THE EFFECTS OF SHORT TERM INTERPERSONAL COGNITIVE PROBLEM SOLVING THERAPY WITH YOUNG CHILDREN

Lilja Ósk Úlfarsdóttir

A doctoral thesis submitted in fulfilment of
the requirements for the award of Doctor of Philosophy of
the University of Leicester

2002

UMI Number: U601181

UMI

Dissertation Publishing

ProQuest

THE EFFECTS OF SHORT TERM INTERPERSONAL COGNITIVE PROBLEM SOLVING THERAPY WITH YOUNG CHILDREN

AUTHOR: Lilja Ósk Úlfarsdóttir

ABSTRACT

The primary aim of this study is to investigate the effects of short term Interpersonal Cognitive Problem Solving (ICPS) training with pre-school children compared to an alternative treatment of Music Therapy (MT). The MT treatment served to investigate the relationship between creativity and Alternative Solutions Thinking (AST). No treatment control was included in the design (Study I). Seven-month follow-up measures of effects from the treatments are included (Study II), to determine the stability of therapeutic gains. The results reveal a successful elevation of AST and Consequential Thinking (CT) following ICPS training, stable over at least seven months and a sleeper effect from the MT treatment.

Behavioural observation revealed improved social interactive behaviours following treatment, but there is some indication that behavioural gains may not be stable. The influence of music on AST and CT was further examined in Study III by comparing AST and CT fluency of children who attended a musically enriched pre-school to that of the children who received short term MT treatment and a non-treatment Control group. The children in Study III proved significantly better at AST and CT than the children in the previous studies were. Finally, in Study IV, an alternative mode of mediating ICPS skills was attempted. This involved a short training of pre-school staff to apply ICPS training techniques in daily dealings with the children. Girls benefited more from this treatment, and only CT skills were elevated.

Results are related to previous findings in ICPS research and discussed in terms of developmental theories, especially Vygotsky's conception of thought development and Crick and Dodge's (1994) social information processing model. A developmental relationship between AST and CT is suggested and it is argued that AST may be a form of creative thought. Implications of the results for education and therapy are discussed.

Acknowledgements

For Benjamín and Camilla

List of contents

ADENDA Includes a reprint of publication: Ulfarsdottir & Erwin (1999). The influence of music on social cognitive thinking. *The Arts in Psychotherapy. 26(2), 81-84*

List of tables

List of figures

List of appendices

Introduction

1.1 Rationale and aims of the investigation

Children in modern society have increasing demands on their social adaptive skills. Because of changing family structures and the de-organisation of many work places, children increasingly have to cope with changing schools, moving away from immediate family and friends or even accepting new family members through parent's remarriage.

At the same time, about 2 million children in the UK alone suffer mental health problems. About two percent of children under the age of twelve, and five percent of teenagers are seriously depressed. Twice that number show significant distress. This is true even in more stable settled populations in reasonably good social settings (Sharp & Cowie, 1998). In troubled, inner-city areas with high rates of broken homes, poor community support and high neighbourhood crime rates, the level of depression may be twice the numbers quoted here (Sharp & Cowie, 1998).

Current concern about violent children (e.g. the journal, Developmental Psychology, called for papers on the topic for 2001), increasing concerns about bullying, teenage suicide rates on the rise and emotional or conduct disorders found in 10 percent of children (Sharp & Cowie, 1998), make preventative measures very topical and underscore the importance of social adjustment.

Notions that poor peer relations may lead to serious difficulties later in life have led to expanding interest in research aimed at understanding how peer relations may be improved. Good peer relations influence further social and emotional development, affect consequent relationships and can enhance academic performance (Asher & Coie, 1990; Hartup, 1970, 1983; Welsh, Parke, Widaman, & O'Neil, 2001). Similarly, poor peer relations can lead to difficulties in the above mentioned areas and have even been associated with mental health problems (e.g. Kolko, 1989; Cowen et al., 1973). Thus, it can hardly be overestimated how valuable it is to provide early support and treatment, which can potentially nip these problems in the bud. At the same time, budgets in the National Health and educational sectors are tight and call for economical means of intervention.

One way of cutting costs is to design short-term intervention methods that are less complicated and costly to implement than longer-term treatment. It is important to understand the core elements of adjustment in order to strengthen social skills at an early age, and thereby maximise the benefits of intervention for the child.

It may seem obvious that the key to adjustment is in the way we think, but when Spivack and Shure (1974) devised their Interpersonal Cognitive Problem Solving (ICPS) approach to therapy, it was quite revolutionary in its focus on how people think rather than what they think. When the focus is on how people think, rather than the content of those thoughts, it creates a potential for prevention and therapy at a very basic level with wide reaching effects. The central idea in the ICPS approach is to exercise ways of thinking that may enhance social

adjustment. This contrasts with social skills approaches, which emphasise training overt behaviour (Erwin, 1993).

Spivack, Platt, and Shure (1976) identified several different skills involved in social cognitive thinking. These include the ability to recognise a problem, seeing alternative solutions to a problem, seeing the means to achieve certain outcomes, anticipating the consequences of acts and understanding the relationship between motives and actions. Clearly some of these skills require more maturity than others do. The two most basic ICPS skills, Alternative Solutions Thinking (AST) and Consequential Thinking (CT) were selected for this research because they have been shown to have almost universal significance for interpersonal relations (Urbain & Kendall, 1980; Erwin, 1994; Denham & Almeida, 1987). While AST refers to the child's ability to consider alternative solutions to a problem, CT refers to the child's ability to consider possible consequences thereof.

In order to make ICPS training a viable alternative to other social skills approaches, it needs to be adaptable to a short-term format in a school context (Erwin & Ruane, 1993). Most previous research, however, on ICPS training with pre-school children has focused on long term intervention programmes which often involve several dozens of sessions (Shure & Spivack, 1980).

This research examines the effect of training AST and CT in a short-term programme of ICPS therapy as well as indirectly with music. Erwin & Ruane (1993) demonstrated a significant effect from such short-term training with children at the age of seven- to eight-year-old in a school setting. The children in this research are only 5 year old and attending pre-school. Thus they can

potentially be better prepared for the social demands involved in leaving pre-school and starting school. Furthermore, it is important to establish the stability of effects from short-term training if it is to provide an alternative option to longer-term interventions. Therefore follow-up measures, 7 months following treatment, were included in this research.

The alternative mode of therapy included in the present research is rooted in the theories of music therapy and was designed to attempt to strengthen AST and CT indirectly through participation in musical activities and improvisation. The choice of a creative arts medium as an alternative means for supporting AST and CT was based on the idea that the ability to see alternative solutions in a situation is essentially creative thinking. If that is so, then training creative thought should have a positive effect on AST and CT. The reasons for choosing music to facilitate AST and CT as opposed to some other creative art form were partly practical as the author is a qualified music therapist and thus able to design and carry out a musical training programme for children. Additionally, several studies in the literature link music and cognition (e.g. Rauscher, Shaw & Ky, 1993; Gardiner, Fox, Knowles, & Jeffrey, 1996; Bilhartz, Bruhn & Olson, 1999), musical activities are inherently social, and music is probably the first art form to be used therapeutically (Fleshman & Fryrear, 1981). The effects of this alternative treatment were also followed up 7 months later.

The results from these studies of two different ways of enhancing AST and CT in a short-term programme sparked further investigation into indirect mediation or enhancement of ICPS skills. Two studies were designed to examine different ways of doing this. Firstly, the effect of long term music participation

from an early age on AST and CT fluency was examined, and secondly, a study was designed to involve pre-school staff in a short term training programme of AST and CT skills, thus mediating the skills training through short training of staff rather than training the children directly.

The research was carried out in Reykjavík, Iceland with normal children attending typical pre-schools in the city. The two training programmes were run for the same amount of time and identically in every way except for the actual method used for therapy, ICPS sessions on one hand and music sessions on the other. The treatment was expected to affect both AST and CT. In turn, such improvement was expected to be reflected in behaviour and even popularity.

The overall aims of this research were:

1) To investigate the effect of a short-term ICPS skills training programme with young children.

2) To investigate the stability of effects from ICPS skills training with children over time.

3) To establish the relative effect of Music Therapy on the specific skills singled out in the cognitive social skills training programme.

4) To seek alternative ways of mediating AST and CT with short term programmes.

1.2 Context of the research and organisation of the thesis

The decision to target 5-year-old children in this research is informed by developmental theories, which are reviewed in the following chapters. It is

important to take into account the child's developmental level at the age of training, in order to understand what can be expected of the child. It is also important to consider the developmental course that lies ahead of the child to understand how the therapy or training will benefit that future development. Finally, common obstacles to smooth social development are important to understand to some extent if they are to be counteracted by treatment.

The theoretical review begins with the importance of baby's first relationship or attachment to caregiver, in light of its implications for future social relations (chapter 2). Attachment sets the stage and affects the child's expectations in social relationships. Bowlby's (1969) idea of "working models" are outlined because they provide useful heuristics in this context, as it can be said that the child's model of self, in combination with a model for relationships, determines how the child interprets social cues.

In chapter 3, the course of social development is discussed, in terms of both social context and personality factors, with reference to theories of friendship development, sexdifferences and the effect of pre-school experience.

All these theorists provide useful heuristics to conceptualise how it is possible to influence children's social development in a positive way by providing beneficial opportunities or training in a way that suits their developmental level. When skills training programmes are designed, it is important to be aware of factors, which can moderate social development.

Some potentially stifling effects to social development are discussed in chapter 4. These include social withdrawal and shyness, and possible consequences thereof in terms of risk factors for later psychological problems.

Social withdrawal and shyness make it difficult for children to make the most of important opportunities for practising social skills, because the amount of interaction with peers tends to be diminished. These children may have a repertoire of feeling embarrassed or uncomfortable in social situations, which, in turn, may encourage them to shy away from challenging situations. Interpretation of other people's intentions may be distorted and the sense of self affected. Such distortions are important in developmental terms when children start to acquire theory of mind and an understanding of other people.

Children's understanding of other people is discussed in chapter 5. Piaget's stage theory of development is compared to Vygotsky's assertion that learning precedes development and that the child learns through social interaction. Understanding others and coming to the realisation that other people may not hold the same beliefs or desires as oneself is an important milestone in a child's development, which is, believed to occur around the age of four. When children start to acknowledge and appreciate that other people may differ from themselves, they also start to interpret other people's actions and motives. How children interpret their environment and other people's actions is influenced by their cognitive development, experience with other people, situational factors and even personal factors such as shyness or loneliness. The process by which children come to conclusions about other people is discussed in chapter 6: Social information processing and social adjustment.

Similar to Bowlby's working models, but more detailed, are social information processing models such as the Crick and Dodge (1994) model, which outlines individual steps involved in the processing of external events to

individual actions or reactions. Theories on working models and social information processing share the assumption that processing becomes increasingly automated or skilled. Thus, it is important to break up maladaptive or distressing patterns of interpreting social cues before they become fixed or automatic in action.

Chapters 7 to 9 lead on to discuss therapy with children, starting with a general discussion of therapy, where important issues relating to children as clients in therapy are specifically discussed in chapter 7. The specific methods applied in this study are discussed in chapters 8 and 9. First, in chapter 8, the main subject of this investigation, ICPS training is reviewed in terms of the development of the method and supporting research. Second, Music Therapy (MT) as a discipline and research connecting cognition and music are outlined in chapter 9, which concludes the theoretical review leading up to the reporting of the actual investigations.

Reporting of the research studies begins with chapter 10 and Study I, which investigates the comparative effects of short term ICPS training and short-term music training. Study II, reported in chapter 11, is a 7 months follow-up of Study I, to determine the stability of the effects gained from the original training. Study III and Study IV were designed to follow up two separate issues raised by the results in studies I and II. The sleeper-effect in Study II from the music training on ICPS skills raised the question of long-term effect on ICPS skills from regular music practise. This was examined by testing the AST and CT skills of children who attended a pre-school where there was much emphasis placed on daily practice of music. This study is reported in chapter 12.

Finally, the last study was based on another finding in study II, that the short term ICPS training produced improved ICPS skills (which were stable for at least 7 months), and the behavioural analysis, which revealed that the basically pro-social effects of ICPS training on behaviour were not stable. The final study constituted an attempt to induce ICPS training into the daily lives of the children, thus providing a more permanent support for the development of AST and CT. This was done by providing short-term training for the staff. The key element in the training was to encourage children to think for themselves in conflict situations, specifically, to think of alternative solutions and consequences, thus training these skills in their daily interactions with the children. This was another way of mediating ICPS with minimal cost and effort.

In chapter 14, the results from all the studies are drawn together and their significance considered as well as ideas for future research. Finally, the report concludes with appendices, a list of references, and a copy of already published material.

*****

2

Setting the stage for relationships

The body of knowledge compiled from research questions into attachment provides important information for understanding children's social development and how it may be enhanced. This line of research illustrates the complexity of factors that influence how people relate to each other. What is it that makes the crucial difference between good and bad relations and when do such differences emerge in relationship development? The answers to these questions are important in terms of therapy and the prevention of relationship problems.

2.1 Theories of attachment

Attachment marks the beginning of socialisation in a person's life. A search for understanding the dynamics of this relationship is a search for understanding of the foundations of future social development. John Bowlby, a British psychoanalyst, had a profound influence on the conceptualisation of social and emotional development of children. Bowlby's (1958) paper "The nature of a child's tie to his mother" is considered by many to mark the beginning of contemporary attachment theory (Joffe & Vaughn, 1982). He introduced his theory of attachment (Bowlby, 1969) after discovering the work of Tinbergen and Lorenz. This ethological-evolutionary theory of attachment brought together

psychoanalysis, cognitive psychology, and evolutionary biology to explain the

relationship between the infant and the mother or caregiver.

Before the formulation of attachment theory Bowlby had been

commissioned by the World Health Organisation (WHO) to write a report on the

mental health of homeless children in post war Europe. His major conclusion in

this report was that in order to grow up mentally healthy,

> *"the infant and young child should experience a warm, intimate, and*
> *continuous relationship with his mother (or permanent mother substitute)*
> *in which both find satisfaction and enjoyment"* *(Bowlby, 1951, p. 13).*

In his writings, Bowlby does emphasise the female parent[1] and later summaries of

Bowlby's writings tend to overlook the reference he made to a mother substitute

and the partners' mutual enjoyment in the relationship (Bretherton, 1994).

Bowlby believed the infant's ability to communicate the need for

nourishment was biological and referred to the infant's behaviour in this respect

as attachment behaviours. However, he also proposed that the biologically based

survival-promoting tendency was an affiliate system, to be sociable, as distinct

from the attachment system. Given normal circumstances, the infant has

considerable power to affect the behaviour of a responsive mother or caregiver to

provide nourishment well beyond general physical care.

Bowlby's theory of attachment centres on the notion of "representational

models", often called internal working models (Bowlby, 1969; 1973; 1980).

Such models are constructed from the infant's experience during the first year of

---

[1] There has been some debate about the importance of mothers as compared to fathers or primary
caregivers in this respect. Before 1970 researchers emphasised the mothers role in attachment but
largely ignored the fathers (Dworetzky, 1995).

life (see Baldwin, 1992 for a review). The child is believed to develop a representation of the parent, the self (closely intertwined), and of relationships based on daily experiences with the parent (Bowlby, 1969; Sroufe & Fleeson, 1986), which represents the individual's first opportunity to form a relationship with another person. The internal working model for the attachment relationship between babies and their caregivers includes memories of the parents' reactions in different situations. These memories determine what children expect from caregivers in given situations and how they appraise the relationship as well as themselves. Thus, if children experience rejection or abuse when seeking comfort from their parents in stressful situations, they may develop an internal working model of themselves as not worthy of help and comfort (Bretherton, 1985).

Proponents of this theory postulate that beliefs, feelings, behaviour, and information processing (including attention, perception, memory, and interpretation) are guided by these representational models (Bowlby, 1980; Bretherton, 1990; Main, Kaplan, & Cassidy, 1985) and thereby have immense influence on the child's future relationships.

2.1.1 The attachment precursor hypothesis

Most theorists agree on the importance of this first relationship with a caregiver, although the precise relationship between attachment and peer relations is a matter of debate (Lamb and Nash, 1989, in Schneider 1993). It has been acknowledged that quality of attachment does predict various aspects of later development such as problem solving in toddlers and peer relations in middle childhood (Carlson & Sroufe, 1995). Moreover, studies of resilient children who

have successfully adapted in adverse circumstances indicate that an early quality relationship with caregiver is the most important factor for their later adaptation (Masten, 1994).

In his original writings, Bowlby is not very specific about the origins of attachment patterns (Schneider, 1993), which has left this aspect of the theory open to interpretation. Bowlby (1980) did recognise that important changes can take place within families and affect the mother-child attachment patterns. This possibility for change is important in terms of therapy and prevention. If the attachment relationship can change, so can other relationships.

Lamb and Nash (1989) have outlined some of the different models considered by theorists conceptualising early attachment relationships as a precursor to later peer relations. The most radical of these models suggests a *causal* relationship between social competence with peers and early mother-infant attachment history. Proponents of this position assume a biologically pre-programmed way of interaction with the mother to meet primary needs for survival, such as food and shelter (Sroufe and Fleeson, 1986). The quality of the attachment relationship is then determined by the quality of mothering or primary care. This places an immense responsibility on parents, caregivers, and even policy-makers with regard to day-care environments, not to mention the long-term sequel of early "trauma". Other implicit models of early attachment relationships are somewhat less sweeping in attributing such a globally causal role to early attachment bonds.

Vandell (1985) acknowledges the bi-directional influence between peer-and mother-child relations, which place emphasis on the child's temperament and

how that would affect both peer-relations and the relationship with the mother or caregiver. By definition, the sociable child is likely to be sociable with peers as well as with parents. Similarly, if the child has a difficult temperament it might have affected the early bond with the mother or caregiver and later relations with peers (Schneider, 1993). Although theorists disagree on the nature of the connection between attachment and later relationships, they do agree on the importance of good quality attachment experience for future relationships.

2.2 Attachment and peer relationships

Sroufe & Fleeson (1986), argue that peer relationships can be related to attachment relationships because they are relatively intimate and emotional (Asher & Parker, 1989; Furman & Buhrmester, 1985; Sullivan, 1953; Youniss, 1980). Intimacy in children's relationships is limited by the stability of the relationship as well as the child's level of social cognitive development (Erwin, 1993). Although there are studies of toddlers and pre-schoolers that show friends to be a "secure base" (Ipsa, 1981; Schwartz, 1972), evidence for this is still scarce. Older children do describe their relationships with their friends as more companionable, intimate, and egalitarian than their relationship with caregiver, but they also describe their friendships as less affectionate and reliable than their relationship with caregiver (Furman & Buhrmester, 1985).

Research literature relating attachment and friendships is extensive (see Belsky & Cassidy, 1994, for a review). There is, for example, evidence that securely attached children tend to be more liked by peers (LaFreniere & Sroufe, 1985). They also tend to be treated more positively by peers (Jacobson & Wille,

1984), to have more positive and synchronous friendships (Youngblade & Belsky, 1992), and to be less aggressive with peers (Renken, Egeland, Marvinney, Mangelsdorf & Srouf, 1989) than children who are insecurely attached.

How precisely the attachment relationship with their parents contributes to how children view their peers is not known, although the relationship between the two has been acknowledged (Suess, Grossmann, & Sroufe, 1992). Children who are considered securely attached at age 5 demonstrate a more well meaning and realistic interpretation of other children's actions than insecurely attached children (Wartner, Grossmann, Fremmer-Bombik, & Suess, 1994). These results were followed up and confirmed by assessment at age 6. Attachment is not a fixed construct, but is dynamic and influenced by external and internal factors (Davila, Karney, & Bradbury, 1999). Although attachment quality and later behaviour seems to be connected in some way, this may be a reflection of something more general such as family stability, which in turn gives rise to secure attachment and later social acceptance (Lamb, Tompson, Gardner, Charnov, & Estes, 1984).

How children view their peers is bound to affect their interaction style with peers. As Dodge, Pettit, McClaskey, & Brown, (1986) suggest, a self-perpetuating cycle of maintaining peer-relations style can occur through the child's peer-related representations. A positive view (representation) of peers will result in behaviour that is more positive towards those peers (Dodge, Murphy, & Buchsbaum, 1984). Positive behaviour contributes to being liked (Coie & Kupersmidt, 1983; Dodge, 1983), and if children are liked by peers, they will be treated more positively by their peers (Dodge & Frame, 1982; Gottman, Gonso, & Rasmussen, 1975), which can reinforce the positive representation of peers and

thereby contribute to the self-perpetuating cycle of positive peer-relations (Gnepp, Klayman, & Trabasso, 1982).

Similarly, when stressful situations arise, previous experiences in close relationships will affect how support is sought, as well as choices of social situations and partners. Thus, expectations based on previous experiences colour both perception of the situation and consequent behaviour. This element in the mechanisms, which maintain patterns of attachment, contributes to the continual reconstruction of situations that confirm earlier experiences and expectations (Bowlby, 1988; Collins & Read, 1994).

This line of investigation assumes that the original attachment relationship with caregiver generalises to other relationships, despite the fact that relatively little is known about the nature of such generalisation or how it occurs (Cassidy et al., 1996). However, is this connection between attachment and peer relationships necessarily due to the attachment quality?

It is quite possible that the relationship between attachment and representations of peers does not rest on generalisation at all (Cassidy et al., 1996). Mothers and their young children may interpret ambiguous peer related stimuli in a similar way (Keane, Brown, & Crenshaw, 1990). This may account for the observed similarity in peer representations between children and their mothers, due to perceptual and cognitive processes being alike rather than the quality of attachment being the most influential factor.

Lamb & Nash (1989) argue that most of the support for the importance of attachment can be accounted for by the child's temperament. Moreover, secure children may be liked for reasons having nothing to do with attachment, for

example good social skills, good affect regulation, good frustration tolerance, or because they have positive self-feelings (Cassidy, 1988; Elicker et al., 1992; Sroufe, 1983). All of these factors facilitate orientation to positive social interaction.

Physical looks and biological characteristics, such as temperament and, possibly, the amount of social stress or trauma experienced, may influence children's popularity or likeability amongst peers. These factors probably have a role to play in children's social affairs with peers. That is, to consider the interplay of individual, familial, social, and larger environmental factors as being the most important elements in determining the quality of social interaction with peers (Sameroff & Chandler, 1975). Finally, when judgements of relationships, such as attachment, are based on empirical data, it is important to consider the limitations of the research involved.

2.3 Cultural influence on attachment

Attempts to validate the attachment precursor hypothesis cross-culturally have revealed mixed findings. A study of German 5- to 6-year-olds suggests marked continuity between mother-infant attachment and social behaviour (Grossman, Scheurer-English & Stefan, 1989) and van IJzendoorn, Van der Veer & Vliet-Visser (1987) found similar continuity from infancy to age three in Dutch families. Conversly, Oppenheim, Sagi & Lamb (1988) failed to find such link on Israeli kibbutzim, where attachment to the community caregiver predicted later social competence, rather than attachment to the mother or the father.

Current cross-cultural studies on adult attachment styles and intimate

relationships with close friends show that differences between cultures are

primarily revealed by people's sense of independence (Kashima, Yamaguchi,

Kim, Choi, Gelfand, & Yuki, 1995; You & Malley-Morrison, 2000). Similar

differences have been found in research on maternal employment and its

association with insecure attachment patterns. While this has been demonstrated

and highly publicised in the United States, the pattern has not been replicated in

the Netherlands (van Dam & van IJzendoorn, 1991).

Interestingly, in cultures where children are cared for by many people, as

is the case with the Efe, a forest-dwelling tribe in Africa, the children do not have

a primary caregiver as such, but form a strong and close attachment to many

members of the tribe (Tronick, Morelli & Ivey, 1992). Finally, the variation

within cultures on results from tests of attachment, such as the strange situation

test (described below), has been found to be one and a half time greater than the

variation between cultures (Van IJzendoorn & Kroonberg, 1988).

2.4 Limitations of research and the debate around attachment

Two major means of assessing attachment are described in the literature

(Schneider, 1993). Firstly, there is the *Strange Situation* test developed by

Ainsworth (1971) and her colleagues where the infant's reaction to brief

separation from the mother and introduction to an unfamiliar adult are directly

observed, and the quality of attachment classified accordingly (for a detailed

description, see Ainsworth, 2000).

Secondly, attachment classification can be based on the observation of the attachment behaviours on two or more different occasions during the child's infancy, e.g. at 12 and 18 months (e.g. Pastor, 1980). These studies employ Bowlby's (1969) assumption that the infant's internal model of the caregiver incorporates ideas of the availability of the caregiver as well as worthiness of self in relation to situations of this type. The advantage of this latter method is that reactions to transitional situations of stress are avoided. However, there is limited data to demonstrate that the observed behaviour corresponds to the infants' behaviour at home (Schneider, 1993).

Studies on the importance of the attachment relationship for later relationship development have been criticised for premature conclusions. Central to this criticism is the lack of understanding of precisely how parental and self-representation influence peer relationships. Much of the research rests upon correlation designs and there is a lack of cross-lagged panel correlation to permit cautious conclusions about the direction of causality (Lamb and Nash, 1989). Some cross-lagged panel results (e.g. Vandell & Wilson, 1987) suggest that the infant's behaviour in the attachment relationship is a better predictor of later peer relations than the mother's responsiveness, which points to the child's temperament as the instrumental factor.

Further criticism of methodology in research on the attachment precursor hypothesis includes concern about sampling size and effects of volunteer samples (Lamb and Nash, 1989). LaFreniere and Sroufe (1985) report assessment procedures, which were both intensive and expensive, so it was important to know

that participants would be available several years later for follow-up assessment. Lewis and Feiring (1989) echo this criticism.

However, Schneider (1993) warns that, although these objections are just, there is a danger in prematurely rejecting a hypothesis for lack of evidence. He relates Sroufe's (1985) convincing argument that the design of the studies is sound in many respects, especially concerning reliability and separate assessment of attachment and social competence. Moreover, contemporary extensions of attachment theory to the relationship between quality of early bonds and current adult attachment orientations support earlier theoretical assumptions. People with secure adult attachment orientations reflect on their relationship with parents as having been warm, positive, and supportive. By contrast, people with insecure adult attachment recall less warm and more conflict-ridden, controlling, and invasive early emotional bonds (Bartholomew & Horowitz, 1991; Carnelly, Pietromonaco, & Jaffe, 1994; Collins & Read, 1990; Hazan & Shaver, 1987; Kobak & Sceery, 1988; Levy, Blatt, & Shaver, 1998).

Rubin and Sloman (1984) suggest that parents provide guidance to their children from a secure "home base", rather than referring to the attachment relationship directly. Implicit in this model is the assumption that the attachment relationship itself is not the only important factor in determining the quality of later interaction, but rather serves as one of many such factors. Thus, the attachment relationship is seen as a necessary, but not a sufficient, condition for the emergence of satisfying or skilled interpersonal relationships. Numerous contextual factors of social context are bound to affect any interaction.

2.5 Summary and conclusions

It is clear that the quality of the attachment relationship is important and has implications for other relationships. Bowlby's relational models provide a useful heuristic for conceptualising how attachment can affect consequent relationships, but it is important to remember that attachment is a dynamic relationship. Moreover, the connection between attachment and future behaviour may be due to some general factor such as family stability as Lamb et al. (1984) has suggested. Studies in cultures where children are minded by others than the mother, as in the Israeli Kibbutz and with the Efa people, support this contention.

Most importantly, current status of work in the area of attachment indicates that children's ability to relate to others is not restricted to the quality of the initial attachment to the mother, but can be influenced by other factors. If some instrumental element in relationship development is identified and improved in order to affect relationship skills, the potential for reversing negative self-perpetuating patterns of relating may be halted or even prevented altogether.

* * * * *

3

Socialising with peers

As children start to move around by themselves, first by crawling and then walking, their potential for choosing socialising partners grows. Initially they are limited to the babies or children they are placed in the vicinity of by a parent or caregiver. Later, attendance to day-care or pre-school offers a choice of socialising partners and independent mobility makes it possible to approach people of interest, although children are still limited to children in their neighbourhood and school. In this chapter, the rudiments of friendship development and out of home care are examined.

3.1 Making friends

By the age of two, children start to shift their attention from the parents or caregivers and relate to their peers (Ellis, Rogoff & Cromer, 1981; Erwin, 1993). By that age, they are walking and running confidently on their own two feet. This development paves the way for peer relationships and friendships to emerge, but at the same time, characteristics such as shyness and social reticence may begin to affect the direction of children's social development (see discussion of these factors in Chapter 4).

Children who are popular amongst their peers at the age of four to five years are those who are giving, attentive, and accepting of others, or, in some way, display positive reinforcing and accepting behaviours (Hartup, Glazer & Charlesworth, 1967; Masters & Furman, 1981). The style in which these reinforcements are given is important as inappropriate communication of friendship is both ineffective and can be counteractive (Erwin, 1993).

Gottman, Gonso & Rasmussen (1975) studied the influence of social class on children's relationships. They observed that positive non-verbal behaviour was more important than positive verbal exchange in children's relationship development at lower-income schools as compared to middle-income schools. Moreover, positive non-verbal behaviour at middle-income schools was negatively related to liking. Thus, the social skills underlying popularity do not appear to be universal but dependant on context (Erwin, 1993). It is the appropriate application of social skills in specific situations that determine social competence (Foster, DeLawler & Guevremont, 1986).

Children do this instinctively to some extent. This can be seen in the way children, as young as three years of age, adapt the complexity of their speech when they talk to handicapped or younger children (Shatz & Gelman, 1973; Gurlanick & Paul-Brown, 1984). Such flexibility in communication marks the development of role-taking ability, which forms an essential basis for children's social relationships, and relates to them negotiating their social reality as well as the development of a self-concept (Erwin, 1993).

3.2 Role-taking and friendship concepts

Selman's (1981) theory of role taking is one of the most influential theories of role-taking and social-cognitive development in the literature. Selman's research, which is theory guided rather than data driven, proposes five stages of role-taking development. These stages range from egocentric role-taking to social and conventional system role-taking, which is the final stage in Selman's theory and occurs when children are around 12 to 15 years of age (Selman, 1980).

The preliminary stage (0) that is egocentric role taking, marks the time when children are unable to distinguish their own perspective from that of other children. At this stage, children see their friends as people who live nearby or are playmates (Erwin, 1993). The social information role taking stage that follows is marked by children's ability to recognise that other people have a different perspective from themselves, although Selman argues they still are unable to consider *both* perspectives. By this stage, friends are those who try to do nice things for another (Erwin, 1993). These role-taking abilities and the ability to consider other people's perspective are closely related to ideas of theory of mind, which will be discussed in the context of understanding other people (see section 5.2).

Bigelow & La Gaipa (1975) studied friendship expectations among school age children and noted differences, which appeared to be developmental, in these expectations. In a follow up study, Bigelow (1977) formed a further support for this notion and suggested three stages of age related friendship expectation, i.e. egocentric-, sociocentric-, and empathic-friendship expectations. As the

participants in the Bigelow study (1977) were Scottish and Canadian children, a cross-cultural comparison was made possible. This revealed a high level of consistency in the age of onset of certain friendship expectations between cultures. Bigelow and La Gaipa's conclusions are very similar to those of Robert Selman, in spite of the different methodology employed.

Hayes (Hayes, 1978; Hayes, Gersham & Bolin, 1980) extended Bigelow's analysis to pre-school children aged 3-5 years old. Hayes found that the most common reasons for friendship at this early age were nearness, common activities, general play, evaluations, and physical possessions. By contrast, rule violation, aggression, and aberrant behaviour constituted reasons for disliking (Hayes, 1978). Moreover, reciprocal friendships were found to differ from unilateral friendships (where best friend nomination is not reciprocated). This was apparent by evaluation and common activities being more important when the friendship is reciprocated (Hayes, Gersham & Bolin, 1980), despite no significant differences on other dimensions.

Youniss and Volpe (1978) developed a stage theory of children's concepts of social relationships. This approach to children's friendships and peer relations is based on Piaget's (1977) theory of cognitive development and Sullivan's (1953) theory of interpersonal relations (Erwin, 1993). The emphasis is on constructive changes in friendship and peer relations, consistent with Piagetian growth of operational thinking in relationships. Youniss and Volpe emphasise the importance of understanding the actions needed to establish, as well as to maintain and dissolve relationships. Youniss and Volpe reached very similar conclusions

to those of Bigelow and Selman, also despite different methodology (Erwin, 1993).

Youniss and Volpe found that, younger children place emphasis on the quality of ongoing interaction, concrete reward versus cost features, and material or social benefits, whereas older children are more focused on intimacy, trust and respect (Erwin, 1993).

3.3 Stages in children's friendship descriptions

The consistent findings of the different theorists, produced by a variety of different methods, provide a fairly clear picture of different stages in children's friendship descriptions. Erwin (1993) provides the following synthesis of the findings.

The first stage, which lasts until age 7 or 8, is the "egocentric" or "situational" stage, during which concrete, external features of others are emphasised. At this stage, children are self-centred and concerned with immediate actions or consequences. They describe friends in terms of rewards and costs, nearness, looks, shared activities and possessions. At this stage, popularity can be boosted with an attractive toy or sweets (Rholes & Ruble, 1984).

The "sociocentric" or "normative" stage follows the "egocentric" stage, and is estimated to last until about age 11. At these stages, values, rules, and obligations of relationships become important. Sullivan's (1953) close chum relationships are important at this stage. Children describe their friends in terms of psychological dimension, and they acknowledge reciprocity in relationships.

For example, a 10 year old described a friend as "she shares more things" (Erwin, 1993).

The final stage is the "empathic" or "internal-psychological" stage during which, children become able to cope with more complex psychological characteristics of others than previously (e.g. easy-going, generous) as well as contrasts in people's character, such as being both shy and social (Erwin, 1993).

The cautious acknowledgement of a stage-like progression of children's concepts of friendship is an important common aspect of the theories of Bigelow, Selman and Youniss (Erwin, 1993). Moreover, these stages are consistent with Piaget's pre-operational, concrete-operational, and formal operational stages, which underscores the intimate relationship between cognitive and social development.

3.4 Socialising with peers

In order to sustain a relationship the child must be capable of consistent evaluations of the other person in spite of possible inconsistency in his/her behaviour (Erwin, p.90 1993). Such evaluations have been shown to be consistent by pre-school age - at least over a three-week period (Ladd & Mars, 1986) - and there are indications that the majority of pre-schoolers do form relatively stable reciprocal friendships (Gersham & Hayes, 1983). As children get older, friends become increasingly more important (Hill & Stafford, 1980) and as children become more able to handle conflicts, these friendships or peer relationships gradually become less vulnerable to collapse (Parker & Gottmann, 1989).

In terms of acquiring social skills through practice and experience, good pre-school experience can offer important benefits to children (Ironsmith & Poteat, 1990). However, it is not enough to enrol children in a pre-school programme. It is crucial that the child can take the opportunity to socialise with peers, and is receptive to the experience of such a programme to gain the social benefits. Shyness or social inhibition can limit the social benefits of pre-school experience or even make the experience counterproductive in terms of strengthening children's social skills. Feeling shy in a group of peers can contribute to awkwardness around other people, which in turn will promote unpleasant experiences, such as embarrassment and feelings of inadequacy.

Pennebaker et al. (1981), showed that shy and withdrawn children had a higher rate of absenteeism in comparison to more outgoing children. This difference was not accounted for by poorer health of shy children, as comparison of health records, before entering nursery school, revealed no significant difference between the shy and more outgoing children. Presumably the shyer children, who could arguably benefit most from the nursery school, also find the school environment more difficult to cope with than their more outgoing peers, resulting in ultimately less benefit (see discussion of shyness in section 4.2).

3.4.1 Boys and girls

There are two major influential forces on children's gender-specific behaviour in social situations. Firstly, the personal behaviour they bring to a situation as a boy or a girl, and, secondly, the way others react to them because of their sex (Erwin, 1993). It has been noted that parents treat sons and daughters

differently from the moment they are born, even though the behaviour of babies is not markedly different between baby boys and girls (Ban & Lewis, 1974; Will, Self, & Datan, 1976). However, sex-role stereotypes can be overcome. It has been demonstrated that children raised in non-traditional families that model atypical gender roles, such as a mother who is a pilot or a father who does most of the cooking and cleaning, are less likely to conform to traditional sex-role stereotypes. This is especially true for girls (Weisner & Wilson-Mitchell, 1990).

It has recently been suggested that boys and later the men they become tend to be more vulnerable than girls or women on various measures (Kraemer, 2000). To add "social insult to biological injury" (Kraemer, 2000) the typical attitude to boys is that they must be more resilient than girls are. Kraemer recounts how boys are more fragile at birth. Newborn girls are biologically equal to 4 to 6 weeks old boys, and baby boys are generally more at risk for various developmental and behavioural disorders. However, Kraemer continues, caregivers assume that from birth boys are tougher than girls are. He argues that biological and social constraints work together against male interests. The implications of Kraemer's argument are that parents need to be more aware of male sensitivity and why boys are so vulnerable to stresses that confront them.

Turning to children's social relations, Maccoby (1990, 1991) has suggested sex differences between social interactions of male and female subjects. Because children prefer same-sex partner to play with (e.g. Maccoby, 1988), it is important to examine the dynamics of same sex play networks for boys and girls.

Some ethologists have suggested that groups of boys develop from prior dyadic conflicts (Benenson, 1994) and indirect evidence suggests that harmful

dyadic physical interactions may be curtailed by a group (Strayer, 1980; Weisfeld, 1980). Much less is known about same sex relationships of girls (Benenson, 1994). From about age two, girls display more social approaches to girls rather than to boys to play with. Boys are gender neutral a bit longer, but by the age of three they associate more with other boys than with girls, and by age five, boys show a stronger same sex preference than girls (Erwin, 1993). Once children are playing in same sex groups, the games that evolve differ.

Boys, in contrast to girls, tend to play in larger groups and to play more physically active games than girls, who tend to play in smaller groups that are more intimate. Consequently, the social skills that are practiced and learned are very different between the sexes (Erwin, 1993). Girls get more practice in learning to respond to subtle social cues, where as boys are exercising organising skills for coordination of activities within larger systems. These skills are not necessarily mutually exclusive, but there is a difference in emphasis, which is partially due to variation in opportunities provided by small group play and activities in larger groups.

3.5 Pre-school experience

Childcare and pre-school attendance has two conflicting goals: to allow the mother or primary caregiver to go out to work, and to serve children's development. In England, the cost of private child-care varies considerably depending on the quality of the services. Thus, a conflict between availability and cost against expensive quality services can arise (Scarr, 1998).

What represents quality childcare is a complicated issue. Parents' personal characteristics have been correlated with the quality of care they select (Bolger and Scarr, 1995) and this complicates the interpretation of any childcare characteristics. Never the less, there is a clear international consensus among child-care researchers and practitioners on what constitutes quality childcare. "It is warm, supportive interactions with adults in a safe, healthy, and stimulating environment, where early education and trusting relationships combine to support individual children's physical, emotional, social, and intellectual development " (Scarr, 1999 p. 388). Influential factors relating to the quality of childcare include the ratio of children to caregiver, group size and qualifications of staff (Cost, Quality, & Child Outcomes Study Team, 1995; Scarr, Eisenberg, & Deater-Deckard, 1994; Whitebook, Howes, & Phillips, 1991).

The agreement of research on differences in childcare experience has not, however, shown persistent effects on the development of children from ordinary homes, whereas for children from socio-economically disadvantaged homes, quality child-care programmes are much more important and may supply missing elements in their lives (Scarr, 1999).

Several studies have shown that school children with early day-care experience display higher levels of social competence than those of their classmates who have not attended day-care before entering school (Anderson, 1989; Clarke-Stewart, 1991). Howes, Phillips and Whitebook (1992) demonstrated that young children who had attended high quality day-care were more likely to form secure attachment than children who had attended lower quality day-care, or no day-care, which in turn contributes to peer-relations that

are more competent. Moreover, a Swedish study (Anderson, 1992) showed that children who had attended high-quality day-care before the age of one, performed better in school when tested at age 8 and 13 than their peers who had entered day care at a later age.

Where high quality day-care is expensive, as it is in England, it is not likely that children from poor backgrounds go to such amenities. Children who attend low-quality day-care from an early age have been found to be more distractible, less considerate, and less able to work at a task than children who attend such low-quality day-care at a later age (Howes, 1990). To complicate matters even further, the families who can afford the quality care may be quite different from families who cannot afford the cost (Pence & Goelman, 1987).

Studies that have statistically controlled for family background reveal that overall quality of childcare has small, but reliable effects on language and cognitive development (Goelman and Pence, 1987; McCartney, 1984; Wasik, Ramey, Bryant, & Sparling, 1990). Social competence and adjustment are also affected by the overall quality of childcare (McCartney, et al., 1997). In view of long-term effects, Scarr (1998) maintains that, although small effects have been demonstrated on children's short-term development, from attending quality day-care, no long-term effects have been revealed, except on disadvantaged children who are at developmental risk at home. These children have clearly benefited from high quality day-care, and the longer the children attend such facilities, the better the results (Ramey and Ramey, 1992). This applies, in particular, to children with poor learning opportunities at home and without sufficient emotional support (McCartney, Scarr, Phillips & Grajek, 1985).

Much positive verbal interaction of caregivers with children has been associated with children being rated more sociable, considerate, intelligent, and task-oriented. Involved and responsive care giving has also been related to more display of exploratory behaviours, positive attitude (Clarke-Stewart, Gruber & Fitzgerald, 1994; Holloway & Reichhart-Erickson, 1989), and better peer relations (Howes, Phillips & Whitebook, 1992) as compared to uninvolved, unresponsive care giving.

3.6 Summary and conclusions

As children begin to socialise with peers, their social skills become important. Much in the same way as it was argued in the previous chapter that attachment is a dynamic relationship, which can be influenced by external as well as internal factors, so is friendship, a dynamic relationship.

Although theorists have approached the topic of children's friendships differently, they all reached highly similar conclusions, namely that younger children place emphasis on immediate gains, material or otherwise, while older children are more focussed on intimacy, trust and respect (Erwin, 1993). Although children of pre-school age are still egocentric to a large extent, they can form relatively stable reciprocal friendships. Maintaining and developing those friendships, however, requires social skills. A good pre-school experience has been shown to be especially beneficial to children from disadvantaged background and may compensate for missing elements in their lives. Pre-school attendance also offers an opportunity to practice and develop social skills with peers.

The social networks of boys and girls differ quite markedly at pre-school age. This may have implications for the sorts of social skills that they practice, especially in same sex groups. It has been said, however, that it is the appropriate application of social skills in specific situations that determine social competence (Foster, DeLawler & Guevremont, 1986). This implies that it is sensitivity to social cues and flexibility in social situations, which are most important to social competence.

