alike? What makes us the same?
(we are all people, physical characteristics, we can all - walk, talk etc.)
Write suggestions on one side of the white board

But we are not exactly the same, how are we different?
(we look different, we talk differently, we go to different schools, we like different things we are good at different things.)
Write differences on the other side.

Look at **workbooks** show where they can fill in similarities and differences and home.

Game - **The what's special about me game**. Everyone stands in a line at one end of the room. A leader calls out categories that everyone, no-one, some of the group or only one person can fall into.
Eg. If you go to school, if you like brussel sprouts, if you have two noses, if you are wearing something green, if your name is Stephen.
If a player falls into the category they can take a step forward (choose categories to keep everyone close together) . The first to the end can help the trainer choose categories for the rest.

Toys and slot car set - videoing observational assessment.

Come back to the group.
Discuss the videoing - everyone had a turn, we will do that every week, the same sort of thing each time.

Look at **workbooks** - the bits they can fill in - get someone at home to help them. remembered bring photos next week.

Session 2

need - photos of trainers
picture of people talking together.

Afternoon tea

Trainer gives out **name tags** saying each child's name.
Informal chat
bean bag name game

Let's start by looking at the workbooks.
On white board have a column for each child and list the answers he wrote for 'How am I special'. **Does anyone like the same things?**

Now let's look at the photos you brought. Collect up all the photo's (including ones of the trainers) and show them to the group one at a time.
Who is this? Go through all
How did you know who it was?
(Because it looks like him, doesn't look like anyone else)

We are all different so how do we get along together? That's an important part of what we are going to be talking about in this group - getting along with other people.

Brainstorm **What are some things two people can do together?**
(Play a game -cards, tennis, a computer game.
Make something together - a model, a cake,
dance together,watch TV together,talk together)

Look at pictures they brought (including extra ones with people talking).

When people talk together it's called a conversation.
There are certain things people do when they have a conversation that make it easier for both people.

Show poster with list of conversation skills.

Conversation Skills
look at each other
listen to each other
start by saying hello
take turns speaking
ask and answer questions

What does skill mean? something you learn how to do well like riding a bike or washing the dishes.

We weren't born knowing how to do these this and it's the same with a conversation there are some thing we have to learn how to do.

Over the next weeks we will be talking about and learning these Conversation Skills.

Game - Touch Blue. **This is a game in which you have to listen carefully and look carefully**. A trainer says 'Everybody touch something blue' and the players listen and follow the direction. Some of the direction can involve touching something on another person 'touch someone else's shoe, arm, ear' or everyone touching the same thing, 'touch that chair'. Thus bringing about some physical contact between the children and facilitates watching others and acting on it.

Toys and slot car set - videoing observational assessment.

Come back to group - positive feedback about the session - listened well, good brainstorming,
Look at workbooks and what they can do for next week.

Session 3

Afternoon tea
informal chat

bean bag name game

Last week we talked about Conversation Skills show the Conversation Skills poster

Did anyone see people at home using Conversation Skills? Discuss

The first skill on the list is Look at each other.

When two people look at each other in a conversation it is called Eye Contact. When you make Eye Contact you look at someone's eyes.

Brain storm **why do we make eye contact?**

Practice
Trainers model correct and incorrect Eye Contact while saying 'Hello --'
Were we making Eye Contact?
Eg Yes I was looking at his eyes or no I was looking away.

Trainers stand in front of each boy and practice correct Eye Contact while you both say 'Hello *name* '

Boys practice with each other, a pair at a time in front of the group. Reflect on performance

Another important part of a conversation is how close people stand to each other.
A good way to remember this is to stand an arms length away.

Practice
Let's practice standing an arms length from the wall. All line up along the wall hold one arm out.

Trainers model correct, too far, too close distance. **Is this the right distance?**

Boys practice one pair at a time, when they are the right distance (with direction if necessary) get them to make Eye Contact and say 'hello' to each other. Reflect on performance

Show poster and page in work book and read through.

When you talk to someone, stand an arms length away and make Eye Contact.

Game -

Toys and slot car set - videoing observational assessment.

Come back to group - positive feedback about the session -
Look at workbooks and what they need to do for next week.

All go and find parents.

Session 4

Afternoon tea
informal chat

bean bag name game

Start by looking at workbooks, drawings answers.

What were we talking about last week?

When you have a conversation with someone where should you look.

Who practiced Eye Contact at home?

Now we are going to talk about another Conversation Skill.

In a conversation, when one person is talking what should the other person be doing? (Listening.)

Show Conversation Skills poster. Listen to each other.

Brain storm **why it is good to listen to the other person.**
(To understand, not miss anything important or nice (like shall we go to the beach), to learn (like at school), to help us know what to say next.)

Listening is like hearing, but it's harder than hearing. Listening means hearing and trying hard to understand what the other person is saying.

There are some things we can do in a conversation that show we are listening. Show poster

Listening Skills
Stop other activities.
Face the person.
Look at the person.
Try to understand;
if you don't understand say 'I'm sorry I don't understand, could you tell me again',
if you do understand, smile and nod to show them you know what they mean.

Practice
scenario
A is sitting reading and B comes up.
B ' **A, there is something I'd like you to do'**
A puts book down, turns and looks.
B ' **I'm going to take the hose around to the back of the house, I'd like you to turn it on when I call out".**
A smiles and nods
B **'Is that OK?'**
A ' **Yes I can do that'**

Model incorrect variations ie A does not put book down, does not turn and look.

Model 'I don't understand'
B **'turn it on when I call out'**
A looks confused ' **I'm sorry, I don't understand when I turn it on, could you tell me again?'**
B ' **sure, when I call out "NOW" you turn it on'**
A smiles and nods
B **'Is that OK?'**
A ' **Yes I can do that'**

Use the same role play and get each boy to be the listener.
Reflect on performance.