*****

4

Inhibiting factors

In the previous chapter, the importance of socialising with peers was discussed in light of social development. Shyness is a widely used descriptor of certain behaviour amongst children in all languages, but when examined more closely a complicated picture emerges. It is important to know why children withdraw from socialising, if they are to be given the freedom to choose between solitude and socialising. Empirical studies of social withdrawal, inhibition and shyness will be reviewed in this chapter, and discussed in terms of their potential consequences for the child's development.

4.1 Social withdrawal.

Social withdrawal is the opposite of social interaction. The failure and reluctance to interact with peers, becomes a matter of concern when it is seen to threaten the child's social development. Harrist, Zaia, Bates, Dodge & Pettit (1997) assert that empirical support for problems associated with social withdrawal, placing children at risk for future adjustment, is tenuous at best. Never the less, reviews (Parker & Asher, 1987; Rubin, LeMare, & Lollis, 1990) suggest risk status of social withdrawal, but definitions of withdrawal pose some problems. Considerable confusion is evident in the literature on withdrawal.

Terms like social withdrawal, social isolation, sociometric neglect, sociometric rejection, shyness, inhibition, and social reticence have been used interchangeably (Rubin & Asendorpf, 1993 p.9).

Rubin and Asendorpf (1993) describe social withdrawal as an "umbrella" term subsuming any kind of behavioural solitude. They argue that, social withdrawal, inhibition and shyness are three separate, but intertwined, constructs, which all share the behavioural expression of solitude. Potential causes of that solitude are complicated, ranging from inherited factors of shyness to preference for playing alone (unsociable children). The resulting social status of children, however, can have detrimental consequences for their social cognitive development. A brief overview of the history of research on social status and solitude may help to clarify the concept of social withdrawal, before turning to the significance of social withdrawal for children's social cognitive development.

4.1.1 Historical background of research on social status and solitude

The first major inspiration for research and intervention in peer-relations was provided by the Viennese psychiatrist Jacob L. Moreno (1934). He designed sociometric techniques to attempt to understand the roles individuals play in their own social systems. Moreno's descriptions of social roles were consequently applied in an attempt to assist people in understanding the roles they played in interaction with others, and then to change them. Moreno (1934) called the sociometric techniques Psychodrama (Schneider, 1993). Moreno's sociometric techniques still form the core of present day sociometry used by researchers and many of his original concerns and limitations of the techniques are still topical.

Moreno (1934, (p. 1xxi)), distinguished between sociometric *tests* and

questions, which today are termed sociometric *choice* and *nominations*,

respectively. The limited use of asking individuals whom they would choose to

associate with, without knowing why, was acknowledged by Moreno from the

start. He originally supplemented his sociometric test with open-ended questions

about why the child would choose to associate with the nominated person, and

discusses developmental differences in children's reasoning (Moreno, 1960). The

sociometric test draws on children's choice of people to associate with, whereas

the sociometric questions or nominations use peers as informants of other

children's popularity and neglect (Schneider, 1993). Although children are likely

to nominate their friends, the implications of this will vary depending on the

children's age. At a very young age, children's friendships are more transient

than later, when their relationships become more intimate and chum ships evolve

(Sullivan, 1953).

Among the concerns Moreno had for sociometry, which still prevail, was

the sensitive issue of introducing sociometry to a small community. However, no

evidence has been produced to show any harm done to children by these

measures. Bell-Dolan, Foster & Sikora (1989), found no change in mood, or

consistent change in peer interaction, following the administration of sociometric

measures to primary school youngsters (Schneider, 1993). Hayvren and Hymel

(1984), support these findings with a sample of younger children.

Current development in sociometric techniques revolves around various

sub classifications of social status as is described in section 4.1.2. below.

Actively rejected children have been differentiated from those who are neglected

(simply not chosen although not actively mentioned as disliked), and those who are liked by some, but disliked by others, have been termed controversial (Coie & Kupersmidt, 1983).

In the 1970s, there was much interest among researchers in how children acquire popularity and acceptance that could be measured by sociometric means. This line of research, which was initiated by Oden & Asher (1977) led to an important, and subtle distinction between children who were *isolated by* peers (unaccepted) and those who were *withdrawing* socially from peers (e.g. Asher, Markell & Hymel, 1981).

During the 1980s, this distinction was further complicated by a sub classification of what had been referred to as isolated children into *rejected* and *neglected* children. This started a wave of research into the causes of acceptance and rejection, which led to yet another classification system. This system allowed sociometric isolation to be construed as either *active* or *passive;* active being equated with *rejection* seen by many negative nominations, whereas *passive* was seen as similar to *neglect* and revealed by few nominations of any sort. *Active isolation* became equated with *social withdrawal* and research data indicated a link between sociometric classifications and behavioural patterns. *Neglected* children were assumed to be *withdrawn*, whereas *rejected* or disliked children were assumed to be *aggressive*.

There is, however, very little sociometric evidence for the claim that children who rarely interact with peers are neglected. On the contrary, growing evidence suggests that children who are described, as passive, sedentary, loners

are likely to be actively disliked by peers as they get older, rather than be passively neglected (Younger, Gentile & Burgess, 1993).

Rubin and Asendorpf (1993) underscore that social withdrawal is a behavioural term that should not be confused with any sociometric classification or the term social isolation. Withdrawal, they assert, refers to staying away from the peer group whereas isolation refers to the peer group staying away from the individual (Rubin & Asendorpf, 1993). Indices of withdrawal from the peer group have, however, been significantly associated with indices of isolation by the peer group (e.g. Hymel & Rubin, 1985; Rubin & Mills, 1988). In summary, Rubin and Asendorpf conclude: "*social withdrawal is neither sociometric neglect, nor sociometric rejection, nor social isolation. ...*social withdrawal refers to a behaviour best described as *solitude.*" (Rubin & Asendorpf, 1993 pp. 11-12).

In more recent studies of social withdrawal, such as those of Harrist et al. (1997) four subtypes of social withdrawal in early childhood have been identified. These subtypes of withdrawal are shy and reticent behaviour (e.g. Coplan, Rubin, Fox, Calkins, & Stewart, 1994; Gottman, 1977); passive and active solitary behaviour (e.g., Rubin, 1982a); avoidance behaviour (e.g. Asendorpf, 1990); and sad or depressed behaviour. To illustrate some important differences between different types of social withdrawal in relation to the child's social development, the four subtypes identified by Harrist et al (1997) are briefly described as follows.

4.1.2 The four subtypes of social withdrawal

Harrist et al. (1997) suggest that some types of withdrawal may place children more at risk than others and failure to identify the subtypes may be responsible for underestimation of the risk of social withdrawal for future development.

Some socially withdrawn children seem to prefer to play alone without necessarily lacking the skills to interact competently (Jennings, 1975) or have high avoidance motivation (Asendorpf, 1990). These children have been labelled *unsociable,* as they do not mind playing with other children, but would rather not. They are distinguished by non-withdrawn groups, only by elevated rates of neglect and high rates of solitary behaviour during free play. As children get older, withdrawn behaviour carries connotations that are negative and put the children at risk for later peer rejection. (Rubin & Lollis, 1988; Younger & Piccinin, 1989).

A second subgroup of children who appear withdrawn are those who are socially unskilled. They want to play with other children, but their peers do not allow them to play. They may socialise at an average rate at first, but are shunned by peers and eventually interact at below average rates. These are the *active-isolates* (Rubin & Mills, 1988; Younger & Daniels, 1992), and are characterised by high approach motivation and low avoidance (Rubin & Asendorpf, 1993). This conception of *active isolates* is largely based on observation of aggressive children who spend much time in solitary play (e.g. Rubin & Mills, 1988). Present studies of rejected or withdrawn children support this subgroup of social withdrawal (Boivin & Begin, 1989; Cillessen, van Ijzendoorn, van Lieshout, &

48

Hartup, 1992). This group seems to have the most marked level of social dysfunction, of all the groups, and a sociometric profile of low popularity and high rejection (Harrist et al., 1997). These children's understanding of personal interaction, as witnessed by their actions, has been found to be poor (Harrist et al. 1997).

The sad or depressed children are described by kindergarten teachers as self-isolating, timid and immature. They are possibly experiencing some social difficulties, which is apparent in sociometric ratings. In kindergarten, these children tended to be rejected and not very popular, and in first through third grade, peers disproportionately neglected them. This profile is consistent with sociometric status of depressed schoolchildren (Harrist et al., 1997). Contrary to studies on depression, however, the social information-processing patterns did not deviate from the norm for the sad or depressed children although this may be due to methodological differences in the measures used by Harrist et al (1997). Among the sad or depressed withdrawn children were children who by kindergarten were rejected and later neglected.

The final group of withdrawn children identified by Harrist et al. (1997), the passive or anxious children, or the temperamentally shy, were not rejected in kindergarten but were described by teachers as timid, anxious, and self-isolating, which suggests they were experiencing an approach/avoidance conflict. The authors speculated that the peer neglect might not have been apparent because of the young age of the children, considering that peer neglect is more prevalent in later grades (Bukowski, 1990; Younger & Boyko, 1987), or because the sample was passive as well as anxious. The temperamentally shy children have been

found to under attribute hostility both in kindergarten and subsequent years compared to control group and the active isolates, indicating a unique view of social provocations (Harrist et al., 1997).

Harrist et al. (1997) conclude that failure to recognise subgroups of social withdrawal in the past, may have caused underestimation of social problems associated with withdrawal. Specifically, they assert that unsociable and passive-anxious children experience few problems compared to other subtypes of socially withdrawn children. These children include the temperamentally shy children.

4.2 Shyness

Shyness is a form of withdrawal that involves social evaluative concerns, primarily in social settings (Rubin & Asendorpf, 1993). The root cause of social inhibition, shyness or wariness can be in the biological make-up of the child (Kagan, 1988).

Genetic studies suggest that heredity plays a larger role in shyness than in other personality traits (Plomin & Daniels, 1986). Twin studies reveal a strong correlation of shyness in monozygotic twins while this correlation is much lower in dizygotic twins. Never the less, only a small temperamental bias is inherited by the 10 - 15% of children who innately have the potential to become shy, and the right environmental context can profoundly change that (Kagan, Reznick & Snidman, 1987).

In a 6-year follow-up study of extremely inhibited and uninhibited children, Kagan, Reznick and Snidman (1988) found that the inhibited children still displayed inhibited behavioural patterns and a high level of physiological responses to mild stress 6 years later. Physiological responses related to

childhood shyness included allergies, which persisted into middle childhood amongst the inhibited children, while virtually no allergies were found amongst the uninhibited children. This could be explained by the overactive "stress circuit" since one of the effects of cortisol is to suppress the immune system, which in turn is implicated in the development of allergies (Kagan et al. 1987). Support for this theory is provided by more recent data (Bell, 1992), which associates trait shyness and depression with above average rates of atopic allergic illnesses. A specific link was also made between shyness and hay fever.

The "stress circuit" has been associated with depression as well as shyness. The common physiological factors between the uptight monkeys and depressed people led Suomi (Suomi & Kraemer,1981) to study the effect of antidepressant drugs on monkeys. He found that anxious monkeys who were separated from their peers following the drug treatment, played and explored more than their untreated counterparts. This is not to suggest that shy children should be treated with anti-depressants, however it does provide some understanding of the chemical activity involved, suggesting that norepinephrine activity in the brain is raised by separation.

From an evolutionary point of view, shyness has an important function for the very young who are wary of strangers. The stranger anxiety in babies serves to protect them and is an early form of shyness. Buss (1986) argues that fearful-shyness, originates in the infant's stranger anxiety and can be associated with biological factors. He differentiates between fearful shyness and self-conscious shyness based on cognitive development.

4.2.1 Cognitive bases for shyness

The self-conscious type of shyness requires that individuals are aware of themselves as a social object; this kind of shyness can thus only develop when the child has outgrown egocentricity. Buss (1986) maintains that self-consciously shy children are more sensitive than non-shy children are to the consequences of their own behaviour and personality on others. Shyness, according to Buss, is a form of hypersensitivity to the social world as the child begins to understand that others may have an opinion of them. Buss argues that this development takes place around the age of 4 to 5 years. This conclusion is supported by Zimbardo and Radl (1981), who claim that middle-class children, as young as 4 years old have a clear idea of what it is like to be shy.

Crozier and Burnham (1990) support Buss's theory of fearful shyness preceding self-conscious shyness. They interviewed 60 children aged between 5 and 11 years old and found a clear age-related increase in reference to self-consciousness and embarrassment. Crozier and Burnham, however, noted references to fearful shyness across the age range of children in their study. This led them to conclude that rather than one form of shyness replacing the other, children's understanding of shyness expands as they get older. As to Buss' claim of finding self-conscious shyness amongst children as young as 4-5 years of age, Crozier and Burnham disagree. They maintain that children need to be 7-8 years old to develop self-conscious shyness. They also suggest that, although Buss is justified in distinguishing between the two forms of shyness, it is premature to postulate two different forms, as further research is needed to explore the development of shyness in children. However, it is most important to implement

intervention in such a way that it works for either scenario, e.g. either attempt to avoid stranger anxiety to become fearful shyness or counteract the development of self-conscious shyness in an attempt to avoid shyness leading to social withdrawal.

It seems appropriate to attempt this through mental processes as all these definitions focus on thinking, or fearfulness, and self-consciousness. Moreover, the negative consequences of these thoughts rest on judgement based on perceptions. These factors will be discussed in the following section.

4.2.2 Shyness, Peer Acceptance and Social Comparison

Studies of shyness have tended to focus on the importance of social exchange for normal growth and development. A certain amount of shyness is necessary to allow the child to assess situations before a commitment to a course of action (Zimbardo & Radl, 1981). However, shy children and adolescents probably have fewer and less rewarding peer relationships than more outgoing individuals (Richmond, 1984).

When children do not interact sufficiently to receive important feedback about their performance in comparison to others, it can result in unrealistic expectations for themselves, and consequently frequent perceptions of failure. Repeated perception of failure is bound to feed a poor representation of self, which in turn can be crucial to self-perpetuating negative cycle of interactions.

As postulated by Festinger (1954), the role of social comparison is to allow the person to get an accurate evaluation of their abilities (Erwin, 1993). Perhaps more important though is the role of social comparison to allow the individual to get a confirmation of how adequate, rather than true, their opinions

and abilities are (Goethals & Darley, 1977). Peers provide important information about standards of behaviour through communication and reinforcement (Hartup, 1983).

Moskowitz and Schwartzman (1988) demonstrated that children who were identified as withdrawn in primary school were consistently underestimating their own performance and exaggerating their poor achievement by adolescence. This could be explained in terms of lack of social comparison, either directly or as a result of lack of social interaction and therefore of limited opportunity for social comparison.

By the time children are 9 to 12 years old, they tend to regard their quiet peers unfavourably (Richmond, Beatty & Dyba, 1985). Consequently, these children are likely to have fewer and less rewarding relationships (Erwin, 1993). This may start off a vicious circle for the more quiet children who will be less popular amongst peers than the more outgoing children, and therefore vulnerable to becoming lonely (Rubin & Mills, 1988).

4.3 Loneliness

Loneliness is closely related to shyness and social rejection (Asher & Wheeler, 1985). It has been shown to be a major risk factor for psychological disturbances and broad-based morbidity and mortality (Cacioppo, Ernst, Burleson, McClintock, Malarkey, Hawkley, Kowalewski, Paulsen, Hobson, Hugdahl, Spiegel & Berntson, 2000).

Loneliness is often considered more a problem of adolescence than childhood. This is probably because loneliness peeks in teenage years and

represents one of the most commonly reported problems of adolescence (Brennan, 1982; Erwin, 1993). Around 10% of children in elementary school are not nominated as friends by anyone in their class, and 10-20% are actively rejected by peers (Erwin, 1993).

Asher, Parkhurst, Hymel & Williams (1990) argue that children's experience of loneliness is in many ways the same as that of adults. They maintain that children have a fairly well developed conception of loneliness by the age of 5 and 6 years. Others suggest that the pain of social isolation can be experienced by children as young as 3 years old (Erwin, 1998).

Once loneliness is established, it can become self-perpetuating because of the apparent negative attitude of lonely people, which does not make them very attractive to interact with. Along with loneliness comes the tendency to make negative attributions about self and others, low self-esteem, self-blaming tendency and low expectations from social interactions (Erwin, 1998).

It is the lonely child's experience of relationships that is most important (Erwin, 1993). These children do not necessarily have fewer or less rewarding relationships than other children, but they feel they do. In a study of friendship quality and early school adjustment, Ladd, Kochenderfer & Coleman (2000) report a positive correlation among kindergarten children between disclosing negative affect and loneliness coupled with higher levels of self-disclosure in friendships. These results present a picture of the lonely child as someone who is not just disclosing more than the average playmate, but is talking about negative feelings all the time, which makes the further finding of gains in loneliness over the school year not that surprising.

Ladd et al. (2000) found that boys who reported high levels of conflict in their friendships became lonelier over a year than boys who did not report such high levels of conflict in friendships. The authors speculated that boys might be more dependent on friendship ties than girls because they have fewer close dyadic relationships and conflicts in these close relationships may therefore take a greater toll on boys. An alternative explanation may be that boys have greater difficulty in resolving conflicts than girls (Parker & Asher, 1993), which would also explain their greater risk for loneliness because of conflicts with friends.

Persistent loneliness is sometimes classified as either state- or trait-loneliness (Jones, 1989) and emotional or social loneliness (Weiss, 1989) in recognition that both constitutional factors (e.g. shyness) and social or situational (e.g. social withdrawal) factors can cause loneliness. Physiological correlates of loneliness, including relatively high amount of cortisol in lonely people's saliva, suggest a higher discharge of corticotrophin releasing hormone and further physiological involvement (elevated activation of the hypothalamic-pituitary-adrenocorticol axis). Thus, chronic loneliness can affect people's physiology as well as behaviour (Cacioppo et al., 2000). Because loneliness starts off in childhood and peaks in adolescence, preventive measures or measures to empower people to cope more effectively with loneliness may be most effective if implemented at an early age.

It has been demonstrated that socially embedded individuals with satisfying social relationships not only tend to have a more positive outlook on life, but also have stronger autonomic activation when confronting acute

psychological challenges; their restorative behaviours are also more efficient than their chronically lonely counterparts (Cacioppo, et al., 2000).

4.4 Summary and conclusions

Solitary behaviour, whether classified as shyness or withdrawal, puts children at risk for loneliness, which in turn is a risk factor for further psychological difficulties. Even unsociable children who choose to play on their own are marked by elevated rates of neglect – which may lead to serious consequences of loneliness. Thus, despite various ways of conceptualising and classifying social withdrawal, there is a consensus amongst researchers that social withdrawal poses adjustment risk to children in terms of social development.

It is important to acknowledge the potential danger in poor peer-relations and social isolation for future psychological well being. It may not be as important to identify the exact social status of a child, as it is to ensure that the child possesses the necessary skills to counteract the tendency to withdraw and to practise the application of such skills. One way to attempt this is to support the development of cognitive tools and train children to use them.

<div align="center">✳✳✳✳✳</div>

5

Understanding others

How and when children understand other people, has received much research interest in recent years, especially in developmental psychology in the area of "theory of mind". In order to relate effectively to other people, children must be able to understand, to some extent, other people's perspective, motives, and reasons for acting as they do. In this chapter the theorising of Piaget and Vigotsky, as it applies to children's social interaction, will be considered, as well as the major topics of relevance to social interaction from the research into theory of mind.

5.1 Developmental perspectives on Social Interaction

Researchers in the 1960s and 1970s explained young children's aggressive, self-centred, and less co-operative behaviours in terms of ego-centric thinking (Shantz, 1983). In fact, psychologists still explain differences in social behaviour by association with inferred level of abilities to take other people's perspective on one hand and on the other to understand the impact of one's own behaviour for oneself and others (Dodge, 1986; Rubin & Krasnor, 1986; Selman, 1985; Shantz, 1983).

Research into the importance of social interaction for human development is rooted in the writings of Piaget and Sullivan (Rubin & Asendorph, 1993) on the cognitive development of children. In Piagetian terms, the child's ability to decentre and take other people's perspective is the crucial developmental step in this respect. This marks the termination of Piaget's 'egocentric' stage.

The child begins to understand that other people have their own view of the world, which may be different to their own. Psychologists have argued over the age at which children outgrow egocentricity, some suggesting that the movement between the developmental stages need not be conceived of in such absolute terms of presence or absence of crucial phenomena (Selman, 1980).

Spontaneous play requires symbolic thinking and as such may be considered to be a cognitive activity (Piaget, 1967), which contributes to the child's understanding of the world around him/her much in the same way as language development does (Rosenblatt, 1977). According to Piaget (1971) the child requires quite advanced symbolic abilities to use any kind of words at all. More recent research, however, challenges this view by stating that the earliest use of words is usually in a social context, (e.g. 'bye-bye', 'there', 'no') and only later are words used to refer to children's own plans (Gopnik & Meltzoff, 1985; Tomasello & Farrar, 1984). This is consistent with Vygotsky's ideas of the importance of social interaction for children's social development and in particular the development of language and thought.

While Piaget presents us with the child as a solitary little scientist, Vygotsky stresses that development is inseparable from human social and cultural activities (Rogoff & Morelli, 1998). The major difference between the two is that

while Piaget believed that development preceded learning, Vygotsky argues for the opposite, namely that learning precedes development (Vygotsky, 1962).

Vygotsky and Piaget disagreed on the nature and development of speech. Specifically, Vygotsky presumed that a child's mind was inherently social in nature, including egocentric speech. He proposed that children learn egocentric speech from others and use it to communicate. Those are the core concepts of Vygotsky's theory of child development (Vygotsky, 1962).

Vygotsky conceptualised thought as inner speech, separate from language. Thought (inner speech) according to Vygotsky is rooted in the biological development of the child, whereas language is rooted in the social milieu of the child (Solso, 1991). This is not to say that language and thought are unrelated, they intertwine once the child comes to realise that every object has a name. Thought and language then become inseparable and the internalisation of language causes thoughts to be expressed in inner speech (Vygotsky, 1962). Luria (1961, 1976), following Vygotsky's lead, describes the role of inner speech in regulating behaviour. Initially the regulative speech is social, the parent or guiding adult tells the child what to do. Later the child does the talking to guide own behaviour around 3 to 4 years of age, and finally the guiding talk becomes covert private speech at round 6 years of age. Bivens and Berk (1990) and Harris (1990) have supported this estimate.

According to Vygotsky (1978), social interaction is the source of the child's knowledge of the world, and all human abilities are first used in an interactive context before being used alone. An important concept in this respect is Vygotsky's *Zone of Proximal Development* (Vygotsky, 1978) that refers to how

children can solve problems, which are beyond their individual cognitive problem solving abilities, provided they work on the problem with the guidance of an adult or a more capable peer than themselves.

The tutorial interactions between children and a guiding adult, in solving a task the child could not manage alone, have been termed *scaffolding* (Wood, Bruner & Ross, 1976, cited by Wood & Wood, 1996). The formulation of this metaphor was an attempt to identify the nature of the guidance and collaboration in the interaction at Vygotsky's *Zone of Proximal Development*. The child was not to be left to struggle alone with too complicated problems, while the task needed to be sufficiently challenging to engage the child and to encourage initiative in task activity (Wood & Wood, 1996).

The idea of scaffolding has been developed, criticised and extended since its original formulation. Criticisms include accusations that the nature of the relationship between adult and child has been ignored and that the concept is limited to a single, isolated task but says little about the nature of communicative mechanisms involved (Wood & Wood, 1996). The nature of what is learned or internalised during the interaction is still a matter of debate. Rogoff (1986, 1990), in an extensive review of both adult and peer tutoring, has identified the following general features of effective collaboration:

1. Tutors provide a bridge between existing knowledge and demands of the task. They can direct the learner to apply relevant knowledge.

2. With instructions, tutors can provide a structure to support problem solving and help learners keep the overall goal of the activity in mind.

3. By providing guided participation, the tutor ensures that the learner plays an active role in the learning process.

4. The responsibility goes from the tutor to the learner.

5. Guided participation can happen spontaneously in everyday activities, such as 'helping' parents or in playful encounters.

These seemingly obvious and self-evident features of everyday interactions are the key in Vygotsky's account of development and serve to transmit culture from one generation to the next (Wood & Wood, 1996). It can be argued that Vygotsky and Piaget agreed that behaviour or external actions are transferred into internal psychological functions or processes, whereas they did not agree on how this happens. Contrary to Piaget's schema development via assimilation and accommodation, Vygotsky's position on the origin of internalisation was that it consists of internalised social, interpersonal relationships (Solso, 1991).

This position, which is similar to that of Vygotsky's contemporaries in France, Emile Durkheim and Pierre Janet, is important for developmental psychology, as children tend to use the same form of behaviour in relation to themselves as others have expressed toward them (Solso, 1991). This underscores the importance of considering theory of mind, or how children understand other people in relation to their behaviour.

5.2 Theory of Mind

The development of theory of mind in childhood is currently one of the most active research areas in developmental psychology. The term refers to the inferences we make in our interactions with other people about their feelings, desires, motivations, intentions, or other mental states (Slater & Muir, 1999). It is the study of our understanding of other people. How and when children develop a theory of mind is a matter of debate although it is now widely accepted that most 4-year-old normally developing children have acquired an understanding of mind (Cutting & Dunn, 1999; Erwin, 1998; for reviews see Astington, 1993; Mitchell, 1997).

Three fundamental assumptions comprise the cornerstones of an adult's common-sense theory of mind. Firstly, the *existence assumption* is the belief that the mind exists despite its activities being invisible and private. Secondly, the *component assumption,* or the belief that the mind consists of mental states and processes, includes intention, knowledge, emotion, desire and belief. Finally, the *causality assumption* is the belief in cause and effect relationship between an individual's mind, external environments and actions (Lee & Homer, 1999). These assumptions are used to make predictions and mentalist explanations. People assume that if other people have seen something, they know about it; if other people want something, they will try to get it and; if other people have been misinformed (hold a false belief) they will still act on it because they do not know it is incorrect – if they did it would be rejected.

The difficulty in examining young children's theory of mind lies in its privacy. Inferences are made based on overt behaviours such as verbal reports about mental activities or covert knowledge (Lee & Homer, 1999). The statements children make must be considered in terms of their cognitive development as well as circumstantial factors. If a child has not outgrown egocentricity, the child may say that another child would like something based on own desire rather than inference about the other child's desire. The child may report past experience rather than make a fresh mental judgement or, the child's performance on a research-test may be affected by boredom, fatigue, information overload or shyness.

5.2.1 Some components of children's theory of mind.

The mind is composed of several mental processes and states such as perception, beliefs, feelings, desires, intentions, and resolutions (D'Andrade, 1987). Each of these states has several characteristics, which are important to consider in relation to children's acquisition of theory of mind. The locus of cause can be either internal, such as feelings or external like perception. Mental states can be self-induced or affected by an external force, and they can be controllable or not. Moreover, mental states can be inter-linked and form a complex web of causal relationships (Lee & Homer, 1999).

The ability to represent another person's false beliefs has been one of the central issues in the debate on the timing of children's acquisition of a theory of mind. This has even been considered by some as the "marker" or "litmus test" of children's theory of mind (Wellman, 1990, cited by Lee & Homer, 1999). In

order to grasp another person's false belief, the child must realise that his or her own belief may differ from that of another person's. This can only be done if a fundamental understanding of the existence, component, and causality assumption exists (Lee & Homer, 1999). To grasp someone else's false belief, the child must be aware of what is falsely represented in the other person's mind, what leads to such a false belief (e.g. ignorance), and what the consequences can be (e.g. misguided behaviour).

The understanding of beliefs and false beliefs is, however, only one milestone of many in children's long journey towards a mature folk theory of mind. This milestone, although much emphasised, is no more important than understanding of desire, knowledge/ignorance, perception and intention (Lee & Homer, 1999).

Closely related to false-belief understanding is the appearance-reality understanding, that is to know that an object or person may appear to be one thing although in reality it is another (Flavell, 1986, cited by Lee & Homer, 1999). This ability also requires the child to hold two conflicting ideas in mind simultaneously that is what the object appears to be and what it really is. The two, however, require a different understanding of the mind. The source of misconception in a false-belief situation is ignorance or a lack of knowledge, while in the appearance-reality situation the source is perception. Flavell (1988) estimated appearance-reality understanding developed around 4 years of age, as 3-year-olds were found to have great difficulty in accomplishing this task. These conclusions, however, have been strongly challenged by studies that are more recent. By altering context, ecological significance and language demands of the tasks, other

researchers have found that children considerably younger than 4 years old could successfully complete an appearance-reality tasks (Sapp, Lee, & Muir, 1997; Siegal & Share, 1990; Rice et al. 1997, cited by Lee & Homer, 1999).

Knowledge understanding is another important component of theory of mind. However, this is a complicated matter and related to several other aspects of the understanding of mind. Firstly, understanding of knowledge requires an understanding of the difference between knowledge and ignorance or the reason for knowing or not knowing. Secondly, the child needs to understand the representation of the content of one's own and others' knowledge, that is the representation of belief or false belief and, finally, the child has to acquire some understanding of the origin and process of knowledge acquisition.

Pre-school children have most difficulty with the last, knowledge acquisition. They often fail to pinpoint when, how and where they have gained a particular piece of information, in spite of correctly reporting whether they have the information or not (Perner & Ogden, 1988; Taylor, 1988, cited by Lee & Homer, 1999). This difficulty may, however, not be limited to children. Adults may also find it difficult to explain how they know certain things, but empirical evidence is scarce on this issue (Lee & Homer, 1999). This issue is complicated because knowledge can be gained by inference, that is, thinking and reasoning can lead to knowing, hence, specific knowledge does not always come from an isolated source (Sodian & Wimmer, 1987). This aspect of understanding of knowing may extend well beyond childhood because the cognitive tasks required involve extensive learning (Lee & Homer, 1999).

Understanding of desires is important in relation to theory of mind, as it links mind and action (Lee & Homer, 1999). Even very young children understand that desire drives actions. Most 2 year olds can use the word "want" effectively to get what they desire and thus demonstrate their understanding of the causal nature of desires (Wellman, 1990). They find it difficult to predict people's actions based on their beliefs, as they tend to assume that people's acts are based on people's desires but not on beliefs. Two year olds are desire-psychologists, whereas by age 4 they become belief psychologists (Lee & Homer, 1999), that is, children above 4 years of age and adults attach greater importance to people's beliefs than their desires in causal reasoning.

5.3 Summary and implications for therapy

Clearly, the child needs to be able to decentre, in Piagetian terms, in order to relate effectively to other people and build dynamic relationships. Although Piaget put this development at age 6 to 7 years, it is widely accepted that the child acquires this ability much earlier or at a similar time as a theory of mind, that is around the age of 4 years. While theorising about decentring has focused on perspective taking, such as seeing another person's point of view, theory of mind is more related to mental states, for example, the understanding of deception, beliefs and knowledge.

Vygotsky's ideas of internal speech are directly related to the therapeutic models of self-talk, as will be seen in the chapter on therapy. Moreover, the zone of proximal development and scaffolding can be mapped on to the interpersonal

cognitive problem solving (ICPS) techniques where ICPS is arguably a form of scaffolding.

Given that effective socialising rests on some understanding of self as well as others, the key to improvement may be found in the interpretation of the information available. Once theory of mind is established, and children realise that other people may have a different view of situations from themselves, and that other people may have different desires and beliefs from their own, the process of interpreting the information available in the situation comes into play. Social cognitive processing is instrumental in determining whether experiences are perceived as positive or negative events, and whether people's actions are understood as kind or as mean gestures.

*****

6

Social information processing and social adjustment

Obviously, we react differently if we believe there is malice involved than when we believe people are concerned about our well being. Similarly, we react differently to people who clearly like us than to people who dislike us. These interpretations are subjective and cognitive so there is seldom one correct answer. There is an important qualitative difference in having a choice of actions available in a given situation and not to have a choice.

6.1 Developmental prerequisites for social information processing.

To process social information, certain aspects can only be relevant if skills such as perspective taking and empathy have been acquired. Piaget's (1965) concrete operational period marks the acquisition of perspective taking skills and empathy, which makes them relevant to social behavioural outcomes, although irrelevant until the child reaches the concrete operational stage. Piaget, estimated this to happen around the age of 6 through 8 years but consequent research has demonstrated that considerably younger children are capable of perspective taking, (e.g. the line of research led by Donaldson, 1979). Referential communication skills, which require perspective taking, correlate positively with

popularity in kindergarten and second grade, but not in fourth and sixth grade (Rubin, 1972).

The degree of relevance or strength of relationship between social information processing and social adjustment may change developmentally as children get older. This is supported by findings that perceived social competence and peer status are unrelated for very young children (Harter & Pike, 1984), positively related for third-grade children (Kurdek & Krile, 1982; Ladd & Price, 1986), and even more strongly related for fifth-grade children (Ladd & Price, 1986). Developmental changes noted in the research literature about social information processing and social adjustment include decline of physical aggression while verbal aggression tends to rise with age (Block, 1983; Egeland, Kalkoske, Gottesman & Erickson, 1990; Parke & Slaby, 1983). It has been suggested that socially maladjusted children lag developmentally behind in social information processing, relative to their better-adjusted peers (Garber, 1984; Sroufe & Rutter, 1984). This suggestion is supported by the findings that maladjusted children are immature in social cognitions for their age (Crick & Ladd, 1990; Dodge et al., 1984; Dodge & Newman, 1981; Feldman & Dodge, 1987).

A vast majority of studies into social information processing are conducted on children at elementary school age, especially 9-12 year olds. Less is known about the relationship between social information processing and social adjustment among pre-school through second grade children. Social skill training efforts have shown that improving social information processing improves social adjustment (e.g. Bierman, 1986; Bierman & Furman, 1984; Guerra & Slaby,

1990; Ladd, 1981; Mize & Ladd, 1990; Oden & Asher, 1977). It is important to nurture this part of children's development and to be alert to factors that inhibit or stifle social cognitive development, in order to prevent later social maladjustment.

6.2 The Role of Social Cognition in Children's Relationships

"...the importance of social cognition in children's peer relationships can only be understood in its dynamic social and historical context." (Erwin, 1993 pp.41). How the information perceived and experienced is processed, interpreted, and expressed rests on cognitive processes. Although most studies in this area are conducted on school aged children, it is reasonable to expect some developmental changes. Hence, the child's development will be considered in this respect. How peers respond to a child and how the child interprets their responses is likely to influence the child's social self-perception. This is clearly illustrated by the shy child who: "rather than acting so as to gain approval, the shy person acts so as to minimise disapproval" (Zimbardo & Radl, 1981, p.81). Crick (1991) demonstrated that children, who were identified as withdrawing from peers, expected to be disliked by their peers and to be excluded from peer activities.

The importance of either social cognition or how a situation is interpreted is well demonstrated by the bully-victim relationship. Slee (1993) found that children who were identified as bullies or victims predicted very different consequences of aggressive action, revealing a significant qualitative difference in these children's social cognitive skills. While bullies believed aggressive action would "get them into trouble," the victims believed such response would only escalate the conflict by encouraging retaliation. Neither party may choose an

aggressive action in a given situation but the reasoning and motive behind the decision are very different. Moreover, 'Bullies' were shown to lack a range of non-aggressive solutions. Consequently, a bully might chose an aggressive action despite "getting into trouble" because of lack of alternative solutions (Slee, 1993).

Alternatively, some bullies may well be skilled manipulators (Sutton, Smith & Swettenham, 1999) who choose to make other people's life miserable in spite of a high level of social cognitive abilities.

6.3 Research into children's social cognition

Psychologist's interest in human problem solving goes at least as far back as Dewey's (1910) thesis "How We Think" (cited by Pellegrini & Urbain, 1985). The connection between effective interpersonal problem solving and social and emotional adjustment was not made until much later. Jahoda (1958) was one of the first people to suggest this connection by emphasising the necessity of recognising and admitting a problem and, consequently, consider possible solutions for decision-making and action. Early investigation on problem solving evolved around non-social problems, such as puzzles, mazes and anagrams.

As with general problem solving research, investigation of children's social-cognitive abilities evolved from methods and theories in non-social cognitive developmental domains. Early investigators examined global cognitive constructs, but as information-processing theories (e.g., Newell & Simon, 1972) became more popular, major changes in the study of social cognition in children followed (Crick & Dodge, 1994). One important change in the direction of investigations in the field was the increased focus on specific cognitive tasks

relevant to children's social interaction. Moreover, following this change of focus, models of children's social information processing responsible for social behaviour emerged (e.g., Dodge, 1986; Dodge Pettit, McClaskey, & Brown, 1986; Rubin & Krasnor, 1986).

In his much cited social information-processing model, Dodge (1986) suggests four mental steps between social situational cues to competent social behaviour:

1) Encoding of situational cues,

2) Construct a representation and interpretation of the cues,

3) Search for response from long term memory and finally

4) Select the most favourable response for enactment.

A reformulation of this model, presented by Crick & Dodge in 1994 (see fig. 1.), is considerably more extensive and includes the possibility of *constructing* a response, rather than selecting a response from long-term memory. Such models provide a useful heuristic for conceptualising where and how intervention influences children's social adjustment.

In the reformulation of Dodge's model, Crick and Dodge (1994) attempted to account for non-cognitive as well as cognitive factors. This revised model includes parallel processing. Crick and Dodge (1994) conclude: "the parallel processing hypothesis requires one to posit feed-back loops across processing steps but that the sequential portion of the proposed model has a great heuristic value for understanding the processing of a single stimulus".

FIGURE 1. SOCIAL INFORMATION-PROCESSING MODEL. CRICK & DODGE (1994).

5. RESPONSE DECISION
● response evaluation
● outcome expectations
● self-efficacy evaluation
● response selection

4. RESPONSE ACCESS OR CONSTRUCTION

DATA BASE
● memory store
● acquired rules
● social schemas
● social knowledge

3. CLARIFICATION OF GOALS
● arousal regulation

6. BEHAVIORAL ENACTMENT

PEER EVALUATION AND RESPONSE

2. INTERPRETATION OF CUES
● causal attribution
● intent attribution
● other interpretative processes
  - evaluation of goal attainment
  - evaluation of past performance
  - self-evaluations
  - other-evaluations

1. ENCODING OF CUES
(both internal and external)

Crick and Dodge's social information processing model illustrates how experience, acquired rules, schemas, and social knowledge influence most aspects of the interpretation of social events.

6.4 Social cognitive processing

Clinical psychological constructs such as *working models of relationships* (Bowlby, 1969) may guide interaction, but it is likely that children access a variety of *heuristics* to make decisions in social situations. Heuristics are known

to simplify cognitive tasks, but can also result in reasoning errors (e.g. Kahneman & Tversky, 1973; Ross, Lepper, Strack, & Steinmetz, 1977).

Most of social information processing is believed to be automated and not conscious. A comparison of children's automatic and reflective social information processing revealed that some socially maladjusted children (i.e., rejected, non-aggressive boys) had a deficit in automatic processing while they performed adequately on reflective processing tasks (Rabiner, Lenhart, & Lochman, 1990). Considering that much of social information processing studies use reflective conditions, such a deficit would not be identified (Crick & Dodge, 1994).

Highly emotionally arousing domains such as religion, interpersonal relationships, and other issues of great value have been shown to trigger "pre-emptive" or script-based processing. Such processing is automatic, irrational and possibly classically conditioned (Costanzo & Dix, 1983). Such processing has been associated with social maladjustment (Dodge & Somberg, 1987; Crick & Dodge, 1992).

Knowledge about developmental changes in social information processing is limited to date. However, two general sources of developmental change in children's processing have been identified: the development of cognitive skills through experience and maturation and, secondly, the increased capacity for speed of processing (Miller, 1989).

6.4.1 Individual differences in social cognitive processing

Existing research on social information processing tends to focus on individual differences rather than developmental changes due to normal growth and development. If social information processing develops in a similar manner to non-social information processing, then structure and organisation of children's knowledge will change to enhance processing (Chi & Koeske, 1983), and children would be expected to show increased processing ability in familiar domain areas. For example, children who have had much experience with new peer groups might process information about initiating friendship quickly and skilfully.

Conversely, as children gain experience and their social information grows, mental structures such as working models (Crittendon & Ainsworth, 1989) also develop and account for more rigidity. Such structures become increasingly resistant to change, as they become more automatic. These structures influence future processing and interactions and explain consistency in behaviour over time. Such consistency reflected in reactions and behaviour is experienced by others as personality and, partially, explains the self-fulfilling prophecy effects, inhibiting intervention in later life. All this underlines the importance of early intervention if negative cycles are to be broken or stopped from becoming self-perpetuating structures.

6.4.2 The effect of emotion on social cognitive processing.

How emotions affect social behaviour or cognitive processes behind behaviour is a relatively neglected area of research in experimental cognitive

social psychology and social cognition (Winfrey & Goldfried, 1986; Lemerise & Arsenio, 2000). Although much progress has been made during the last two decades in research and the development of theories regarding the contributions of emotion and emotion regulation to children's social competence (Eisenberg & Fabes, 1992; Saarni, 1999), researchers have paid little attention to the relationship between social information processing and emotion (Lemerise & Arsenio, 2000). Dodge & Somberg (1987) demonstrated that emotional arousal has a debilitating effect on the interpretation accuracy of aggressive children. It has also been suggested (Crick & Ladd, 1993) that causal attributions may cause feelings of distress in social situations. This relationship was shown to vary with social adjustment status, which in turn has been related to social anxiety (Franke & Hymel, 1984; La Greca, Dandes, Wick, Shaw, & Stone, 1988), and depression (Quiggle, Garber, Panak, & Dodge, 1992; Vosk, Forehand, Parker, & Rickard, 1982). Moreover, feelings of loneliness have been positively related to children's social adjustment (e.g., Asher, Hymel, & Renshaw, 1984; Asher & Wheeler, 1985; Cassidy & Asher, 1992; Crick & Ladd, 1993).

Whether emotion is distinct from cognitive information processing (Gottman, 1986; Zajonc, 1980) or the two are integrated (Greenberg & Safran, 1984) is a matter of debate. To some extent, whether emotion and cognition are seen as separate or as one process, depends on how broadly cognition is defined (Dodge, 1991; Ekman & Davidson, 1994). At a very general level, both emotion and cognition are types of information processing although they serve distinct functions. Lemerise and Arsenio (2000) argue that emotion processes serve motivational, communicative, and regulatory functions within and between

individuals that are distinct from the contributions of cognitive processes

(attention, learning, memory, logic) to social competence.

Crick and Dodge (1994) report a significant correlation between social

information processing and social adjustment as conceptualised in their

reformulated model of social information processing. Unfortunately, most of the

supportive studies on social information processing reviewed by Crick and Dodge

to support their model, use aggression as a measure of social adjustment.

Moreover, most studies, which focus on aggression, include a biased number of

boys, since boys tend to be more overtly aggressive than girls are. Thus, it is not

known how the results of these studies generalise to girls (Crick and Dodge,

1994).

Major personality and behaviour differences between the sexes concern

the difference in social orientation and style of aggression between boys and girls.

Social approval is more important to girls than boys, and girls tend to be more co-

operative or socially oriented. Boys, on the other hand, are more concerned about

controlling external events and tend to be more physically aggressive and

dominating towards peers (Anastasi, 1984; Block, 1983). Boys display

aggression in a physically direct manner by hitting or with verbal abuse, while

girls tend to be more indirect in their aggression. Girls often focus on spoiling

peer relationships (Cairns, Cairns, Neckerman, Ferguson, & Gariepy, 1989;

Lagerspetz, Bjorkqvist, & Peltonen, 1988; Crick & Grotpeter, 1995). Crick and

Dodge (1994) conclude that social maladjustment may be interpersonal in nature

for girls, but instrumental for boys. Some empirical support is provided for this.

Maladjusted boys have been found to deviate from their better adjusted peers in

the generation of aggressive responses and in outcome expectations for assertive behaviours, both of which must be considered instrumental cognitions (Crick & Ladd, 1990; Rubin, 1982a). Socially adjusted or maladjusted girls, on the other hand, have been found to differ mainly in perceived social competence (Franke & Hymel, 1984), which involves cognitions on interpersonal concerns.

6.4.3 Situational factors and social cognitive processing

Research suggests that for some children maladaptive social information processing may be specific to certain situations (Dodge et al., 1986). Situations related to social success, such as initiating relationships or resolving peer conflicts have shown the greatest difference in social information processing between socially well adjusted and socially maladjusted children (Dodge & Feldman, 1990).

The nature of social tasks and situations varies across development Higgins & Parsons, 1983). Social comparison, for instance is irrelevant to children in pre-school, but relevant by elementary school (Ruble, 1983). Similarly, toddlers seek proximity and attention, while elementary school children make friends and exchange information. Thus, social information processing must be considered in terms of social adjustment in age appropriate tasks. This is especially important when interventions and therapy are constructed to enhance social adjustment by intervening at the level of cognition or information processing. Crick and Dodge's model of social information processing provides a useful heuristic for visualising where intervention is acting and how it can potentially have broadly based effect on children's social cognitive skills.

6.5 Social skills training intervention

The different modes of intervention for social skills can be roughly categorised into three groups (Schneider, 1989). Firstly, the most direct intervention, that of coaching, involves direct teaching of specific social skills and the practise of skills that may be lacking. Secondly, modelling is similarly an instructive method, but by providing a live or filmed model for observational learning. Finally, problem solving training focuses on the thought behind the actions rather than behaviour directly. This is a method, which exercises adaptive ways of thinking about social situations.

The emphasis is on training covert thinking processes such as identifying problems or generating alternative solutions. Thus, cognitive problem solving training is a mode of therapy, which intervenes at the level of processes, which potentially mediate social competence across a broad range of situations. Such approaches have the advantage of building generalisation in as an integral part of the treatment (Urbain & Kendall, 1980).

Ideally, maladaptive information processing should be combated before it becomes automatic and skilled. Both shyness and loneliness have biological correlates to stress, which suggests these people are more easily aroused, at least in certain social situations. Emotion, in turn (see section 6.4.2), can have a debilitating effect on the accuracy of interpretation (at least for aggressive children), and highly emotional events trigger script based processing which is automatic (see section 6.4.).

6.6 Summary and conclusions

The importance of social information processing in relation to social adjustment is illustrated by the shy child's motive to minimise disapproval rather than gain approval and the bully-victim relationship and the finding that bullies may lack a range of non-aggressive solutions (Slee, 1993).

Social information processing models such as that of Crick & Dodge (1994) are essentially a more detailed account of Bowlby's working models. They are heuristics, which are useful in conceptualising the thinking involved between perception and action in social situations while factors such as children's developmental level, emotional arousal, and situational factors can all influence social information processing.

Cognitive problem solving training as a mode of therapy, which intervenes at the level of social information processing, makes generalisation an integral part of the treatment. This is particularly important when short-term treatments are designed as they rely on self-perpetuating elements to take effect in order to maintain treatment effects. If such training is to benefit social relationships, it requires that children have acquired theory of mind, but are still young enough to be receptive to alternative ways of thinking. Mental structures such as working models develop and become increasingly resistant to change, which make it more difficult to implement new ways of thinking later in life.

The ICPS training of AST and CT in this research is arguably boosting competence at the level of social information processing. In light of Crick and Dodge's (1994) model, training AST is relevant to step 4 (response access or

construction) with emphasis on constructing new responses, which is one of the

major changes implemented in this revised model (see figure 1.). Training CT is

relevant to step 5 (response decision, including evaluation and outcome

expectations).

*****

7

Therapy

In this chapter, issues specific to children in therapy and the challenge posed to therapists by their developmental age are discussed. Before detailing the actual therapeutic method of ICPS with children, it is useful to look at the historical context of cognitive therapy in general as well as ICPS in particular. Major themes that underlie current development in cognitive therapy, and utilise the cognitive processes to accomplish therapeutic change, will be examined.

7.1 Children as clients in therapy

The formative years of childhood represent a time of immense developmental changes, not only physically, in terms of growing from a baby to a child, but also in terms of mental, social, and emotional development. This time of opportunity places much responsibility on the caregivers and professionals who work with children, because of possible far-reaching effects on children's lives from early developmental influence.

Concerns for children's psychological well being most often arise when the child's behaviour appears to be out of control, unpredictable or lacking in

sense or meaning (Herbert, 1998). Concerns can also arise from developmental deviance or delay, such as the failure of certain activities, like talking or relating to people, to occur. Extreme behaviours, such as self-mutilation, do not pose problems in determining whether the behaviour is abnormal or not, but more subtle behavioural symptoms can be difficult to assess.

Many childhood signs of psychological abnormality are in essence exaggerated behavioural, cognitive, and emotional responses common to all children. Hence, most childhood disorders qualify as such because of the inappropriate intensity or degree to which certain behaviours or cognitions occur, rather than the kind of behaviours or cognitions being abnormal in some way. There are only rare exceptions from this generalisation (Herbert 1994, cited by Herbert 1998).

This raises the obvious question of who decides what is "normal". Such decisions are inherently open to value judgements, personal and cultural bias, prejudice, and theoretical interpretation. Although psychological problems are often identified because they are believed to have unfavourable social and personal consequences for the child, the family or the wider community, it is not necessarily obvious, to whom the behaviour is undesirable? Is it really undesirable for the child, or is it undesirable for the social context the child exists in? Assertive behaviour may be adaptive and appropriate while the same behaviour may appear aggressive in a different context.

7.2 Ethical issues

When children are seen to display undesirable behaviour and are referred to therapy, there is an underlying assumption that some other behaviour is better. The clinical assessment leads to some plan of action for correcting the maladaptive behaviours, thoughts or emotional expressions. Since children are not legally responsible for themselves, but are the responsibility of parents or legal guardians, the ethical concerns surrounding their position as clients in therapy are somewhat different to those of adults. For example, children can never have the same therapist – client confidentiality adults receive for obvious reasons. Furthermore, very young children are dependent on the caring adult to speak on their behalf and guard their needs until they achieve the necessary development to speak for themselves.

Adults often infer children's emotional needs from their behaviour because verbal expression of emotion is quite a sophisticated skill, involving abstract concepts. For instance, it is not uncommon for children to react to stress with bedwetting (Rutter, 1975), young children may find themselves physically taking their anger and frustrations out on their peers (O'Rourke & Worzbyt, 1996), and withdrawn behaviour can be a sign of shyness or depression (Harrist et al., 1997). Finally, parental reports of deviance and dysfunction in their children may be affected by stress in the home, marital discord, and even parent psychopathology or intent to conceal harmful parental practices such as abuse or neglect (Forehand, Lautenschlager, Faust & Graziano, 1986; Kazdin, 1989). Thus, although the child presents with behavioural problems, it may sometimes be a normal reaction to abnormal circumstances.

7.3 The efficacy of psychotherapy

There is an ongoing debate over the importance of psychotherapy (Bergin & Garfield, 1994; Lambert & Bergin, 1994). The emerging consensus is that psychological treatments work and credible reviews have suggested that treatments are all roughly equally effective in terms of treatment outcomes (Hollon, Shelton, & Loosen, 1991; Luborsky, Singer, & Luborsky, 1975). According to Kazdin (2000), well over 1000 controlled outcome studies in child and adolescent psychotherapy can be identified. The overall picture, however, is complicated by several factors such as the nature of the treatment, the problem at hand, and the client's and the therapist's style of working (Beutler & Clarkin, 1990; Lambert & Hill, 1994, in Dobson & Craig, 1998).

Meta-analyses of empirically supported treatments for children and adolescents has shown that behavioural treatments, such as behavioural contracting, modelling, and cognitive-behavioural therapy, produce a larger effect size than nonbehavioural treatments, such as insight-oriented therapy and client-centred counselling (Weisz, Weiss, Alicke, & Klotz, 1987; Weisz, Weiss, Han, Granger & Morton 1995). By contrast, meta analysis has not revealed a difference in treatment outcomes depending on the types of problems treated, for example, internalising problems as compared to externalising problems (Weisz, 1998).

It is not always clear what improvement is due to therapy, and what is due to minimal interventions, social support or simply the passage of time (Bergin & Garfield, 1994; Lambert & Bergin, 1994). An alternative view is that therapies have specific effects and produce the most pronounced change in relation to the

specific problems they are designed to address. Weisz, Weiss, Han, Granger, &

Morton (1995) addressed this problem by testing whether effect sizes were larger

for the specific problems targeted by the treatments than for more incidental

domains, which might be helped by the treatment. For example, the effect of a

treatment method meant to reduce anxiety was evaluated in terms of its effect on

anxiety as compared to a more peripheral problem of depression. Such multiple

comparisons revealed that mean effects were about twice as large for the specific

problems addressed in treatment than for related problems that were not

specifically addressed. Weisz et al. (1995) conclude that the treatments appear to

have rather specific effects, which are consistent with the objectives of the

therapies.

7.4 Limitations to research into child psychotherapy

In his discussion of the application of empirically supported therapies to

real practise in clinical setting, Weisz (1998) discusses three major limitations to

research into child psychotherapy.

Firstly, most child psychotherapy research fails to take due account of

developmental stages in terms of cognitive and language ability. Secondly, most

child psychotherapy research is not sensitive to context, and, finally, most

research into child psychotherapy is not very representative of clinical practice

cases or conditions.

According to Weisz (1998), current research on psychotherapy with

children is relatively isolated from the growing base of theory and evidence on

human development. Researchers often do not comment on developmental

factors or empirical findings as basis for treatment programmes and results

sections of articles frequently ignore developmental factors that may relate to

treatment effects. Weisz speculates that success of many of these treatments may

be to blame, but warns that it is important to consider developmental factors both

in planning and assessing outcome of treatment. Some of the most obvious limits

of development are the ability to decentre and expressive language ability, which

inevitably will affect the client-therapist relationship. If a child cannot decode the

therapist's comments, then it is of little use and if the child cannot communicate

the problem, the therapist's role as a helper is compromised. Developmental

levels of children may affect the behaviour-cognition connection, thus it is

important, Weisz (1998) asserts, to identify true mediators of therapeutic change

among treated children at different developmental levels.

Much treatment outcome research with children is based on interaction

with one therapist in a treatment setting or with a small group of unfamiliar

children in a therapist's office or therapy room (Weisz, 1998). Contextual factors

and key individuals in the child's environment are usually not involved in the

treatment, yet numerous theorists and researchers (e.g. Bronfenbrenner, 1979;

Masten, Best, & Garmezy, 1991) have emphasised the importance of social

context to children's development, with implications for adaptation and

dysfunction. According to Weisz, there are only a few exceptions to this in

clinical outcome research (Weisz, 1998).

The final limitation to child psychotherapy research, discussed by Weisz,

is the problem of discrepancy between research therapy and clinical therapy. A

comparison of research therapy and clinical therapy with control group revealed

better outcome from research therapy (Weisz, Donenberg, Han, & Kauneckis, 1995). There are important differences between the two, however, which must be respected. Whereas research therapy tends to focus on a narrow or single problem, clinic therapy deals with a broad range of multiple problems. The participants in research therapy are usually a homogeneous group of children who are recruited or volunteer but in clinic therapy, the participants are clinic-referred cases, usually more severe and some coerced into treatment. In research therapy the therapy is provided by researchers who often prepare extensively before the treatment. The treatment is pre-planned, highly structured and tends to be behavioural, (e.g. operant, respondent, modelling or CBT), whereas in clinic therapy the therapist is a professional clinician often with a heavy caseload and little time to prepare the therapy. The therapy done by the clinician is often a psychodynamic or eclectic approach (Weisz, 1998).

7.5 Cognitive therapy

Before the 1970s, most psychologists viewed socialisation as mastery of social rules (Scarr, Weinberg, & Levine, 1990). Childhood development was viewed in light of how well children mastered these rules (Thomas, 1985). The rules were made by adults, who in turn provided rewards and punishment accordingly depending on the appropriateness of displayed behaviours in specific environments (Skinner, 1957). The child was considered dependant on 'expert' opinion for the right and wrong solutions to specific problems.

John B. Watson, the founder of behaviourism said:

"Give me a dozen healthy infants, well formed, and my own specified world to bring them up in and I'll guarantee to take

any one at random and train him to become any type of

specialist I might select – a doctor, lawyer, artist, and

merchant-chief and, yes, even into beggarman and thief,

regardless of his talents, penchants, tendencies, abilities,

vocations and race of his ancestors. "

(Watson, 1926, p. 10, in Hergenhahn, 1992, p. 355).

Although Watson wrote this as a protest against racism, it illustrates

dramatically his view of child development taken to an extreme. Few were to

follow Watson's radical position, but the influence of behaviourism on therapy

has been enormous and far-reaching. Behavioural techniques are still used to

combat problematic behaviour of children and adults and many contemporary

treatment methods are rooted in behaviourism.

Behavioural techniques are widely accepted and good where they apply

but they do limit the child's ability to internally generate effective ways of dealing

with personal and interpersonal problems (Spivack & Shure, 1974). As a result,

children – and later the adults they become – are dependant on the external

structure for coping in novel situations. Spivack et al. (1976) demonstrated an

association between proficiency in cognitive processes related to solving

interpersonal problems with a variety of measures of personal and social

adjustment. Subsequently, Spivack and later Shure, went on to develop the

Interpersonal Cognitive Problem-Solving approach to therapy (detailed in chapter

8), a cognitive approach specifically aimed at children.

7.5.1 What is cognitive therapy?

Before discussing the different approaches to cognitive therapy, it is right to clarify the term cognitive therapy. The difference between behavioural- and cognitive therapy is not a very clear one, which has led to the popular use of cognitive-behaviour-therapy amongst professionals. Spence (1994) differentiates between cognitive and behavioural approaches by the following criteria: Behavioural interventions focus on producing direct changes in overt behaviour without emphasising cognitive change. Cognitive therapies, by contrast, are united (according to Spence) by the following common factors: They assume that overt behaviour and affect are determined by cognitive processes; they assume that change in cognitive processes will result in change in behaviour and affect and finally; they attempt to produce change in cognitive processes directly by means of verbal mediation or vicarious learning rather than through behavioural change.

In practise, this distinction is often not very clear. Spence points out that learning through verbal presentation or modelling, which provides observation to learn from, are both instances where it is not immediately obvious whether cognitive or behavioural factors are instrumental in the therapeutic change, hence the enormous popularity of the term cognitive-behavioural therapy.

Cognitive therapies are frequently categorised according to the cognitive processes or events that intervention is aimed at. Kendall (1993) distinguishes between interventions that teach cognitive skills and those that are aimed at correcting erroneous thinking. The former includes problem solving training, self instructional training and self control techniques while the latter refers to

cognitive restructuring and rational emotive therapy. This distinction is not a clear-cut one either. It could for example be argued that teaching children social perception skills to correctly identify non-verbal social cues was a matter of correcting skills deficit, as it could be argued that this constituted a correction of faulty cognitive processing. Information processing is arguably a skill in many ways, which makes the distinction between cognitive skill and cognitive error based therapies unnecessary (Spence, 1994).

However, some heuristic for conceptualising different aspects of cognition in therapeutic context can be useful. One such is provided by Stark, Rouse, & Livingstone (1991) who distinguish between cognitive products, cognitive operations, and schemata in their model of depression in children as a cognitive distortion and cognitive skill deficit. The cognitive products are defined as thoughts, images, and symbolic words in the person's stream of consciousness while cognitive operations refer to the processes involved in interpreting information and transforming it into cognitive products. Both cognitive processes and products are dependent on the schemata as a filtering device for incoming information. Poor problem solving skills would constitute a deficit in cognitive operations according to this model (Stark et al., 1991, cited by Spence, 1994).

The practical implications of such a cognitive model are the need for practitioners to assess various levels of cognitions in order to intervene.

7.5.2 Historical background to Cognitive Therapy with children

A discussion of Cognitive therapy must begin with Albert Ellis and Aron Beck. Cognitive approaches in psychological therapies started to gain momentum in the late 1960s (Spence, 1994).

Albert Ellis introduced what has come to be known as the ABC model of therapy in 1958. This approach to therapy is based on the assumption that negative emotional states and inappropriate or maladaptive behaviour is caused by the individual's irrational interpretation of events or situations rather than the actual circumstances. Ellis went on to develop his Rational Emotive Therapy, or RET (now REBT for Rational Emotive Behaviour Therapy), based on this assumption. RET aims to identify and bluntly challenge any irrational beliefs to achieve therapeutic effect on affect and behaviour.

Aron Beck's approach to therapy is subtly different from that of Ellis. In his early work (Beck, 1963,1964), Beck proposed that people maintain their depression with maladaptive thoughts about themselves, others and the world. The distortions Beck identified in this respect included overgeneralization, selective abstraction, and catastrophizing. The self-talk that is guided by such thinking was Beck's key to therapeutic change. He set about restructuring by teaching people to identify and change these maladaptive thoughts. Beck's later work involves a more comprehensive role for maladaptive cognitive processes and explaining other psychological problems such as anxiety and personality disorders (Beck, Emery & Greenberg, 1985; Beck et al., 1990). In his keynote speech at the 1999 European Cognitive Behaviour Therapy conference, Beck related that his method was being successfully applied to the treatment of

delusions in Schizophrenia. Turkington and Kingdon (2000), report successful

application of cognitive behaviour techniques in the management of psychoses.

Ellis and Beck's approach to therapy was originally developed for adults.

Child clinical psychology during the 1950s and 1960s was largely dominated by

interventions based on operant and classical conditioning theories. Some

therapists had attempted to use cognitive therapy methods based on Ellis' (1958)

Rational therapy with children, but it was Albert Bandura's introduction of social

learning theory (Bandura, 1969, 1977) that exerted a major influence on the field.

The Social learning theory introduced cognitive events such as vicarious

learning as acceptable explanations for behaviour and thereby possibly

maintaining maladaptive behaviour or psychopathology. Gradually psychological

processes such as attention, memory, perception and self-regulation made their

way into therapy and became accepted as important mediators of overt behaviour.

Some of the early precursors to cognitive therapy approaches include self-control

therapies.

Kanfer, who was among the pioneers in this respect, included several

cognitive elements such as self-monitoring, self-observation, self-regulation, self-

evaluation, and self-reinforcement in his model of therapy (Kanfer, 1970; 1975).

Around the same time, a more problem solving mode of therapy was introduced

by d'Zurilla and Goldfried (1971). This approach to therapy was constructed for

adults but is an important antecedent to consequent approaches to therapy

developed for children. d'Zurilla and Goldfried defined problem solving as a

behavioural process, whether overt or cognitive in nature. The significance of this

for the development of therapy, was that a variety of potentially effective

responses were thereby made available for dealing with the problems at hand, while, at the same time, the probability of selecting the most effective response from a range of possibilities were increased (d'Zurilla & Goldfried ,1971, p. 108). These steps to problem solving, outlined by d'Zurilla and Goldfried, are arguably still the basis of most problem solving therapy approaches to date and bear an important resemblance to Spivack and Shure's (1974) method of tackling interpersonal problems with children.

The Interpersonal Cognitive Problem Solving approach developed by Spivack and Shure (1974) to treat and prevent interpersonal difficulties with children is closely related to d'Zurilla and Goldfried's approach, but is specifically aimed at children and will be discussed in detail below. Another important influence on the development of cognitive therapy for children was Michenbaum (1975), who introduced self-instructional techniques to therapy. This approach is rooted in the theories of Soviet developmental psychologists Luria (1961) and Vygotsky (1962) (see chapter 5, section 5.1.)

Meichenbaum and Goodman (1971) based their therapeutic approach on the idea of internal speech and developed a series of steps that reflect the normal way children come to control their behaviour. At first, the adult models self-talk to instruct own behaviour by voicing the actions as they happen. Following this, the adult does the talking for the child, that is describes aloud the actions that are performed by the child. Having done that the child moves on to instructing own behaviour, by talking aloud at first, then by whispering and finally by internal speech or thinking.

7.6 Summary and implications for the present study

Although the emerging consensus is that psychological treatments are all roughly equally effective in terms of treatment outcomes, meta-analysis of treatment for children and adolescents has shown that behavioural treatments produce a larger effect size than non-behavioural treatments, such as insight-oriented therapy and client centred counselling (Weisz et al., 1995). Many psychological problems of childhood are exaggerated behavioural, cognitive, and emotional responses common to all children. This poses some obvious ethical concerns.

Major limitations to research into child psychotherapy include a lack of concern for developmental factors and context (Weisz, 1998), in particular, language ability and cognitive development. While behaviour therapy tends to make people reliant on external structure for coping in novel situations, cognitive approaches aim to give children the ability to generate solutions to problems for themselves. Historically cognitive therapies were constructed for adults, but came to be adapted for children. Michenbaum's (1975) self-instructional techniques and the ICPS approach developed by Spivack and Shure (1974) are both therapeutic approaches developed for children specifically. The advantage of the ICPS approach is that it aims to improve ways of thinking which are common to a variety of social problems.

Therapeutic or preventative intervention at a cognitive level relies on language as a mediator for therapy, which poses a limit to how early effective intervention, can take place in a child's life. It has been suggested that maladjusted boys have deficits in automatic processing while reflective processing

is unaffected (Rabiner, Lenhart, & Lochman, 1990). This suggests a missing link in the chain of events, which one can only speculate as to what it is. Rainer, et al. (1990) identified this deficit in rejected non-aggressive boys, presumably comparatively quiet children. Thus, the missing link could be related to initiatives, motivation or the ability to synthesise similarities in different situations. This has implications for cognitive intervention with children as it reveals the importance of automatic processing. While maladaptive automatic processing poses problems, the deficit automatic processing is also problematic for social relations.

Whatever the cause for maladaptive processing, however, the solution may be practice. Training children to think in certain ways, that enhance social competence, is the core concept of ICPS training as posed by Spivack and Shure.

*****

8

Interpersonal Cognitive Problem Solving

The ICPS method of training children at a cognitive level to

enhance social competence will be detailed in this chapter. This

method of social skills training shifted attention from behaviour

as the focus of attention for improving social competence to the

\thought behind the actions. The objective is to teach children

new ways of thinking or how to think rather than what to think.

ICPS training has been used with all age groups, and diverse

populations. The application of ICPS training as well as

comparative effect will be discussed.

8.1 The development of ICPS training for children

Spivack and Shure (1974) constructed the Interpersonal Cognitive

Problem Solving method. Spivack, a clinical psychologist trained during the post-

World War II era, was practising as a clinical psychologist in Philadelphia in 1961

when the idea of specific properties of thought, or thinking skills mediating social

adjustment, was sparked in a therapy session with a teenage delinquent boy

(Spivack & Shure, 1985). The boy had broken residential rules - gone off campus

- but did not appear to have thought through the consequences of his actions. This

could not be explained by general low ability, as the boy was of above-average

intelligence. When the boy was asked about what he had done, his most frequent

response was: "I didn't think of that at the time" or "No, that didn't occur to me."

This led the therapist gradually to the conclusion that cognitive deficit was

responsible for repeatedly leading this boy into social difficulties (Spivack, Platt

& Shure, 1976). In Spivack's own words:

> *"What I realized from this incident was a revelation: that in fact a maladaptive act such as this - a bit of stupid behavior - might not necessarily reflect conflict or disturbed motives or morbid affect. Some maladaptive behavior may reflect the habit or deficit of not thinking through a problem situation before deciding what to do. In wanting something, this youngster went to get it, without thinking through how, or when, or potential obstacles, or what might be the aftermath. What I realized was that this youngster was actually telling me the truth. He really had not thought!"*

(Spivack and Shure, 1985, p. 226).

Prior to this incidence, Spivack and Levine had been researching time

conception and self control in a group of emotionally disturbed adolescents

(Spivack & Levine, 1959) and found that lack of tolerance for the tension of

waiting, inability to project self into the future, and constricted focus to the

present limited these youngsters' consequential thinking. Moreover, they had

noted that poor future thinking also meant poor planning and thus more reliance

on immediate institutional rewards for good behaviour (Levine & Spivack, 1959).

Spivack's idea that the ability to think through and solve problems in a

social context might be representative of specific cognitive *processes* constituted

an important shift of focus from the content of thought to the processes involved,

or *how* people think rather than *what*. Following the incident at the residential

school, Spivack and Levine set out to test the hypothesis that specific social

cognitive deficiencies might manifest in inability to think through and solve

problems. The results revealed that normal adolescents were as likely to think of misbehaving as maladjusted ones, but the difference seemed to be in the thought processes then set into motion, which would mediate action (Spivack & Levine, 1963).

The community mental health movement in the USA during the mid-1960s provided the researchers with an opportunity to empirically explore the central idea of training ways of thinking in interpersonal context in a similar way to the general practise in impersonal context. In order to develop preventive interventions, it was necessary to study these processes in preadolescent populations.

Consequently, Spivack and Shure studied means-end thinking in 9 to 12 year old children, revealing a cognitive deficit among the emotionally disturbed children of this age, compared to normal (Shure & Spivack, 1972). The findings led Shure to suggest that social cognitive skills could be enhanced in children as young as 4 years old. The following 6 years Spivack and Sure continued their research into specific cognitive problem solving skills and the term ICPS emerged.

The skills that were identified included: being sensitive to the presence of a problem; the capacity to generate alternative solutions to a problem; foresight needed to recognise obstacles and others' reactions, or so called means-end thinking, consequential thinking for self and others; and understanding of the social context of events on a continuum into past and future. Two of these skills, AST and CT, seem to have almost universal significance to interpersonal problem solving competence. (Spivack et al., 1976). Specifically, AST is the ability to see

many solutions to any problem, whereas CT refers to the ability to think of long- and short-term consequences of solutions or actions and to appreciate the choice such alternatives provide. Finally, the means-end thinking is the ability to generate a plan of actions to reach specific means. This includes identifying obstacles in the way, and finding ways to cope with them.

These skills represent different sophistication in thinking and are not all applicable to ICPS training with very young children. Means-end thinking for example is a higher order skill that cannot be trained until middle-childhood while other skills such as AST and CT are much more basic to interpersonal competence. The aim of training AST is not to supply children with correct answers to situations but rather to give them practice in looking for alternative solutions, as many as possible, in any given situation. Consequently, children should acquire a feeling of having choices when confronted with a challenging situation.

Having identified the set of skills, the researchers began to look towards prevention of behavioural problems. If these skills could discriminate between well-adjusted children and those less well adjusted within the relatively normal range of adjustment amongst children, could training of the skills possibly prevent or reduce later difficulties such as inhibition, impulsive behaviour, or other behaviours, which put children at risk for more serious maladaptation? In essence, this was the reverse of what educators and clinicians had assumed:

> *"If educators and clinicians have assumed that relieving emotional tension paves the way for one to think straight, our research would test the reverse idea: that ability to think straight can pave the way for emotional relief."*

(Shure, in Spivack & Shure, 1985, p.230)

The prevention research with intervention started with direct training of 4-year-old children in a day-care centre in inner city Philadelphia. Later, teachers were trained to implement the method and, eventually, parents. Observations of teachers training children to think of solutions to hypothetical problems, turning around, and providing the solutions when real situations arose led to the development of "Problem Solving Dialoguing". This was a way of talking with children in real problem situations with appropriate probing to recognise problems, generate possible solutions, explore consequences, and so forth. The concern was for the children to actually *think* in the situation – not just to know how to – by introducing an *in vivo* training.

Cognitive approach to adjustment, which was launched after 2 years of pilot studies, included daily 20-minute sessions over the course of 10 weeks, supplemented with the dialoguing. Significant behavioural impact was revealed following participation in one such course (including dialoguing) at the nursery level, as well as in kindergarten. The gain from the training was still apparent two years later. Moreover, at least half of the overly impulsive and inhibited children in the training groups measured within the normal range of behaviour following training. Some evidence suggested that children who received training were less at risk for developing behavioural problems in kindergarten than comparable controls who received no training (Shure & Spivack, 1982).

Mothers who participated in the parent training attended small groups, where they learnt to encourage their children's thinking skills over the course of 10 weeks. This was especially effective when the mothers received ICPS training

for themselves as well as how to assist their young ones. The effect of the training in the home was found to generalise to school settings.

Following reports of adaptations of the ICPS approach with older children, which had not produced the intended effect on behaviour, more sophisticated age appropriate concepts were added into the training package. Greater curriculum demands on older children made the daily lessons difficult to conduct. This was solved by lengthening the training time from 2 ½ months to 4 ½ months. Adjustments were made to the dialoguing support for the older children. They were given ICPS sheets called "Did I ICPS today?" where they could record their own "dialogue".

8.2 Implementation of ICPS with young children

Early in the development of ICPS training the decision was made to target interventions at entire classrooms within a school-based programme, rather than testing children for ICPS competence, and to train only the ICPS deficient students (Shure & Spivack, 1970). This ensured that children deficient in ICPS skills would not be overlooked, that silences would be avoided by competent children participating in the training, and that no one would be harmed, because ICPS skills improvement is beneficial to all (Touchet, Shure and McCown, 1993).

Training manuals for teaching problem-solving skills have been developed and revised to suit different age groups (Shure, 1992a, 1992b, 1992c). The pre-school, kindergarten, and primary grades programmes developed by Shure (1992a, 1992b) prescribe daily sessions of about 20 minutes for 4 months. Teachers work with 6 to 10 students together in a group. Informal use of the

principles in the everyday activities at school has been shown to help consolidate the training (Spivack & Shure, 1974).

With the youngest age groups, some pre-ICPS training skills have been developed to facilitate later training. These include teaching of important concepts for ICPS (i.e., or, not, different, if-then, etc.). Following concept teaching, the children are guided to appreciate the feelings and emotions of others, before the actual training of the specific skills involved in ICPS begins (Touchet, Shure, & McCown). All the training aims to get the children to think for themselves – that is to teach them *how* to think rather than what to think in order to make them capable of deciding for themselves what to do in various social situations.

8.3 The application of ICPS training

The ICPS training programme is among the most systematic and empirically researched problem-solving interventions (Pelligrini & Urbain, 1985). It is designed to be applicable across racial, ethnic, and age groups (Touchet, Shure & McCown, 1993). Interventions rooted in ICPS have been used with all age groups of people, from pre-school to adulthood (see Spivack et al., 1976, for a review).

The ICPS skills have been found to distinguish normal children from disturbed (Shure & Spivack, 1972), as well as to discriminate within homogeneous groups of normal (Richard & Dodge, 1982), disturbed (Higgins & Thies, 1981), dependent-neglected (Larcen, Spivack, & Shure, 1972), educable-

retarded (Healey, 1978), learning-disabled (Berg, 1982), and depressed (Gotlib & Asarnow, 1979) children.

Social problem solving (SPS)[2] approaches have been used with abused children and their families (Nesbitt et al., 1980). They have been used with the elderly (McCown & DeSimone, 1993), with emotionally disturbed children and their parents (Yu, Harris, Solovitz, & Franklin, 1986), and with developmentally disabled children at high risk for human immunodeficiency virus disease (McCown, 1993, cited by Touchet, Shure, & McCown, 1993). They have also been used for learning disabled children (Weiner, 1978, cited by Touchet, Shure, and McCown, 1993).

Poor problem solving skills have been associated with early, unwanted, pregnancy (Steinlauf, 1979), as well as with delinquency (Spivack & Levine, 1963), and battered women (Claerhout, Elder, & Janes, 1982). Poor problem solving skills have also been associated with abusing and neglectful mothers (Azar, Robinson, Hekimian, & Twentyman, 1984), heroin addiction (Platt, Scura, & Hannon, 1973), and poor social relations among the elderly (Spivack, Standen, Bryson, & Garrett, 1978).

ICPS thinking and parental style have been associated for groups of normal children (Jones, Rickel, & Smith, 1980) and with educable mentally retarded children (Herman & Shantz, 1983). Behavioural improvement from ICPS/SPS training has been demonstrated with normal children by Elardo and Caldwell (1979), Elias (1980), Mannarino, Christy, Durlak, and Magnussen (1982). Behavioural improvement from ICPS/SPS training has also been

---

[2] SPS and ICPS are variations on the same basic mode of therapy, that is problemsolving in social situations.

demonstrated with: hyperactive 7 year olds (Camp and Bash, 1978, 1981); with educable retarded 6 to 12 year olds (Healey, 1977); with learning disabled 8 to 12 year olds (Natov, 1981); with young adult alcoholics (Intagliata, 1978); and with short-term young adult inpatients (Coché and Flick, 1975). Elias (1984) showed that the amount of stress experienced at transition to middle school (grade 6) was directly related to the length of ICPS/SPS intervention training.

Despite this long list of successful application of ICPS/SPS training, ICPS is not without its problems. Although Spivack et al. (1976) have repeatedly shown that SPS training has beneficial therapeutic and preventative effects for inner-city preschoolers; similar programmes have not consistently replicated those findings for suburban pre-schoolers and older children. Krasnor & Rubin, (1981) found that SPS training for upper-middle socio-economic status preschoolers improved their AST but not their social behaviour or adjustment. Similar findings were revealed by Winer, Hilpert, Gesten, Cowen & Schubin (1982), in a 42-lesson, 10-week SPS intervention with middle socio-economic status kindergarten children. The training led to improved AST thinking, fewer irrelevant responses, and some adjustment gains, but specific ICPS skills were not associated with improved adjustment.

Interventions developed for second to fifth grade levels primary schools have not all been successful beyond improving children's ability to generate alternative solutions to hypothetical situations (e.g. McClure, Chinsky, & Larcen, 1978). Weissberg, Gesten, Rapkin, et al., (1981) reported little behavioural effect of SPS training with urban and suburban third graders and some reversals were noted in the urban sample. This research group, however, reported some

behavioural gain in consequent studies (Weissberg, Gesten, Carnirke, et al., 1981), which they attributed to more closely monitored training and consultation efforts. Expanded curriculum was considered important in gaining behavioural effects, as well as informal dialogues that were more systematic. Thus, although ICPS training has been systematically and empirically researched (Pellegrini & Urbain, 1985), the evidence for the utility of ICPS interventions as a means of changing overt behaviour and reducing social isolation is not unanimous.

8.4 The comparative effect of ICPS training.

Meta-analysis is a process used to summarise the results of a number of different studies. It is an analysis of the analysis as suggested by the term *meta*. While reviews can provide a general narrative of the literature, meta-analysis is a statistical method to provide a more objective, quantitative, equivalent to such narrative. Essentially, each study is treated as a participant and the analysis takes account of sample size and various statistical features of the data from each study. Meta-analysis allows the reviewer to quantify the trends, which are contained in the literature, by combining the effect sizes and combining the probabilities, which have been found in a number of studies. Moreover, by combining the results of a number of studies the power of the statistical test is increased and a number of studies which all show the same trend, may, when combined, prove to be significant.

It is important, however, to note the author's selection criteria for meta-analytic reviews, as there is a tendency for bias on the part of both authors and journals towards reporting statistically significant results. Thus, methods may

have been repeatedly shown to be ineffective without this being apparent from the published studies in the field. Moreover, different publications may actually include the same subjects when several publications report different aspects of the same study (Clark-Carter, 1997).

Denham & Almeida (1987) performed a meta-analysis to examine reported relations between children's' ICPS skills and adjustment, and to specify the effects of ICPS training. All together fifty studies of children between the ages of 3 and 12 years were included in the analysis. These were studies, which used a similar conceptual premise as well as independent, and/or dependent variables to that reported by Shure and Spivack (1972, 1979, 1980, 1982).

Five separate hypotheses relating to the effect of ICPS training were tested. Firstly, the link between ICPS skills and adjustment was shown to be moderate ($d = .58$, $n = 20$). Thus, scores on ICPS measures do differentiate between adjusted and maladjusted children. Secondly, ICPS trained children were shown to exhibit, on the average, significantly greater scores following training than do control children ($d = .78$, $n = 24$) and the d is large enough to be of practical significance. The third hypothesis stated that teachers would rate the behaviour of children trained in ICPS skills more socially competent than untrained children. The magnitude of the effect for this hypothesis is small ($d = .26$, $n = 9$). Thus, the authors state, caution should be used in assuming that ICPS training has favourable effect on socially competent behaviour. Moreover, there is a possibility of a file-drawer effect for this result, i.e. the results are easily refuted by unsubmitted nonsignificant studies (this is revealed by Failsafe N calculations of Stouffer's z_i). The fourth hypothesis states that observed social

behaviours will be more positive for groups of ICPS trained children compared to control groups at post-test. This difference was shown to be moderate to large (d = .75, n = 7). The authors further note that no significant differences for d index was found when comparing observations based on analogue situations as opposed to time- or event-sampled data for behaviour observation. Finally, Denham & Almeida tested whether a direct relationship between increased ICPS skills and improvement in behavioural adjustment could be shown. Findings for this hypothesis indicate that an increase in ICPS skills is reliably paired with improvement in rated behavioural adjustment although the effect is only moderate (d = .52, n = 10).

In summary, Denham & Almeida (1987) show that ICPS skills are related to adjustment, the training has positive effect on ICPS skills and observed behaviour, but teachers' post-test behaviour rating is not necessarily more positive for trained children compared to controls. Finally, improvement in ICPS skills is reliably paired with improvement in behavioural adjustment. Although these results are enlightening, they describe main effects only but say nothing about interactions within these effects. Further analysis, performed by Denham & Almeida (1987), revealed that the link between ICPS and adjustment proved stronger for younger children, however, the authors do not report age groups in this respect. Where behavioural effects were concerned, training was more effective with younger children in terms of changing their social behaviour.

Effects of ICPS training on rated behavioural adjustment, although reliable, were affected by the expertise of the investigator; with training being more effective for more experienced investigators, especially of the Hahnemann

group. The authors speculate that there may be a body of clinical skills, or specific components of training, that have been built up by this group over the years, and which can not be as easily exported as the curricula itself. Interventions lasting 40 or more lessons tended to lead to better-acquired ICPS skills but only a marginally significant overall behavioural effect. The effects of dialoguing were nonsignificant for ICPS skills, but the trend was for groups to gain more behaviourally when dialoguing was used (Denham & Almeida, 1987).

Schneider & Byrne (1985) presented a meta-analysis of 51 studies of various types of social skills training methods with children. They coded the different approaches according to four major categories: coaching, modelling, operant conditioning, and social-cognitive approaches (including ICPS training). They reported a moderate overall average effect size (equivalent of $d = .55$ (Schneider, 1992)) for children's social skills training. The effects were highest for studies utilizing operant reinforcement, coaching, and modelling techniques while social problem-solving studies had smaller but significant treatment effects.

This initial meta-analysis was limited in several ways. Firstly, the meta-analysis was limited to published studies, which makes it vulnerable to the file-drawer effect. Secondly, the study was performed before the formula for combining studies with multiple effect sizes (Rosenthal & Rubin, 1986) became available so multiple effect sizes were combined within a single study without considering the intercorrelation of the measures. Finally, few follow-up studies were available at the time. Schneider repeated the analysis a few years later (Schneider, 1992), employing a more stringent inclusion criteria, this time looking at modelling and cognitive-behavioural approaches.

The analysis included 28 studies from the Schneider & Byrne (1985) meta-analysis, the remaining studies in the 1985 data pool failed to meet the more stringent criteria for control groups used. Schneider reviewed 350 studies but included all together 79 studies in the analysis. Of the 79 studies included, 33 employ social-cognitive training technique. The overall effect size was moderate ($d = .89$, $n = 79$). This is somewhat higher than the mean effect size ($d = .55$) reported by Schneider and Byrne (1985).

There were significant differences in effect size among the major technique classifications. Modelling and coaching studies had significantly higher effect sizes than social-cognitive or "multiple technique" studies. Moreover, the major training technique was not a significant predictor of effect size which indicates that *content* of the treatment method may be important, as well as the method, as Schneider suggests. That is, what is modelled or coached, and what are the issues that are used for problem solving? The number of training sessions was not a significant correlate of effect size and many of the highest effect sizes were associated with studies of relatively short duration. Examination of follow-up effect sizes in the sample did not suggest any change in the relative effect sizes for social problem-solving studies at follow-up. This is consistent with Gresham (1985) who reached a similar conclusion in a qualitative review of this literature. Schneider (1992) notes that although many studies included boys only, there were none with exclusively girls in the sample.

Erwin (1994), in comparing the relative effectiveness of coaching, ICPS, and modelling, did not find significant difference in terms of effectiveness between the different methods. Erwin concludes that there is benefit to be gained

from all approaches. Whether social behaviour is seen (modelling), understood (ICPS), or practised with feedback (coaching), significant improvement in behaviour is predicted.

A further meta-analysis by Beelmann, Pfingsten, and Lösel (1994) on 49 studies from 1981 to 1990 examined the effects of various kinds of social competence training (SCT) in children. SCT, as defined by Beelmann et al., is a comprehensive term for various types of training to improve social adjustment. SCT includes behavioural and/or cognitive interventions directed toward training components of social behaviour in children, such as social play (motor), social problem solving (cognitive), and/or anger-control (affective). The analysis included both monomodal and multimodal studies of age groups ranging from 3 to 15 years.

Social cognitive skills' training was found to be moderately effective ($d_+ =$ .77) and affected by the age of the children. Specifically, social cognitive skills training and Social Interaction Skills training with 3-5 years old children, showed significant effect size, whereas Social Adjustment and Self-related Cognitions/Affects showed non-significant results for this age-group.

Beelmann, et al., (1994) also found an interaction between type of programme and age. Monomodal programmes proved to be more effective in young (3-8 years old) ($d_+ = .57, n = 21$) than older children ($d_+ = .24, n = 18$). whereas the reverse was true for multimodal programmes. This trend held true for all programme types. This is in tune with what Schneider (1992) reports, that the effect size for multiple techniques is lower than the effect size from any other

technique, although Schneider does not report effect of age in relation to major

technique.