Game The Listening Game.
Sit in a circle, one person starts 'when I go on holiday I take my ... tooth brush, swimming togs, Mum and Dad etc.
Each person must remember what has been said already and add something new to the list.

Toys and slot car set - videoing observational assessment.

Come back to group - positive feedback about the session -
Look at workbooks and what they need to do for next week.

All go and find parents.

Session 5

Afternoon tea
informal chat

bean bag name game

Start by looking at workbooks, drawings, answers, talk about playing the listening game, what did they notice.

Over the last weeks we have looked at things to do when we have a conversation. Lets Brain storm.

(Eye Contact, distance, facing, listening, smiling, nodding.)

For the next three weeks we are going to use those skills as we practice having conversations.

Look at Conversation Skills board what we have covered so far.

So the next skills we can learn is saying hello.

Brain storm **Who are some people that you know that you might say hello to?**

(Family, family friends, people at school, neighbours, shop assistant,)

When we meet someone we know we start by saying hello

Show poster

You say hello to someone you know the first time you see then each day.
You say hello before you say anything else.

Practice

Lets pretend it is the morning and we have just got to work.
Trainers correctly greet using names, then incorrectly start talking without saying hello.
Boys practice with trainers and each other.
Reflect on performance

Brain storm **What are some other ways of saying hello?**
Write up in two columns
(Hi, Kia ora, Good morning, Gidday etc)
(How do you do?, how are you, hows it going, how are things etc)

Sometimes when people say hello they ask 'How are you?'
This is a question, so it needs and answer.

Brain storm **How could we answer that question?**
(Very well, good thanks, all right, OK, really good, fine thanks)

Practice
Trainers model correct hello, how are you? I'm well thank you
And incorrect not replying to How are you?
Boys practice with trainers and each others.
Reflect on performance

Game Frozen Bean Bag . Everyone moves around the room with a bean bag on their head. The action or pace can be change by asking them to walk faster, walk backwards, hop etc. If a bag falls of a head that person is frozen and must stand with hands on hips. Someone else can unfreeze them by picking up the bag and placing it on the first's head without losing their own bag.

Toys and slot car set - videoing observational assessment.

Come back to group - positive feedback about the session -
Look at workbooks and what they need to do for next week.

Session 6

Afternoon tea
informal chat

bean bag name game

Last week we practiced greeting people.

Look at work books, dinosaur voice bubbles.

Now we are going to think about things we might talk about in a conversation.
What you talk about is called the Topic.

Brain storm **let's make a list of topics.**
(Favourite things - TV, sport, special interests, activities
Something you just did - yesterday, last weekend
Something you are going to do - tomorrow, in the Christmas holidays
The weather
School - teacher, class, things you like to do at school
Your family)

To get talking to some one you could start by telling them something about yourself or ask them a question.

Show poster

> To talk about a topic with someone start by -
> telling them something about yourself
> or ask them a question.

Practice
Trainers model then discuss parts of the conversation - Eye Contact etc started with greeting telling something about self, asking questions.

Hi----------, how are you?
Good thanks
I went horse riding yesterday.
Wow, what colour was your horse?
It was black

Hi ----------
Hello----------
I really like cars, do you like them?
Yes I do, my favourite is a Morris Minor.

Get 1 boy at a time to have a short conversation with a trainer in front of the group. Discuss before hand what the topic will be and give suggestions about how they might get started. Ask the group for suggestions.
Then get the boys to practice the same conversation in pairs.
Reflect on performance

Game Ask or Tell
A board game with I die and two pile of cards ASK and TELL. Players move around the board, when they land on an ASK or TELL square they must follow the directions of the top card of the corresponding pile. TELL require telling something about yourself, ASK involves asking another member of the group.

Favourite - food, drink, sport, TV programme, colour, animal,
Number in family.
Where you live.
How old you are.
What school you go to.
What class you are in.
Your teacher's name.
What colour your house is.
What your middle name is.
The name of a friend.
Something you are good at.

Toys and slot car set - videoing observational assessment.

Come back to group - positive feedback about the session -
Look at workbooks and what they need to do for next week.

Session 7

Afternoon tea
informal chat - discuss that next week is the last group. How do we feel about that?

bean bag name game

Last week we thought about what to talk about in a conversation, the topic. What are some topics you like to talk about.
Get each boy to tell you one topic from their work book.

Today we will talk about taking turns. What games did you think of that has turns in them. Write on board.

Brain storm **what does taking turns mean?**

Let's look at how we take turns in a conversation
Show poster

In a conversation we take turns.
You talk and then you wait while the other person is talking.
Listen when it is the other persons turn to talk
Don't interrupt when they are talking.
When they have finished, you talk again.

Practice
Trainers model by having a conversation.
Demonstrate - both talking at ones, one not replying or responding and a conversation with appropriate reciprocity.

Ask the boys to comment after each conversation

Suggests topics the boys can talk about and get them to practice first with a trainer and each other.
Reflect on performance

Game

Toys and slot car set - videoing observational assessment.

Come back to group - positive feedback about the session -
Look at workbooks and what they need to do for next week.

Session 8

Afternoon tea
informal chat - this is the end of the group how did everyone find it?

bean bag name game

Look at work books - drawings and answers. **Did anyone see people taking turns talking on TV? How did they do it?**

Today we are going to look at what you say when you have finished talking to someone.

Show poster

When you want to stop talking to someone, tell them you are going. **Say Good bye.** **Don't just walk away.**

Brain storm **How could we let someone else know that we have finished talking and that we want go?**

(I've got to go know good bye,
It was nice talking to you see you later,
I'm going home now bye.)

We can tell the person when we will next see them. 'Good bye see you tomorrow.'

When you go to bed when will you next see Mum and Dad? - in the morning so you could say ' see you in the morning.

When you leave school when will you next see your teacher, or friends? Tomorrow, **what about on Friday?**

Other examples, any weekly groups eg Cubs, music lessons, speech therapist.
Sometimes we just say 'I'll see you later.'

Practice trainers model Pretend we are at the super market and we are talking to each other
B " I've got to go now ___A_____"
A " OK"
B "Good bye"
A "Good bye" Walk away from each other.
Discuss

Redo
A " yes, I really like spaghetti"
B just walks away.
A looks confused
Discuss

Boys practice with trainers in front of group. Each says 'I've got to go now __Trainer__, Good bye.

What happens if the person we are talking to has to go?

PracticeTrainers model
Say we are at work talking about computers
A " Well I'm late for lunch, I had better go."
B " That great thing about my computer is it has two disk drives"
A looks worried.

What happened? B wouldn't stop talking. A couldn't leave.

Trainers remodel
A " Well I'm late for lunch, I had better go."
B " OK, it was nice talking to you"
A " yes, I'll see you later"
B " Good bye"

What happened this time?
B stopped talking and said, "it was nice talking to you". That showed he had heard A.

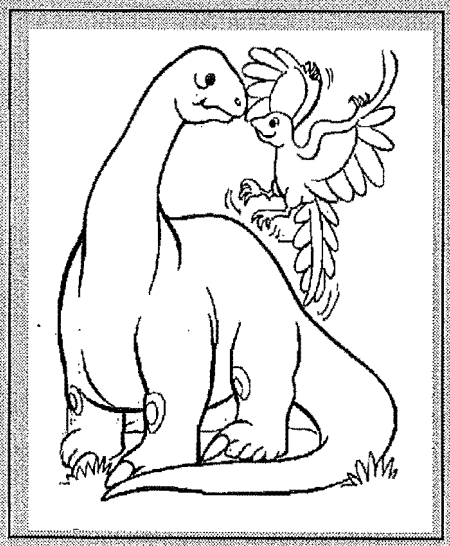
Each boy practices the same scenario as B.

Game

Toys and slot car set - videoing observational assessment.

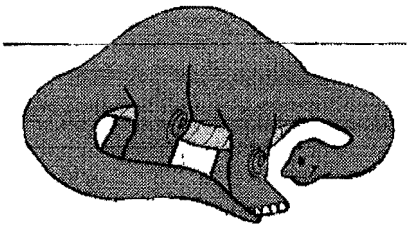
Come back to group - positive feedback about the session -

The Making Friends group Workbook



This book belongs to

_____



Contents

Week 1

Introduction

Welcome to the Making Friends Group.

We will meet after school every THURSDAY at WHAKATATA HOUSE.

At 3.45 we will arrive and have afternoon tea

At 3.50 we will learn about talking to other people

At 4.20 we will play a game together

At 4.40 we will play with toys and the slot car set

At 4.55 we will meet back and talk about next week.

At 5.00 we will go home

We will learn about things in different ways

Brainstorming - someone will ask a question and everyone will come up with different answers and we'll write them down.

Practicing - the trainers will practice and you will watch and then you will practice with a trainer and then with another boy.

Video - sometimes you will practice having a conversation and you will be videoed.

The people in the group have lots in common

We all live in Christchurch, we all have two eyes, we can all see, we can all talk.

What else do we all have in common?

_____

_____

_____

_____

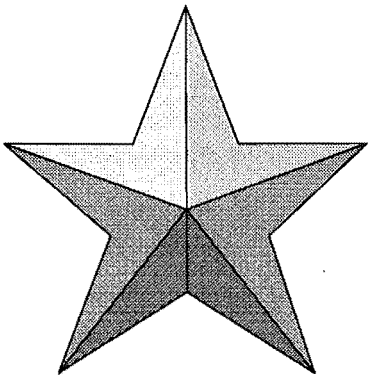
_____

_____

_____

_____

But everyone is different



How are you special?

What is your name? _____

How old are you? _____

What colour hair do you have?

_____

What colour are your eyes? _____

How many people are there in your family?

_____

What school do you go to? _____

What is your favourite;

food _____

drink _____

game _____

colour _____

TV programme _____

_____

_____

What are some things you really like doing?