Although Beelmann et al., (1994) did not detect sex differences in the

analysis, they reported that favourable outcomes were striking in all-girl groups,

whereas a lower, homogeneous effect was found in groups containing more boys

than girls. In the short term, Social Competence Training was found to be an

effective intervention among children, whereas long-term effects could not be

confirmed by the meta-analysis of follow-up measures. Long term effect could be

assumed only in acquired social cognitive skills ($d_+ = .34$, $n = 10$). The authors

note that follow-up measures tend to be performed particularly in studies where

the immediate effect is small.

Schneider (1992) did report somewhat higher follow-up effects than

Beelmann et al. did, especially in short intervals of up to 3 months ($r = .36$, $n = 5$,

for 2-3 month follow-up). Moreover, most of the follow-up studies addressed pre-

school children, an age-group in which Beelman et al. also found relatively high

effects.

In general, multimodal programmes lead to better generalisation of

training effects. According to Beelmann, et al. (1994) generalisation to social

behaviour, however, seems to occur only in a multimodal problem-solving

training with extensive behavioural training. This lack of generalisation has been

criticised by Gresham (1985) in social-cognitive programmes. Beelmann et al.,

however, demonstrate that this criticism applies to all training programmes where

criteria such as social adjustment, popularity, self-concept, and locus of control

are applied.

8.5 Summary and conclusions

The ICPS method of training children how to think rather than what to think constituted an important shift in focus from behaviour to cognitive processes governing behaviour. The application of ICPS training has received systematic empirical support across racial, ethnic, and age groups. Poor problem solving skills have been associated with various signs of poor social adjustment but the evidence for the utility of ICPS interventions as a means of changing overt behaviour is not unanimous.

The potential for preventing behavioural and adjustment problems by strengthening children's ICPS skills, and the possibility for therapy which addresses the social cognitive skills for therapeutic gains, sparked considerable amount of research into these cognitive processes in preadolescent populations. A number of specific skills were identified, two of which were shown to have almost universal significance, namely, AST and CT.

Meta-analysis of the ICPS literature has revealed a robust correlation between children's ICPS skills and adjustment. The most dramatic and lasting effects are revealed with Social Cognitive Skills training of young children using monomodal programmes.

The benefit from ICPS for social adjustment and behaviour is more complicated. Rated behavioural adjustment following ICPS training is affected by the expertise of the investigator as well as the age of the children. Younger children benefit more than older children, especially with expert investigators.

Dialoguing has little or no effect on ICPS skills but may benefit behavioural gains.

In comparison to other social skills training methods, ICPS generally produced smaller effect size than modelling or coaching, however, Schneider (1992) found that the major training technique applied in social skills training, did not predict effect size. This indicates that content of the treatment method may be important, that is, what issues are used for problem solving in ICPS training. Stability of effects over time is unclear as there is a shortage of follow-up studies of the various social skills training programmes. Beelmann et al., (1994) argue that follow-up measures tend to be performed particularly in studies where the immediate effect is small. Schneider (1992) reports the highest follow-up effects from short intervals of up to 3 months following training.

It has been suggested that the consistent success in improving ICPS skills with training may be the result of training to task because between assessments, participants are trained in the same way they are assessed. That is to think of as many solutions as possible to hypothetical problems. Thus, it is important to establish positive effects from the method, other than fluency in ICPS skills in response to hypothetical problems. Moreover, if ICPS training influences how we think, what are some of the underlying forces that determine whether people are good at thinking in different ways or not. The possibility that creative thinking may influence ICPS fluency is explored in this study. The following chapter discusses links between cognitions, creativity and music, which is the chosen arts medium for the purpose of this research.

9

Music and ICPS

An alternative method to improve AST and CT by indirect

means was designed for this study. This method is rooted in the

theories of improvisational music therapy and aims to mediate

and facilitate ICPS skills through creative musical activities. The

rationale behind selecting music therapy for this purpose is

discussed in this chapter. The concept of creative thinking is

discussed in relation to ICPS, leading on to the choice of music

for the purpose of this study and a discussion of the discipline of

music therapy. Finally, connections between music and cognitive

processes are outlined as well as the specific qualities of music

relevant to ICPS skills.

9.1 Creative thinking and music

It has been argued that creative arts in general are important to a child's

development, because they involve the child's natural curiosity, which is

instrumental in the child's cognitive development (Stern, 1989). Creativity is,

however, a controversial term. Although most people have some idea of what it

is, defining creativity is difficult. Some of the controversy about the concept of

creativity surrounds the question of the extent to which it is a personality trait, a

specific cognitive ability, or a type of problem-solving strategy that might be

learned (Michael, 1977). Moreover, if creativity is a problem-solving strategy it can be taught in a similar way to AST and CT.

Creativity has been associated with divergent thinking, as defined by Guilford (1967). By contrast to divergent thinking, convergent thinking, according to Guilford, is very much like formal operations. It involves the application of logic and reasoning to arrive at a single, correct, answer to a problem. Divergent thinking, by contrast, is more open-ended, and multiple solutions are sought, examined, and probed, thereby leading to what are deemed creative responses on measures of creativity. If Guilford's view is accurate, then the ability to see many solutions to one problem is very different from the ability to develop one correct answer from a store of information. The skills needed for both convergent and divergent thinking appear to be acquired, at least in part, through experience (Pepler & Ross, 1981).

Guilford's theory of convergent and divergent thinking has had enormous impact on research into creative thinking. Some tests have been designed to predict creativity by measuring divergent thinking. One such test, described by Michael Wallach (1970), employs the concept of ideational fluency, which refers to the ability to develop a large number of ideas appropriate to a particular task. Researchers might ask people to name as many uses as possible for a common object such as a shoe or a cup. Such divergent thinking tests have been found to be much more accurate in predicting creativity than are IQ tests (Dworetzky, 1989).

If ideational fluency measures creativity, is then a measure of AST not a measure of creative thinking in social situations? If that is so, and divergent

thinking can be acquired, then it would be reasonable to presume that creative arts activities can enhance AST. Similarly, the ability to anticipate, or imagine, many possible consequences of a particular act is arguably a form of divergent thinking, which might be enhanced through creative arts activities.

Music was selected as the creative arts medium for enhancing AST and CT in this study, largely for practical reasons. The author is a qualified Music Therapist and has worked as a music teacher with both children and adults but has no expertise in other arts discipline.

9.2 Music therapy, the discipline

Music is probably the first art form to be used therapeutically (Fleshman & Fryrear, 1981). There are examples of music being used to alleviate physical or mental distress in Egyptian medical papyri, the Bible (and other religious texts), Greek medical practice, mythology, magic, and tribal medicine. Moreno (1988) has compared certain aspects of modern day music therapy practise in western culture to the healing rituals incorporating song and dance seen in many tribal cultures.

Until the 1940s, there was little understanding of the value of music beyond its general aesthetic and cultural properties (Bunt, 1994). Today, however, there are professional societies for music therapists around the world, academic training has been available since 1946 and conferences are held regularly worldwide.

Given the wide range of techniques used by music therapists today in their work with diverse disabilities and all age groups, general statements about the

value of music therapy would be unfair. As Bunt (1997) points out in concluding remarks on music therapy, "...music crosses many boundaries, e.g. mind-body, physical-spiritual, conscious-unconscious" (p.264). These boundaries separate the better-defined areas of human functioning from the less well-defined and less measurable aspects. Thus, improvement from music therapy may be achieved through unknown interplay between spiritual and physical influence or conscious and unconscious processes. That is not to say that scientific measures cannot be applied to the achievement. It is not necessary to understand how the improvement has come about to detect that it is there.

Research in music therapy is still in its infancy (Gilroy & Lee, 1995) and debate on appropriate methodology for research in music therapy continues (Aldridge, 1993). The issue of objectivity is central to this debate, as the artistic process is difficult to measure subjectively. Music therapists generally insist on assessment based on musical parameters, such as rhythm, dynamics, musical innovation, range of pitch used on keyboard or in singing and so forth. Much of the work aims to aid improvement of clinical problems such as eye-hand co-ordination, attention-span, speech impediments or emotional difficulties to name but a few. In discussing methodological difficulties in music therapy research, Aldridge (1993) recounts a common complaint voiced by creative arts therapists, that of demand for reliability.

Aldridge (1993), in reviewing the medical research literature within the general context of music therapy research, concludes that: "Bridges must be built so that clinical change can be recognised by clinical practitioners in medicine and the arts" (Aldridge, 1993, p.120).

9.3 Music and cognitive thinking

There are several studies linking music and cognitions in the literature. For example, Rauscher, Shaw, & Ky (1993) demonstrated that music enhanced academic learning in college students who listened to Mozart's sonata for two pianos (K488). These students did considerably better on a spatial task performance than when they had listened to relaxation instructions or when they did not listen to anything before performing a spatial reasoning task from the Stanford-Binet intelligence scale. Hence, the results cannot be attributed to the relaxed atmosphere produced by the music. It is possible that the music made the students more alert to the lesson, which followed, or that the music exerted a direct effect on mental structures, which facilitate learning.

A more recent study by Gardiner, Fox, Knowles, & Jeffrey (1996) reports significant advantage on reading and maths achievement by 5-7 year old children who participated in specific extra curriculum of music and visual arts. Most advantage was gained from two years of training, less, but still significant, from one year of training, and least advantage with no training. The authors speculate that benefits can be attributed both to improved attitude towards learning and school, and to a forced mental 'stretching' which enhances other learning, such as acquisition of mathematical skills (Gardiner et al., 1996). The latter study involved children being actively trained in music rather than passively receiving music, by listening to it, as the college students in the study by Rauscher et al. (1993). Some interesting features of this relationship are born out of neurological and medical research

demonstrating both separation and relation between musical cognitions and other cognitive functions.

People who suffer from Alzheimer's disease seem to retain their musical abilities despite cognitive deterioration of language (Aldridge, 1995). They can sing old songs and dance to past tunes although they cannot talk and their memory is lacking (Aldridge, 1993). Similarly, people immobilised by Parkinson's disease have been mobilised to dance to music (Sacks, 1991) as dramatically depicted in the movie *Awakenings*. Stuttering can stop while people sing (Lebrun & Leleux, 1985) although it disrupts their speech. In these cases, musical activities appear to allow impediments to be overcome to some extent.

Evidence for music influencing physical structures in the brain is provided by examination of recovery mechanisms in people who suffered nonfluent aphasia. Positron Emission Tomography (PET) has revealed that Broca's area and the left prefrontal cortex were reactivated during repetition of words with Melodic Intonation Therapy (MIT). By comparison, language tasks without melodic intonation, abnormally activated right hemisphere regions, and deactivated left hemisphere language zone (Belin, Van Eeckhout, Zilbovicius, & Remy, 1996). The authors suggest the recovery with MIT coincides with the reactivating of left prefrontal structures of the brain.

The MIT technique has been used, with some success, to break through the communication barriers of autism (Miller & Toca, 1979). Whether that involves new learning, possible activation of brain structures or allowing for expression of knowledge is possibly a matter of debate.

All these studies suggest some kind of connection between musical
functioning and other cognitive activities such as speech, dancing, communication,
and academic learning.

9.4 Music as communication

As a creative arts medium, music therapy can provide means of
communication without words. Many of the essential elements or building blocks
of music provide a metaphor for language. The essential skills involved in
effective verbal communication are the same as those of effective musical
improvisation. To improvise music with others, people need to listen to the
others, learn to take turns and appreciate the exchange involved in
communication. Moreover, these skills can be practised in musical activities.

Conversations can be carried out with instruments and abstract constructs
like emotions can be easier for a young child to express through the arts than with
language. The concepts needed for emotional expression are quite sophisticated.
While children need to know what a certain feeling is called (happy, angry, sad,
etc.), in order to say how they feel, music can address feelings much more
directly. Perhaps the easiest way of expressing feelings in particular is a
combination of arts – music, movement, and gestures (drama).

The method developed for this study is strongly influenced by theories in
music therapy, especially the teachings and research of Nordoff and Robbins
(1977), and writings of Leslie Bunt (1988, 1994). Music therapy is not easy to
define, as the techniques and methodology is strongly influenced by the client's
needs and therapist's position. The uniting factor between music therapists and

their work is the element of music as a tool for therapy. The music therapist is a resource brought to the client or recipient of therapy and it is the music therapist's task to find a way for the person to participate in music. If physical handicap poses difficulty in playing instruments, the instruments are adapted; if mental disability or developmental stage of the person is an issue, then the activities, and often the instruments, are adapted as well. The child may strike the keynote that provides the awaited resolution to a chord. Instruments can be tuned so that technical skills are not necessary to sound a chord etc.

Music therapy does not aim at helping people with their music in the same way; for instance, speech therapy is aimed at helping people with their speech difficulties. Neither is it aimed at teaching people to play an instrument nor to play a specific song, although this may often be a by-product of therapy sessions (Bunt, 1994). Therapy is social, interactive, and communicative.

Psychologists, psychiatrists, and other clinicians may use music as part of the therapy. Bruscia (1987) refers to this as "music in therapy". "Music as therapy", by contrast places music as the central ingredient of therapy where changes in the music are often mirrored in changes within the client-therapist relationship.

9.5 Specific qualities of music relevant to ICPS skills

In terms of relating the AST and CT skills to creative musical activities, the musical terms *improvisation* and *variation* arguably correspond to AST and CT. The Harward concise dictionary of music provides the following definitions of these terms:

"Improvisation. The art of creating music spontaneously in performance. In practice, the resulting music is often based on some subject or theme and may, in such cases, take the form of a set of variations."

"Variation. The modification or transformation of a musical idea in a way that retains one or more essential features of the original. Also the result of such modification or transformation."

The former refers to making something up on the spot (spontaneous thinking of new themes) while the latter is based on a specific musical idea – like a specific solution, which sparks different consequences. Moreover, the precursors to ICPS skills identified by Shure, and discussed briefly in chapter 8, include verbal abilities, which are done away with in the musical exercises. The music groups provide a structure for trying on different social roles such as leadership in a non-threatening way. The children can take turn leading the group and gain the experience of leadership. Moreover, self-esteem is boosted by guaranteed success, as everybody's music is equally good. As the creative thinking in such activities as improvising music is made visible by its expression in terms of musical playing, it is somewhat easier to observe and guide than thinking based on verbal communication. In a sense, the musical instruments used externalise the thinking and make it visible.

9.6 Summary

Creativity has been associated with divergent thinking, which involves seeking multiple solutions as opposed to one correct answer to a problem. It is argued that AST and CT are in essence forms of creative thought, and therefore,

measures of AST and CT represent a form of ideational fluency, measuring creative solutions to interpersonal problems. It is further suggested that as forms of creative thought, AST and CT can be enhanced through creative arts activities, such as music therapy.

Several studies suggest that musical functioning and other cognitive activities are connected in some way. Music has been shown to enhance academic learning; reading and maths achievement and help people overcome speech impediments such as stuttering. The qualities of music relevant to the present study of ICPS skills include its communicative properties, creative aspects, and opportunity for trying on different social roles.

The creative thought that is exercised in musical improvisation is expected to enhance AST and CT as thinking of alternative solutions and several possible consequences thereof is likely to rely on creative thinking.

*****

9.7 Summary of literature review

This chapter concludes the literature review section of this thesis. It is useful at this point to summarise the major issues relating to the overall aims of this research programme. The first aim of the research is to establish the effect of a short-term ICPS skills training programme with young children. This is contrary to common practice where training is generally much more extensive (see chapter 8). The preschool, kindergarten, and primary grades programmes developed by Shure prescribe daily sessions for 4 months, and with the youngest

children, some pre-ICPS training skills were developed to facilitate later training, as outlined in chapter 8. Thus, the 8 session training programme in this research programme is considerably shorter than that prescribed by Shure for young children. Such short-term training has the obvious economical benefit of being less expensive to implement as well as require less time and resources than longer-term treatment. Such short-term training of ICPS skills has not been attempted before with children as young as five years old, although short-term training has been successful with school-aged children (Erwin & Ruane, 1993).

Based on the developmental theories reviewed in the early chapters of the thesis the decision was made to work with 5 year old children for the short term training. By the age of five, even relatively late bloomers should have developed theory of mind, which has been demonstrated with children as young as 4 years of age (see chapter 5). With theory of mind comes some understanding of mental states, such as other people's beliefs, deception, and knowledge. Moreover, theory of mind is related to children's ability to decentre as discussed in chapter 5. Acquiring theory of mind and being able to decentre are both important developmental milestones for social behaviour as this involves children realising that other children may see things differently to themselves.

Social-cognitive training has been criticised for lack of generalisation of effects to social behaviour (e.g. Gresham, 1985; Beelmann, et al., 1994; McClure, Chinsky, & Larcen, 1978). This problem is addressed in the present research in several ways. Firstly, viewed in terms of Crick and Dodge's (1994) social information processing model, which is essentially a more detailed account of Bowlby's working models, AST and CT correspond to the last two steps (see

figure 1, pp. 74) before behavioural enactment. Effects of improved AST and CT

skills can therefore be expected to affect the children's behaviour. Secondly, the

children's age is important for generalisation of effects to behaviour. They must

be young enough to be open to new ways of responding to situations, while old

enough to be relating to other children in a meaningful way. Thirdly, although in

general, multimodal programmes show better generalisation of training effects

than monomodal programmes, as discussed in chapter 8, monomodal programmes

are more effective with young children (3-8 years old) than with older children

(Beelmann, et al., 1994). Finally, in light of Schneider's (1992) criticism of the

content of training materials used in social cognitive training, it was decided to

place emphasis on the relevance of training items to the children's reality at the

preschool (see section 10.2.3.1 for details).

The second aim of this research is to determine the stability of effects from

ICPS skills training with children. As discussed in chapter 8 (section 8.4), there is

a general lack of follow-up studies of effects from ICPS training. Moreover, in

view of the fact that short-term training has not been attempted with children this

young before, it is important to establish the stability of effects if such an

approach is to be a viable option to longer term programmes.

The ability to see many solutions in any given situation and foresee several

possible consequences are arguably a measure of ideational fluency, or creative

thinking, which represents a possible link between cognition and musical

functioning. This link will be addressed in the present research by applying the

alternative method of Music Therapy to improve AST and CT through exercising

creative thinking. This relates to the third and fourth aims of the research, to

establish the relative effect of Music Therapy on the specific skills and to seek alternative ways of mediating AST and CT with short-term programmes.

Finally, Vygotsky's concept of scaffolding (see section 5.1) forms the theoretical framework for in vivo training of AST and CT in the final study, which also relates to the final aim of seeking alternative ways of mediating AST and CT with short term programmes.

*****

Study I

The absolute and comparative effect of short term Interpersonal Cognitive Problem Solving therapy with children.

In this study, a short-term treatment of Interpersonal Cognitive Problem Solving (ICPS) therapy with children was compared to an alternative music-training programme rooted in music therapy techniques. Treatment groups were compared to controls on measures of Alternative Solutions Thinking (AST) and Consequential Thinking (CT) skills, prior to and following 8 sessions of treatment. Behavioural observation of free play was included and related to the social cognitive skills. ICPS training resulted in elevated AST and CT skills, whereas music training at this stage showed no significant difference. Behavioural improvements were not demonstrated although the relationship between ICPS skills and behaviour was exaggerated compared to pre-test measures.

10.1 Introduction

A short-term programme, which runs for a certain amount of time has several advantages over a longer-term programme of no predetermined duration. Firstly, it is less complicated to implement than longer-term intervention, as practical considerations are only temporary and cost of the training can be

accurately budgeted for the number of sessions involved. In fact, Schneider

(1992) reports that studies of relatively short duration of social skills training tend

to produce larger effect.

In this study, AST and CT skills were selected for the training because they

are the most basic skills identified by Spivack et al., (1976) and have been shown to

have almost universal significance for interpersonal relations (for review see Urbain

& Kendall, 1980; Erwin, 1994; Denham & Almeida, 1987). The potential benefit of

training AST and CT can be conceptualised by applying the heuristics introduced in

the previous chapters.

As was discussed in chapter 2, working models have the tendency to become

increasingly automated and reactionary. Accordingly, it is important to induce

flexibility at an early age to counteract destructive ways of thinking. The ability to

see alternative solutions would potentially elaborate on the working models of

relationships, alerting children to a range of possible solutions in social situations.

Consequential thinking, by similar means, would elaborate on the pre-existing

working models and get children to consider various possible consequences of their

actions.

Viewed in terms of Crick and Dodge's reformulated model of social

information processing, introduced in chapter 6 (6.3.), the AST training corresponds

to step 4 (response access or construction). Improved AST would then be expressed

as consideration of a wider range of possible responses, as well as construction of

more new responses. CT, in turn, corresponds to step 5 (response decision,

including response evaluation, and outcome expectations). Improving CT would

conceivably have the effect of children considering a wider range of possible

responses because of training. Step 6, in Crick and Dodge's model, is "behavioural enactment". Thus, improvement at these last two steps of social information processing, immediately preceding behavioural enactment, would logically improve behavioural competence.

The comparative method of enhancing AST and CT, with music training, which is based on music therapy techniques, does not have a parallel in the literature, and was specifically designed for the purpose of this study. As discussed in chapter 9, the creative music activities provide a structure for practising various social roles, such as leadership. Moreover, creative activities may tap into a similar kind of thinking to that involved in generating alternative solutions, and thinking of consequences, that is creative, or divergent, thinking. If creative thinking underpins AST and CT, then exercising creative thinking can potentially strengthen AST and CT indirectly. Although the nature of the relationship between general cognitive processes and music is still not clearly defined, it has been established that such a relationship exists (see section 9.3).

To apply cognitive measures to measure the benefit for social cognition, derived from creative music therapy, serves to investigate further the influence of music on cognition. If gains from a music therapy programme generalise into other areas of people's lives, it is important to have some objective means of measuring this. ICPS may provide a tool to reveal this gain. The specific, cognitively focused psychological measures of AST and CT could, potentially, provide a valuable yardstick for assessing progress in this creative arts discipline.

Cognitive therapies in psychology focus on the thinking processes, which govern behaviour, rather than attempting to alter behaviour directly, as more

behaviouristic methods of therapy within psychology have done. This produces very similar problems to those encountered by arts therapies. That is, research in the area of cognitive behaviour therapy can only measure cognition as it is expressed verbally, but the behavioural results will vary, according to individuals, as greatly as do the expressed results from improvised arts therapies.

Although the medium for all therapy within psychology is verbal conversation, psychologists have not limited themselves to interviews in research measures of the effect of intervention. Psychological studies include behavioural observations and physiological measures. By the same reasoning of association between functions, music therapy can benefit from psychological measuring tools. The therapeutic medium is music, but interviews can reveal cognitive change.

Erwin and Ruane (1993) examined the effectiveness of a short-term ICPS training programme for improving children's ICPS ability and social status. They trained seven- to eight-years old school children in AST and CT skills over a period of four weeks (eight sessions). The results revealed significant improvements in levels of AST and CT but no change in sociometric status. The authors speculate that this may be, at least in part, due to the dynamics of the child's social network, specifically the slow rate at which sociometric status changes (Erwin & Ruane, 1993).

This study extends Erwin & Ruane's (1993) study in several important ways. First, the children in the present study were 5 years old at the start of the programme as compared to 7 to 8 years old in Erwin and Ruane's study. This is important for a variety of reasons. Early intervention has the obvious advantage of maximum preventative value for the child. Improving social competence as

early as possible in life, can potentially spare the child unpleasant experiences in early peer relations. It is desirable to intervene before a child reaches an age at which friendships become extremely important to the child's development. Moreover, early intervention is more likely to have a long-term effect (Schneider, 1993; Beelmann et al., 1994) than intervention, which is implemented when children are older.

The fact that the children in this study are younger than the children in Erwin and Ruane's (1993) study are is also important in relation to popularity measures. Although Erwin & Ruane did not find increased social attractiveness among the trained children in their study, there is reason to investigate whether short term ICPS training may exert impact on the popularity of younger children. The children in the present study are considerably younger than the children in Erwin and Ruane's study. At the age of 5, social reputation is not as firmly established as it is by the age of 7 to 8 years, and might therefore be less difficult to change.

Second, an important methodological difference in the present study, as compared to Erwin & Ruane, is that the children in the control group in the present study did not have the opportunity to interact with trained children. This eliminated the possible influence from interaction with children who were improving in their social cognitive skills because of specific training. It is well established that manipulating children's peer contacts has been used as an effective intervention strategy with social isolated children (Erwin, 1993).

Finally, the inclusion of a comparative method of training ICPS skills and behavioural measures are further extensions to Erwin & Ruane's (1993) study. As

discussed before (chapter 8, section 8.4) improvement in ICPS skills has been reliably associated with improved behavioural adjustment (e.g. Denham & Almeida, 1987).

This study was carried out in pre-schools in Reykjavík, Iceland. Pre-schools in Reykjavík are run by the city council and serve children aged 1 to 6 years old. There are some privately run centres in the city, which may differ from the average public pre-school, but none were included in the study. The service is subsidised by local authorities and fees depend on family situation, that is, single parents and students pay a reduced rate, and cost is not a determining factor in children's access to these institutions. Availability of spaces is limited in some areas but most children get a place in their home area.

Children in Iceland start school at age 6. The transition from pre-school to school constitutes a major change to the child's every-day life in many respects. Perhaps most important is the difference in the adult-child ratio at school, as compared to that of the pre-schools. The responsibilities of the school-teacher, who is solely responsible for the class, are very different to that of the pre-school teacher who has several assistants in the classroom. Effective social interactive skills provide an opportunity to smoothen the transition from pre-school to elementary school when children assume a new role, that of a school child, at the same time as they are getting to know new teachers and making new friends.

Children who received few nominations by peers in their classroom, at the pre-intervention measures, were expected to gain social attractiveness as their social cognitive skills improved through training. In terms of preventative value of ICPS training, the transition between pre-school and school is in many respect

an ideal time to implement new social skills. If isolating behaviour is halted at

this age, it is possible that serious consequences of social withdrawal and

loneliness later in life will be prevented.

The hypotheses developed for this study were:

1) Short-term programme of training AST and CT skills will improve these

    particular ICPS skills.

2) Participation in a creative music programme will improve AST and CT.

3) Improved AST and CT will have positive impact on children's

    interpersonal behaviour as measured by observation during free play in the

    playground.

4) Improved AST and CT will improve children's popularity

10.2 Methods

10.2.1 Research design

A multiple-group, matched subject, pre-test-post-test design was employed

for the study. Two treatment methods and a non-treatment control group were

included. The non-treatment control is important to provide indication of

improvement, due to normal development rather than the effect of the treatment

(see section 10.2.5.9 for further discussion of the control group).

Independent variables: a) ICPS training

                          b) Music therapy based training, and

                          c) No intervention control

Dependent variables: a) AST skills

                          b) CT skills

c) Behaviour

d) Popularity

Four pre-schools were selected from the general city area of Reykjavík. All the pre-schools were in a similar socio-economic setting with mixed housing and age of residents. None of the institutions were running any kind of special intervention programme at the time, or during the previous 2 years before the ICPS and music training programmes.

All the pre-schools had age-integrated classrooms of approximately 20 children, ranging in age from 2 to 6 years old. Children attend these centres either on a part-time or all-day basis. All children born in the same calendar year (5-6 years old) attending the relevant institutions were included in the study. Thus, the study covered their last year of pre-school before starting school.

Five-year-old children have acquired theory of mind, they generally have a good grasp of expressive language, and they are still young enough to have flexible social status amongst peers. All these factors are important for effective ICPS training. Most important, however, is language comprehension as well as expression. Children must, for example, understand the words *same* and *different* if they are to benefit from AST training (Shure, 1992a). Similarly, understanding the words *because* and *might* (as in what might happen next) are important for CT training. For very young children (4 year old), Shure includes pre-problem solving training, which consists of teaching children the meaning of these words. Thus, it was decided to select 5 year-old children for the present study.

Each pre-school was assigned to one condition only by a draw from a hat. The two smaller pre-schools were combined to comprise one condition to get

approximately the same numbers of children in each condition. The difference in size of the smaller and larger pre-schools was the number of classrooms. The size of the pre-school should not affect the number of possible nominations for the popularity measures, because the classrooms in the smaller pre-schools were of equal size to the classrooms in the larger pre-schools.

By only assigning each institution to one condition, interaction between trained and untrained children, and possible improvement in the control group from interaction with peers who were receiving training, was avoided. It is important to bear in mind that the participants were all healthy children, who were functioning amongst peers, in regular pre-schools, without any diagnosed special needs, thus improvement may be subtle and ceiling effect can be expected (see discussion of ceiling effects in section 10.2.8.1).

10.2.2 Participants

A total of ninety-six children, or all children born in the same year and attending the selected pre-schools, were initially included in the study. Ten, out of the ninety six children, did not participate for various reasons: two because their parents opposed their children's participation in the study; and eight because of change of residence, extended vacations or early school start. Thus, the final sample consisted of eighty-six children ($N = 86$, 50 boys and 36 girls). The children were 5 years old at the beginning of the study.

10.2.3 Materials

The material used for training the children in ICPS skills and music

training was either adapted or constructed specifically for the purpose of this

study.

10.2.3.1 Training materials for ICPS groups

In preparation for the study, the experimenter spent a few days in each pre-

school, making acquaintance with the children in both indoor and outdoor activities.

This time was also used to observe and record common conflict situations, amongst

the 5-year-old children, to use as material for training and assessment vignettes. It

was decided to construct the vignettes in this way to ensure that the content of the

material used for training was relevant to the children's lives as it has been suggested

that content of the training material may be of importance in relation to the real life

effect of ICPS training (Schneider, 1992).

The vignettes were constructed around real conflict situations observed

amongst the children in the pre-schools and in neighbourhood playgrounds, where

children of this age commonly play at weekends, and when they are at home.

Additional information about the sorts of conflicts that arise both at the pre-schools

and in neighbourhood playgrounds was gained from informal interviews with

children of the same age, as well as talking to teachers and other staff at the schools.

Four children, two girls and two boys who did not attend any of the

institutions involved in the study, participated in pilot sessions to test the

appropriateness of vignettes. As a result of these 4 practice sessions, the vignettes

were made considerably shorter than originally planned. This was done in order

to ensure that children this young would not have difficulty comprehending the

whole situation in their mind, while thinking of alternative solutions or consequences of those solutions.

The scripts for the vignettes were kept in a little book (the storybook) for the researcher to read out during ICPS training sessions. For scripts, see Appendix II-i.

10.2.3.2 Materials for ICPS assessment

Items used for the assessment of AST and CT were identical to the ICPS training material for AST and CT.

A *"Story card"* was created for each assessment vignette. These were index-cards with a picture of the central object, a person or a thing, in each vignette as well as a word naming the story (swing, ball and friend). The script for the actual story was separate for reading out or reciting by the experimenter. English translations of the assessment items are presented in section 10.2.5.3 and the original versions (in Icelandic) are recorded in Appendix I-i, along with translations.

10.2.3.3 Training-material for the music groups

"Hello song" and a *"Good-bye song"* were songs that were specially adapted for the groups in view of their age and purpose of the sessions. These were used to start and end each session.

Various activities were planned for each music-session. A framework session plan was constructed, although not detailed with the sessions being

creative and improvisational to a large extent. These plans are included in

Appendix III-i.

10.2.3.4 Data-recording sheets

Two types of data-recording sheets were prepared, firstly for recording the

children's responses in the interviews, and secondly for recording behaviours when

analysing the video-recordings (see sample in Appendix IV-i).

10.2.4 Apparatus

A small tape-recorder was used to tape the interviews. A small cam-corder was

used for videotaping the children, for behavioural observations during free play in

the playground. A timer-stop watch was used for timing the videotaping for each

observation.

For the music sessions only: Musical instruments, including guitar and

general school instruments, such as tambourines, drums, tone-bars, maracas,

triangles, and bells were used. SPSS statistical package (8.0 for Windows) was

used for statistical calculations.

10.2.5 Procedures

The assessment procedures described below were all conducted at three

different time points:

a) before intervention,

b) immediately following intervention, and

c) seven months following the completion of the training programme.

The follow-up measures are reported as a separate study (Study II) in chapter 11. Since the same assessment procedures were used for the follow-up measures, the procedures are only detailed here and only referred to in study II.

10.2.5.1 Assessment by interview

Interviews were performed in the pre-schools by the researcher on a one to one basis with the children, with the exception of 3 very shy children, who were reluctant to come for an interview, but happy to do it with a friend. In these cases, the accompanying friends were interviewed first alone, and then asked not to disturb the interview while their friend was interviewed. This request was respected in all cases.

Each interview started with a couple of questions about the child's favourite activities at the pre-school. Then the child was asked the sociometric question of whom the child liked to play with at the pre-school. Negative nominations were not included for ethical reasons (e.g. power of suggestion). Finally, the assessment questions for AST and CT skills were posed, as described in section 10.2.5.3. The interviews were recorded with a tape recorder.

10.2.5.2 Popularity and social status

Popularity was determined by means of peer-nomination, asking the children to name the children they played with at the pre-school. No limit was set

on the number of nominations (Moreno's criteria, (Moreno, 1960)) or field of eligible allowed. However, only nominations of peers were included in the popularity assessment. Nominations of younger children and children who did not attend the pre-school were excluded, because of the design. Only children of the same age in each school were interviewed, and, thus, in a position to nominate others. Absolute numbers and reciprocated nominations were both considered and recorded. Sociometric scores consist of a count of nominations by peers.

At the age of 5 years, children still have fairly transient relationships with friends; they may count someone amid their friends today and not tomorrow. Children, who are generally sociable and more popular among peers, are likely to be nominated by many of their peers at any given time and present in the data as popular. Similarly, less sociable children are likely to be less remembered by peers than social children, and present in the data as less popular. Ultimately it was the change in popularity that was of concern in relation to the training programmes, specifically, whether changes in ICPS skills produced changes in popularity scores or behaviour.

10.2.5.3 Assessment of AST and CT

Three vignettes were used to assess AST and CT (for the original, Icelandic version, refer to Appendix I-i). The stories covered 3 different subject areas of social conflict: Making friends (friend), conflict with a peer (swing), and conflict with authority (ball).

The child in the vignette was always the same sex as the child being assessed. This was done in light of the fact that children this age generally prefer to

play with children of their own sex. Thus opposite sex story character might not be viewed as favourably as same sex one, especially when thinking of making friends with the person.

The *Story cards* were placed face down on a table, so they all looked identical, and the child was asked to select a *Story card* from the three cards. When the child had selected a *Story card,* the researcher read out the story on the other side of the card. The three stories were as follows:

1) Friend: Johnny goes to a pre-school like yours. A new child comes to his classroom one day. Johnny really wants to make friends with this child. What can Johnny do?

2) Swing: Johnny is in the playground at the pre-school. He wants to have a go on the swings, but the same children have been on the swings for a long time and will not give him a turn. What can Johnny do to get a go on the swings?

3) Ball: Johnny is playing with a ball at pre-school. The ball goes over the fence. What can Johnny do to get the ball back?

When the story had been read to the child, the child was prompted to think of as many alternative solutions as s/he could by using standard prompts. For AST the prompts were:

"What can X do?"

"What else could X do?"

"Could X do anything else?" followed by:

"What would you do?"

"What else could you do?"

"Could you do anything else?"

Prompting was continued until the child stopped producing new alternatives. That is, either the child kept repeating alternatives or said that he or she could not think of more ways.

For each suggested alternative solution, the child was asked for possible consequences. This constituted the CT assessment. The prompts for CT assessment were:

"What would happen then?"

"What else could happen?" and

"Could anything else happen?"

These prompts were repeated until the child either started to repeat responses or could not think of further possible consequences.

10.2.5.4 Recording of AST and CT test responses

AST and CT scores consisted of the absolute number of responses to the vignettes. No judgment was placed on the quality of the children's responses. All alternative solutions were counted in unless they were a total fantasy which could not possibly be a realistic solution, such as "I would get a magic wand and...." or "I would go to Africa, get a lion and make it chase him away". Such responses were not included in the final scores but solutions such as pushing children off the swing to get a turn were counted in. The final score of AST and CT is a count of the number of alternatives and consequences respectively.

10.2.5.5 Assessment by observation

Behaviour observation was done by videotaping the children. This has the advantage of allowing observers to go over the material several times in order to construct behaviour categories. The disadvantage, of videotaped observations is that considerable context is lost. Interval sampling was applied to minimise potentially intimidating effects of longer individual observations. Observations were performed during out-door free play sessions to preserve ecological validity. This is the only time where there are no structured activities going on in the pre-school and the children are left to choose what they do and whom to play with. The out-door play sessions are 90-120 minutes in the morning and again immediately after lunch. To provide a measure of socialising patterns, each child was observed for one minute, four times during the same play-session. These observations were evenly spread over 90 minutes of outdoor play and thus provide a one-minute glimpse of the type of interaction each child is engaged in at four different time points.

Behavioural index was constructed from videotaped recordings of the children during free play at each pre-school's playground during normal school hours. This was done by watching much of the material and looking for salient behaviours, which could be used for rating. Initially 9 behaviour-categories were identified in the data. They were:

1) Social Play: Child is engaged in social play, playing in a group, or interacting with other children.

2) Solo: Child is on his/her own, but playing or doing something: engaged, looking for playmates.

3) Positive approach: Child makes a positive approach to other children, e.g. joins a game, or asks someone to play.

4) Negative approach: Child makes a negative approach to others, e.g. hits, throws sand or calls for other children's attention by disrupting their play rather than joining in. Unsuccessful approaches, e.g. does not get response from others, but does no more to get attention.

5) Positive reaction to being approached: Child reacts positively or appropriately to another child's approach, e.g. even if the child doesn't want to play then that is expressed. Including deals well with teasing.

6) Negative reaction to being approached. Child reacts negatively to approach by another child by avoiding the interaction, e.g. walks away without a word.

7) Teasing: Child teases other children, e.g. by running away with a toy the other child wants,

8) Passive: Child is passive around others, including when following a group but does not participate in anything. Also runs around – does not enter into games. Helplessness.

9) Playing in pairs: Playing with another child.

These behaviour categories were collapsed to form five different behaviours rather than nine. This was done before the second rating, undertaken by a second person as a reliability check on the categorisation of the data, was performed on the data. The reasons for collapsing categories were twofold. Firstly, few entries in some of the categories such as

"Negative reaction" and "Teasing" were too few to produce a meaningful category for statistical analysis. Secondly, the categories were collapsed in order to make the categories clearer to avoid the need for subtle judgements in rating. "Passive" and "Solo" were combined in a variable called "Alone" since they both represented a behavioural observation of solitude. "Positive approach" and "Positive reaction" were combined into a variable called "Positive interaction" and the same was done for "Negative approach" and "Negative reaction". "Teasing" was included in the negative interaction variable since it especially constitutes negative approach to another child. Thus, the five categories in the analysis are as follows:

1) *Positive interaction*: Any positive approach to another child, such as handing a toy to a child, approaching a child to join a game, going up to a child to help, assisting another child, or asking another child to play. This category also includes positive reactions to other children's approaches, such as welcoming them in a game and accepting assistance. Essentially this is successful approach or interaction with other children.

2) *Negative interaction*: Aggressive and unsuccessful approaches to other children, hitting, shoving, shouting, and fighting (physically or verbally). This category also includes negative reactions to approaches from other children such as not allowing a child to join in a game, pushing children who want to play away, teasing other children, and refusing to share toys or equipment, such as see-saws and swings in the playground. Essentially this is unsuccessful approach or interaction with other children.

3) *Alone*: This category includes any kind of observed solitude both away from other children and in the vicinity of other children. Wandering about the playground alone or passively standing by and not showing any attempts to join in games or approach the other children.

4) *Playing in pairs*: This is the observation of two children running around, chatting, or playing together.

5) *Social*: This category includes any group-activity, such as playing group-games and being actively involved in a group of three or more children. This category differs from categories 1 and 2 by referring to children being actively involved in a group as opposed to the act of approaching or initiating interaction.

Behaviour scores consisted of counts of the types of behaviours, which occurred during the specified observation time.

10.2.5.6 Control procedures

Order-effect: Order-effect of the assessment vignettes, was controlled for by having the children chose which card to start with as described above (10.2.5.3).

Inter-rater-reliability: All taped material was rated by a second rater. The second rater was an elementary school teacher (B.Ed.), with several years of teaching experience. The second rater was blind to the conditions being rated. Rating was done by watching the video-tapes and ticking off the behaviours that occurred during the observation time. A tone from a stopwatch sounded the

beginning and the end of each observation on the video. Recording sheets were compared for agreement for each tape. Interviews were rated by listening to the audiotapes. Recording sheets were compared in the same way for numbers of agreement. The inter-rater reliability ranged from 92% to 98% agreement between raters at the three different time points of measurement. A sample of the data recording sheets are included in Appendix IV.

Interaction control: Assigning each school to one condition only controlled for interaction effects between subjects. Thus, the likelihood of trained children interacting with those serving as controls was eliminated.

Group effect control: The children were randomly assigned each time to the groups of 5-6 for the training sessions (both for the ICPS and music training). Thus, the groups were differently composed each time. This prevented the children from identifying with a specific group within the classroom and possible effects from that.

10.2.5.7 ICPS training

Eight ICPS training sessions were held, each lasting approximately 25-30 minutes. The training was conducted in the pre-schools by the researcher. The children were trained in groups of 5 to 6 children, which were randomly composed each time (by a draw from a hat). This maximised the opportunity for shyer children to interact with peers. Moreover, going through conflict stories with different people, or different combination of people each time, allowed the children to experience more varied sources of solutions. When conflicts arose among the children in the training sessions, the conflict was immediately made into a story,

which was dealt with in the session by finding alternative solutions and possible consequences.

Every session started with a little game, in order to focus the group and start the session. The Alternative Solutions Thinking and Consequential Thinking were trained in combination. The children were pressed to find as many solutions as possible for each Vignette. Each solution was then taken up individually and the children were assisted in figuring out all the possible consequences.

10.2.5.8 Music training

Eight music treatment sessions were held, each lasting approximately 25-30 minutes. The music sessions were structured in the same way as the ICPS sessions in terms of frequency and composition of the groups. Every session started with a *Hello-song* and was concluded with a *Good-bye* song. For each session, an activity to begin with was planned, but any initiative from group-members each time was encouraged and followed through. Thus, the sessions progressively had a tendency to "take off" into different directions, although the aim of training AST thinking and CT was always central to the activities. This was done by continually trying out different ways of doing things and paying attention to the various results.

The children went from singing familiar songs with movements to changing the movements, words, melody, and dynamics of the song, to making their own music and producing movements to it, for more detail refer to Appendix III-i.

<u>10.2.5.9 Control group</u>

Considering that the music treatment does not have precedence in the literature, it was decided to have a non-treatment control. In the case of no treatment-effect from the music, it would at least provide an activity control measure to compare against the ICPS treatment. Further advantage of including a non-treatment control is to control for effects of normal development.

The control group received no training. Assessments were made at the same time and in identical way to assessments in the treatment groups. That is, before treatment, at the time treatment in the ICPS group and the Music group were completed and at seven-month follow-up time.

<u>10.2.6 The trainer-therapist</u>

The researcher (author) was the trainer-therapist in the training programmes. She is a qualified music therapist and psychology-teacher (licensed in Iceland). She has worked as a pre-school teacher for 6 years in Denmark and Iceland, and was practising music therapy in Iceland on a part-time basis at the time of the experiments.

<u>10.2.7 Ethics and data protection clearance</u>

The British Psychological Society's Code of Conduct, Ethical Principles and Guidelines for working and experimenting with children were honoured throughout the research programme.

Permission to run the experiments was obtained from the appropriate authorities before the experimentation. This included: a permission from the Icelandic Data-Protection-Committee (Tölvunefnd), run by the Icelandic Ministry

of Justice; permission from Reykjavík City Council, division of child-care

services (Dagvist barna), to approach head-teachers of pre-schools in the city for

participation in the study; an agreement from the head-teachers at the pre-schools

involved; consent from parents or guardians of the children; and finally, the

participant's consent. No deception was involved and the children were informed

as to the nature of the study.

The Data Protection Committee granted permission on the condition that

all participants were numerically coded in the data, and all information regarding

the children was kept anonymous. All taped material and video recordings were

to be destroyed following final analysis of the data, and no original data to be

taken out of the country[3].

10.2.8 Statistics and methodological issues

10.2.8.1 Difference scores

Difference rather than absolute scores were used in the analysis of

progress from pre- to post-test measures, in order to compare progress and

change. At pre-test measures, there were differences between the three groups on

the behavioural measures but not on the cognitive measures of AST and CT.

Thus, it was decided to use difference scores to enable direct comparison of

progress in cognitive and behavioural domains. Moreover, difference scores

allow the comparison of correlated changes, that is, whether changes in AST or

CT go with changes in behaviour.

Difference scores overcome the problem of different starting points

because it is the change from pre-test to post-test that becomes the dependent

variable, which represents the effect of the treatment methods in the experimental

groups, and changes due to normal development in the non-treatment control

group. The problems posed by difference scores are ceiling- and floor-effects, or,

---

in general, regression toward the mean (Tabachnick & Fidell, 1996). Thus, it can be difficult to say whether a difference score is small because the treatment is not very effective, or because the pre-test score was high and left little room for improvement. These concerns are discussed in relation to the data and results where appropriate.

10.2.8.2 Power

The conventional Alpha level of .05 was used for all statistical tests, controlling for Type I error. With regards to Type II error, power statistics were calculated based on sample size. Cohen (1977, 1988) suggests $\beta = .20$ as a reasonable value for general use. More specifically, he suggests that power, equal, to $1 = \beta$, be at least .80. The average number of participants in each group in Study I was 28 (26, 27 and 33). According to Lipsey (1998), power of .95 with this number of cases allows detection of effect size of 1.0. That is, given that there are (on average) 28 participants in a group, the power to detect an effect size of .80 is about .84%, at the $\alpha = .05$ level with a t test or one-way ANOVA.

The data were examined for homogeneity of variance and normal distribution before applying analysis of variance to compare means. SPSS statistical package for Windows was used for all statistical analysis.

10.3 Results

10.3.1 Pre-test

Participants were all together 86 ($N = 86$). In the Music group, there were 18 boys and 9 girls ($n = 27$); in the ICPS group there were 15 boys and 11 girls

(n = 26) and in the Control group, there were 17 boys and 16 girls (n = 33).

Institutions were randomly allocated to either Music Therapy based training (MT), ICPS training or Control group. A one-way, between subjects, analysis of variance (one-way ANOVA) was applied to see if the groups differed on any of the dependent variables before treatment. These included measures of ICPS skills (AST and CT), peer-nominations scores and behavioural measures.

The three groups did not differ in levels of AST and CT at pre-test ($F(2,76)$ = 1.44, NS) for AST and $F(2,76)$ = .51, NS for CT). Means and standard deviations are presented in table 1 below.

Table 1. Levels of AST and CT in the three groups at pre-test.

Condition	AST		CT	
	M	SD	M	SD
MT	4.16	3.02	2.48	2.49
ICPS	3.08	2.43	2.60	2.22
Control	4.14	2.34	3.07	2.14

Note: There is no significant difference between groups on these measures.

Behavioural measures revealed significant differences between the three groups on 3 of the 5 behavioural categories: "socialising" ($F(2,80)$ = 3.518, $p <$ .05), "positive interaction" ($F(2,80)$ = 3.606, $p <$ .05), and "playing in pairs" ($F(2,80)$ = 4.240, $p <$ .05). No difference was found between conditions for "alone" and "negative interaction". Tukey's HSD multiple comparisons show that there was significantly more "socialising" ($p <$ .05) and "playing in pairs" ($p <$ .05) amongst the children in the ICPS group than in the MT group. The final significant difference in behaviour between the three groups was in "positive interaction", which was significantly greater in the MT group ($p <$ .05) than in the

ICPS group at this stage. Means and standard deviations for the behavioural

measures are presented in table 2 below.

Table 2. Comparison of means for behavioural measures at pre-test

Condition		*M*	*SD*	*df*	*F*
Positive interaction	1: MT	.44	.64		
	2: ICPS	1.08	.95	2,80	3.606*
	3: Control	.90	1.01		
Negative interaction	1: MT	.15	.36		
	2: ICPS	.29	.62	2,78	1.867
	3: Control	.06	.25		
Alone	1: MT	1.68	1.13		
	2: ICPS	1.55	1.37	2,75	1.035
	3: Control	1.55	1.34		
Playing in pairs	1: MT	1.52	1.12		
	2: ICPS	.72	.74	2,80	4.240*
	3: Control	1.32	1.14		
Socialising	1: MT	1.04	.94		
	2: ICPS	1.84	1.11	2,80	3.518*
	3: Control	1.23	1.31		

Note * Difference between the groups is significant. $p < .05$

The MT group differed from the other two groups on measures of peer

nomination scores ($F_{(2,83)}$ = 4.743, $p < .01$). Tukey's HSD post hoc

comparisons revealed that nomination scores in the MT were significantly lower

than nomination scores in the groups assigned to ICPS training group ($p < .05$)

and Control ($p < .01$). Summary of the nomination scores in the three groups is

presented in table 3 below.

Table 3. Peer-nominations at pre-test.

Condition	Mean	SD
MT*	.70	.82
ICPS	1.54	1.14
Control	1.61	1.52

Note: *significantly lower than ICPS and Control, $p < .01$.

The differences in the peer nomination scores and behavioural measures between conditions will be adjusted by the application of difference scores, thus working with measures of progress following treatment. By applying difference scores it will be possible to compare progress in the groups as only the actual progress is being compared, not absolute levels of competence.

10.3.1.1 Summary of statistics at pre-test

There was no significant difference in ICPS skills between the groups, but differences were found in measures of behaviour and popularity. Differences between groups will be adjusted for by the use of difference scores.

10.3.2 Post-test results

Post-test measures were taken immediately following the conclusion of the intervention programmes. These included one-way ANOVAs to determine the effect of the treatment on the children's ICPS skills, and behaviour.

Pearson's r correlation coefficients were used to reveal association between ICPS skills and behaviours. One tailed correlations were applied as it is predicted that changes in AST or CT will have behavioural consequences. Statistical calculations were based on difference scores. The results were as follows.

10.3.2.1 Progress in ICPS skills: AST and CT

The results showed significant difference between the groups on measures of AST and CT skills ($F_{(2,74)}$ = 18.29, $p < .01$) for AST and $F_{(2,74)}$ = 13.455, $p < .001$ for CT). Tukey's HSD post hoc comparison revealed that the children in the ICPS group had improved significantly more on measures of AST than the

children in the MT group ($p < .001$), or the Control group ($p < .001$). The same

was true for CT. Children in the ICPS group had progressed significantly more

than the children in the MT group ($p < .001$) and the children in the Control group

($p < .005$). These results are summarised in table 4, and depicted in figures 2 and

3 below.

Table 4. Progress in ICPS skills immediately following training.

	MT		ICPS*		CONTROL	
	Mean	SD	Mean	SD	Mean	SD
AST	.68	2.01	3.61	2.62	- .03	2.10
CT	1.48	2.10	3.39	2.15	.45	1.90

Note: * Significantly different from the other two groups. The numbers represent numbers of responses between pre-test and post-test, or difference scores in AST and CT.

FIGURE 2. PROGRESS OF AST BETWEEN PRE-TEST AND POST-TEST.

condition
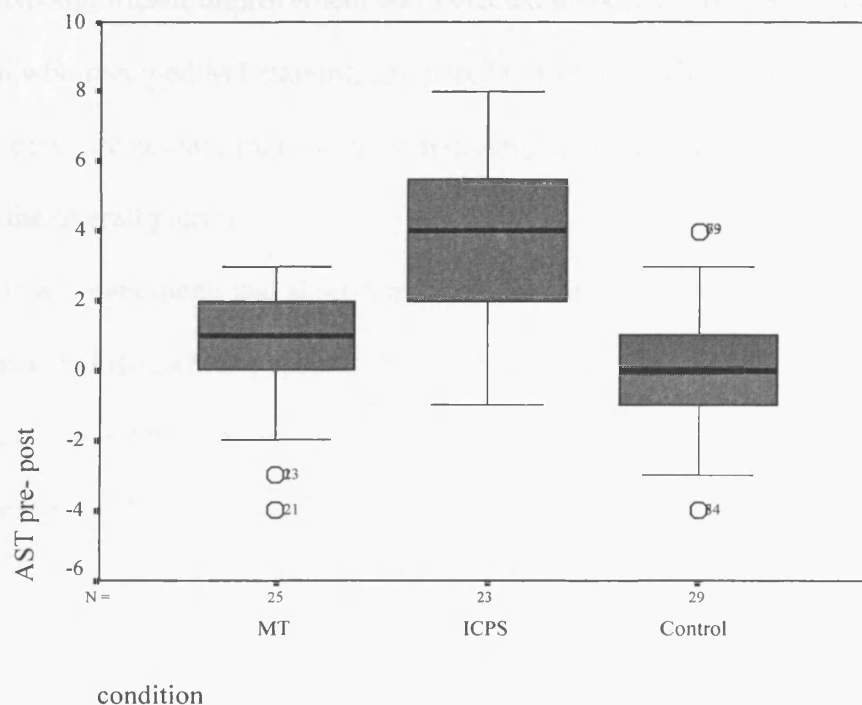
FIGURE 3. PROGRESSION OF CT BETWEEN PRE- TEST AND POST-TEST.
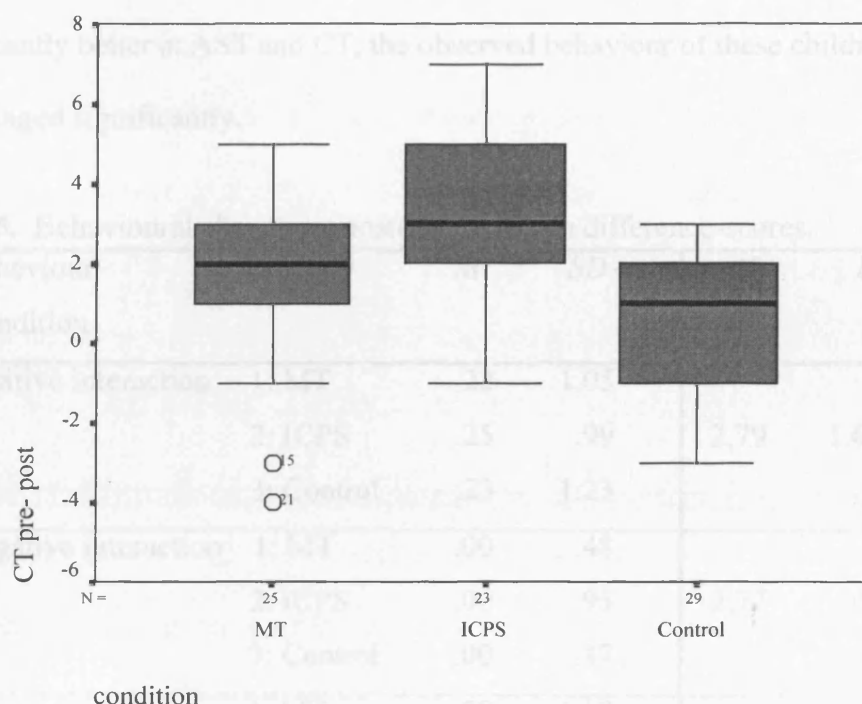
No significant improvement was detected in these measures from the children who received MT training compared to Control. The outliers depicted on the box plots are not star-marked, thus, removing them from the data did not change the overall picture.

It was concluded that short-term ICPS training had resulted in elevated AST and CT skills, which supports the first hypothesis of this study. The second hypothesis cannot be substantiated. The MT training has not produced significant improvement in AST or CT at this stage.

10.3.2.2 Behavioural measures at post-test

The results show no significant behaviour change in any of the groups, based on difference scores from pre-test to post-test measures (see table 5).

Although the children who participated in the ICPS training group have become

significantly better at AST and CT, the observed behaviour of these children has

not changed significantly.

Table 5. Behavioural changes at post-test based on difference-scores.

Behaviour Condition		*M*	*SD*	*df*	*F*	*p*
Positive interaction	1: MT	.22	1.05			
	2: ICPS	.25	.99	2,79	1.680	.193
	3: Control	- .23	1.23			
Negative interaction	1: MT	.00	.48			
	2: ICPS	.00	.95	2,77	.000	1.000
	3: Control	.00	.37			
Alone	1: MT	- .32	1.17			
	2: ICPS	- .58	1.91	2,74	.812	.448
	3: Control	.00	1.83			
Playing in pairs	1: MT	- .07	1.54			
	2: ICPS	.83	1.46	2,79	2.195	.118
	3: Control	.35	1.60			
Socialising	1: MT	.52	1.60			
	2: ICPS	- .25	1.51	2,79	2.455	.092
	3: Control	- .32	1.56			

Note: Means represent mean difference from pre-test to post-test.

10.3.2.3 Behaviour and ICPS skills.

The relationship between AST, CT and behaviour variables at post-test

was examined by means of *Person's r correlation*. Differences in AST, CT and

behaviours were correlated to see if there was an association between changes in

ICPS skills and changes in behaviours. Only in the ICPS training group were

there significant correlations between changes in AST or CT and changes in behaviour variables (based on difference scores).

Improvement in AST levels correlated positively with changes in "positive interaction" ($r = .381, p < .05, n = 22$), which in turn is positively related to "playing in pairs" ($r = .420, p < .05, n = 24$). AST also correlates negatively with "alone" ($r = -.575, p < .01, n = 22$), which in turn is negatively related to "social" ($r = .565, p < .01, n = 24$).

Changes in CT levels were positively correlated with changes in "social" ($r = .411, p < .05, n = 22$) behaviour, which in turn has a negative correlation with "playing in pairs" ($r = -.570, p < .01, n = 24$). Other behaviour changes did not correlate significantly with changes in AST or CT (see table 6 below).

When these correlations were tested for difference between groups by means of Fisher's $Z_{r'}$ (see formula in Appendix VI-ii), they did not prove significantly different. In other words, the relationship between the variables was the same in the different groups although only significant and thus stronger in the ICPS group following intervention.

Table 6. Behavioural changes associated with improved ICPS skills.

Behaviour	AST		CT	
	r	N	r	N
Social	.314	22	.411*	22
Play in pairs	- .122	22	-.324	22
Positive interaction	.381*	22	-.025	22
Negative interaction	.256	21	.273	21
Alone	-.575**	22	-.336	22

Note: Correlations at post-test in the ICPS group only.
 * Correlation is significant at the .05 level (one tailed)
 ** Correlation is significant at the .01 level (one tailed)

It was concluded that the ICPS training had strengthened a relationship between ICPS skills and behaviours, bringing them to statistically significant levels. Specifically, improved AST skills decrease the amount of time spent alone, which is related to more time spent in groups. Positive interaction is enhanced, which leads to playing more with one other child. Improved CT skills also enhance socialising rather than playing with one other child. Thus, it appears that improved AST and CT skills are strengthening children's social interactive behaviours. These findings provide some support for the third hypothesis although it cannot be fully substantiated. (Complete correlation tables are included in Appendix VI-i).

10.3.2.4 The effect of training on popularity

One-way ANOVA revealed no significant change in nomination scores between pre- and post-test measures ($F(2,83)$ = .204, NS). Means and SD are presented in table 7 below.

Table 7. Popularity as seen in peer nominations at post-test.

Condition	Nominations	
	M	*SD*
MT	.96	1.16
ICPS	.77	1.58
Control	.76	1.30

Note: These numbers represent difference scores between pre-test and post-test.

Pearson's *r* correlations between improvement in popularity and improvement in AST or CT also proved nonsignificant in all the groups.

162

The final hypothesis of improved ICPS skills improving popularity must be rejected, as this was not observed in the data.

10.3.3 Subsidiary analysis at post-test

As popularity measures appeared to have no significance for changes in either AST or CT, changes in popularity were correlated with changes in behaviour to see if popularity had any connection with behavioural changes. This revealed a significant positive correlation between changes in social behaviour and changes in popularity in the music therapy group ($r = .383$, $p < .05$, $n = 27$). This observation led to the development of social status classification of the children based on the peer-nomination scores.

Social status was treated as a dichotomous variable, where the cutting point was at 1. That is to say, children were divided into those who received no nominations from peers and those who received nominations. These groups will be referred to as *social* and *lone* respectively. These terms are used for convenience and do not refer to a specific terminology outside of this study.

The proportion of children who received no nomination was 31%. This may seem high, but one reason for this will be the structure of the pre-school classrooms as the classes are age-integrated. Thus, children who tended to play with younger children in the classroom were likely to present in the data as *lone,* with fewer nominations from their peers, or age mates, than those who tended to play with children their own age. The object of interest, however, was how popular children were among their peers, so the important information for the

purpose of this study was whether peers saw a particular child as a desirable playmate or not.

In view of the fact that there are proportionately more boys in the MT group than in the other groups, it was decided to look at sex differences as well. Thus, further analyses were carried out relating to the effect of sex and social status on progress in ICPS skills and changes in behaviour following treatment. These analyses are reported below.

10.3.3.1 Progress in AST and CT related to sex and social status

Factorial analysis of variance (FANOVA) was applied to look for interaction effects from sex and social status on progress in AST and CT skills. This revealed a main effect (as previously established) from condition, controlling for sex and social status for AST ($F_{(2,65)}$ = 14.287, $p < .001$) and for CT ($F_{(2,65)}$ = 7.745, $p < .001$). An interaction effect between condition, sex, and social status was revealed for CT only ($F_{(2,65)}$ = 4.117, $p < .05$).

However, closer examination revealed that the participants in some of the categories were so few (see table 8 below) that this analysis was dropped and t-tests employed instead, to look at the difference between the sexes and between *social* and *lone* children.

Social status will not be entered as a factor into ANOVAs in other analysis to search for interaction effects, due to small numbers (i.e. 2 *lone* girls in the ICPS group).

Table 8. Numbers of *social* and *lone*, boys and girls in each condition.

Condition	Sex	*Lone*	*Social*	Total
MT	boy	10	8	18
	girl	3	6	9
ICPS	boy	4	11	15
	girl	2	9	11
Control	boy	6	11	17
	girl	2	14	16

Multiple *t*-tests showed no sex difference in progress in AST or CT measures, or difference based on initial social status in either of the treatment groups (for a complete list of *t*-test results refer to Appendix VI-iii). Significant differences emerged between *social* and *lone* children in the control group on measures of AST difference from pre- to post-test (t (27) = 2.693, $p < .01$). A similar trend is apparent for CT although not significant ($t(27)$ = 1.948, p = .06 *two tailed test)*, see table 10 below.

Mean-difference scores for AST are presented in table 9 below. They show that the AST skills of *lone* children have declined in the Control group, while this has not happened in the ICPS group and the MT group. Thus, the ICPS training has possibly been preventative for *lone* children, as *social* and *lone* children appear to make similar progress in AST skills.

In view of the small number of *lone* children in each group, results must be taken with caution.

Table 9. Progress in AST scores of *social* and *lone* children at post-test.

Condition	social		lone	
	Mean	SD	Mean	SD
MT	1.07	1.69	.18	2.36
ICPS	3.58	2.57	3.75	3.30
Control	.50	2.04	-1.71*	1.25

Note: * significant at the 0.05 level

Table 10. Progress in CT scores of *social* and *lone* children at post-test.

Condition	social		lone	
	Mean	SD	Mean	SD
MT	1.93	2.23	.91	1.87
ICPS	3.47	2.12	3.00	2.58
Control	.82	1.87	-.71	1.60

The short-term ICPS training did successfully elevate AST and CT skills of the children participating in the ICPS training group, which supports the first hypothesis of this study. The supplementary analysis shows a further finding that the ICPS training has possibly prevented a natural decline in AST skills for *lone* children.

10.3.3.2 Sex difference, ICPS and behaviours

To examine whether changes in behaviour, which were related to changes in AST and CT skills, in the ICPS group, were affected by the sex of the children, the ICPS changes were correlated to changes in behaviour for boys and girls separately. This analysis is only reported here for the ICPS group as the correlations between changes in ICPS skills and behaviours did not reach significant levels in the other groups.

The results show that the negative correlation between "alone" and AST

revealed in the overall effect, only reached significant levels for girls

($r = -.678$, $p < .05$, $n = 9$), and was negatively correlated with "social"

($r = -.891$, $p < .01$, $n=9$). The positive correlation between "positive interaction"

and AST did not reach significance levels for either sex but "socialising" was

positively correlated with both AST ($r = .642$, $p < .05$, $n = 9$) and CT ($r = .627$,

$p < .05$, $n = 9$) for girls only. "Social" behaviour is negatively correlated with

"playing in pairs" ($r = -0.702$, $p < .05$, $n = 9$) for girls only.

Thus, there were no associations detected at this point between changes in

ICPS fluency and behaviours specific to boys whereas the general pattern for girls

is that, with improved AST, they are less alone, which is related to more social

activity. Improvement in AST and CT is associated with socialising in groups,

rather than playing in pairs (complete correlation tables are included in Appendix

VI-iv).

10.3.3.3 Social status, ICPS and behaviours

The relationship between ICPS skills and behaviours was examined

separately for *lone* and *social* children in the ICPS group, to see if social status

influences the effect that improving ICPS skills has on behaviour.

Results show that both AST and CT changes, are positively related to

change in "positive interaction" for *lone* children in the ICPS group ($r = .922$, $p <$

.05, $n = 4$ for AST and $r = .944$, $p < .05$, $n = 4$ for CT), and negatively

correlated to changes in "alone" behaviour ($r = -.934$, $p < .05$, $n = 4$ for AST

and $r = -.956$, $p < .05$, $n = 4$ for CT).

For *social* children there was a significant negative correlation between improved AST and *alone* ($r = -.466$, $p < .05$, $n = 18$) which in turn is negatively related to social ($r = -.746$, $p < .001$, $n = 19$). Improved CT is negatively related to "playing in pairs" ($r = -.464$, $p < .05$, $n = 18$), which, in turn, is positively related to "positive interaction" ($r = .546$, $p < .01$, $n = 19$), and negatively related to "social" ($r = -.659$, $p < .01$, $n = 19$). Thus, the ICPS training seems to have helped *lone* children to interact more positively and resulted in them spending less time alone. The *social* children, similarly, seem to spend less time alone and more socialising as their AST skills improve, and with improved CT they play less in pairs, moving on to playing in groups (social). The positive correlation between playing in pairs and positive interaction suggests that the positive interaction is leading to playing with a friend. However, from playing in pairs, the *social* children move on to playing in groups.

No significant differences were found by means of Fisher's Z_r· comparisons of any of the above correlations between groups and subgroups in the study. Thus, the quality of the relationships has not been changed although it has been strengthened (complete correlation tables are included in Appendix VIv).

In summary, for *lone* children, improvement in AST and CT improve positive interaction and decrease the time spent alone, which is the same pattern as for the overall group. The data reveals no significant correlations between ICPS skills and behaviours specific to boys, whereas the pattern for girls is towards activities that are more social as their AST and CT skills improve.

10.3.3.4 Sex difference in changes in popularity

A sex difference was revealed by means of independent t-tests. Change in popularity, as measured by nomination scores, was demonstrated in the MT group and the Control group. While the boys in the MT group and the Control group had grown in popularity significantly more than the girls ($t(25) = 2.592$, $p < .05$) for the MT group and $t(31) = 1.995$, $p < .05$, for the Control group), this had not happened in the ICPS training group. For means and standard deviations of difference scores in popularity between pre-test and post-test, see table 11 below.

Table 11. Improvement in popularity scores of boys and girls.

	Girls		Boys	
	Mean	SD	Mean	SD
MT*	.22	.83	1.33	1.14
ICPS	.45	1.51	1.00	1.65
Control*	.31	1.35	1.18	1.13

Note: * Significant sex difference at the .05 level.

The absence of significant difference between boys and girls change in popularity score at this stage in the ICPS group could be an expression of treatment effects. That is to say, in the ICPS group, girls continue to increase their popularity while they do not in the other groups – only the boys. This would logically follow since they have gone on to play more in social groups than before and are thus presumably mingling more with more people.

10.3.3.5 Social status and changes in popularity

Multiple *t*-tests were used to compare changes in popularity of *social* and *lone* children following treatment. Only in the Control group was there a significant difference revealed in popularity measures between pre-test and post-test ($t(31) = -2.311$, $p < .05$). Lone children increased in popularity more ($M = 1.63$, $SD = 1.41$) than did *social* ($M = .48$, $SD = 1.16$) children, see table 12 below.

Table 12. Improvement in popularity scores of *social* and *lone* children.

	Social		Lone	
	Mean	SD	Mean	SD
MT	.79	1.37	1.15	.90
ICPS	.60	1.67	1.33	1.21
Control*	.48	1.16	1.63	1.41

* Significant difference between *social* and *lone* children at the .05 level.

Although no significant overall change in popularity measures was detected in the data, the absence of significant difference in the increase of popularity between boys and girls, and *lone* and *social,* in the ICPS group and the MT group could be an expression of a treatment effect, that is girls and *social* children continue to improve in popularity.

10.3.4 Summary of results

The findings in Study I are listed below. The numbered results relate directly to the hypotheses while subsidiary analyses are listed alphabetically as subheadings. The subsidiary analyses are enlightening, but should be treated with

caution, as no adjustments were made for multiple testing. Therefore, there is certain danger of type I error. It is also important, however, to keep in mind that the participants in this study (as well as the following studies) are healthy children, which do not have any diagnosed cognitive or behavioural deficits. Therefore, it is likely that treatment effects will be small. Where the subsidiary analysis is weak, it can at least reveal trends, which can point to important questions to be asked. The implications of the findings in Study I are discussed in section 10.4.

1. Short-term ICPS training has successfully elevated AST and CT skills of the children participating in the ICPS group.
   a. ICPS training has possibly prevented a natural decline in AST skills for *lone* children.
2. MT has not affected AST and CT skills
3. No overall behaviour-change was detected following treatment, but improved AST skills enhance "positive interaction", promoting "playing in pairs"
   a. Boys in the ICPS group are playing less in groups while girls are playing more in groups.
   b. Girls seem to play more social as their AST and CT skills improve but there are no significant correlations between ICPS skills and behaviours specific to boys.
   c. *Lone* children show more positive interaction and appear to be less alone with improvement in AST and CT.

4. No significant overall change was found in popularity.

    a. Popularity of *lone* children and boys improved significantly in the MT and Control group. The absence of this difference in the ICPS group could be a treatment-effect, that is, social children and girls continue to improve in popularity.

10.4. Discussion of results at post-test.

The first hypothesis is confirmed by the data. Short-term training in ICPS skills has elevated the children's AST and CT levels. Thus, it has been demonstrated that 5-year-old children are receptive to short-term training of ICPS skills of only 8 sessions of approximately 25-30 minutes each. This is a considerably shorter programme and less elaborate intervention than the pre-school, kindergarten, and primary grades programmes developed by Shure (1992a, 1992b), which prescribe daily sessions of about 20 minutes for 4 months.

The results based on *social* and *lone* status of children must be taken with caution, as these are very coarse categories, which really represent dichotomous categories of popularity rather than any real social status. With the sociometry being based on nominations by age-mates only, immature children who play with younger children will present in the data as *lone*. However, although the sociometry has proven difficult, the analyses based on *social* and *lone* status warrant some speculation, as important trends may be revealed.

The apparent decline in AST skills of *lone* children revealed in the Control group at post-test has not occurred in the treatment groups. Thus, the treatment –

at least the ICPS training - has possibly been preventative for *lone* children, preventing a decline in AST skills.

The question then arises whether the decline in AST, detected in the Control group is a symptom or expression of early inhibitions (Buss, 1986) that are starting to evolve. Buss maintains that self-conscious type of shyness (as opposed to fearful shyness, rooted in stranger anxiety) can only develop when children outgrow egocentricity, as it requires that they are aware of themselves as social objects (see chapter 4, section 4.2.2. for discussion). Buss argues that this development takes place at around 4 to 5 years of age, which means that the participants in the present study are just of the right age for fearful shyness to be budding with them.

Self-consciously shy children are hypersensitive to the social world. Moreover, shy people tend to rehearse situations (Guglietti-Kelly, & Westcott, 1990), which encourages self-absorption and would foster feelings of uncertainty (Guglietti-Kelly & Westcott, 1990). Thus, shy children may not consider alternative solutions unless they can anticipate the consequences. If the decline in AST in the control group, is due to budding self-conscious-shyness, or other type of social withdrawal, then the ICPS treatment may be a valuable preventive method for these children because social withdrawal and shyness can easily become self-perpetuating, as was discussed in chapter four. Shy children probably have fewer relationships than their more outgoing peers do (Richmond, 1984). Perhaps most importantly, shyness puts children at risk for loneliness which can be difficult to combat as the negative attitude of lonely people doesn't make them very attractive to interact with (Ladd et al., 2000). Moreover, social

cognitive processing in situations related to social success, such as initiating

relationships or resolving peer conflicts, have shown the greatest difference

between socially well adjusted and socially maladjusted children (Dodge &

Feldman, 1990).

The second hypothesis must be rejected, as there is no significant

difference detected in the data for improvement in AST and CT following MT

training.

The third hypothesis stated that improved AST and CT would make a

positive impact on children's interpersonal behaviour, as measured by observation

during free play in the playground. Although significant changes in behaviour

were not detected between the pre- and post-tests, the relationship between AST,

CT and behaviours was strengthened in the ICPS training group following

treatment. The overall pattern, revealed by the data, is that of improved AST

skills, which lead to more "positive interaction". "Positive interaction" is in turn

related to "playing in pairs". This might be a sign that the children are going on to

initiate contact with other children or actually starting to make friends.

Furthermore, AST decreases the time children spend alone, thus promoting

socialising as "social" is negatively correlated with "alone". Interestingly, CT is

positively related to "social", which is not only negatively related to "alone", but

"playing in pairs" as well. This could indicate that CT is a skill that follows AST,

and is possibly more mature. Hence, children who already play with other

children quite comfortably, go on to form groups as their CT skills improve.

Consequently, they are seen playing more with other children in groups and less

with just one other child.

The children in this study are still very young and socialising in the sheltered environment of a pre-school rather than school, where they need to be more independent. Thus, it is still quite difficult for them to play in larger groups, so again, it appears that improved CT is ushering them along to more sophisticated ways of relating in groups.

When the subgroups, sex and social status, were examined, the most striking result is that there were no patterns of relation between AST, CT, and behaviours revealed among boys, whereas the general pattern for girls was similar to that of the whole ICPS group. This suggests that girls were gaining more (or more quickly) from the training in terms of ICPS skills' immediate influence on behaviour. Because there was no sex-difference in progress on the AST and CT measures, the differences in behaviour may be related to sex difference in some other way, for instance socialising, or the relationship between thought and action. This is apparent in the different ways boys and girls display aggression. Whereas boys tend to display aggression in a physically direct manner, girls often focus on harming peer relationships (Crick & Grotpeter, 1995). As ICPS training is a method that relies heavily on language and uses language as mediator of the skills, it would not be surprising that the improvement in skills shows up in girls socialising, whereas it is less relevant to the boys most common activities. Boys may respond better to direct training in applying AST and CT in real situations, and rather than conceptualising situations, actually practising them.

Moreover, the fact that no significant relationship was found between ICPS skills and behaviours at pre-test suggests that the ability is present, but is not being used effectively in social situations. What may be most important is not the

level of AST and CT, but the realisation that it is possible to take charge of situations – to initiate change from an idea - in social interaction. This may come more naturally to some children (*social*) than others (*lone*) or there may be an inhibiting factor at work for children who do not initiate interaction, although they can think of several ways to interact if they tried.

The idea of AST preceding CT is supported by the difference between *social* and *lone* children, although any conclusions associated with *lone* children should be treated with caution, as there were only 4 lone children in the ICPS group. With AST and CT improvement, *lone* children are less alone and display more "positive interaction". However, the *social* children, who are nominated by more of their peers and can be assumed to mingle more than the *lone* children, are moving on to playing in groups with improvement in AST, and improved CT leads them into social activities via playing less in pairs. Playing in pairs (which is decreased with improvement in CT) is positively associated with positive interaction and this could be indicative of these children not making many shifts between activities, but rather playing along in a group for a longer time.

When these results are compared to the pre-test measures, a relationship between ICPS skills and behaviours is clearly forming in the ICPS training group and is starting to have effect on behaviours. *Lone* children seem to be using their AST skills to approach others to play with – possibly initiating friendships – and the *social* persons are also applying their skills to playing more with one other child and diminishing their time spent alone. Either way, what is important is that they may have acquired a tool that they can use to serve their social needs.

Finally, *social* children may not be as sensitive to the effect of AST and CT changes. Their social status may mean that they are drawn into groups and are asked to play more than *lone* children, who need the skills to enter social groups, and, perhaps most importantly, would benefit from learning to use and apply their skills.

Although the MT training did not show significant improvement in the measures of AST and CT applied in this study, it is important to remember that when skills are being taught indirectly, the improvement may take longer time to appear on direct measures. Moreover, behaviour is a secondary gain to the treatment and should, therefore, be allowed some time to emerge. Finally, it must be kept in mind that the relationship between ICPS and behaviour has already been established, whereas the MT treatment is specially designed for the present research and has not been tested in this context before. The relationship between the applied measures and the MT treatment are not yet known.

When participants are healthy children who are functioning well in a mainstream school, observed difference can be very delicate and sensitive to outside influence, but never the less important to study to gain a better understanding of the processes involved in the development of social functioning.

10.5. Conclusions

There is budding evidence that the short term ICPS training does affect social behaviour in a positive way, with significant correlations forming between AST, CT, and pro-social behaviour. If ICPS skills are an important influential factor in these pro-social behaviours, one must conclude that exercising ICPS

skills is beneficial for the child. If, however, the effect is to be of preventative value for future adjustment and quality of social relationships, it is important that the effect is stable over time or, preferably escalates. The next study, which consists of follow-up measures of the progress in ICPS skills and behaviour, was designed to establish the stability of the effects of the short term training programmes of ICPS skills and MT.

The MT training was an attempt to train specific skills in an indirect manner. It was based on the assumption that creative thinking is closely related to AST and by exercising creative processes, AST (and possibly CT as well) would be enhanced. If ICPS shares some important element of cognition involved in creative thinking, the benefit from exercising such creative thoughts might not be immediately apparent on measures of AST and CT, but need some time to proliferate to social cognitive thinking. Thus, again, follow-up measures were considered important to the present investigation before it can fairly be concluded that the MT training had no effect on ICPS skills.

$$*****$$

Study II [4]

The stability of effects from short-term therapy with children

This study comprises a follow-up measure of the effects gained from the treatment in study I. The investigation concerns an examination of the stability of effects as well as a search for possible delayed effects from treatment, allowing for some time for the skills to consolidate and generalise. All the same measures as at post-test in study I are repeated and statistical analysis includes a search for predictive power of AST and CT for future behaviour.

11.1 Introduction

Gains from cognitively based treatments can be evident for up to a year later (Kazdin & Weisz, 1998). It is impossible, however, to determine the exact effect of treatment over time, as treatment gains must affect many areas of the persons' life – cognitive and cognitively related. The development of shyness illustrates this clearly.

Crozier and Burnham (1990), in their study of shyness, showed that references to self-consciousness and embarrassment increased with age.

---

[4] The ICPS results from this study were precented at a postersession at the 29th Annual Congress of the EABCT in Dresden 1999.

Presumably, to counteract this element of shyness at an early age (e.g., 5-6 years old), when references to self-consciousness and embarrassment are rare, may spare the person the painful effects of intense shyness.

The effects of psychological anomalies can be extensive and span the whole life-course. Shyness provides a convenient example of such social psychological difficulty, which can have a proliferating effect on peoples' lives. Caspi, Elder and Bem (1988) studied the life-course pattern of shy children. They found that shy girls were more likely to follow the conventional path to marriage, childrearing, and homemaking than their peers, while shy men tended to delay marriage, parenthood, and stable career. Furthermore, as discussed in chapter 4, there is some risk that shy people can become socially withdrawn, which in turn can lead to loneliness. The difficulty with social withdrawal and loneliness is that they can become self-perpetuating.

As discussed before, AST and CT thinking, presumably, give people a choice of actions in given situations and thereby add a new dimension to their sense of control, particularly if they have been lacking in this skill. Such empowerment over circumstances must influence the person's self-concept, which in turn affects other cognitive functions. In the same way, that social withdrawal can become self-perpetuating, positive social thinking or behaviour can become self-perpetuating. Hence, it is important to examine the holding power of treatment to appreciate the gains from therapy.

In a five-year longitudinal study of the impact of ICPS intervention on thinking and behaviour of high risk, inner city kindergarten, and first grade children, Shure (1993) revealed some strong longitudinal effects. Firstly, the

greatest impact was for boys trained by their teachers, and girls trained by their mothers. The behavioural impact of two years of training, by teachers, in both kindergarten and first grade, disappeared for a while. However, in this group a dramatic sleeper effect was revealed, and the group emerged as the best-adjusted group in the study by grade four (Shure, DHHS report, 1993).

These children turned out to be much better adjusted on measures of impulsiveness, inhibition, and total problem scores as measured by independent observers. As Shure rightly points out in her final report to the DHHS, which supported the research, this is important for research findings of prevention. Cowen (1973) demonstrated that children with early-identified dysfunction, if left alone, did poorly in the first several school years and tended to become quite impaired by the time they were in the third grade.

Rixon and Erwin (1999) found that treatment effects from a short-term ICPS training programme were stable, at least over four weeks, following ICPS training with 7- 8-year-old children. This, however, may not always be the case, and sometimes the effects may wear off in time. As discussed in chapter 8 (8.4), follow-up effects tend to be better with younger children, at least for up to 3 months holding power of effects (Schneider, 1992). Although Beelmann, Pfingsten & Lösel (1994) report a lack of long-term effect from follow-up studies, they do note that follow-up measures tend to be performed in studies where the immediate effect is small. Shure and Spivack (1982) report a two year stability of effects from a 10 week programme of daily 20 minute sessions with nursery- and kindergarten children. This programme did include "dialoguing" which has been

shown to provide important support to treatment effects of ICPS training (see section 8.1).

The present 7-month follow-up study of short-term intervention will establish the stability of effects gained from the training. Moreover, it will reveal possible delayed effects of the MT treatment as well as proliferation of ICPS skills to affect observable social behaviour of the children who improved the most from the ICPS training. It can be said that this study extends the findings of Rixon and Erwin (1999) in two ways. Firstly, the time elapse between training and follow-up measures is much longer, and secondly, the children are still at pre-school and thus younger than the children in Erwin and Rixon's study. The fact that the children in this study are under school age is important in terms of the holding power of the treatment effects. It was hypothesised that:

1. Effects of short term ICPS training are stable over at least 7 months.

2. Effects from MT intervention programme on ICPS thinking will have generalised and show up in improved AST and CT skills.

3. The improved social cognitive skills will result in an increase in positive social behaviour.

4. With time elapse from ICPS training allowing skills to affect behaviour, popularity will be improved.

11.2 Methods

11.2.1 Research design

This study constitutes repeated measures of the factors investigated in Study I with a 7-month delay between post-test measures in Study I to the follow-

up measures. The time elapse of 7 months was based on the maximum possible time from the time of treatment until the children were due to leave the pre-school to go to school. The treatment took place in September, the post-test measures were taken during the latter half of October, and the follow-up measures were collected at the end of May.

Measures of ICPS skills, sociometry, and behaviours, were all the same as in Study I, see Chapter 10, section 10.2 for details of method and procedures.

11.3 Results

Of the original participants, 4 children were not available for the follow-up study. This resulted in 18 boys and 9 girls ($n = 27$) in the MT group, 13 boys and 10 girls ($n = 23$) in the ICPS group, and 17 boys and 15 girls ($n = 32$) in the Control group.

11.3.1 ICPS skills: AST and CT

To determine whether improvement in AST and CT are stable over time, the data were subjected to univariate ANOVA. Results show that effects are stable at least over 7 months for both AST ($F(2,58) = 8.94$, $p < .01$) and CT ($F(2,58) = 7.23$, $p < .01$) as measured with difference-scores from pre-test to follow-up time and compared to Control group.

The multiple comparisons showed that the children who received short-term training in ICPS skills measured significantly higher on levels of AST ($p < .001$) and CT ($p < .001$) than those who were in the Control group. Moreover, the children who received the MT training also measured significantly higher than the Control children on levels of AST ($p < .03$), and CT ($p < .05$), revealing a delayed

effect of the intervention on ICPS skills. The ICPS and MT group did not differ significantly on measures of AST and CT difference from pre-test to follow-up time. The mean differences in AST and CT scores from pre-test to follow-up time are presented in table 13 below and depicted in figures 4 and 5.

Comparison of progress in ICPS skills between post-test and follow-up time did not reach significance levels ($F(2,58) = 1.819$, NS, for AST and $F(2,58) = 1.019$, NS for CT).

Table 13. Progress in ICPS skills between pre-test and follow-up.

	AST		CT	
	Mean	*SD*	*Mean*	*SD*
MT*	3.11	4.13	3.11	2.00
ICPS*	4.48	2.64	3.96	2.57
Control	.55	2.31	1.20	2.55

Note * Significantly more progress on AST and CT than Control

FIGURE 4. DIFFERENCE IN LEVEL OF AST FROM PRE-TEST TO 7-MONTH FOLLOW-UP.