_____

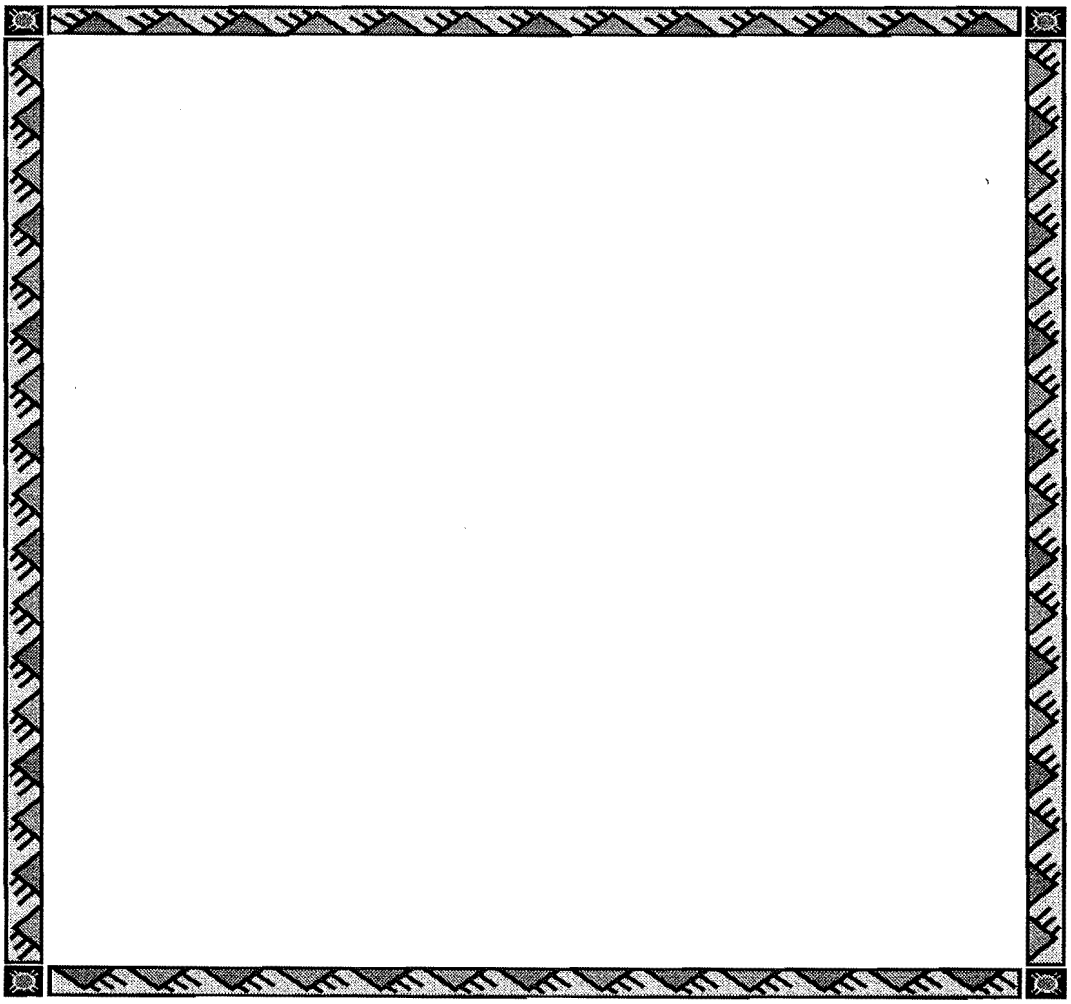
_____

_____

_____

_____

Draw a picture of yourself and things that make you special.



Questions

- Can you remember the names of some of the people in the group?_____

_____

_____

_____

_____

- What does brainstorming mean?_____

_____

_____

Next week

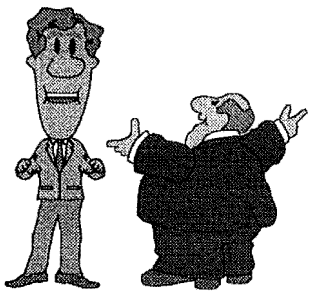
bring a photo of yourself and bring a picture from a magazine with two people doing something together.

Week 2

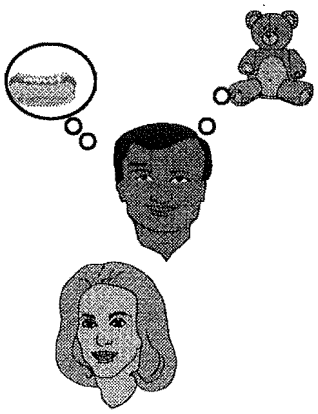
What are conversation Skills?

No two people are the same

they look different



and they like different things



But there are a lot of things two people can do together.

They can go for a walk, paddle a canoe or play a game of cards.

What are some things you do with another person?

_____

_____

_____

_____

Something people do together a lot is **talk.**

When two people are talking together it's a **conversation.**

There are certain things people do when they have a conversation that make it easier for both people

Conversation Skills

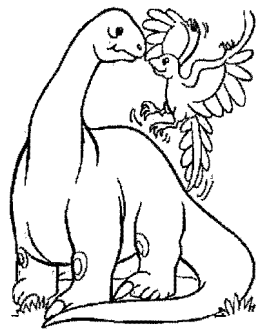
look at each other

listen to each other

start by saying hello

take turns speaking

ask and answer questions



Watch two people at home having a conversation do they use any conversation skills?

Questions

- What is it called when people are talking together?

_____

- What are some skills you have? Eg I can ride a bike

_____

_____

_____

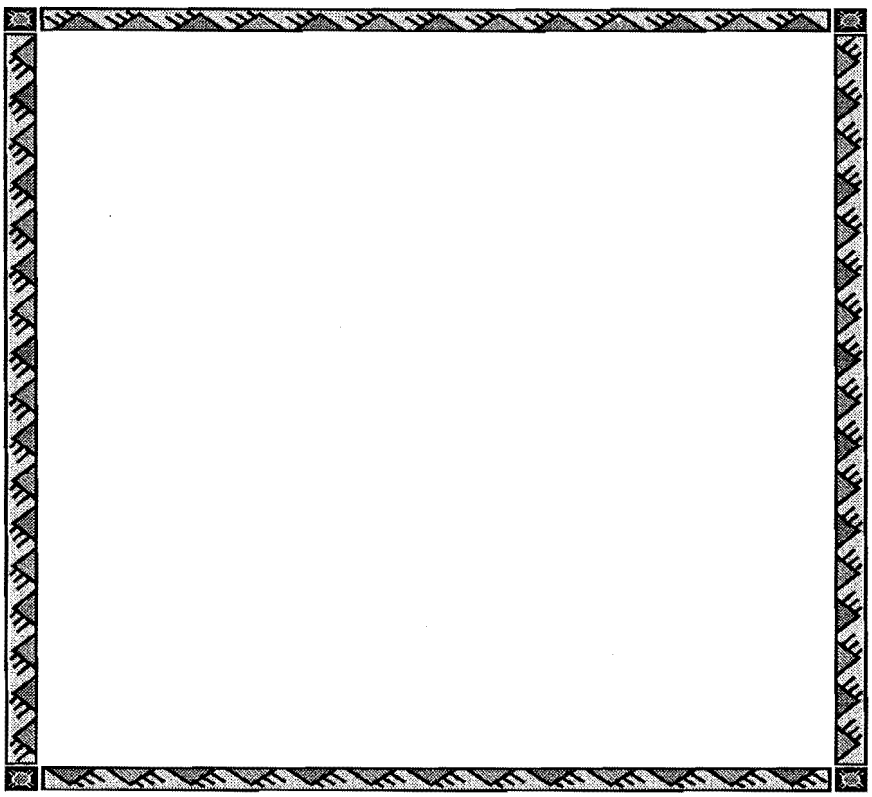
Week 3

Looking

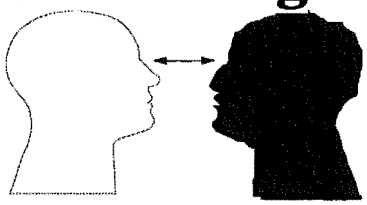
When two people look at each other in a conversation it is called Eye Contact. When you make Eye Contact you look at someone's eyes

When you talk to someone, stand an arms length away and make Eye Contact.

Draw a picture of two people having a conversation. How close are they standing? Where are they looking?



Practise looking at eyes.



Look at your own eyes in a mirror.

Look at the eyes of people on TV, like someone reading the news.

Look at your teachers' eyes when they are explaining something, or reading a story.

Practise making Eye Contact in a conversation with people at home. Look at their eyes while you ask them a question "What is you favourite food?' Then fill in this table.

Name	Favourite food	Eye colour

Questions

- Where should you look when you are talking to someone?_____

- How close should you stand to someone you are talking to them ?_____
_____

Week 4

Listening

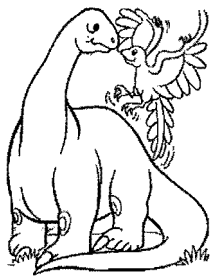
In a conversation, when one person is talking the other person is listening.

Listening is like hearing, but it's harder than hearing. Listening means hearing and trying hard to understand what the other person is saying.

There are some things we can do in a conversation that show we are listening.

Listening Skills

look at the person.



Stop other activities.

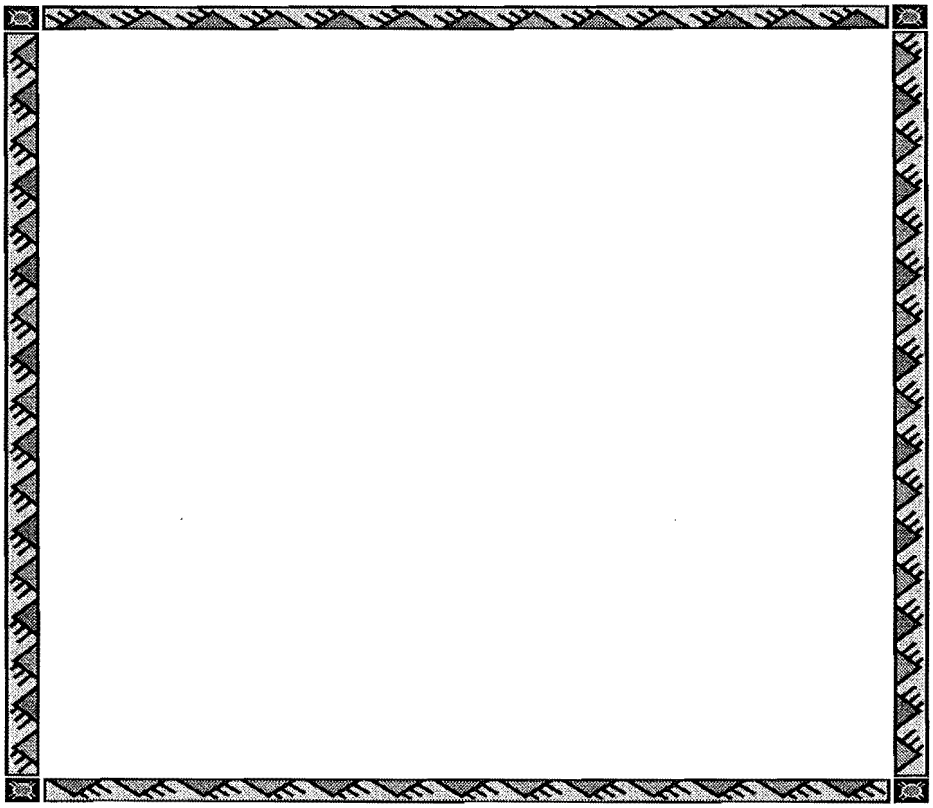
face the person.

try to understand

if you <u>don't</u> understand say 'I'm sorry I don't understand, could you tell me again'

if you <u>do</u> understand, smile and nod to show them you know what they mean.

Draw a picture of two people having a conversation. One person is talking and the other is listening



Play the listening game with someone at home.

When they are talking, practise using your Listening Skills

Do they show you they are listening when it is your turn to talk?

The Listening Game.

One person starts 'when I go on holiday I take my ... tooth brush, swimming togs, computer, etc.'

Each turn the person must remember what has been said already and add something new to the list.

Questions

- In a conversation, when one person talks what does the other person do?_____
- What are some things you can do to show you are listening?_____

_

_____

_____

_____

_____

Week 5

Meeting and greeting

When we met someone we know, we start by saying hello

You say 'hello' to someone you know the first time you see them each day.

You say hello before you say anything else.

Here are some places you might meet someone you know

walking to school	at the movies
in the class room	at a birthday party
at the park	at the shops

Can you think of some other places?_____

_____

What might these two dinosaurs be saying to each other?

Fill in the bubbles.