184
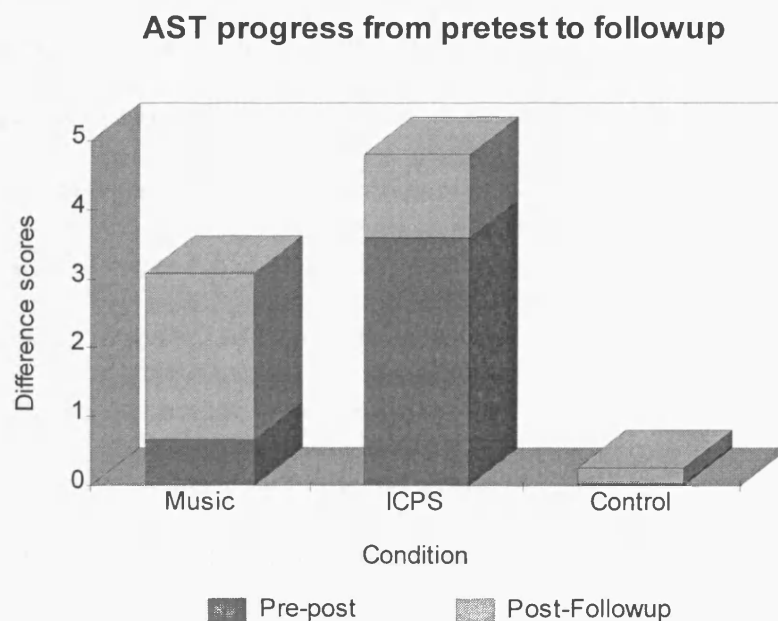
FIGURE 5. CT DIFFERENCE FROM PRE-TEST TO 7-MONTH FOLLOW-UP.

CT progress from pretest to followup
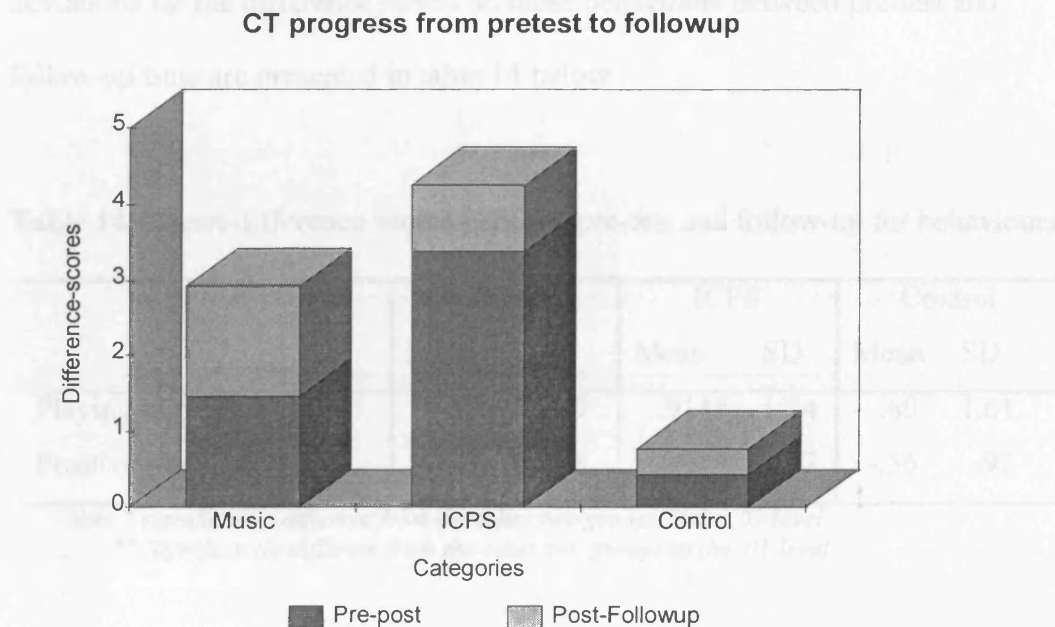
11.3.2 Behavioural measures at follow-up test.

To determine whether the social interactive behaviours of the children had changed with time allowed for generalisation of the AST and CT skills, univariate ANOVAS were performed based on difference scores from pre- to follow-up measures. This revealed significant differences between the groups on two measures of behaviour.

The groups differed significantly on difference measures of "playing in pairs" ($F(2,64) = 7.252$, $p < .001$) and "positive interaction" between pre-test and follow-up time ($F(2,64) = 4.388$, $p < .05$). Specifically, as revealed by Tukey's HSD multiple comparisons, the increase of "playing in pairs" in the ICPS group is significantly greater than in the MT group ($p < .01$) or Control ($p < .01$) which both show a slight decrease on this measure. Similarly, the increase of "positive

interaction" among the children in the MT group is significantly greater than for both the ICPS group ($p < .05$) and Control ($p < .01$). The means and standard deviations for the difference scores on these behaviours between pre-test and follow-up time are presented in table 14 below.

Table 14. Mean-difference scores between pre-test and follow-up for behaviours.

	MT		ICPS		Control	
	Mean	SD	Mean	SD	Mean	SD
Playing in pairs	-.45	1.39	.91**	1.34	- .60	1.61
Positive interaction	.35*	.88	-.41	1.37	-.56	.92

*Note * significantly different from the other two groups at the .05 level*
*** Significantly different from the other two groups at the .01 level.*

The same analysis was repeated for difference measures between post- and follow-up time but did not reveal any significant changes.

11.3.3 Behaviour and ICPS skills

In order to look for parallel changes in ICPS skills and behaviours, changes in behaviour were correlated with changes in AST and CT skills. This was done by Pearson's r based on post to follow-up, and pre- to follow-up difference scores. This revealed the following results for measure of difference between post test and follow-up measures in the ICPS group.

Only in the ICPS group, were there significant correlations between changes in behaviour and changes in ICPS skills on post-follow-up measures. AST correlated positively with "positive interaction" post- follow-up ($r = .520, p < .01, N = 21$) and CT correlated positively with "negative interaction" ($r = .386, p < .05, N = 21$), see table 15 below. No significant correlation was found

between behaviour and ICPS skills changes in the MT group or in the Control group.

Pre-test to follow-up revealed no significant correlation between ICPS skills and behaviours based on difference scores in the MT group or the ICPS group. Both AST and CT, however, proved to have a positive correlation with "playing in pairs" pre-follow-up ($r = .533$, $p < .01$, $N = 19$) and ($r = .490$, $p < .05$, $N = 19$), respectively for children in the Control group, see table 16 below. This suggests that a high level of both AST and CT contributes to playing with one other friend rather than in groups. Fisher's Z_r comparisons of correlations revealed no significant differences between the correlations.

Table 15. Behaviour associated with improved ICPS skills based on post-follow-up measures of children who received ICPS training.

Behaviour	AST		CT	
	r	N	r	N
Social	-.022	21	.087	21
Play in pairs	-.141	21	-.263	21
Positive Interaction	.520**	21	.343	21
Negative Interaction	.335	21	.386*	21
Alone	-.033	21	.129	21

Note: * Correlation is significant at the .05 level (one tailed)
     ** Correlation is significant at the .01 level (one tailed)

Table 16. Changes in behaviour associated with improved ICPS skills based on pre-follow-up measures of children in the Control group.

Behaviour	AST		CT	
	r	N	r	N
Social	-.199	19	-.134	19
Play in pairs	.533**	19	.490*	19
Positive Interaction	.273	19	.101	19
Negative Interaction	.069	19	-.112	19
Alone	-.165	19	-.232	19

Note: * Correlation is significant at the .05 level (one tailed)
** Correlation is significant at the .01 level (one tailed)

11.3.3.1 Power of AST and CT for predicting behaviour

The relative importance of AST versus CT in relation to behavioural variables was examined by means of linear, multiple regression analysis. AST and CT difference scores between pre-test and post-test were entered simultaneously as predictors for future behaviours. This was done for each group in order to examine the effect of the treatments on behaviour, which is to see if the accelerated development of AST and CT in the ICPS group filters through to behavioural change.

The results show a trend for predictive value of changes in AST and CT in the ICPS group for "alone" post-follow-up. Together the predictors account for 29% of the variance in "alone" as measured by difference between post- and follow-up time. The relationship is linear and significant $(F(2,18) = 3.674, p < .05, two tailed test)$. This reveals a trend that AST might predict alone post-follow-up, $(Beta = .459, t = 1.987, p = .062, NS)$ but CT is not a significant

predictor (*Beta* = .131, *t* = .567, *NS*) in predicting "alone" scores for post-follow-up difference. The relationship is positive which is to say that the more positive change there was in AST from pre-test to post-test, the more children are alone, post-follow-up.

Other behaviours could not be predicted at greater than chance level in the ICPS group. The *R*, R^2 and *Beta* levels for the behaviour variables in the ICPS group are reported in table 17 below.

In the Control group "socialising" post-follow-up and "playing in pairs" pre-follow-up was predicted by ICPS development between pre- and post-test. Together the predictors account for 31% of the variance in "social" post- follow-up. The relationship is linear and significant ($F(2,20)$ = 4.537, $p < .05$). Neither AST (*Beta* = -.396, *t* = -1.504, *p* = .148, *NS*) nor CT (*Beta* = -.203, *t* = -.770, *p* = .450, *NS*) reached significance level for predicting behaviour. AST is not far off significance. Predictions of "playing in pairs" pre- follow-up in the control group were the strongest ones found in the data ($F(2,19)$ = 4.099, $p < .05$). AST is a significant predictor (*Beta* = .767, *t* = 2.382, $p < .05$) of future behaviour, "playing in pairs", while CT (*Beta* = -.311, *t* = -.966, *p* = .346, *NS*) does not reach significant levels. No co linearity was detected for these calculations (*tolerance* = .738).

Table 17. Trends for predictive value of AST and CT for behaviours

		R	R²	AST Beta	CT Beta
ICPS:	Alone post- follow-up	.538	.290*	.459	.131
Control:	Social post- follow-up	.559	.312*	-.396	-.203
	Playing in pairs, pre-follow-up	.549	.301*	.767	-.311

Note: The AST and CT scores in this analysis are difference scores between pre-test and post-test.
* Significant at the .05 level.

11.3.3.2 Summary of ICPS relationship with behaviours

For the ICPS trained children, progress in AST from post-test to follow-up is positively related to "positive interaction" and progress in CT from post-test to follow-up is positively related to "negative interaction". This suggests some positive impact on behaviour from improved AST, as well as, more complicated long-term effects of association between ICPS skills and social behaviour. Thus, the third hypothesis is not fully supported by these results. Associations between change in ICPS skills between post-test and follow-up and behaviours were not detected in the other groups.

Pre-test to follow-up correlations of improved ICPS skills and behavioural change revealed no relation in the treatment groups but in the control group, both AST and CT had positive correlation with "playing in pairs" pre-follow-up.

A trend towards predictive power of AST, controlling for CT, (difference between pre- and post-test) was revealed in the ICPS group for "alone" post-follow-up. This relationship is positive. In the Control group, progress in AST and CT pre-follow-up is predictive of "socialising" post-follow-up, and "playing

in pairs" pre-follow-up. In all instances, AST is the stronger predictor of future behaviours.

11.3.4. Popularity measures

A one-way ANOVA revealed no significant change in nomination scores between post- and follow-up measures ($F(2,83) = 2.441$, NS) or pre- to follow-up measures ($F(2,83) = 2.441$, NS). The final hypothesis is rejected as no improvement in popularity has resulted from the treatments.

11.3.5 Subsidiary analysis at follow-up

11.3.5.1 Progress in AST and CT related to sex

Sex difference in progress on AST and CT skills was examined by means of multiple t-tests. A sex-difference was detected in the ICPS group in progress of AST from post-test to follow-up time ($t(19) = 2.088$, $p < .05$). It appears that boys in the ICPS group continue to make progress on these measures, whereas girls have gone into a slight decline in AST skills from post-test to follow-up time. A further sex difference was detected in the Control group ($t(20) = -2.213$, $p < .05$) where the boys CT skills have gone into a decline while the girls continue to improve on measures of CT between post- test and follow-up. The means and standard deviations for these measures are presented in table 18 and table 19 below.

Table 18. Sex difference in improvement of AST skills from post-test to follow-up.

Condition	Boys			Girls		
	Mean	*SD*	*n*	*Mean*	*SD*	*n*
ICPS*	2.55	3.62	11	-.30	2.45	10
MT	1.33	3.14	12	4.50	7.15	6
Control	-.55	2.42	11	1.00	1.84	11

Note: * significant difference at the .05 level.

Table 19. Sex difference in improvement of CT skills from post-test to follow-up.

Condition	Boys			Girls		
	Mean	*SD*	*n*	*Mean*	*SD*	*n*
ICPS	1.55	3.21	11	.10	1.37	10
MT	1.17	2.17	12	2.00	4.60	6
Control*	-.45	1.63	11	1.09	1.64	11

Note: * significant difference at the .05 level.

11.3.5.2 Progress in AST and CT related to social status

The progress of *social* and *lone* children on ICPS skills was examined by means of multiple, independent samples *t*-tests. Only in the ICPS group were any differences detected in the progress of *social* and *lone* children on measures of AST and CT. Specifically, *lone* children who participated in the ICPS training had made significantly greater progress than the *social* children in the same group on levels of AST between post-test measures and follow-up time ($t(19) = -2.204$, $p < .05$). Means and standard deviations are listed in table 17 below. This difference holds when considered for gain between pre-test and follow-up time ($t(21) = -2.404$, $p < .05$).

The equivalent measures for CT were not significantly different for *lone*

children compared to *social* in the ICPS group ($t(19)$ = -1.470, *NS)* for post-test to

follow-up and $t(21)$ = -.594, *NS* for pre-test to follow-up time), but show the same

trend of greater gain for *lone* children on measures of CT between post-test and

follow-up time. Means and standard deviations for this are presented in tables 20

and 21 below.

Table 20. Difference in AST skills from pre-test to follow-up for *social* and *lone*
children.

Condition pre-follow-up	social			lone		
	Mean	*SD*	*n*	*Mean*	*SD*	*n*
ICPS*	3.76	2.33	17	6.50	2.59	6
MT	2.09	3.78	11	4.71	4.42	7
Control	.82	2.21	17	-1.00	2.65	3
Condition post-follow-up						
ICPS*	.47	3.10	17	4.25	2.99	4
MT	1.00	3.58	11	4.57	6.08	7
Control	.00	2.29	19	1.67	1.53	3

*Note * Lone* children made significantly more progress than *social* in the ICPS group

Table 21. Difference in CT skills from pre-test to follow-up for *social* and *lone* children

Condition Pre-follow-up	*social* Mean	SD	*n*	*lone* Mean	SD	*n*
ICPS	3.76	2.75	17	4.50	2.07	6
MT	2.91	2.07	11	3.43	1.99	7
Control	1.53	2.40	17	-.67	3.06	3
Condition Post-follow-up						
ICPS	.47	2.18	17	2.50	3.70	4
MT	.64	3.11	11	2.71	2.75	7
Control	.42	1.84	19	-.33	1.53	3

Note. There are no significant differences between the *social* and *lone* on these measures

As before, results must be interpreted with caution because of the small number of *lone* children in the sample.

11.3.5.3 Summary of improvement in ICPS skills

The short-term training of AST and CT is still evident and appears robust at 7 months follow-up. An apparent sleeper effect was found in the MT group, showing significant difference between the children in the MT group and Control on measures of AST and CT between pre-test and follow-up time. These results support the first and second hypothesis. ICPS training effects are still evident and a sleeper effect is revealed from MT training.

Boys in the ICPS group made significantly more progress than girls between post-test and follow-up on measures of AST. Moreover, the CT skills of boys in the Control group declined whereas the girls showed progress in CT skills between post- and follow-up time.

It is noteworthy that more than half of the *lone* children were not included

in the post-follow-up measures (3 by follow-up as opposed to 7 at post-test),

which suggests they either attend less regularly or quit for the summer, bearing in

mind that the follow-up measures were taken in May.

Lone children in the ICPS group made significantly more progress than

social children on measures of AST. This difference was also apparent when

based on difference scores between pre-test and follow-up time.

11.3.5.4 Behaviour related to sex

Sex difference in behavioural changes was examined by means of multiple

t-tests. A sex difference was revealed in measures of *social* between post-test and

follow-up in the ICPS group ($t(21) = 2.070$, $p < .05$). Specifically, whereas boys

were socialising more, girls have decreased their socialising by follow-up time.

This is a reversal of the sex difference found at post-test. Means and standard

deviations for these measures are presented in table 22 below.

Table 22. Sex difference in behaviour change at follow-up time.

Social post-follow-up	MT		ICPS*		Control	
	Mean	SD	Mean	SD	Mean	SD
Boys	.07	1.64	.85	1.63	1.00	2.00
Girls	.33	1.37	-.50	1.43	1.25	1.36

Note: * significant difference between boys and girls at the .05 level.

11.3.5.5 Behaviour and social status

Multiple *t*-tests were applied to examine the effect of social status on

behavioural changes. No significant differences were detected between *social* and

lone children in terms of measures of difference in behaviour from pre-test to follow-up time in any of the groups.

Only one behaviour category, namely, "alone" presented a significant difference between *lone* children and *social* in terms of change in the behaviour from post-test to follow-up time ($t(21) = -2.03$, $p < .05$). Specifically, *lone* children in the ICPS group are more alone ($M = - .83$, $SD = 1.84$) whereas the *social* children in this group are less alone ($M = .20$, $SD = .84$) from post-test to follow-up.

11.3.5.6 Popularity related to sex and social status.

Sex and social status did not affect results from popularity measures. That is, popularity was not affected by sex or social status.

11.3.5.7 Summary of behavioural changes at follow-up

There is an increase of "playing in pairs" in the ICPS group and an increase of "positive interaction" in the MT group. The sex difference in socialising behaviours has been reversed from the post-test in the ICPS group, that is, boys are socialising more while girls are socialising less.

Social children in the ICPS group are less alone between post-test and follow-up whereas the *lone* children are more alone.

11.3.6 Summary of results

Study II has shown the following significant results at follow-up time. The implications of these findings are discussed in section 11.4.

1. AST and CT were stable over at least 7 months for ICPS training.

   a. ICPS *lone* children progressed more than *social* children in AST from post- to follow-up time.

   b. ICPS boys progress more in AST than girls from post- to follow-up.

   c. CT declined for boys in the Control group, but girls progressed between post- and follow-up time.

2. MT training has delayed effects on AST and CT skills

3. Children in the ICPS group played more in pairs (others gone into a decline).

4. Children in the MT group displayed more positive interaction than children in the Control group or the ICPS group.

   a. Boys in the ICPS group socialised more whereas girls socialised less than before, post-follow-up. This is a reversal from post-test.

   b. *Social* children in ICPS are less alone than before, but *lone* children are more alone by post-follow-up.

5. Progress in AST from ICPS training correlates positively with "positive interaction" post-follow-up, and progress in CT from ICPS training correlates positively with "negative interaction" post-follow-up.

6. In the Control group, improvement in AST and CT from pre- to follow-up correlated positively with "playing in pairs" pre- follow-up.

7. In the ICPS group, a trend is reveald for AST changes from pre- to post-test to predict changes in "alone" behaviour between post- and follow-up time. The relationship is positive.

8. AST (and CT), difference from pre- to post-test, predicted "socialising" post-follow-up, and "playing in pairs" pre-follow-up in the Control group.

11.4 Discussion

The first hypothesis, which states that effects from short term ICPS training are stable over at least 7 months, is supported by the data. The results from this study indicate that treatment effects from short term ICPS training of AST and CT are stable over 7 months. A *sleeper effect* from MT training was revealed on AST and CT skills, which confirms the second hypothesis.

The pattern of progress among boys and girls in the ICPS group supports the suggestion that AST precedes CT. First, boys in the ICPS group progressed more than girls, in AST from post- to follow-up. At the same time, their peers in the Control group displayed a decline in CT skills, whereas girls in the Control group continued to progress in measures of CT from post- to follow-up time. Presumably, the boys in the ICPS group have benefited from the accelerated improvement of AST, and are thus able to continue to develop CT. The boys in the Control group have not improved their AST skills significantly, which is reflected by discontinued improvement in CT, perhaps until AST has improved.

The fact that *loners* and *boys* progressed more than girls and *social* children in AST could be due to a ceiling effect of ICPS in competent children. There may have been less room for improvement among *social* children and girls, than among boys and *loners*. A further support for this interpretation is found from the post- to follow-up test where the boys make more improvement in AST than the girls, who may have reached their ceiling by post-test.

It is widely accepted that girls tend to be more advanced in language skills than boys of similar age are, and girls may thus benefit more from a verbally based treatment than boys. Moreover, verbal skills may be more relevant to social activities for girls than for boys. Studies of aggression in pre-school have demonstrated that girls tend to be relationally aggressive, whereas boys tend to be more overtly aggressive (Crick, Casas & Moser, 1997).

A somewhat complicated, but interesting, picture is revealed in the ICPS training effect on behaviour. With the time allowed for generalisation of effects to take place, a positive impact on socialising behaviour was predicted (third hypothesis in this study). The results show that some behavioural changes began to emerge. Firstly, it appears that the raised level of AST and CT in the ICPS group facilitated "playing in pairs". Moreover, the children in the MT group displayed more "positive interaction" than the children in the other groups at follow-up. This reflection of ICPS skills in behaviours, in the MT group, is consistent with that observed in the ICPS group at post-test in Study I.

The children's improved AST skills were reflected in increased level of "positive interaction". Thus, it appears that improvement in ICPS skills *via* MT followed the same course as that of direct training of ICPS skills. That is the effect on behaviour was the same as that of direct training of ICPS skills in Study I. It is possible that some other element of the MT training is responsible for the improvement in "positive interaction", but the similarity with post-test measures in the ICPS group is encouraging.

The socialising pattern of girls and boys in the ICPS group appears to have gone through a reversal between post-test and follow-up. Again, this could

indicate a ceiling effect. When difference scores are used, it is difficult to say if a low score is due to high competence and, therefore, little room for improvement, or a lack of effect from treatment methods resulting in low scores.

The finding that *social* children in the ICPS group were less "alone" and *lone* children in the ICPS group were more "alone" than before, suggests the effect of ICPS training on behaviour wears off. This interpretation of the results is further supported by the regression analysis, which showed that the AST and CT progress between pre-test and post-test in the ICPS group, predicted more "alone" behaviour at follow-up time for these children.

AST was a better predictor than CT, of increased "alone" behaviour; again suggesting that AST precedes CT, although CT was also important. The connection between AST and behaviour may rely on some other element, such as initiative, or self-control, if it is to be effective in governing behaviour. If the analogy is drawn from the studies of social withdrawal and shyness, shy people know what they want to do, but they are inhibited by their shyness. Moreover, they tend to rehearse social interactions beforehand and, then, find it difficult to cope with unexpected responses from others (Guglietti-Kelly & Westcott, 1990). Thus, CT may be exercised, but when real life events throw an unexpected consequence at people, the resulting behaviour may actually be unsuccessful, or even inhibited by the surprise.

Bearing in mind that the statistical calculations are based on difference scores, it is possible that the more progress the children made on ICPS during the training, the more they needed to improve their ICPS skills. That is to say, the

children who represent the big numbers in difference in AST and CT pre- to post-test, may be the children who were actually most lacking in social cognitive skills.

Information from the Control group suggests that progress in AST and CT is related to more "socialising" and "playing in pairs". The relationship between improved CT and increased "negative interaction", as well as being more "alone", may not be so peculiar after all, but rather indicate the need for a support system for applying the AST and CT skills in real life situations. This could be done with the application of booster-sessions or *dialoguing*[5].

Some important developmental changes may be involved here.
In modelling co-operative behaviour with 6- and 8-year-old children, Sagotsky, Wood-Schneider & Konop (1981) found that booster sessions were necessary for the 6-year-olds, while the 8-year-olds maintained a significantly greater co-operation than the control group at seven weeks follow-up measures.

Shure implemented the ICPS dialoguing in the playground with the children to maintain application of thinking skills to behaviour (Shure & Spivack, 1982). Although the children in the present study are a year older than the children in Shure and Spivack's study, this may still be a necessary supplement to the training of thinking skills if they are to be effectively reflected in improved behaviour.

When children are trying out new ways of relating to peers, they may experience discouraging reactions from time to time, or be clumsy with their attempts in the beginning. It is possible that the reluctant children will get

---

[5] For a description of ICPS dialoging refer to section 8.1.

disheartened when they run into such experiences, and retract to their former ways rather than try something else.

Other associations between ICPS skills and behaviour support the assumption that ICPS promotes social interaction. In particular, the results from the control group are informative. This is a group where the development of AST and CT has followed a natural course without the aid of training. It appears that children who are good at AST and CT are ones who are playing with one other child. Perhaps they are actually the children who have a special friend.

The positive relationship between CT and "negative interaction" may be singling out the children who are exercising anticipatory rehearsal (associated with shyness) or even negative consequential thinking, which could be related to depression. It is important to remember that the negative interaction category actually includes any unsuccessful interaction. Importantly, these children are of the right age for self-conscious shyness to escalate, as was discussed above (see section 4.2.2.).

Alternatively, it is conceivable that CT becomes skilled. That is, with improved AST and efficient evaluation of each alternative solution, the AST and its consequences become one thought. That is, the processing involved in CT becomes a parallel process to AST processing rather than proceeding AST. This might account for the decline in CT in the Control group. If AST does not improve, then the level of CT (if it becomes skilled) would not show improvement either, and conceivably a decline as CT might develop into a fixed consequence of each alternative solution. Thus, the child might only consider limited number of consequences to each solution, based on experience, and not consider new ones.

It appears that short training of AST and CT, at least in this study – has successfully improved children's ICPS skills but would benefit from a support system for gains to be expressed in terms of greater improvement in social behaviour. It is worth noting that the behaviour of the children in the ICPS group has not declined or suffered – it is rather that the improvement in behaviour has not been as significantly strong as expected. To be fair, it must be noted that positive changes to behaviour are detected in the results, but they appear to be unstable and possibly to wear off with time. Perhaps these children are too young for behaviour to benefit from ICPS training without either booster-sessions or further coaching. A form of *scaffolding* support for children's development and application of ICPS skills in their natural environment may be more beneficial and lead to more stable behavioural gains than time limited specific ICPS training programmes.

Because of rapid developmental changes during childhood, it is often necessary to make subtle adjustments in treatment to meet developmental needs. This is clearly demonstrated by the adjustments made by Spivack and Shure (1982), to the length of sessions, content of training material and dialoguing support for older children, following reports that the approach did not produce the intended effect on behaviour.

Turning to the alternative method of training ICPS skills with MT, the results are quite different. This method has produced a delayed effect of improvement in AST and CT. At 7 months follow-up, the children who received MT training had reached significantly greater fluency in these skills than children in the Control group, and by that time, the difference between ICPS trained and

MT trained children was not significant. Thus, it can be concluded that something in the MT training has affected the AST and CT fluency of these children.

How the MT influences the ICPS skills is not clear, but one can speculate that creative thought provides a common element to the mental activities of creating alternative solutions and making music. Interestingly, the children who received MT training show more "positive interaction" at follow-up time. Perhaps the experience and consequent practise of relating to others in a group has provided these children with a valuable repertoire that they can draw on in other situations. Although the communication tool is different, there are many common elements to effective communication through music and through language, such as listening and reciprocity, to name but two.

Although the way the MT training has worked is a mystery, it appears that the children have learnt how to relate to others more positively. It is possible that the practise in taking on different social roles, for instance, leadership, in the MT activities has produced this effect in social behaviour. The question then arises: Have these children improved in their ICPS skills because of practise in social role-taking behaviours which are important for theory of mind, which in turn is important in effective socialising; or has their behaviour improved because of the improvement in ICPS skills facilitated by the cognitive effects of music? Further investigation into the way music affects cognition is warranted to clarify this. The first question then must be: Was it the music that made the difference? Could the improvement in ICPS skills in the MT group simply be a *placebo* effect? Could it be that the sessions were therapeutic and boosted self-esteem, thus allowing the

children to express themselves more freely? Alternatively, was it the musical participation that was the instrumental factor in the MT group?

The results from studies I and II raise two separate issues regarding the effectiveness of the short term training programmes. Firstly, the nature of the effect of short term MT training needs to be addressed to examine whether music is the instrumental factor in strengthening ICPS skills as mentioned above. Secondly, the relation between short term ICPS training and behaviour warrants further investigation. The effect of the ICPS training on AST and CT competence appears to be robust over at least 7 months, but the potential behavioural gains from the training appear to be compromised. One way of overcoming this difficulty would be to implement the AST and CT training through a form of *scaffolding* so that the children acquired the ICPS efficiency through a support system in their natural environment. This would eliminate the problem of the development of newly acquired skills to be halted when a programme of training is terminated.

Studies III and IV address these two separate issues. Firstly, the nature of the effect of short term MT training needs to be addressed to examine whether music is the instrumental factor in strengthening ICPS skills as mentioned above. Study III is an examination of the effect of long term participation in musical activities on a daily basis on AST and CT competence and secondly, Study IV examines the effect of training the staff at a pre-school to support AST and CT development in their every day interactions with the children. Both these studies share the common element of examining ways of producing a form of *scaffolding*

to support specific development. First in Study III the music participation is a part of the children's daily experiences at the pre-school and second, in Study IV, an attempt is made to provide such daily experiences which exercise the application of AST and CT in real life situations.

*****

12

Study III[6]

The influence of music on social cognitive thinking

This study was conducted to search for possible effects of general musical activities on social cognitive thinking. Measures were taken at a pre-school where music played an important part in the daily routines of the children. These measures were compared to measures from study I and II, to examine the different effect of short-term music training and on going music practise on AST and CT skills. The results suggest favourable effects on social cognitive skills from musical activities.

12.1 Introduction

Most people have experienced how music can vividly recall memories and change mood. This extraordinary quality of music that allows for direct access to

---

emotions has long been recognised and no doubt, people have consciously or unconsciously used music through the ages for emotional expression and release.

Work songs, lullabies, and religious music are but few examples of how the purposeful use of music has always existed. As stated in the discussion of results in study II, a sleeper effect on AST and CT is apparent although the study does not allow conclusions to be reached as to how this effect is achieved through music. Gardiner et al., (1996) (see chapter 9, section 9.3.), linked advantage in reading and maths achievement of 5-7 year old children to participation in specific extra curriculum of music and visual arts. They state that most advantage was gained from two years of training, although significant improvement was apparent from one year of training. The authors discuss possible explanations such as forced mental 'stretching', which may enhance other learning or improved attitude in general toward learning and school.

In the present study, no academic skills are assessed. The issue is whether indirect forces can improve aspects of thinking, which are important in effective social conduct, or ICPS skills. The sleeper effect on AST and CT, which was accomplished with a short term music training programme, (revealed in study II) was accompanied by similar behavioural reflections to those revealed immediately following direct training of ICPS skills. This raises the question of what part the music training had in improving the AST skills, CT skills, and behaviour. Could this have happened, with any kind of training, or is there something about music that is specifically relevant to ICPS thinking?

The findings of Gardiner et al. (1996) suggest that participation in arts activities enhance cognitive functions. If, then, the effect from the short-term

training on AST and CT is due to some element of the music practice but not a form of placebo effect, long-term participation in musical activities should be evident in elevated AST and CT skills. The present study was designed to look for such effects and the following hypothesis was developed:

The social cognitive skills: AST and CT, will be more advanced in children with extensive musical experience than children who have participated in a short term music training programme (MT) or in a Control group.

12.2 Method

The pre-school selected for this study was selected because of its special emphasis on creative arts – especially music. This pre-school is privately run, but contracted by Reykjavík City Council to take overflow from the pre-schools run by the city council.

The pre-school suffers somewhat from poor financing, as the running of it is not subsidised by the city council. This is apparent in a poorer collection of toys and furniture. The pre-school is in a building that is a family house on 3 levels, with a big garden for a family house, but a small playground for a pre-school.

The proportion of children from single parent homes is very similar at this pre-school as it is in other pre-schools around the city because the parents get subsidy from the city to meet the cost of private pre-school while there is a shortage of places in the city run pre-schools.

12.2.1 Design

This study is a multiple-group, matched subjects, post-test design.

The independent variables were:

1) Short term Music Therapy treatment

2) Ongoing musical involvement

3) No treatment control

Dependent variables: a) AST measures

b) CT measures

12.2.2 Participants

All children born in the same calendar year, and 5 years old at the time, were tested. Control and MT group from study II served as comparison measures for the competence level of these children as the participants were drawn from the same population of children.

Altogether there were 77 children, (35 boys and 37 girls) included in the final analysis. There were 17 children (5 boys and 12 girls) in the Musical pre-school group, 27 children (18 boys and 9 girls) in the MT group, and 33 children, (17 boys and 16 girls) in the Control group.

12.2.3 Assessment

The assessment procedures were the same as in Study I and II. See chapter 10 for assessment materials (10.2.3.2) and procedures (10.2.5.). No behavioural measures were included in this study.

12.2.4 Procedure

The vignettes and procedures were the same as in Study II. The children had all been attending the pre-school for at least 2 months with some having attended from the age of 2, the latter having received musically enriched upbringing at the pre-school for 3 years. Before assessment, one afternoon was spent chatting with the children during outdoor play in the playground.

The assessment of AST and CT was a one-time measure at the musically enriched pre-school.

12.2.5 Scoring of data

Difference scores could not be used in this study due to the lack of pre-test measures of the Musically enriched pre-school. Thus, comparison of levels of AST and CT are based on absolute scores at follow-up measures of Control group and Music Therapy group from Study II and the one time measure at the Musically enriched pre-school. It is worth noting that there was no difference between groups on pre-test measures of AST and CT in Study I so there is no need for baseline adjustment for comparison of AST and CT scores (see section 10.3.1 for pre-test measures of AST and CT).

12.3 Results

12.3.1 ICPS skills: AST and CT

Univariate ANOVAS were used to compare relative levels of AST and CT of the children who benefited from the sleeper effect of short term music training, the children who attended the Musically enriched pre-school, and the children who had no training, or Control group. The results show significant difference between the three groups on measures of AST ($F(2,53) = 15.156$, $p < .001$) and CT ($F(2,53) = 12.513$, $p < .001$). Post hoc, multiple comparisons (Tukey, HSD) showed the children from the Musically enriched pre-school were significantly more fluent at AST and CT than both the comparison groups, that is the Music Therapy intervention group and the Control group. Summary of means and standard deviations for these measures are presented in table 23, below and depicted in figures 6. and 7.

Table 23. Levels of AST and CT skills in the three experimental groups.

	MT		Control		Music*	
	Mean	SD	Mean	SD	Mean	SD
AST	7.28	4.60	5.00	1.45	12.13	5.35
CT	5.28	2.72	4.55	1.53	13.00	9.78

Note: * Children in the Music group are significantly more fluent at AST and CT than the children in the other two groups.

FIGURE 6. LEVELS OF AST COMPARED BETWEEN GROUPS

...marked outliers apparent in the

box plot, it did not change the overall picture.

12.6.1.1 Progress in AST and CT related to sex

No sex-difference was detected in the data. Means and Standard deviations

are presented in tables 24 and 25 below. For a better overview, see appendix VIII-i.

Table 24. Sex difference in progress of AST

FIGURE 6. LEVELS OF AST COMPARED BETWEEN GROUPS

Condition	Boys		Girls	
	M	*SD*	*M*	*SD*
M	6.16	1.62	7.67	
Music	11.40	7.37	12.45	6.09

Note: These differences are statistically significant at the .05 level

Table 25. Sex difference in Progress in CT

FIGURE 7. LEVELS OF CT COMPARED BETWEEN GROUPS.

Condition	Boys		Girls	
	M	*SD*	*M*	*SD*
	3.57	1.67	6.50	
Control	4.36	4.36	4.73	
Music	9.20	7.61	12.27	6.93

Note: None of these differences are statistically significant at the .05 level

12.4 Discussion

The results of this study are in agreement with the findings of Gunsberg et
al, 1988. The children who had exercised music over an extended period of time
somehow demonstrated more progress in AST and CT, compared to those pupils
who experienced short-term intervention (MT), and especially those who received
no music intervention. It can be inferred that musical activities successfully

The calculations were repeated without the star marked outliers apparent in the box-plot. This did not change the overall picture.

12.3.1.1 Progress in AST and CT related to sex

No sex-difference was detected in the data. Means and Standard deviations are presented in tables 24 and 25 below. For a list of t-values see appendix VIII-i.

Table 24. Sex difference in progress of AST

Condition	Boys		Girls	
	M	*SD*	*M*	*SD*
MT	6.08	1.62	9.67	7.47
Control	4.82	1.54	5.18	1.40
Music	11.40	7.37	12.45	4.57

Note None of these differences are statistically significant at the .05 level

Table 25. Sex difference in progress of CT

Condition	Boys		Girls	
	M	*SD*	*M*	*SD*
MT	4.67	1.67	6.50	4.04
Control	4.36	1.36	4.73	1.74
Music	9.20	7.01	12.27	6.13

Note None of these differences are statistically significant at the .05 level

12.4 Discussion

The results from this study are consistent with the findings of Gardiner et al. (1996). The children who had exercised music over an extended period of time were clearly advantaged on measures of AST and CT, compared to their peers who received short-term intervention of MT, and especially those who received no music intervention. It can be inferred that musical activities successfully

influenced cognitive functions via creative music activities. It must be acknowledged, that although there are no sex differences detected in this data, there is a clear trend apparent from the mean scores of girls and boys, that the girls in the Music and MT groups, appear to be more advanced in AST and CT skills than the boys (see tables 24 and 25). Moreover, this difference does not appear to be present in the Control group, which suggests that the girls are benefiting more from the training.

Long-term participation in creative music programmes appears to be not only beneficial to academic achievement, such as reading and mathematical skills, (Gardiner et al., 1996), but also to the development of social cognitive skills. The nature of the necessary music intervention is not yet clear as these are measures of association rather than cause and effect, however, some inferences can be made.

The short-term MT intervention successfully facilitated social cognitive skills in a similar way as a long-term music intervention programme. The increased effect apparent 7 months after treatment was concluded, suggests that the influence from the music therapy programme became self-perpetuating.

Gardiner et al. (1996) speculated that a positive attitude towards learning and forced mental 'stretching' might be, at least partially, responsible for the improved performance of the children receiving music and art intervention. Similarly, it is possible that the method of music therapy involved the children in the activities in such a way that they will continue to 'do' music for themselves after the intervention programme ended, much in the same way as people continue to solve problems in their lives after they stop attending counselling.

By comparison, the music-oriented day care may be projecting the idea that music is a natural part of every-day living by the frequent practice of musical activities in the daily life there. Such influence might result in the children continuing to exercise musical thinking when they stop attending the pre-school. The reason for the diminished effect of the short-term music and arts intervention in Gardiner's (1996) study may be the cessation of exercising music. If musical thinking constitutes an important area of mental fitness in the same way as physical exercise is important to general health, it would follow that diverse areas of cognitions might be affected by musical thinking.

It must be recognised, however, that there is a possibility that something, other than the music, in the musically enriched pre-school, is stimulating the social cognitive skills of the children. The physical setting is poorer if anything, and there are considerably fewer toys at this pre-school than the others, both in-doors and outside. This may actually be stimulating the children's' creative thinking as they spend their days playing, but need to think of different ways to play with limited amount of toys. The family housing, rather than purpose built pre-school, calls for regular consideration for younger children from the older ones, as the older ones need to help the little ones up and down stairs.

It is likely, in light of the findings from Study I as well as research linking cognitions and music, that music has significant effects on children's social cognition. It is also likely, that other art forms, if exercised on a regular basis, would exert similar effect on ICPS skills.

One can but speculate which qualities of music are most beneficial to ICPS skills. It is often said that music has the special quality of existing in and

manipulating time. However, this can be said about many other art forms, such as

motion pictures, theatre, story telling, and such. All these art forms can

manipulate the experience of time passing fast or slow, largely because they affect

mood. When we are bored, time passes slowly and when we are enjoying

ourselves, time flies. This effect closely resembles motivation. The studies

discussed in chapter 9, regarding the effect of music on people who suffer

Alzheimer disease (Aldridge, 1995), suggest some sort of mobilizing effect from

music. These people can sing old songs and dance to past tunes although they

cannot talk and their memory is lacking (Aldridge, 1993). Similarly, people who

suffer from Parkinson's disease have been mobilised to dance to music (Sacks,

1991).

As an arts medium, music has its own symbolic language and the

building blocks include tone, timbre, rhythm, and beat. In order to participate in

group music activity, the most basic prerequisite is to listen. In order to improvise

music the most basic prerequisite may be to think.

When children improvise with others in a music group, they need to

coordinate the two; they need to listen to others, whilst also paying attention to

what they are doing so that it fits in with what the other people are playing. These

acts of listening, attention and thinking are much the same as those required for

effective communication. In fact, when Spivack relates how he first came to the

idea that specific ways of thinking were involved in social adjustment (Spivack,

Platt & Shure, 1976; Spivack & Shure, 1985), he describes how he realised that a

youngster he was interviewing, and repeatedly had got into trouble, didn't think.

Perhaps music motivates people to think, thus providing or activating an important element to social cognition, that of initiative.

It is clear from the studies of cognitive deterioration that music is a valuable link in rehabilitation of communication as demonstrated by the singing in the Melodic Intonation Therapy programmes, which allow right hemisphere regions to compensate for damaged left regions (Aldridge, 1995; Belin et al., 1996) through singing, or intonation. It is also clear from the results in this study that practising music has beneficial effects, which can be measured, in psychological areas.

If the ICPS skills can allow people to be in control of their actions rather than react to situations automatically or be immobilised by them due to lack of ideas for what to do, music making can provide a symbolic practise of controlling or, at least, influencing outcomes of situations. As AST and CT are, arguably, a form of creative thought, the creative aspect of music making may be the same as the principal aspect of creative thinking in social situations. Thus to exercise creative thought on a regular basis is arguably most important to effective social thinking.

Turning back to the initial pro-social effect of ICPS training on behaviour, detected in study I, and the absence of stable behavioural effects by follow-up measures in the ICPS group, reported in study II, it was suggested that a form of scaffolding to support AST and CT development would be desirable. That way the children could acquire the ICPS efficiency through a support system in their natural environment. The question then arises whether there is a way of teaching

218

children AST and CT in such a way that they will continue to apply it in social situations without further training or reminders to apply their skills. Is it, for example, possible to inject the idea of looking for alternatives, and thinking of consequences, with *in vivo* training, without the actual ICPS training sessions? Furthermore, if little children (5 year olds) get the idea that there are always several ways of dealing with any situation, and that their reaction influences what happens next, would that suffice for them to react by thinking in the face of a conflict situation? The final study in this research programme begins to investigate this.

*****

13

Study IV

The effect of brief training of teachers for mediating Interpersonal Cognitive Problem Solving skills.