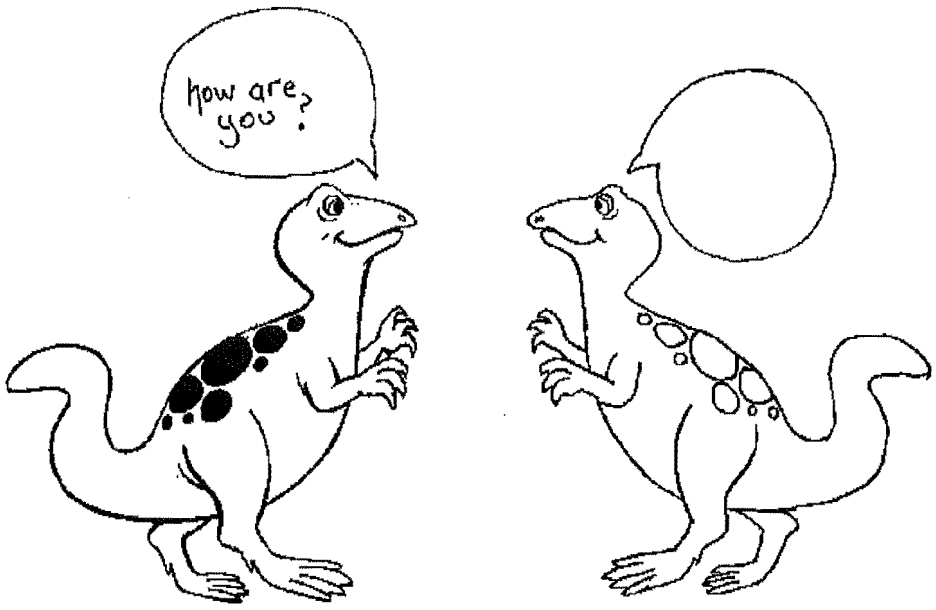
Sometimes when we meet people they ask

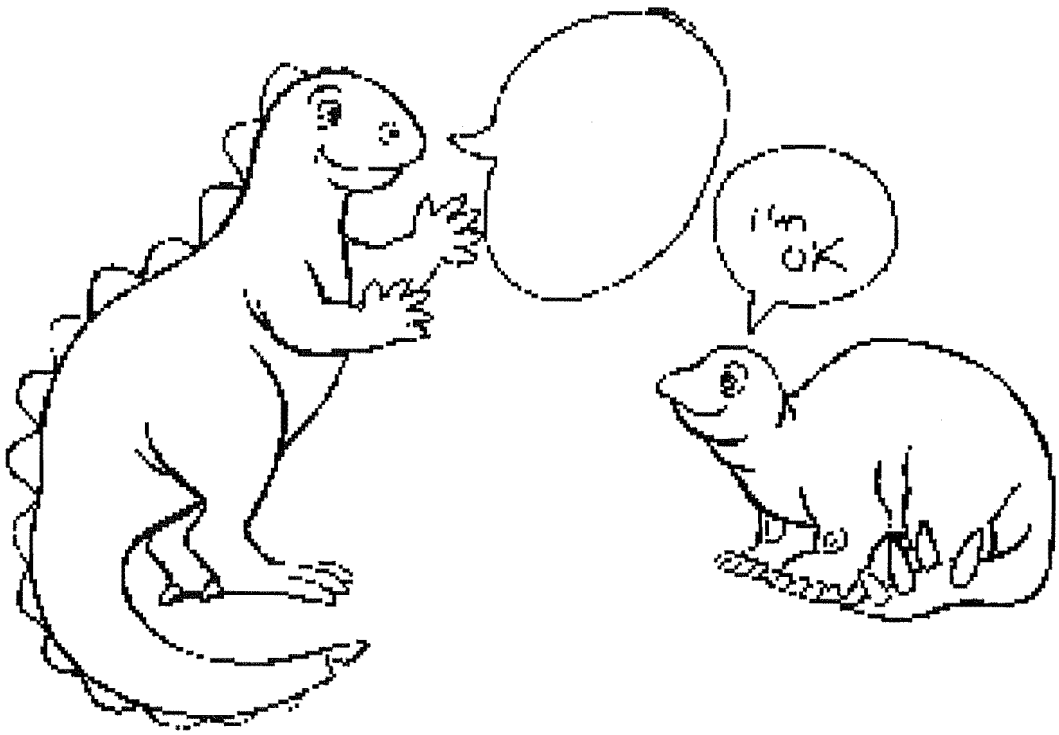
'How are you?'

This is a question, so it needs an answer. Here are some suggestions

Very well thank you,
good thanks,
I'm OK,
really good,
fine thank you

Here are some more dinosaurs greeting each other. What are they saying?





Practise saying hello and 'how are you?' with someone at home. Don't forget Eye Contact , distance, and Listening Skills!

Questions

- Who are some people that you know that you might say hello to?_____

_____

_____

_____

- What are some other ways of saying hello? (See if you can find any in books or on TV)

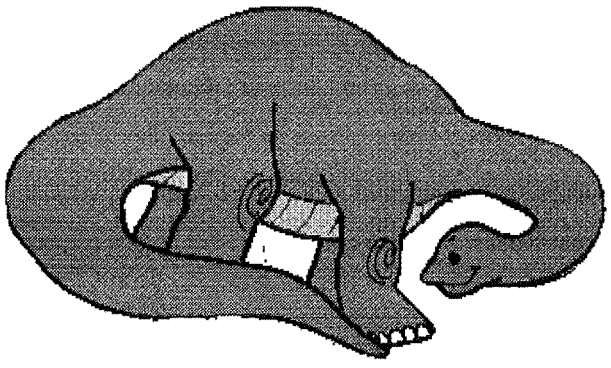
_____

_____

_____

- What could you say if someone asked 'How are you?'_____

_____



Week 6

Conversation Topics

The thing we talk about with another person is called the topic of the conversation.

Make a list of topics that you can talk about.

Your favourite things

toys _____

TV _____

_____

things you like to do _____

_____

other favourite things _____

_____

Something you just did

yesterday _____

_____

last weekend _____

_____

Something you are going to do

tomorrow _____

_____

this weekend _____

_____

in the Christmas holidays _____

_____

The weather

What was the weather like today?

_____

_____

School

your teacher _____

your class _____

things you like to do at school _____

_____

_____

things you don't like at school _____

_____

_____

Your family

who is in your Family _____

_____

where your Grandparents live _____

your pets _____

_____

Getting started

There are two important ways to start talking about a conversation topic - Asking or Telling.

To get talking to someone

tell them something

about yourself

or ask them a question.

Use some of the topics you came up with on the last page to fill in this table of **Topic starters.**

Topic	Tell	Ask
eg swimming	I really like swimming	Do you like swimming?
eg pets	We have a cat called Rosie at my house	Do you have any pets?

Try starting a conversation with someone at home using some of these starters.
Don't forget Eye Contact, distance, and listening Skills!

Think of a game you can play in which the players take turns. Like a board game or a card game. Write the name of your game in this box.

Questions

- The thing we talk about in a conversation is called the _____
- What are two ways to start talking about a topic?_____
- _____

Week 7
Taking turns talking

Taking turns

In lots of games you have to take turns.

For example in a board game. When it is your turn you role the dice and move you counter. Then you wait while the other players have their turn. Then it is your turn again.

Here are some important things to remember about taking turns

- One person has a turn at a time,
- you wait until it is your turn,
- you have to keep listening and watching so you know when it is your turn
- taking turns means no-one misses out.

Taking turns talking is just like taking turns in a game.

In a conversation we take turns.

You talk and then you wait while the other person is talking.

Listen when it is the other persons turn to talk

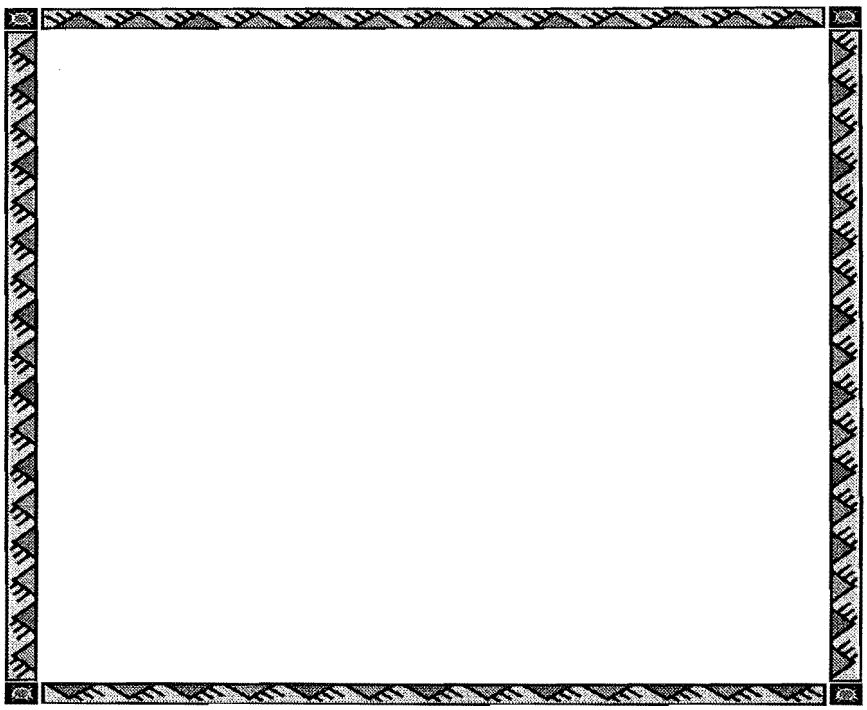
Don't interrupt when they are talking.

When they have finished, you talk again.

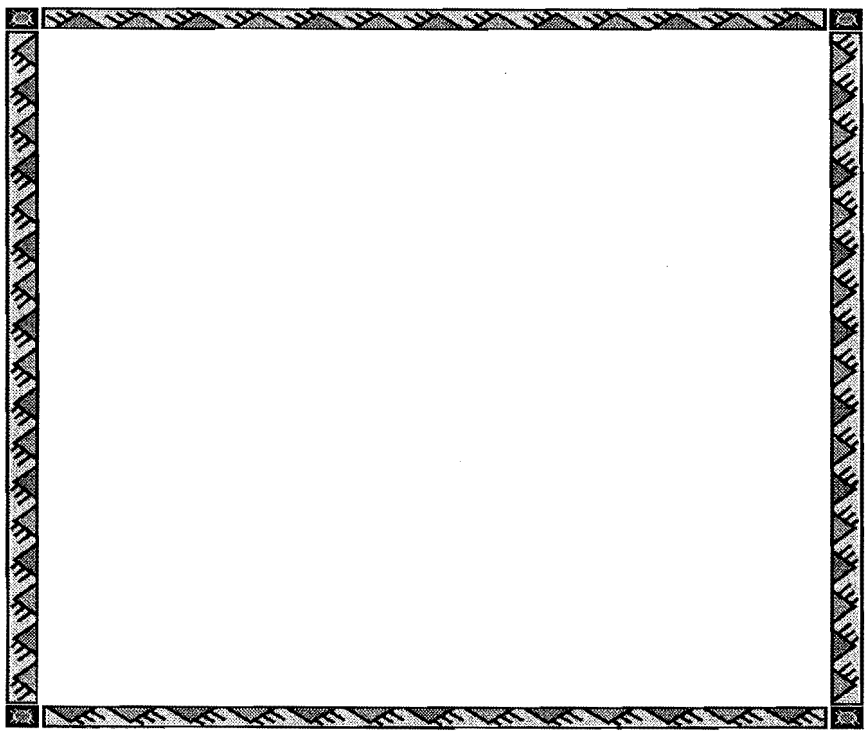
I talk, then you talk, then I talk, then you talk, then I talk, then you talk....