This is the final study in the present programme of research. The study was designed to follow up the ICPS results from study one. The aim was to find a way to incorporate the basic training of children in specific ICPS thinking skills, in their everyday life at pre-school. The idea was to tempt staff and teachers at the pre-school to incorporate and apply the ideas of ICPS in their daily routine with the children, most importantly, to push children to think for themselves solutions in conflict situations.

13.1 Introduction

This study is based on the present findings of Study I and Study II that short-term training of ICPS skills is effective with pre-school children but behavioural gains may tend to wear off with time, if no further support is provided. Rather than run the training programme again, it was decided to attempt to design a self-supportive system for developing AST and CT in the pre-schools. Shure and her associates found that longer term training of ICPS gave

better results than shorter programmes (Shure, 1993), and that ICPS dialoguing

was a necessary supplement to ICPS training with very young children (Shure &

Spivack, 1982). The fact that dialoguing is important for proliferation of ICPS

skills of very young children, gave rise to the idea to inject ICPS support into the

daily interactions between adults and children, at the pre-schools in an attempt to

train ICPS skills directly through behaviour. It has been demonstrated, in Study

II, that ICPS skills can be enhanced with MT training, thus it is clear that ICPS

skills can be improved by indirect means. While dialoguing, as described by

Shure and Spivack, (1982) was designed to supplement ICPS training, to support

behavioural improvement associated with ICPS training, the adult support

proposed here would constitute a primary way of learning ICPS skills. In other

words, the attempt is made to reverse Spivack and Shure's original design, that is

to enhance ICPS skills through behavioural guidance.

Viewed in terms of Crick & Dodge's (1994) model, (see figure 1), this

idea of adult supported learning of ICPS skills, would exert influence on cognitive

processes at step 1 in the model, when children are reacting to outside influence.

That is, the adult would encourage the child at the level of encoding and

interpreting cues, in response to Peer evaluation and response to behavioural

enactment. That is, the children would be encouraged by the attending adult to

think of alternative ways to act (steps 2- 4).

There are potentially several advantages to such training, over training

children to find solutions to hypothetical problems. Firstly, *in vivo* training is

more concrete than producing solutions to hypothetical problems. The guidance

provided by the adults in daily interaction with children could potentially act both

as scaffolding and possibly also as coaching to some extent. Secondly, when children start to gain the experience of solving problems more effectively, this may act as a reinforcement for continued problem solving in social situations. Schneider & Byrne (1985), found operant reinforcement techniques to be most effective in social skills training, thus, if children find problem solving rewarding, they are likely to continue to solve problems in that way. Hence, reinforcement, which is inherent to the set-up of training, is likely to improve it's effectiveness. By the same reasoning, experience of failure, or negative reinforcement, could discourage children from applying problem solving in similar situations again. The *in vivo* training in the form of adult support, rather than training children to think of solutions to hypothetical problems as prescribed by Shure, has the advantage of adults being available for much of the child's practise of the skills. That is, if the adults are prompting the children to think, then the adult is there at the time, whereas if children exercise ICPS thinking in class, and then, go out and try applying it on their own, they are more vulnerable to disappointing results.

Moreover, research has shown that small children respond best to monomodal programmes, while older children can benefit from multimodal programmes, particularly in terms of improved behaviour (Beelmann et al., 1994). Finally, this way of training ICPS skills ensures relevance of the content of the training material, as it is done in the phase of a real conflict situation.

Ideally, training should incorporate some kind of self-perpetuating mechanism so that the development it initiates does not stop when the training stops. If children were to experience an effective way to solve problems with peers, they are likely to repeat it. If they can be got into the habit of *thinking* in

social situations, they would essentially be 'doing' or supporting their own ICPS development.

The question is whether it is possible to inject such ICPS skills training into the child's environment, by training the adults at the pre-school to prod children to think when conflicts arise, rather than to provide them with solutions. This study begins to examine ways of doing that. It was decided to introduce the research to the teachers and staff at a pre-school and attempt to get them enthusiastic about the ideas and try some out in daily dealings with the children. Again, the emphasis was put on AST and CT, this time as the central focus in general interaction with the children.

This training was not an attempt to replicate Spivack and Shure's much more extensive training of teachers, but rather to explain the idea of ICPS well enough to the staff at the pre-school, for them to be able to see and seize opportunities to encourage children to think, rather than give them answers in conflict situations.

The entire staff at the pre-school who were involved with the children, participated in the workshop, including pre-school assistants, as well as teachers. This was done in order to make the implementation as extensive as possible in the children's daily life at the pre-school. Finally, it was believed this would make it easier for the staff to try on new ways of handling conflicts among the children, because they would all be involved, and could support each other.

The teachers were initially trained in one 4 hour workshop by the experimenter. The training was quite playful and emphasised the positive aspects of trying out new ways. It was decided to measure results in this study two

223

months after training the teachers. This is approximately the same amount of time that elapsed between pre- and post-test in Study I, which makes the non-treatment Control group equivalent to the Control in Study I, and the time elapse between pre- and post-test measures the same. A regular scheme of visits from the researcher was set up to provide support for the training, as well as, regular checking of whether there were any problems with applying the method, because 'old habits die hard'.

Popularity measures in the form of peer-nominations were included in this study. In light of the fact that these measures did not reveal any improvement in popularity in studies I and II, some adjustments were made to the method. Rather than asking children to nominate peers, the names of their classmates were read aloud and for each name the children were asked whether they liked to play with that child. This was done to eliminate the possibility of children not receiving nominations simply because they were not remembered immediately, or even not attending pre-school on the day their friends were being tested. The following hypotheses were developed:

1. The children in the pre-school where the staff has been trained to implement ICPS training ideas will be better at AST and CT than children in the Control group where no training was provided to the staff.

2. Popularity will be improved with improved AST and CT skills.

13.2 Methods

Two pre-schools, in the same residential area in the suburbs of Reykjavík, were selected for this study. One pre-school was assigned to training and the other to control condition by the toss of a coin. The total population of 5 year-

olds at the pre-schools participated in the study with parental consent and permission from authorities. Neither school was running any kind of enrichment programme or special training at the time of the study, nor had there been any special intervention programme running for at least two years prior to the study.

13.2.1 Research design

A multiple-group, matched subject, pre-test-post-test design was employed for this study.

Independent variables: 1) ICPS Training group

2) Control group

Dependent variables: a) AST and CT skills

b) Popularity

13.2.2 Participants

Altogether there were 40 children who participated in the study (23 boys and 17 girls). There were 20 children in the Training condition (12 boys and 8 girls) and 20 children in the Control group (11 boys and 9 girls). All the children were born in the same calendar year and in their last year at pre-school at the time of the study, that is approximately 5 years old.

13.2.3 Assessment

The assessment of AST and CT skills was carried out in the same way as in previous studies (see section 10.2.5.1) apart from an adjustment of the sociometric test, based on experience from Studies I and II.

Thus, a class-list was used to remind the children of every child in the class and for every classmate, the children were asked whether they played with them. This procedure does not rely on the children recalling from memory the children they liked to play with, but rather calls on them to recognise if they play with each child as they were named. In every other respect the assessment procedure was the same as described in section 10.2.5.2.

13.2.4 Training of staff

The training of the teachers and assistants was conducted as a 4 hour workshop with weekly follow-up visits over the course of two months while the experiment was running. Prior to the actual training, the background research and its applicability in pre-school setting was introduced to the staff of the pre-school assigned to the Training condition.

Following a brief informal discussion about how children's proficiency in the AST and CT skills might make it easier to resolve daily conflicts in the pre-school, the staff was divided into little groups for brainstorming. They were instructed to think of situations where they would think it appropriate to encourage AST or CT thinking, rather than provide answers and solutions for the children. The results from these brainstorming sessions were then shared in the whole group and the staff did some role-playing of typical conflict situations

between children (and children and staff) in the pre-school. The staff was asked to keep two standard answers in mind:

1) What can YOU do about that? (Hvað getur þú gert við því?) and

2) What happens then? (Hvað gerist þá?)

This was done in order to keep things simple and easy to remember for the staff, while they developed a habit of encouraging children to *think* for themselves, and solve their problems rather than appeal to an adult for a solution.

The staff were asked to keep a log book where they would jot down at the end of the day some points about situations in which they had applied their skills, or difficulties with using the method. This was to enable the experimenter to give constructive suggestions on the weekly visits and to serve as an everyday reminder to apply the method.

13.2.5 Log-books

None of the logbooks were returned. Some members of staff claimed they never had the time to write in the logbooks, others that they tended to forget, and some that they were embarrassed to write things down so they did not do it. There was no information returned from the logbooks about the daily implementation of ICPS training with the children.

13.2.6 Follow-up visits

The pre-school, which housed the Training group, was visited at the same time, Tuesday mornings, every week for 8 weeks. Each visit lasted approximately one hour. The experimenter went into the classrooms, chatted to the teachers and assistants, asking how things were going and doing a bit with the children whenever opportunities presented themselves to model and demonstrate the application of the method. The logbooks were mentioned at every visit. The staff were asked whether they were jotting down pointers in them, and if they felt uncomfortable doing so. When the staff talked about being nervous about writing things down in the log-books, they were repeatedly told that the log-books served as a reminder of incidents that had happened, and a learning tool for the researcher as well as the staff, and would not be transcribed or published anywhere.

13.3 Results

Multiple t-tests were used to compare the groups on measures of AST, CT and popularity. No significant difference was revealed between the groups on pre-test measures of ICPS skills ($t(38)$ = .328, NS for AST and $t(38)$ = -.805 for CT) or popularity ($t(38)$ = -.170, NS). The means and standard deviations for these measures are presented in table 26 below.

Table 26. Levels of AST, CT and popularity at pre-test.

	Training group (N=17)		Control group (N=18)	
	Mean	SD	Mean	SD
AST	6.60	3.03	6.30	2.74
CT	5.80	3.00	6.65	3.65
Popularity	5.35	1.81	5.45	1.90

Note: There are no significant differences between the groups at pre-test.

13.3.1 Improvement of ICPS skills

CT thinking was significantly improved in the Training group, as revealed by means of independent t-tests comparing difference scores between pre-test and post-test $(t(33) = 1.869$, $p < .05$, $one\ tailed)$. Difference in AST was insignificant (t(33) = 1.567, NS), and popularity was unaffected ($t(33)$ = -.467, NS). Thus the first hypothesis is partially supported by the results, as training appears to have affected improvement in CT only. The second hypothesis must be rejected as no significant change was revealed in measures of popularity between pre- and post-test measures.

Means and standard deviations for these calculations are reported in table 27 and depicted in figures 8 and 9 below.

Table 27. Changes in AST, CT and popularity following intervention.

	Training group (N=17)		Control group (N=18)	
	Mean	SD	Mean	SD
AST difference score	1.06	3.34	-.44	2.25
CT difference score*	1.47	4.27	-.77	2.71
Popularity difference score	-.25	2.34	.10	2.40

Note: * Significant at the .05 level.

FIGURE 8. DIFFERENCE IN AST SKILLS FOLLOWING INTERVENTION.

20
18
16
14
12
10
8
6
4
2
0

Mean

Training　　　　Control

Condition

■ AST post-test
■ AST pre-test
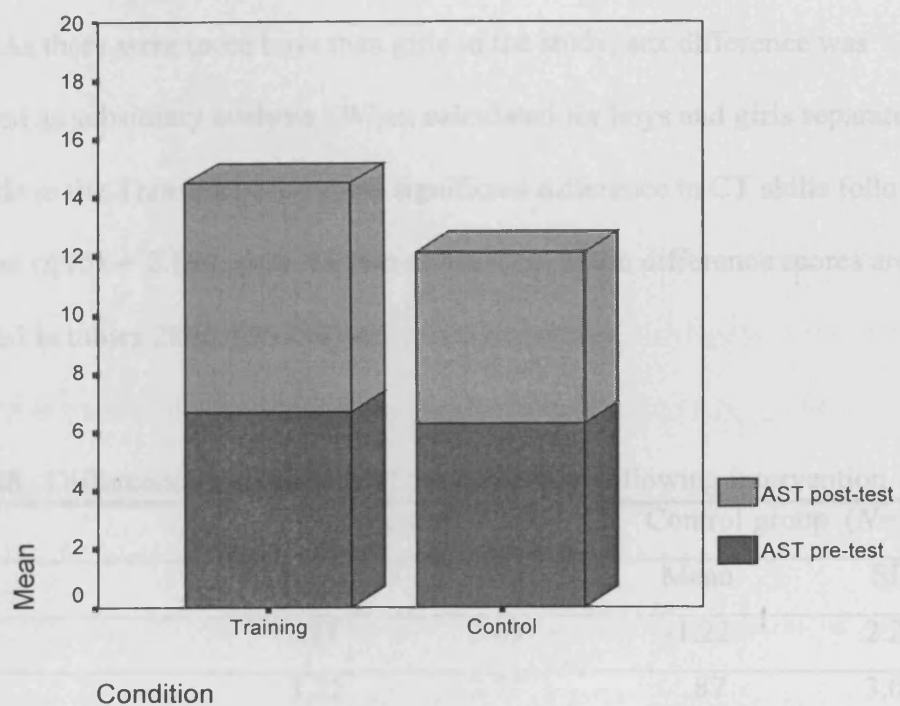
FIGURE 9. PROGRESS IN CT SKILLS FOLLOWING INTERVENTION.

20
18
16
14
12
10
8
6
4
2
0

Mean

Training　　　　Control

Condition

■ CT post-test
■ CT pre-test
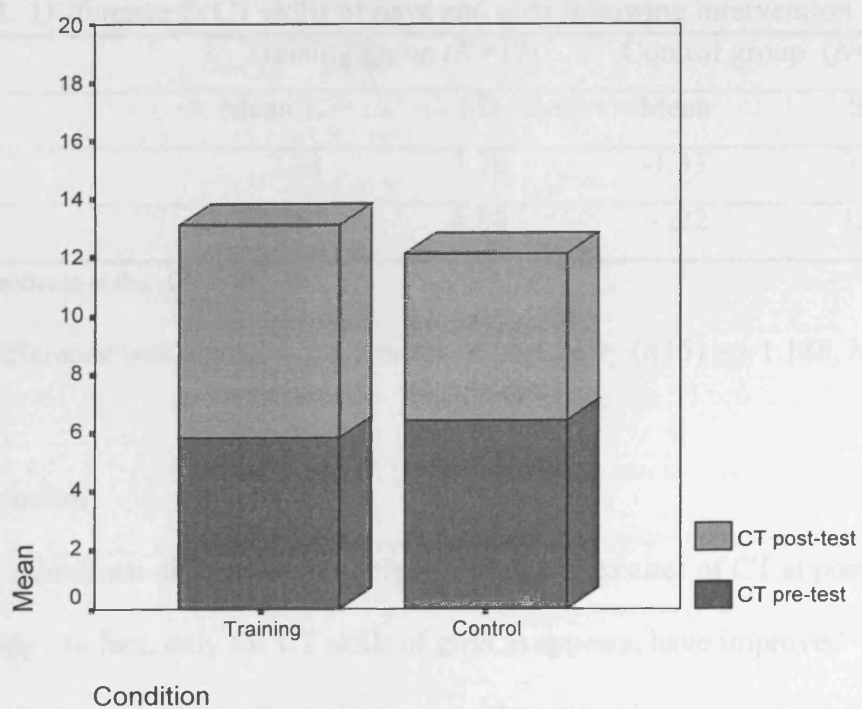
13.3.2 Sex difference in improvement of AST and CT

As there were more boys than girls in the study, sex difference was examined as subsidiary analysis. When calculated for boys and girls separately, only girls in the Training group show significant difference in CT skills following treatment ($t(15)$ = 2.180, $p < .05$, *two tailed test*). Mean difference scores are presented in tables 28 and 29 below.

Table 28. Difference in AST skills of boys and girls following intervention.

	Training group *(N=17)*		Control group *(N=18)*	
	Mean	SD	Mean	SD
Girls	.87	3.09	-1.22	2.22
Boys	1.22	3.73	.87	3.09

Table 29. Difference in CT skills of boys and girls following intervention.

	Training group *(N=17)*		Control group *(N=18)*	
	Mean	SD	Mean	SD
Girls*	2.38	3.70	-1.33	3.32
Boys	.67	4.80	- .22	1.99

Note * Significant at the .05 level.

No sex-difference was detected in measures of popularity ($t(15)$ = =1.188, *NS*).

13.4 Discussion

A significant difference was only apparent in measures of CT at post-test in this study. In fact, only the CT skills of girls, it appears, have improved significantly through this method of training. Thus, there is some support for the first hypothesis, but it is not fully supported by the results. These somewhat

disappointing results, however, do throw some light on the relationship between AST, CT and behaviour.

As discussed in the introduction to this study, this was an attempt to affect ICPS skills by reversing the process used for training, that is, to provide guidance in real life, aimed at improving ICPS skills. This has exerted a reverse effect on the ICPS skills, that is, CT is affected rather than AST, which generally appears to be the more basic skill. The means reveal, however, a clear trend in the data for improvement in AST as well as CT (see table 27).

It is possible, that the main thing missing, in this study, is more time for effects to proliferate. The intervention is very basic, and represents small, but important, adjustment to the way adults interact with the children. Although effects are small, they may be very important. It may simply take more time for the effect of this kind of intervention to show up. The fact that some effect is apparent, after only 8 weeks of such minimal intervention, may actually be a sign that the staff is applying the method when they see the opportunity to do so. Moreover, it is likely that, as the staff practises the method, they will develop a habit of encouraging children to think rather than provide them with answers.

Shure (1993) has suggested that the ability to foresee "what might happen next", that is CT, may function as a more direct behavioural mediator at the age of five than at age four. If that is so, then the present findings of stronger effect on CT would be expected. It is possible, however, that important changes in social cognitive thinking are taking place around the age of 4 to 5 years and complicating the relationship between AST and CT, concerning behaviour and in vivo training of cognitive factors.

The AST thinking may be more relevant before actions are physical, as suggested by Shure. Thus, the guiding adult might need to foresee a problem coming up between children and encourage them, at that point, to *think*, to enhance AST. By the time children are acting out a response to a conflict situation, CT may be more relevant. In other words, CT may be more relevant to overt behaviour, but AST more to covert behaviour. Moreover, the relevance of AST and CT to behaviour may be age-dependant.

It is interesting to look at the relationship between AST and CT in view of the present finding, and Crick and Dodge's (1994) model of social information processing, again. It was suggested in the introduction to this study, that ICPS skills might be strengthened through behavioural guidance, as opposed to practise in finding solutions to hypothetical situations. It was argued, in the introduction to Study I, that AST and CT correspond to steps 4 (response access or construction) and 5 (response decision, including outcome expectations) in Crick and Dodge's model. Training, it was argued, would enhance AST and CT, which it did. In this study, by contrast, it has been argued that the training will exert an effect on ICPS skills by means of guidance in real life situations. It was predicted that by encouraging the children at the level of encoding and interpreting cues (step 1 in the model), in response to peer evaluation and response to behavioural enactment, the children would be encouraged, by the attending adult, to think of alternative ways to act or deal with the situation (steps 2- 4).

The results suggest that the effect of this training has in fact gone counter-clock-wise in the model. That is from step 1 to step 5 (response evaluation, or CT). Crick and Dodge do place feedback loops between steps 5 and 4, as well as

from every step to the centre database. It is, therefore, also possible that the training has affected social schemas or social knowledge in the centre database, and thereby influencing CT.

The exclusive gain of girls from this form of treatment raises the question of whether pre-school staff generally have different expectations for girls and boys with regard to behaviour. As girls are generally more mature than boys are at this age, it is possible that girls are expected to show more responsible behaviour than boys do. This might result in girls being directed to think of consequences more readily than boys. Furthermore, rough and tumble play, might be seen as a conflict among girls, warranting adult interference, whereas the same kind of play might be seen as playful among boys and left without adult attention. If, as suggested above, the training was happening largely through adult attention to behavioural conflicts, or fights, the girls may have received training more often than boys. Boys may have been seen to be "just playing" while girls may have been seen as fighting when engaged in disagreements. Alternatively, the girls may be more able to benefit from the guidance because they are more mature.

The second hypothesis must be rejected, as there is no difference detected in popularity, following the training. The adjustment that was made to the method of assessing popularity by reminding the children of all the children in the class did produce a much higher nomination score for each child compared to studies I and II, and there were no children who received no nominations. This is not to say that there were no children in the sample without playmates, but it does indicate that there are difficulties with assessing children's popularity at this age.

If children are asked to recall friends, they may count the children they have been playing with that particular day, and when they are asked if they play with specific children, which they are reminded of, they may say yes, because they would not mind playing with them. Behavioural observation or teacher rating might give a more accurate picture of children's actual popularity at this young age.

The reluctance of the staff to keep the logbooks, and failure to return them, suggests they were either uncomfortable with the method, or forgetting to apply it. This was somewhat surprising, as there was considerable excitement about trying out the method following the training session. This warrants some speculation. 'Old habits do die hard' and the dialoguing technique was developed by Shure and her associates, following the observation of teachers training children in AST and CT, but then turning around and providing all the answers in the playground (Shure & Spivack, 1982). It is possible that in the present study, the staff had some negative experiences with applying the method, which they have not disclosed to the researcher.

It is not uncommon, in therapy, for behaviour to become worse before it gets better (e.g. Herbert, 1998). There may have been an element of that which discouraged the staff. It is possible that when the children started to meet questions instead of answers from the grownups when they appealed with problems, that they continued to come again and again, actually seeking limits before realising that they would have to *think* for themselves. If this did happen, it may have made the staff lose heart in the programme.

Alternatively, in order to implement new ways of relating, people must be alert to their own behaviour. This may come more naturally to some people than others. Nevertheless, there were some significant improvements in CT amongst girls, although the fact that AST did not improve significantly warrants further investigation which is beyond the scope of this research.

There were some methodological concerns in this study, which may have affected the research results. Firstly, the weekly visits of the experimenter probably did not suffice to keep the staff enthusiastic about implementing the programme. This could be improved by having a person present at the pre-school for a few weeks on a permanent basis while the staff was getting into the habit of prodding children to *think* rather than provide the answers. Such a design would clarify the picture somewhat, as there would be constant observation of how much training was going on.

Secondly, if this age group is going through some important developmental changes that are affecting the relevance of their ICPS skills to behaviour, it is important to clarify those developmental changes before results can be interpreted fairly.

Thirdly, the finding that girls gained more than boys from the treatment warrants investigating whether pre-school staff treat girls and boys differently in a programme like this, or, whether this differences is simply due to difference in developmental levels of girls and boys at this age.

Finally, the trend for effect of this sort of training is definitely present in the data, although the only significant result detected is that of improved CT skills of girls. Perhaps, the main thing missing is simply more time. The effect from

the MT training was not apparent at post-test, but was revealed at 7-month follow-up.

In conclusion, although the effect on ICPS skills revealed in this study is not very dramatic, it is important to recognise that subtle effects can be of great importance. If it is possible with such minimal intervention to create a support system to the continued development of ICPS skills, then that can have wide reaching long term effects for the children.

*****

14

Overall discussion and future directions

In this chapter, the results from the entire research

programme are drawn together and discussed in terms of their

implications and future directions. Results are related to

developmental theories reviewed in the first nine chapters of

the thesis and theoretical suggestions are offered.

14.1 Summary and discussion of results from the entire research programme.

The short-term treatment with ICPS proved successful in raising the level of

AST and CT. Thus the first aim of this research, to establish the effect of short

term ICPS training with young children, is met. Erwin and Ruane (1993)

demonstrated that school children improved on measures of AST and CT

following short term ICPS training. The present findings show that this is

possible with considerably younger children, at pre-school, with only 8 sessions

of approximately 25-30 minutes each. Moreover, the improvement of AST and

CT is stable over at least 7 months following training, which establishes the

stability of the effects of such short term training of AST and CT and meets the

second aim of the research. Largely these results are as predicted. There is no

precedence, however, for such a short-term programme with pre-school children

in the literature. By comparison, kindergarten, and primary grades programmes

developed by Shure (1992a, 1992b) prescribe daily sessions of about 20 minutes for 4 months.

The sleeper-effect apparent in the improvement of AST and CT, seven months following the MT treatment, meets the third aim of the research to establish the relative effect of the MT treatment. It appears that the treatment has exerted effect on AST and CT, but effects require time to appear. This suggests there may be an association with creative thinking involved in AST as well as CT. These results raise several theoretical questions. How music mediates or supports ICPS thinking is not revealed by the data, but the results from study III suggest that involvement in creative musical activities enhance children's social cognitive thinking. Whether that is because AST is really a form of divergent thinking, ideational fluency or creative thought, as suggested earlier (see section 9.1 on creativity and Guilford (1967)), warrants further investigation.

The effects on behaviour associated with the ICPS skills in the present study are consistent with previous findings (e.g. Elardo & Caldwell, 1979; Elias, 1980; Mannarino et al., 1982; Rixon & Erwin, 1999) in that they largely appear to improve social interactive behaviours (Shure & Spivck, 1982, see also results from Study I and II). This is however not always the case. Denham and Almeida (1987) caution against assuming that ICPS training has favourable effect on socially competent behaviour, as the magnitude of the effect for this hypothesis in their meta-analysis is small (see section 8.4). Denham and Almeida (1987) do show, however, that ICPS training is more effective with younger children in terms of changing their social behaviour.

There are parallels between the ICPS and MT training in terms of behavioural reflections of improved AST and CT skills. The fact that similar behavioural effects were revealed in the MT group at follow-up, to that immediately apparent in the ICPS group at post-test (more "positive interaction"), suggests that the relationship between ICPS skills and behaviour is the same from the MT treatment as that produced by ICPS treatment. Behavioural measures in this study were very coarse, and statistical calculations should be taken with caution, as there were no adjustments made for multiple testing. Thus, there may be chance happenings among the results.

The decision not to resort to p levels of .01, for example, was based on the fact that the participants were normal healthy children and treatment effects were likely to be small. Schneider (1992) showed that the most powerful predictor of effect size from treatment was subject diagnosis. Thus, the risk of type II error was considered greater than the risk of type I error.

AST appears to be more consistently associated with behavioural changes than CT, but primarily as a prerequisite to the development of CT. It is possible that there is a developmental relationship between AST and CT, that is, CT may build on AST, and the difference may be qualitative. Consistent with previous findings (Shure, 1993), CT appeared to become a more relevant mediator of behaviour at a later age (Shure, 1993). Shure has said that this happens between the ages of four and five. If, CT, in fact, is a more important mediator of behaviour for 5 year olds than it is for 4 year olds, this could again be a sign of developmental relationship between the two skills. That is to say, that CT is a

more mature skill than AST. If CT develops consequent to AST, it is possible that the two become intricately related and essentially one in a similar way to how Vygotsky conceptualised the relationship between speech and thought (see section 5.1).

Just as Vygotsky argued thought (inner speech) was rooted in the biological development of the child, and language in the social milieu (Vygotsky, 1962), it could be argued that AST is rooted in the biological development of the child but CT is based on experience. Such a relationship would explain the results in Study IV, where only CT improved from real-life training of ICPS skills. Furthermore, this is not to say that AST and CT are unrelated, but that they intertwine once the child comes to realise that every action has a consequence – just like thought and speech intertwine once the child comes to realise that every object has a name. This analogy with Vygotsky's conceptualisation of the relationship between thought and speech provides a possible explanation of the increased importance of CT in mediating behaviour for older children. It would follow that rejection of alternatives could be due to their foreseen consequences, thus limiting the number of alternative solutions considered for solving social problems.

Studies of clinical populations provide interesting information on the consequences of poor ICPS skills. When children are lacking in AST, they generally are seriously lacking in CT. Youngsters, who exhibit impulsive and inhibited behaviours, clearly demonstrate this. They tend to be lacking in AST although they can think of consequences of their actions (CT). According to Shure (1993), impulsive children may realise consequences but act impulsively,

and consequently, get into trouble, whereas the inhibited children are more sensitive to other people's feelings and tend to do nothing, due to a lack of alternative solutions apparent to them.

The improvement in CT only of the children in Study IV is somewhat curious. Firstly, it could mean that extensive support to such in vivo intervention is necessary if it is to deliver the results without the ICPS training sessions. By contrast, it could mean that because of the in vivo, or scaffolding, training method, the effect on thinking is more direct. The small effects detected in the data in study IV, could actually be very important. It is possible that the children are thinking of alternative solutions they are not expressing because they are associated with undesirable consequences.

The finding that girls have benefited more from the intervention in Study IV may be an indication of girls being more receptive to verbal methods from an early age. Schneider (1992) notes that although there are several studies with boys only in his collection of studies for meta-analysis, there were none with exclusively girls. Beelmann et al. (1994) by contrast remark that although they did not detect sex difference in their meta-analysis they found strikingly favourable outcomes in studies of girls only. Thus there are indications that girls may be more receptive to the ICPS training in this format, as it relies on conversational guidance; they may be more mature than boys are; or they may simply perform better than boys on the assessment of AST and CT (which is verbal).

As discussed in chapter 3 (section 3.4.1.), by the age of 5, boys show stronger same sex preference than girls and tend to play more physically active

games in larger groups than girls (Erwin, 1993). Thus, ICPS training may be more relevant to girls' interactions with other girls, than for boys interacting with other boys. Alternatively, the ICPS training may be exerting influence on some cognitive or social competence of boys, other than AST and CT, and thus go undetected. Such factors could include: feeling of having some control over what happens (internal locus of control); sense of independence; positive self-image and self-esteem.

Little girls may simply be more receptive to verbal instructions, whereas body language and coaching or modelling may better guide boys, rather than verbal instructions. In the literature on personal relationships, such a difference in attention to social cues is well known. Studies of Opening Gambits have shown that while women tend to pay great attention to the content of what is said in charged situations, men are more tuned into the manner of how things were said but don't remember the actual words (Cunningham, 1989).

In order to conceptualise the developmental significance of these results it is useful to view them in light of developmental theories and ideas about children's social behaviour reviewed in the introductory chapters.

14.1.1 Results viewed in theoretical perspective

The ICPS method of training certain ways of thinking to promote positive social interactive behaviours constituted an important shift in attention from behaviours to thought processes governing behaviour. How these thought processes govern behaviour is a complex issue.

To apply Vygotsky's idea of the relationship between speech and thought to the relationship between AST and CT provides a useful heuristic for conceptualising the relationship between AST and CT as outlined in the previous section (14.1). Arguably, ICPS training is a form of what Vygotsky termed *scaffolding* (see chapter 5. section 5.1.) and refers to the interactions between children, and a guiding adult or peer which allows the child to solve a problem that would have been beyond his/her abilities alone. The general features of effective *scaffolding* identified by Rogoff (1986, 1990) and discussed in chapter 5, (section 5.1.) corresponds directly to the ICPS training programme.

Firstly, Rogoff states that tutors provide a bridge between existing knowledge and demands of the task, which is inherent in encouraging children to think of alternative solutions to a problem. Secondly, the ICPS training is in itself a structure that supports problem solving and helps children to keep the overall goal of the activity in mind, which is another feature of effective *scaffolding* according to Rogoff. This is perhaps especially true for means-end thinking, a more advanced ICPS skill than the ones dealt with in these studies, but also to some extent true for exercising consequential thinking. Thirdly, Rogoff identified the importance of guided participation to ensure that the child was active in the learning process, which is again, precisely what ICPS aims to do. Namely, to get children to think for themselves what action to take and to take responsibility for those actions, which is the fourth feature identified by Rogoff. Finally, Rogoff identifies the spontaneous guided participation in everyday activities, which is yet another quality of ICPS thinking. Thus, ICPS thinking is arguably a form of *scaffolding.*

As a form of *scaffolding,* the ICPS training and its effectiveness for social behaviour relies on the development of theory of mind. Increasingly sophisticated understanding of other people, allows children to interact effectively in social situations and develop meaningful relationships with other people. Understanding of desire and belief as a drive behind behaviour, further serves to aid children in effective socialising behaviour and predicting other people's reactions or the social consequences of events.

Development of theory of mind, may explain why CT is more instrumental in determining children's behaviour, as they get older. When children come to understand that other people may hold a *false belief,* that they may not know certain things, and that they may have different desires and beliefs to themselves, they gradually become better able to predict other people's actions and reactions. Such understanding supports accurate consequential thinking, and visa versa, that is consequential thinking must support theory of mind development, as it must involve judgements of other people's motives, desires and beliefs, in order to foresee consequences.

In the attempt to conceptualise how therapy, such as ICPS training works, it is useful to apply some heuristics to provide context. Crick and Dodge's (1994) reformulated model of Social Information-Processing Mechanisms in Children's Social Adjustment provides a useful framework for viewing the effect of AST and CT thinking in relation to developmental theories (see figure 1.). Bowlby's working models of relationships and Piaget's schemas would have to be placed at the central data base in the model where general memory store, acquired rules,

social schemas and social knowledge is stored. This core database influences and is influenced by every step of the way from stimulus to response.

The *scaffolding* or ICPS training of AST and CT specifically, is most relevant to steps 4 (Response access or construction), which are essentially AST, and five (response decision, including response evaluation, outcome expectations, self-efficacy evaluation and response selection), or essentially CT. The next step in the model is Behavioural enactment. This is one way to conceptualise how AST and CT govern behaviour and supports the idea of AST preceding CT although Crick and Dodge allow for some retracting along the way. As mentioned before, Shure (1993) speculates that CT is a more relevant mediator of behaviour at age 5 than it is at age 4. If AST precedes CT, this might actually be a developmental factor.

Children may go directly from AST to behaviour or from step four in Crick and Dodge's model to step six, without considering the possible outcomes of their behaviour. According to Shure, this is not because the children cannot think of consequences, but because their AST is limited and they do not have alternatives available to them, so they act despite realising they will get into trouble. In other words, impulsive behaviour might be explained as being due to lack of AST skills.

Moreover, the way the model is depicted with information flow from every step of the way in to the centre database; the possibility of short-cuts across the circle is created. Thus, a child might go from interpreting cues (step 2), directly to response decision (step 5), and enactment (step 6) because of repeated experience of similar situations (essentially schemas or working models). To

illustrate this, let us consider a child who sees a teacher take the key to the toy-shed, immediately rushes to the door of the shed. The child does not stop to wonder where the teacher is going with the key, what s/he is going to do with it and so forth. The child knows from experience that when the teacher takes the key to the shed, she is about to open it and will ask the children to stand in line to select bikes, trucks, etc. Thus, the child interprets the cue (step 2), decides to be first in line, perhaps to get the most popular bike (step 5 / CT), and acts.

Models, such as that of Crick and Dodge, can only explain a limited amount of what is behind social behaviour. There is for example no obvious place in the model for creative thinking or physiological responses from inhibitions to exert influence on behaviour, yet these factors are important, as is temperament, mood and last but not least, emotion. How the music training has affected the AST and CT skills of children is for example difficult to map onto such a model.

Piaget (1967) stated that spontaneous play requires symbolic thinking. As such, playing is a cognitive activity, which helps the child understand the world. Creative music activities must also require symbolic thinking and thus act on cognitive processes. Moreover, the structure of music activities represents scaffolding in a similar way to cultural surroundings. Both provide a framework of selective experiences determined by the culture on one hand and the arts medium or tool of expression on the other. How these selective experiences affect abstract thinking that may be involved in constructing AST is difficult to examine, for the same reason as a theory of mind is difficult to measure, that is the privacy of the thinking processes, which we, for the most part, are not even aware of ourselves. Thought processes may become skilled, they can be pre-emptive due

to emotional arousal and they can be irrational at times, especially when strong beliefs or emotions are involved.

Vygotsky's self-talk, discussed in relation to therapy (see section 7.5.2.) provides a useful way of conceptualising how ICPS governs behaviour. Vygotsky suggested that, at first, the instructions for behaviour came from an external source, followed by self-talk, which eventually becomes inner-speech or thought. The way young children tend to talk instructively to themselves (and many adults do when dealing with tasks that require concentration) is a good example of thought guiding behaviour. While Piaget explained egocentric speech as an expression of the child's egocentricity rather than important part of the child's cognitive development, Vygotsky places more importance on this phenomenon as part of an important development of thought. That is, an intermediate stage between instructions from exterior sources to becoming self-governing inner-speech or thought.

This provides a useful analogy for conceptualising how music exerts influence on social-emotional development. Many people, both children and adults, sing as they work. Some tend to hum others sing specific songs. This could be a different type of self-control, guiding other important aspects of people's way of being, for example, mood, temper, or stress levels. Steady rhythm tends to have a calming or levelling effect on people's mood. In fact, this self-administered regulation of mood through singing, which many people use, may actually develop much in the same way as inner speech. Most mothers have used lullabies to calm and comfort infants. Religious music is used to elicit certain moods for ceremonies, celebrations in most cultures include music and

children learn a certain part of their culture through the songs from older generations. This is arguably a cultural transmission of emotional control. Singing the lullabies, and similar musical interactions, may constitute important emotional up-bringing, possibly enhancing the controversial construct of Emotional Intelligence.

Emotional Intelligence is a relatively new concept, which is gathering support. It includes such abilities as being able to motivate oneself, persisting in the face of frustrations, controlling impulses and delaying gratification, empathizing, hoping, and regulating one's moods to keep distress from overwhelming one's ability to think (Goleman, 1995). There is much evidence "that people who are emotionally adept – who know and manage their feelings well, and who read and deal effectively with other people's feelings – are at an advantage in any domain of life" (Goleman, 1995). In the context of social information processing, Lemerise and Arsenio (2000), argue that emotion processes serve motivational, communicative, and regulatory functions within and between individuals that are distinct from the contributions of cognitive processes (attention, learning, memory, logic) to social competence.

If creative, or musical thinking, supports cognitive processes involved in ICPS thinking and social interaction, then exercising the musical thinking processes is likely to enhance the ICPS thinking. If creative or musical thinking is linked with emotional aspects of the person, then it may serve to strengthen some aspect of mood and through such connections support ICPS skills. Alternatively, processes that enhance various types of thought may be most easily accessed through the arts or abstract activities. To reflect back on earlier comparison of the

relationship between AST and CT being similar to that of the relationship between thought and language, according to Vygotsky, it is possible that AST is rooted in creative thought. That is, the biological base of AST is some element of creative thinking.

Whether ICPS skills evolve as schemes in stages along the lines of Piaget's cognitive stages of development or children learn the skills through social interaction with other people and the environment, as Vygotsky envisaged children's cognitive development, it is clear that they can guide social behaviours. Skilled ICPS thinking provides an opportunity to improve children's social skills and a potential for preventing destructive social interaction patterns.

14.2 Implications and future directions

The results from this programme of research have demonstrated that the ICPS skills of children can be elevated with a short-term training programme. These effects are stable over at least 7 months but in order to reap the most benefit from the behavioural consequences of improved ICPS skills, supplementary dialoguing or booster-sessions may be of benefit as behavioural effects were weak, and appear to fade. This warrants further investigation, if short term ICPS programme is to be of benefit to social behaviour.

A developmental relationship between AST and CT is suggested. One way of investigating such developmental connections between AST and CT thinking would be to examine the quality of the responses provided by the children. Are there perhaps more mature answers among the children who appear to only progress in CT? This issue is related to the sex difference found in Study

IV where only girls progressed in CT and boys did not improve significantly in their ICPS skills. It would be interesting to know what provoked the staff at the preschool in Study IV to intervene and apply ICPS support. Is there, for example, a sex difference in the expectations put on boys and girls from the attending adults at the schools? Another possibility is that the boys have actually gained behaviourally but this does not appear in the results because there were no behavioural measures included in Study IV.

By the same reasoning, it is possible that the girls have mainly become better at talking about possible consequences, which raises the question of the importance of language in therapy, and whether language has more direct influence on thought, and action, for girls, than it does for boys? Alternatively, there might be a developmental difference between AST and CT, apparent in the present research, because 5-year-old girls have better command of the language than 5-year-old boys have. To clarify this issue, it would be of interest to include a measure of language comprehension and expression in the assessment procedure for AST and CT. A closer examination of the differences between boys and girls in this respect might provide useful information for therapy. While it is important to recognise differences between boys and girls in various context, it also raises ethical questions. Is there a call for different emphasis in therapy for boys and girls, or can therapy methods cater for the needs of both sexes?

The early training of ICPS skills has the obvious benefit of maximum effect in the long term, given that the improvement is stable, but of course, it is important to consider developmental factors to suit developmental abilities. Booster-sessions may be necessary with young children. A couple of booster-

sessions with 6 month intervals, following initial training, may suffice to stabilise

the behavioural effects during developmental changes. It would be curious to see

what effect such additional training to the one reported in this study would have

on the behavioural consequences of the ICPS training. This would still maintain

the benefit of relatively short training (although repeated) with the obvious

economical benefits over longer-term treatment.

Considering the benefits of music on ICPS skills, it would be of interest to

combine the dialoguing and MT training, thus tapping both verbal skills and

creative abilities. The stability of the behavioural gains from MT training cannot

be determined, because of the sleeper-effect involved. It would be curious,

however, to examine the behavioural correlates at 7 months following the

appearance of the behavioural effects in the MT group, and see if they follow an

identical course to the ICPS training which would be more "playing in pairs"

seven months later. Furthermore, it would be interesting to investigate whether

the relationship between creative thinking and ICPS skills is reciprocal, that is,

would ICPS training strengthen children's creative thought?

The results from the present investigation of the role of music in mediating

social cognitive skills carry general implications for education by underscoring

the importance of nurturing children's creative abilities through the arts. As Plato

states in The Republic:

"...*musical training is a more potent instrument than any other, because
rhythm and harmony find their way into the inward places of the soul, on which
they mightily fasten, imparting grace, and making the soul of him who is rightly
educated graceful,*" (Plato The Republic, [401e]).

The current trend in education is to emphasise performance in traditional academic subjects. Publications of national league tables and emphasis on comprehensive exams, to evaluate schools, are evidence of this. The danger is that increased emphasis on subjects, which are included in the comprehensive exams, will be at the cost of other subjects, which are not a part of this assessment, such as the arts. One way to counteract this is to integrate the arts into general teaching methods. The arts can provide a teaching tool for academic subjects, just as music therapy was used to train specific ICPS skills, in this study. No doubt, there are teachers who do this to a greater or lesser extent, independently or in collaboration with the arts teachers. Such teaching methods bring the issue of professional practice into focus.

The current findings of difficulty with implementing new practice (as was the case in Study IV), is very much in tune with the current discussion in the research literature on mentoring teachers. Hargreaves and Fullan (2000) who have written extensively on the topic state: "Although it is possible to find a few teachers who are conversant and comfortable with the wide range of new teaching strategies, these individuals are a scarce resource and can quickly become overburdened".

As discussed at the beginning of this thesis, there is current concern regarding violence amongst children in various forms such as, bullying, children committing violent act, teenage suicide, and so forth. Changing societies call for new ways of preparing children to cope with their social environment. The ICPS skills training has repeatedly been associated with adjustment, and in this study it has been shown that children as young as 5 years old are receptive to short-term

training of AST and CT. Moreover, it has been demonstrated that music, or possibly any creative arts practise, supports such social cognitive thinking. This underscores the importance of encouraging creative thought, not only for artistic purposes, but also for social adjustment.