Draw two pictures of you and your friend. In picture 1 it is your turn to talk In picture two it is your friend's turn.

Picture 1



Picture 2



Practise taking turns talking

Read a book together with someone at home. You read two lines then they read two lines and so on.

Watch how people on TV take turns talking.

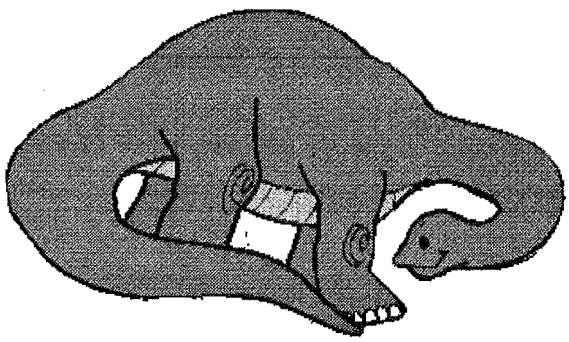
Questions

- In a conversation, how many people talk at one time?_____

- When the other person is talking, what do you do? _____

  _____

- What do you do when they have finished talking? _____



Week 8

Saying Good bye

At the end of a conversation it's a good idea to say something to finish it off so both of you know the conversation has finished.

When you want to stop talking to someone,

Tell them you are going.

Say Good bye.

Don't just walk away.

Stopping the conversation

Here are some ways we can let someone know we want to stop the conversation,

'I've got to go now' 'It was nice talking to you.'

Can you think of some more?_____

_____

Saying goodbye

There are lots of ways we can say good bye,

'goodbye' , 'see ya', 'bye'

Think about when or when you might see them next.

'see you tomorrow'

'I'll see you at school'

'I'll see you on Thursday'

Can you think of any more? _____

_____

Fill in the voice bubbles for these dinosaurs

Practise saying good bye

Listen to people at school saying good bye.

How do people on TV finish a conversation?

Questions

- If you want to stop talking to someone what could you say? _____
- Should you just walk away? _____
- If the person you are talking to says they have to go what should you do? _____

_____

Congratulations!

You have completed your work book and finished the making friends group.

Well done

This is to say that

_____

has been part of the

'Making Friends' group.

He has worked hard and thought about lots of

Conversation Skills.

Signed_____

_____

BEHAVIOUR CODING SYSTEM for the project 'Social skills training for children with Asperger's Syndrome'

The Code

The term utterance is used to indicate any, sentence, word or communicative noise made by the subject.
A **questions by the trainer** is any utterance made by the trainer with the intention of eliciting an answer.
A **statement by the trainer** is any utterance made by the trainer which passes on information without the intention of eliciting an answer. It may be phrase so as to indicate a response is desired, but not a direct answer

- **ask** - a question by the subject- any utterance made by the subject with the intention of eliciting an answer which is **not a response or reply** to the trainer.
- **state**- a statement by the subject- any utterance made by the subject which passes on information without the intention of eliciting an answer and is **not a response or reply** to the trainer.
- **reply** - a reply by the subject to the trainer's question - any utterance by the subject which follows a question and is related in some way to that question
    * subcode as either ask, state, or neither depending on the nature of the utterance
- **respond** - a response by the subject to the trainer's statement - any utterance by the subject which follows a statement and is related in some way to the statement
    * subcode as either ask, state, or neither depending on the nature of the utterance
- **interrupt** - an interruption by the subject- any utterance by the subject which starts while the trainer is talking
- **unrelated** - a statement by the subject which is not related - any utterance by the subject which follows a question or statement by the trainer and is not connected in any way to trainer's utterance.
- **noresponse** - when the subject does not make a related utterance following the trainer's statement
- **noreply** - when the subject does not reply after being asked a question by the trainer.

BEHAVIOUR CODING SYSTEM for the project 'Social skills training for children with Asperger's Syndrome'

Information for Raters

Thank you for being involved with this project

You will be shown a series of two minute conversations between a subject and a trainer. You are asked to assess each conversation in two different ways. The first phase involves using a stop watch to establish the length of time the subject spends attending.In the second phase you will listen to and code the content of the conversations.

Additional information about the subject's greeting behaviour are asked on the data sheet and require your observation at the beginning and end of the conversation.

Phase One Attention/listening/eyecontact.

This is a record of the percentage of time the subjectspends looking at, listening to or attending to the trainer. Because the converstation is on video it is difficult to establish clearly when these features of attenting occur. For this reason, head orrientation is used as a more identifyable indication of attending.

Using the stopwatch, start timing when s'subjecthead movement orients toward t's face and pause when s'subjecthead is turned away.To improve timing accuracy during this phase you are asked to watch the conversation right through with out stopping the video. We will run through an example tape for practise to establish interater reliability before you start.

Phase Two Initiation/reciprocity

You can stop the tape at anytime you like during this phase to clarify parts of the conversation but please endeavour not to code the same utterance on different occations

In this part you will listen to the content of the conversation and for each comment (or inappropriate lack of comment) that the subject makes, code it in the table provided.

Eg. If the subject asks an question put a mark in the **ask** row.

If the trainer asks a question and the subject does not reply put a mark in the **noreply** row.

We will run through an example tape for practise to establish interater reliability before you start.

BEHAVIOUR CODING SYSTEM **for the project 'Social skills training for children with Asperger's Syndrome'**

Data sheet

Code letter: ☐ Child: Rater:

Time from phase 1 ☐

did child reply to greeting? y/n
did child spontaneously greet?, y/n
did child respond to goodbye? y/n
did child spontaneously say goodbye? y/n

code	subcode	tally	total
ask			
state			
reply	ask		
	state		
	neither		
respond	ask		
	state		
	neither		
interupt			
unrelated			
noreply			
noresponse			

for office use only

Total length of conversation ☐ total utterances ☐

attending score ☐

reciprocity score ☐

initiation score ☐