The findings in this research raise several theoretical questions. Firstly, is AST in fact a form of creative or divergent thinking? Is there a call for different training-methods for boys of this age, as boys, consistently appear to benefit less than girls from the training methods? Is there a basic element, responsible for divergent thinking that can influence various cognitive functions, such s ICPS thinking, and finally, what is the role of emotion in musical cognition, creative thinking or ICPS thinking?

14.3 Final conclusions

The main contributions to existing knowledge on ICPS training are that 5 year old children can benefit from a short-term training programme of AST and CT skills, and the effects are stable for at least 7 months and there appear to be some positive behavioural gains from the treatment. This is a considerably less elaborate intervention than that prescribed by Shure (1992a, 1992b) for preschool, kindergarten and primary grades.

Furthermore, it has been demonstrated that short-term music therapy training can successfully enhance AST and CT, although the effects are not immediately apparent. There are also indications in the present results that participation in creative activities on a regular basis does benefit social cognitive functions. Again, there are some indications that cognitive effects from a short-

term music-training programme are associated with positive behavioural effects. Finally, a subtle change in the way adults interact with children in conflict situations may influence their development of social cognitive thinking.

Some theoretical contributions are offered in the interpretation of results from this research programme. It is suggested that creativity, as defined by Guilford (1967), may constitute a link between cognitive and musical functions. If so, then the relationship between AST and CT may be likened to Vygotsky's conceptualisation of the relationship between thought and language. That is that initially they are separate but become intricately related and inseparable through development. Specifically, AST may constitute a basic biological element of creativity while CT may be rooted in the social milieu and develop through experience. Thus the two may become one in the same way as thought and language according to Vygotsky.

<div align="center">✷✷✷✷✷</div>

Appendices

Appendix I

I-i Assessment items for AST and CT

The assessment items for levels of AST and CT were presented in chapter

10, section 10.2.5.3 translated into English. The original items were in Icelandic as

follows (English version is presented in italics below each item.):

Róla: Jói er á leikskóla. Hann er úti að leika og langar að róla. Það eru sömu krakkarnir búnir að vera í rólunum lengi og vilja ekki leyfa honum að komast að. Hvað getur Jói gert til að fá að róla?

Swing: Johnny is in the playground at the pre-school. He wants to have a go on the swings but the same children have been on the swings for a long time and will not give him a turn. What can Johnny do to get a go on the swings?

Vinur: Jói er á leikskóla. Einn daginn kemur nýr strákur á deildina hans. Jóa langar að vera vinur stráksins, hvað getur Jói gert?

Friend: Johnny goes to a pre-school like this one. A new child comes to his classroom one day. Johnny really wants to make friends with this child, what can Johnny do?

Bolti: Jói er að leika með bolta úti á leikvellinum í leikskólanum. Allt í einu fer boltinn yfir girðinguna. Hvað getur Jói gert til að fá boltann aftur?

Ball: Johnny is playing with a ball at pre-school. The ball goes over the fence. What can Johnny do to get the ball back?

Appendix II

II-i Vignettes for ICPS training.

Magga er á leikskólanum og henni leiðist. Hún sér Önnu vinkonu sína hinumegin við grindverkið og fer að tala við hana. Anna er í heimsókn hjá ömmu sinni og leiðist að hafa engan að leika við. Hún biður Möggu að koma og leika við sig. Hvað getur Magga gert?

Magga is at the pre-school and she is bored. She sees her friend Anna on the other side of the fence and starts to chat to her. Anna is visiting her grandmother and is also bored. She wants Magga to come and play. What can Magga do?

Anna er að leika sér í kastalanum. Óli kemur og ýtir henni frá þegar hún ætlar að fara að renna sér niður rennibrautina. Önnu bregður, hún verður reið og ýtir Óla niður. Fóstran kemur og skammar Önnu fyrir að ýta Óla niður. Hvað getur Anna Gert?

Anna is playing in the castle. Óli comes and pushes her away when she is about to go down the slide. Anna is startled, she gets angry and pushes Óli down the slide. The teacher comes and shames Anna for pushing Óli down the slide. What can Anna do?

Jói er að leika sér í sandkassanum. Siggi kemur og hendir sandi í hann. Hvað getur Jói gert?

Jói is playing in the sandpit. Siggi comes and trows sand at him. What can Jói do?

Ella dettur og meiðir sig. Hún segir að Nonni hafi hrint sér, en hann gerði það ekki. Fóstran skammar Nonna. Honum finnst það mjög leiðinlegt. Hvað getur Nonni gert?

Ella hurts herself. She sais Nonni pushed her, but he didn't do it. Nonni is shamed for pushing Ella and gets upset because he didn't do it. What can he do?

Það er sól og hiti úti á leikvellinum. Lóu er rosalega heitt og hana langar að fara úr úlpunni og vera á peysunni úti að leika. Fóstrurnar segja að það sé allt of kalt til að vera á peysunni en Lóa er sveitt í úlpunni. Hvað getur Lóa gert?

It is sunny and warm out in the playground. Lóa is really hot and she wants to take her coat off. The teachers say it is too cold to not wear a coat but Loa is sweatting with her coat on. What can Lóa do?

Það er fiskur í matinn á leikskólanum. Maríu finnst fiskur vondur. Hún borðar aldrei fisk heima hjá sér. Fóstrurnar segja að hún verði að smakka á matnum, annars fái hún ekki eftirmat. María er mjög svöng og hana langar í eitthvað að borða en hún getur alls ekki borðað fiskinn. Hvað getur María gert?

There is fish for lunch at pre-school. María doesn't like the fish. She never eats fish at home. The teachers have said that she has to taste the fish, otherwise she will not get desert. María is really hungry and she wants something to eat but she can't eat the fish. What can María do?

Finnur er úti á leikskólanum. Það eru krakkar að leika í kastalanum og hann langar að vera með en krakkarnir loka kastalanum. Hvað getur Finnur gert?

Finnur is outside at pre-school. There are children playing in the castle and he wants to join them but the children "close" the castle. What can Finnur do?

Það er dótadagur á leikskólanum. Jonni kom með lítinn bíl sem hann er nýbúinn að fá frá ömmu sinni. Jonni veit að það er bannað að fara með dótið sem maður kemur með á dótadaginn út á leikvöll en hann fer óvart með bílinn út. Jonni sýnir vinum sínum bílinn á leikvellinum, og þeir leika með hann. Í miðju kaffinu, man hann svo eftir að hann hefur gleymt bílnum úti. Hvað getur Jonni gert?

It is show-and-tell at pre-school. Jonni has brought a little car that his grandmother has just given to him. Jonni knows it is not allowed to take the toys from home out into the playground but he forgets and takes the car outside. Jonni shows the car to his friends in the playground and they play with it. During the tea-time, he realises that he has forgotten the car outside. What can Jonni do?

Nonni fer fram til að klæða sig í útigallann. Þegar hann kemur fram situr Siggi í hólfinu hans og neitar að færa sig. Nonni er ekki viss hvað hann á að gera. Hvað getur hann gert?

Nonni goes to put on his coat. When he comes out to the wardrobes, Siggi is sitting in his space and refuses to move. Nonni is not sure what to do. What can he do?

Það er sögustund á leikskólanum. Allt í einu man Anna eftir að hún gleymdi húfunni sinni úti. Húfan er ný og hún vill ekki týna henni. Hvað getur Anna gert?

It is story time at pre-school. Suddenly Ann realises she has forgotten her hat outside. The hat is new and she does not want to lose it. What can Ann do?

Jói fær lánaðan bolta hjá Sigga vini sínum. Siggi er veikur og má ekki fara út að leika. Jói fer með boltann á leikvöllinn heima hjá sér. Þá koma stórir krakkar og taka boltann.

*Jói borrowes a ball from his friend Siggi. Siggi is sick and can't come out to play.
When Jói is playing with the ball in the playground by his house some big kids
come and take the ball. Whan can Jói do?*

Það er sögustund á leikskólanum. Fóstran hefur beðið alla að hafa hljótt og
hlusta. Anna sér ekki myndirnar í bókinni hjá fóstrunni. Hvað getur Anna gert?

*It is story time at the pre-school. The teacher has asked everyone be quiet and
listen. Ann can't see the pictures in the book that the teacher is reading. What
can Ann do?*

Davíð er að perla. Hann langar að hafa rauðar perlur allan hringinn á spjaldinu en
það eru ekki nógu margar rauðar perlur í boxinu hans. Hvað getur hann gert?

*David is doing pearls. He wants to have red pearls all the way around the board,
but there are not enough red pearls in his box to do that. What can he do?*

Önnu langar út að leika. Hún er kvefuð svo mamma hennar bað fóstrurnar að láta
hana vera inni í dag. Hvað getur Anna gert?

*Anna wants to go out to play. She has a cold, so her mother asked the teacher to
keep her inside today. What can Anna do?*

Það er sögustund á leikskólanum, þá má ekki hafa hátt. Jói er alltaf að ýta á
Benna. Fóstran biður Benna að hafa hljótt í sögustundinni en Jói heldur áfram að
ýta honum. Hvað getur Benni gert?

*The children must be quiet at story time at pre-school. Jói is always pushing
Benni. The teacher asks Benni to be quiet during story time, but Jói continues to
push him. What can Benni do?*

Jói fékk lánaðan uppáhaldsbíl hjá vini sínum. Hann lék sér lengi með hann og
setti hann svo í vasann. Þegar hann ætlaði að fara að skila bílnum var hann ekki
lengur í vasanum. Hvað getur Jói gert?

*Jói borrowed a favourite car from his friend. He played with it for a long time
and then he put it in his pocket. When he was going to give it back to his friend
the car was gone. What can Jói do?*

Appendix III

III-i Structure of MT sessions

The sessions followed the basic session-plan below. Within that structure, each part of the sessions followed a certain progression from week to week as described below.

1) Hello song: Children sit in a circle on little mats.
> The sessions always started the same way throughout the programme.

2) Singing and movement:
> Initially this part consisted of traditional songs and accompanying actions that the children knew, later it developed into improvisation. Later, the children made up actions to familiar songs. Finally, the children made up their own songs.

3) Instrument playing and composing
> Songs were accompanied with instruments. They were played and sung in many different ways. Melodies were changed, words were changed, and finally melodies were composed to suit made up words and visa versa.

4) Goodbye – song. Sessions were closed the same way they started, in a circle with a song.

Week 1	
1. Hello song	In a circle on the floor
2. Singing and movement	Familiar songs with actions. Emphasis on traditional songs Fast - slow High - low Whisper, shout, and sing. Children think of variations
3. Instrument playing and composing	Accompaniment to familiar songs. Structured instrument playing: Basic beat provided
4. Good-bye song	In a circle on the floor, sitting or lying down.
Week 2	
1. Hello song	
2. Singing and movement	Change the actions to songs Change the words - first one - then more Change the melody
3. Instrument playing and composing	Accompaniment to singing new or changed songs Building a rhythm-band Children take turns to play the basic beat with the adult Imitate rhythmic patterns and make up new ones Follow the beat and change it Children asked to make up a song for next time
4. Good-bye song	

Week 3	
1. Hello song	
2. Singing and movement	Sing songs the children have made up. Improvising with singing, actions and instruments
3. Instrument playing and composing	Saying things with the instruments Musical conversations Improvisation with instruments
4. Good-bye song	
Week 4	
1. Hello song	
2. Singing and movement	Emphasis on original music
3. Instrument playing and composing	Saying things with the instruments Musical conversations Improvisation
4. Good-bye song	

Appendix IV

IV-i Data recording sheets

AST and CT scoring

Child:	Friends:				
	AST		Total	CT	Total
Swing					
Friend					
Ball					

Behaviour scoring

Behaviour Child	1	2	3	4	5	6	7	8	9
1									
2									
3									
4									
5									
1									
2									
3									
4									
5									
1									
2									
3									
4									
5									
1									
2									
3									
4									
5									

The numbers across from 1 to 9 refer to the behaviour categories. The numbers going from 1 to 5 repeatedly down the first column refer to minutes of observation.

Appendix V

V-i Sex, social status and ICPS at pre-test

ANOVA		*F*	
Source	Df	AST	CT
Between Subjects			
Sex	1	.399	1.518
Social Status	1	.617	.310
Sex X Social Status	1	.000	.066
Within group error	75	(7.027)	(5.151)

Note. Values enclosed in parentheses represent mean square errors. None of these F-values show significant effect of Sex or Social Status on AST or CT at the .05 level.

V-ii Sex, social status and behaviour at pre-test

		F
Source	*Df*	**Social**
Between Subjects		
Sex	1	.111
Social Status	1	.120
Sex X Social Status	1	1.579
Within group error	79	(1.375)

		F
Source	*Df*	**Playing in pairs**
Between Subjects		
Sex	1	2.071
Social Status	1	.015
Sex X Social Status	1	.059
Within group error	79	(1.139)

		F
Source	*Df*	**Positive Interaction**
Between Subjects		
Sex	1	.699
Social Status	1	.171
Sex X Social Status	1	1.130
Within group error	79	(.849)

		F
Source	Df	**Negative interaction**
Between Subjects		
Sex	1	2.385
Social Status	1	.524
Sex X Social Status	1	.328
Within group error	77	(.181)

		F
Source	*Df*	**Alone**
Between Subjects		
Sex	1	.357
Social Status	1	.139
Sex X Social Status	1	2.127
Within group error	74	(1.662)

Note. Values enclosed in parentheses represent mean square errors. None of these F-values show significant effect of Sex or Social Status on behaviour.

Appendix VI

VI-i ICPS skills associated with behaviour at post-test

ICPS skills at post-test related to changes in behaviour for both the treatment groups and the control group. Correlations based on difference scores between pre-test and post-test.

MT	AST	CT	social	play in pairs	positive interaction	negative interaction	alone
AST N	1.000	.372* 25	- .082 25	- .013 25	- .034 25	.165 25	.176 25
CT N		1.000	.227 25	- .200 25	.105 25	- .040 25	.033 25
social N			1.000	- .606** 27	- .323 27	- .050 27	- .182 27
play in pairs N				1.000	.082 27	- .260 27	- .435* 27
pos. interaction N					1.000	- .381* 27	- .095 27
neg.interaction N						1.000	.433* 27
alone N							1.000

*Correlation is significant at the .05 level (1-tailed).
**Correlation is significant at the .01 level (1-tailed).

ICPS	AST	CT	social	play in pairs	positive interaction	negative interaction	alone
AST N	1.000	.553** 23	.314 22	- .122 22	.381* 22	.255 22	- .575* 22
CT N		1.000	.411* 22	- .324 22	- .025 22	.261 22	- .336 22
social N			1.000	- .570* 24	- .131 24	.093 24	- .565** 24
play in pairs N				1.000	.420* 24	- .223 24	- .145 24
play in pairs N				1.000	.420* 24	- .223 24	- .145 24
pos.interaction N					1.000	.094 24	- .058 24
pos.interaction N					1.000	.094 24	- .058 24
neg.interaction N						1.000	- .049 24
neg.interaction N						1.000	- .049 24
alone N							1.000
alone N							1.000

*Correlation is significant at the .05 level (1-tailed).
**Correlation is significant at the .01 level (1-tailed).

Control	AST	CT	social	play in pairs	positive interaction	negative interaction	alone
AST *N*	1.000	.703** 29	.055 28	.239 28	- .048 28	.097 28	- .124 28
CT *N*		1.000	.105 28	.185 28	- .163 28	- .050 28	- .110 28
Social *N*			1.000	- .246 31	- .126 31	- .176 31	- .586** 31
play in pairs *N*				1.000	- .127 31	.228 31	- .478* 31
pos.interaction *N*					1.000	.148 31	.134 31
neg.interaction *N*						1.000	- .050 31
Alone *N*							1.000

*Correlation is significant at the .05 level (1-tailed).
**Correlation is significant at the .01 level (1-tailed).

VI-ii Formula for comparing 2 independent *rs*.

This formula is attributed to Fisher (1921). First the *rs* are converted to *r'* where:

r' = (0.5) *loge | (1+r/1-r) |

and then using these r primes, the z is worked by:

$Z_{r'} = (r'1 - r'2) / (sqrt ((1/N1 - 3) + 1/N 2 - 3))$

VI-iii Difference in AST and CT based on sex or social status

Sex difference in progress in AST and CT based on difference between pre- and post-test.

Condition	ICPS	*df*	*t*-value
MT	AST	23	.637
	CT	23	.650
ICPS	AST	21	-.946
	CT	21	-.596
Control	AST	27	-.090
	CT	27	-.245

Note None of these values reach significance at the .05 level.

Difference between *social* and *lone* in progress in AST and CT based on difference between pre- and post-test.

Condition	ICPS	*df*	*t*-value
MT	AST	23	1.101
	CT	23	1.214
ICPS	AST	21	-.116
	CT	21	.393
Control	AST	27	2.693**
	CT	27	1.948

Note. ** Significant at the .01 level

VI-iv Sex difference in associations between ICPS and behaviour at post-test

Sex difference in ICPS correlates with behaviour in the ICPS group only.

Boys	AST	CT	social	play in pairs	positive interaction	negative interaction	alone
AST N	1.000	.421 13	- .214 13	.295 13	.430 13	.312 13	- .441 13
CT N		1.000	.076 13	- .123 13	- .237 13	.276 13	- .095 13
social N			1.000	- .312 15	- .218 15	.063 15	- .360 15
play in pairs N				1.000	.533* 15	- .170 15	- .586* 15
pos.interaction N					1.000	.194 15	- .081 15
neg.interaction N						1.000	- .035 15
alone N							1.000

*Correlation is significant at the .05 level (1-tailed).
**Correlation is significant at the .01 level (1-tailed).

Girls	AST	CT	social	play in pairs	positive interaction	negative interaction	alone
AST N	1.000	.708* 10	.642* 9	- .578 9	.284 9	- .089 9	- .678* 9
CT N		1.000	.627* 9	- .514 9	.243 9	.170 9	- .519 9
social N			1.000	- .702* 9	- .217 9	.027 9	- .891* 9
play in pairs N				1.000	.366 9	- .563 9	.481 9
pos.interaction N					1.000	- .500 9	.056 9
pos.interaction N					1.000	- .500 9	.056 9
neg.interaction N						1.000	.056 9
neg.interaction N						1.000	.056 9
alone N							1.000
alone N							1.000

*Correlation is significant at the .05 level (1-tailed).
**Correlation is significant at the .01 level (1-tailed).

VI-v Social status and associations between ICPS and behaviour at post-test

Social status in relation to ICPS skills at post-test in the ICPS group

Lone	AST	CT	social	play in pairs	positive interaction	negative interaction	alone
AST / N	1.000	.977* 4	.817 4	.195 4	.922* 4	.757 4	- .934* 4
CT / N		1.000	.674 5	.400 5	.944* 5	.775 5	- .956* 5
social / N			1.000	- .275 5	.367 5	.468 5	- .512 5
play in pairs / N				1.000	- .101 5	.086 5	- .592 5
pos.interaction / N					1.000	.539 5	.150 5
neg.interaction / N						1.000	- .383 5
Alone							1.000

*Correlation is significant at the .05 level (1-tailed).
**Correlation is significant at the .01 level (1-tailed).

Social	AST	CT	social	play in pairs	positive interaction	negative interaction	alone
AST / N	1.000	.447* 19	.255 18	- .202 18	.269 18	.142 18	- .466* 18
CT / N		1.000	.390 18	- .464* 18	- .225 18	.089 18	- .160 18
social / N			1.000	- .659** 19	- .204 19	.067 19	- .746** 19
play in pairs / N				1.000	.546** 19	- .162 19	.225 19
pos.interaction / N					1.000	.225 19	- .125 19
pos.interaction / N					1.000	.225 19	- .125 19
neg.interaction / N						1.000	- .145 19
neg.interaction / N						1.000	- .145 19
Alone							1.000
Alone							1.000

*Correlation is significant at the .05 level (1-tailed).
**Correlation is significant at the .01 level (1-tailed).

VI-vi Effect of condition, controlling for sex, on behaviour at post-test

Summary of ANOVAS at post-test based on difference scores between pre-test and post-test of behaviour measures.

		F
Source	Df	Social
Between Subjects		
Condition	2	2.654
Sex	1	2.496
Condition X Sex	2	4.208*
Within group error	76	(2.234)

		F
Source	Df	Playing in pairs
Between Subjects		
Condition	2	1.441
Sex	1	.196
Condition X Sex	2	1.356
Within group error	76	(2.390)

		F
Source	Df	Positive Interaction
Between Subjects		
Condition	2	1.821
Sex	1	.228
Condition X Sex	2	.613
Within group error	76	(1.244)

		F
Source	Df	Negative interaction
Between Subjects		

Within group error	74	(.399)
Condition	2	.031
Sex	1	.251
Condition X Sex	2	.552

		F
Source	Df	Alone
Between Subjects		
Condition	2	1.190
Sex	1	2.239
Condition X Sex	2	.472
Within group error	71	(2.879)

Note. $*p < .05$ Values enclosed in parentheses represent mean square errors.

269

VI-vii Sex difference in behaviour following treatment.

Summary of *t*-tests, measuring the difference in behaviour of boys and girls in the treatment groups following ICPS and MT training and compared to no treatment control group.

Condition	Behaviour	*Df*	*t*-value
MT	Social		-.587
	Playing in pairs		-.173
	Positive interaction	25	.000
	Negative interaction		- .845
	Alone		1.283
ICPS	Social		-3.486*
	Playing in pairs		1.641
	Positive interaction	22	-.313
	Negative interaction		- .451
	Alone		1.288
Control	Social		1.040
	Playing in pairs		- .676
	Positive interaction	29	1.131
	Negative interaction		.992
	Alone		.194

*Note: * p < .05*

VI-viii Difference in behaviour of *social* and *lone* children following treatment.

Summary of *t*-tests, measuring the difference in behaviour of *social* and *lone* children in all groups following ICPS and MT training.

Condition	Behaviour	*df*	*t*-value
MT	Social	25	-.778
	Playing in pairs	25	.254
	Positive interaction	25	1.062
	Negative interaction	25	.796
	Alone	20	.656
ICPS	Social	22	-.081
	Playing in pairs	22	-1.729
	Positive interaction	22	-.374
	Negative interaction	21	1.652
	Alone	22	1.980
Control	Social	29	-.674
	Playing in pairs	29	.211
	Positive interaction	29	1.068
	Negative interaction	28	1.116
	Alone	29	.896

Note: none of the *t*-values are significant at the .05 level.

Appendix VII

VII-i Changes in ICPS correlates with changes in behaviour: post - follow-up.

AST and CT correlates with behaviour in the MT group, based on post-follow-up difference scores.

MT	AST	CT	social	play in pairs	positive interaction	negative interaction	alone
AST N	1.000	.840** 18	.381 18	- .233 18	.177 18	.057 18	- .017 18
CT N		1.000	.208 18	- .221 18	.163 18	.166 18	.092 18
social N			1.000	- .489* 20	- .184 20	- .171 20	- .060 20
play in pairs N				1.000	.148 20	- .085 20	- .626** 20
Pos.interaction N					1.000	- .166 20	.075 20
Neg.interaction N						1.000	.414* 20
alone							1.000

AST and CT correlates with behaviour in the ICPS group, based on post-follow-up difference scores.

ICPS	AST	CT	Social	Play in pairs	Posit. interaction	Neg. interaction	Alone
AST N	1.000	.619** 21	- .022 21	- .141 21	.520** 21	.335 21	- .033 21
CT N		1000	.087 21	- .263 21	.343 21	.386* 21	.129 21
social N			1.000	- .682** 23	- .134 23	- .017 23	- .162 23
play in pairs N				1.000	- .261 23	- .214 23	- .387* 23
play in pairs N				1.000	- .261 23	- .214 23	- .387* 23
Pos.interaction N					1.000	.340 23	.508** 23
Pos.interaction N					1.000	.340 23	.508** 23
Neg.interaction N						1.000	.361* 23
Neg.interaction N						1.000	.361* 23
alone post-							1.000
alone post-							1.000

AST and CT correlates with behaviour in the Control group, based on post-follow-up difference scores.

Control	AST	CT	Social	Play in pairs	Positive interaction	Negative interaction	Alone
AST	1.000	.730**	.174	- .204	.075	- .064	.116
N		22	22	22	22	22	22
CT		1.000	- .004	.001	.122	.002	.018
N			22	22	22	22	22
Social			1.000	- .504**	- .170	- .152	- .517**
N				26	26	26	26
play in pairs				1.000	.069	- .162	- .329
N					26	26	26
Pos.interaction					1.000	.092	.127
N						26	26
neg.interaction						1.000	.342*
N							26
Alone							1.000

** Correlation is significant at the .01 level (1-tailed).
* Correlation is significant at the .05 level (1-tailed).

VII-ii Changes in ICPS correlates with changes in behaviour: pre - follow-up.

AST and CT correlate with behaviour in the MT group, based on pre-follow-up difference scores.

MT	AST	CT	social	play in pairs	positive interaction	negative interaction	alone
AST	1.000	.605**	.297	- .034	.152	- .130	- .140
N		18	18	18	18	18	18
CT		1.000	- .142	.264	- .031	.270	- .234
N			18	18	18	18	18
social			1.000	- .457*	.117	.253	- .034
N				20	20	20	20
play in pairs				1.000	.050	- .017	- .531*
N					20	20	20
pos.interaction					1.000	- .044	.190
N						20	20
pos.interaction					1.000	- .044	.190
N						20	20
neg.interaction						1.000	- .135
N							20
neg.interaction						1.000	- .135
N							20
alone							1.000
alone							1.000

** Correlation is significant at the .01 level (1-tailed).
* Correlation is significant at the .05 level (1-tailed).

AST and CT correlate with behaviour in the ICPS group, based on pre-follow-up difference scores.

ICPS	AST	CT	Social	Play in pairs	Posit. interaction	Neg. interaction	Alone
AST N	1.000	.593** 23	.122 21	- .348 21	.316 21	- .049 21	.073 21
CT N		1000	- .194 21	- .111 21	.223 21	- .074 21	.335 21
social N			1.000	- .444* 22	- .163 22	- .107 22	- .665* 22
play in pairs N				1.000	.083 22	.066 22	- .035 22
pos.interaction N					1.000	- .029 22	.276 22
neg.interaction N						1.000	.107 22
alone post-							1.000

** Correlation is significant at the .01 level (1-tailed).
* Correlation is significant at the .05 level (1-tailed).

AST and CT correlate with behaviour in the Control group, based on pre-follow-up difference scores.

Control	AST	CT	Social	Play in pairs	Positive interaction	Negative interaction	Alone
AST N	1.000	.760** 22	- .199 19	.533** 19	.273 19	.069 19	- .165 19
CT N		1.000	- .134 19	.490* 19	.101 19	- .112 19	- .232 19
social N			1.000	- .608** 25	- .134 25	.048 25	- .581** 25
play in pairs N				1.000	.243 25	.047 25	- .004 25
pos.interaction N					1.000	- .033 25	- .145 25
neg.interaction N						1.000	.478** 25
neg.interaction N						1.000	.478** 25
alone							1.000
alone							1.000

** Correlation is significant at the .01 level (1-tailed).
* Correlation is significant at the .05 level (1-tailed).

Appendix VIII

VIII-i Difference in ICPS skills of boys and girls in Study III

Summary of multiple *t*-tests, measuring the difference in ICPS skills of boys and girls in the three groups: MT, Music, and Control.

Condition	Behaviour	*df*	*t*-value
MT	AST	16	-1.633
	CT	16	-1.385
Control	AST	20	- .580
	CT	20	- .546
Music	AST	14	- .354
	CT	14	- .891

Note: There are no significant differences between sexes

Ainsworth, M. D. S. (2000). Infant-Mother Attachment. In W. Craig (Ed.), *Childhood Social Development. The Essential Readings.* (pp. 13-24). Oxford: Blackwell Publishers Ltd.

Ainsworth, M. D. S., & Stayton, D. J. (1971). Individual differences in stranger-situation behaviour of one-year-olds. In H. R. Schaffer (Ed.), *The origins of human social relations.* (pp. 17-57). New York: Academic Press.

Aldridge, D. (1993). Music Therapy Research 1: A review of the medical research literature within a general context of Music Therapy research. *The Arts in Psychotherapy, 20,* 11-35.

Aldridge, D. (1993). Music Therapy Research II: Research Methods suitable for Music Therapy. *The Arts in Psychotherapy, 20,* 117-131.

Aldridge, D. (1995). Music Therapy and the Treatment of Alzheimer's disease. *Clinical Gerontologist, 16*(1), 41-57.

Anastasi, A. (1984). Reciprocal relations between cognitive and affective development with implications for sex differences. In T. B. Sonderegger (Ed.), *Psychology and gender: Nebraska symposium on motivation* (pp. 1-35). Lincloln: University of Nebraska Press.

Anderson, B. (1992). Effects of day-care on cognitive and socioemotional competence of thirteen-year-old Swedish schoolchildren. *Child Development, 63,* 20-36.

Anderson, B. E. (1989). Effects of public day care - a longitudinal study. *Child Development, 60,* 857-866.

Asendorpf, J. B. (1990). Beyond Social Withdrawal; Shyness, Unsociability, and Peer Avoidance. *Human Development, 33,* 250-259.

Asher, S. R., & Coie, J. D. (Eds.). (1990). *Peer Rejection in Childhood.* Cambridge: Cambridge University Press.

Asher, S. R., Hymel, S., & Renshaw, P. D. (1984). Loneliness in children. *Child Development, 55,* 1457-1464.

Asher, S. R., Markell, R., & Hymel, S. (1981). Identifying children at risk in peer relations: A critique of the rate of interaction approach to assessment. *Child Development, 52,* 1239-1245.

Asher, S. R., & Parker, J. G. (1989). Significance of peer relationships problems in childhood. In B. H. Schneider, G. Attili, J. Nadel, & R. P. Weissberg (Eds.), *Social competence in developmental perspective.* (pp. 5-23). Dordrecht: Kluwer Academic Press.

Asher, S. R., Parkhurst, J. T., Hymel, S., & Williams, G. A. (1990). Peer rejection and loneliness in childhood. In S. R. Asher & J. D. Coie (Eds.), *Peer Rejection in Childhood* (pp. 253-273). Cambridge: Cambridge University Press.

Asher, S. R., & Wheeler, V. A. (1985). Children's loneliness: a comparison of rejected and neglected peer status. *Journal of Consulting and Clinical Psychology. 53,* 500-505.

Astington, J. W. (1993). *The child's discovery of the mind.* Cambridge, MA: Harvard University Press.

Azar, S. T., Robinson, D. R., Hekimian, E., & Twentyman, C. T. (1984). Unrealistic expectations and problem-solving ability in maltreating and comparison mothers. *Journal of Consulting and Clinical Psychology, 52,* 687-691.

Baldwin, M. V. (1992). Relational schemas and the processing of social information. *Psychological Bulletin, 112,* 461-484.

Ban, P. L., & Lewis, M. (1974). Mothers and fathers, girls and boys: Attachment behavior in the one-year-old. *Merrill-Palmer Quarterly, 20,* 195-204.

Bandura, A. (1969). *Principles of behavior modification.* New York: Holt, Rinehart & Winston.

Bandura, A. (1977). *Social learning theory.* Englewood Cliffs, NJ: Prentice Hall.

Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology, 61*(2), 226-244.

Beck, A. T. (1963). Thinking and depression: 1. Idiosyncratic content and cognitive distortions. *Archives of General Psychiatry, 9,* 324-333.

Beck, A. T. (1964). Thinking and depression: 2, Theory and therapy. *Archives of General Psychiatry, 10,* 561-571.

Beck, A. T., Emery, G., & Greenberg, R. L. (1985). *Anxiety disorders and phobias: a cognitive perspective.* New York: Basic Books.

Beck, A. T., Freeman, A., & Associates. (1990). *Cognitive therapy and personality disorders.* New York: Guilford Press.

Beelmann, A., Pfingsten, U., & Lösel, F. (1994). Effects of Training Social Competence in Children: A Meta-Analysis of Recent Evaluation Studies. *Journal of Clinical Child Psychology, 23*(3), 260-271.

Belin, P., VanEeckhout, P., Zilbovicius, M., Remy, P., Francois, C., Guillaume, S., Chain, F., Rancurel, G., & Samson, Y. (1996). Recovery from nonfluent aphasia after melodic intonation therapy: A PET study. *Neurology, 47*(6), 1504-1511.

Bell, I. R. (1992). Allergens, Physical Irritants, Depression, and Shyness. *Journal of Applied Developmental Psychology, 13,* 125-133.

Bell-Dolan, D. J., Foster, S. L., & Sikora, D. M. (1989). Effects of sociometric testing on children's behavior and loneliness in school. *Developmental Psychology, 25,* 306-311.

Belsky, J., & Cassidy, J. (Eds.). (1994). *Attachment: Theory and evidence.* Oxford: Blackwell.

Benenson, J. F. (1994). Ages Four to Six Years: Changes in the Structures of Play Networks of Girls and Boys. *Merrill-Palmer Quarterly, 40*(4), 478-487.

Berg, F. L. (1982). *Psychological characteristics related to social problem solving in learning disabled children and their non-disabled peers.* University of Michigan, Ann Arbor.

Bergin, A. E., & Garfield, S. L. (Eds.). (1994). *Handbook of psychotherapy and behavior change.* (4th ed.). New York: Wiley.

Beutler, L. E., & Clarkin, J. (1990). *Systematic treatment selection: Toward targeted therapeutic interventions.* New York: Brunner/Mazel.

Bierman, K. L. (1986). Process of change during social skills training with preadolescents and its relation to treatment outcome. *Child Development, 57,* 230-240.

Bierman, K. L., & Furman, W. (1984). The effects of social skill training and peer involvement on the social adjustment of preadolescents. *Child Development, 55,* 151-162.

Bigelow, B. J. (1977). Children's friendship expectations: A cognitive-developmental study. *Child Development, 48,* 246-253.

Bigelow, B. J., & Gaipa, J. J. L. (1975). Children's written descriptions of friendship: a multidimensional analysis. *Developmental Psychology, 11,* 857-858.

Bilhartz, T.D., Bruhn, R.A., & Olson, J.E. (1999). The Effect of Early Music Training on Child Cognitive Development. *Journal of Applied Developmental Psychology, 20*(4), 615-636.

Bivens, J. A., & Berk, L. E. (1990). A longitudinal study of the development of elementary school children's private speech. *Merrill Palmer Quarterly, 36,* 443-463.

Block, J. H. (1983). Differential premises arising from differential socialization of the sexes: Some conjectures. *Child Development, 54,* 1335-1354.

Boakes, R. (1984). *From Darwin to behaviourism: Psychology and the minds of animals.* New York: Cambridge University Press.

Boivin, M., & Begin, G. (1989). Peer status and self-perception among early elementary school children: The case of the rejected children. *Child Development, 60,* 591-596.

Bolger, K. E., & Scarr, S. (1995). Not so far from home: How family characteristics predict child care quality. *Early Development and Parenting, 4*(3), 103-112.

Bowlby, J. (1951). Maternal care and mental health. *World Health Organization Monograph.* (Serial No. 2).

Bowlby, J. (1958). The nature of the child's tie to his mother. *International Journal of Psycho-Analysis, 39,* 350-373.

Bowlby, J. (1969). *Attachment.* (Vol. 1). London: Hogarth Press.

Bowlby, J. (1973). *Separation: Anxiety and anger.* (Vol. 2). New York: Basic Books.

Bowlby, J. (1980). *Loss.* (Vol. 3). New York: Basic Books.

Bowlby, J. (1988). *A secure base.* New York: Basic Books.

Brennan, T. (1982). Loneliness at adolescence. In L. A. Peplau & D. Perlman (Eds.), *Loneliness: A Sourcebook of Current Theory, Research and Therapy.* . New York: Wiley.

Bretherton, I. (1985). Attachment theory: Retrospect and prospect. *Monographs of the Society for Research in Child Development, 50*(1-2, Serial No. 209), 3-35.

Bretherton, I. (1990). The role of internal working models in the attachment relationship: Theoretical, empirical, and developmental considerations. In M. Greenberg, D. Ciccal, & E. M. Cummings (Eds.), *Attachment in the preschool years: Theory, research, and intervention.* Chicago: University of Chicago Press.

Bretherton, I. (1994). The origins of attachment theory: John Bowlby and Mary Ainsworth. In R.D. Parke, P. A. Ornstein, J.J. Rieser & C. Zahn-Waxler (Eds.), *A Century of Developmental Psychology*. Washington, DC: American Psychological Association.

Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press.

Bruscia, K. (1987). *Improvisational Models of Music Therapy*. Springfield, Maryland: Charles C. Thomas.

Bukowski, W. (1990). Age differences in children's memory of information about aggressive, socially withdrawn, and prosociable boys and girls. *Child Development, 61*, 1326-1334.

Bunt, L. (1994). *Music Therapy. An Art Beyond Words*. London: Routledge.

Bunt, L., Cross, I., Clarke, E., & Hoskyns, S. (1988). A Discussion on the Relationships between Music Therapy and The Psychology of Music. *Psychology of Music, 16*, 71-76.

Bunt, L. (1997). Clinical and therapeutic uses of music. In D. J. Hargreaves, & A.C. North (Eds.), *The Social Psychology of Music*. Oxford: Oxford University Press.

Buss, A. H. (Ed.). (1986). *A theory of shyness*. New York: Plenum.

Cacioppo, J. T., Ernst, J. M., Burleson, M. H., McClintock, M. K., Malarkey, W. B., Hawkley, L. C., Kowalewski, R. B., Paulsen, A., Hobson, J. A., Hugdahl, K., Spiegel, D., & Berntson, G. G. (2000). Lonely traits and concomitant physiological processes: the MacArthur social neuroscience studies. *International Journal of Psychophysiology, 35*(2-3), 143-154.

Cairns, R. B., Cairns, B. D., Neckerman, H. J., Ferguson, L. L., & Gariepy, J. L. (1989). Growth and aggression: 1. Childhood to early adolescence. *Developmental Psychology, 25*, 320-330.

Camp, B. W., & Bash, M. A. (1978). *The classroom "Think Aloud" program*. Paper presented at the American Psychological Association meeting, Toronto.

Camp, B. W., & Bash, M. A. (1981). *Think Aloud: Increasing social and cognitive skills - A problem solving program for children. Primary level*. Champaign, IL: Research Press.

Carlson, E. A., & Sroufe, L. A. (1995). Contribution of attachment theory to developmental psychology. In D. Cicchetti & D. Cohen (Eds.), *Theory and methods* (Vol. 1). New York: Wiley.

Carnelly, K. B., Pietromonaco, P. R., & Jaffe, K. (1994). Depression, working models of others, and relationship functioning. *Journal of Personality, 66*, 835-878.

Caspi, A., Elder, G. H., & Bem, D. J. (1988). Moving Away From the World: Life-Course Patterns of Shy Children. *Developmental Psychology, 24*(6), 824-831.

Cassidy, J. (1988). Child-mother attachment and the self in six-year olds. *Child Development, 59*, 121-134.

Cassidy, J., & Asher, S. R. (1992). Loneliness and peer relations in young children. *Child Development, 63*, 350-365.

Cassidy, J., Scolton, K. L., Kirsh, S. J., & Parke, R. D. (1996). Attachment and Representations of Peer Relationships. *Developmental Psychology, 32*(5), 892-904.

Chi, M. T. H., & Koeske, R. D. (1983). Network representation of a child's dinosaur knowledge. *Developmental Psychology, 19*, 29-39.

Cillessen, A. H. N., van IJzendoorn, H. W., van Lieshout, C. F. M., & Hartup, W. W. (1992). Heterogeneity among peer-rejected boys: Subtypes and stabilities. *Child Development, 63*, 893-905.

Claerhout, S., Elder, J., & Janes, C. (1982). Problem-solving skills of rural battered women. *American Journal of Community Psychology, 10*, 605-612.

Clark, R. A., & Jones, J. (1990). Parental reflection enhancing communication, of elementary school children. *Child Study Journal, 15*, 251-264.

Clark-Carter, D. (1997). *Doing Quantitative Psychological Research: From Design to Report.* Hove: Psychological Press Ltd.

Clarke-Stewart, K. A. (1991). A home is not a school: The effects of environments on development. In M. Lewis & S. Feinman (Eds.), *Social influences and socialization in infancy* (pp. 41-61). New York: Plenum Press.

Clarke-Stewart, K. A., Gruber, C. P., & Fitzgerald, L. M. (1994). *Children at Home and in Day Care.* Hillsdale, NJ: Erlbaum.

Coch'e, A., & Flick, A. (1975). Problem-solving training groups for hospitalized psychiatric patients. *Journal of Psychology, 91*, 19-29.

Cohen, J. (1977). *Statistical power analysis for the behavioral sciences.* New York: Academic Press.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences.* Hillsdale, NJ: Lawrence Erlbaum.

Coie, J. D., & Kupersmidt, J. B. (1983). A behavioral analysis of emerging social status in boy's groups. *Child Development, 54*, 1400-1416.

Collins, N., & Read, S. J. (1990). Adult attachment, working models and relationship quality in dating couples. *Journal of Personality and Social Psychology, 58*, 644-663.

Collins, N. L., & Read, S. J. (Eds.). (1994). *Cognitive representations of attachment: The content and function of working models.* (Vol. 5). London: Jessica Kingsley.

Coplan, R. J., Rubin, K. H., Fox, N. A., Calkins, S. D., & Stewart, S. L. (1994). Being alone, playing alone, and acting alone: Distinguishing among reticence and passive and active solitude in young children. *Child Development, 65*, 129-137.

Cost, Q., and Child Outcomes Study Team. (1995). Cost, quality, and child outcomes in child care centers (Public Report, 2nd ed). *Denver: University of Colorado at Denver, Economics Department.*

Costanzo, P. R., & Dix, T. H. (1983). Beyond the information processed: Socialization in the development of attributional processes. In E. T. Higgins, D. N. Ruble, & W. W. Hartup (Eds.), *Social cognition and social development: A sociocultural perspective.* (pp. 63-81). Cambridge, England: Cambridge University Press.

Cowen, E., Pederson, A., Babigan, H., Izzo, L., & Trost, M. (1973). Long term follow up of early detected vulnerable children. *Journal of Consulting and Clinical Psychology* (41), 438-446.

Craig, W. (Ed.). (2000). *Childhood Social Development. The Essential Readings.* Oxford: Blackwell Publishers Inc.

Crick, N. R. (1991). Subgroups of neglected and rejected children. *Paper presented at the meeting of the Society for Research in Child Development, Seattle, WA.*

Crick, N. R., Casas, J. F., & Mosher, M. (1997). Relational and Overt Aggression in Preschool. *Developmental Psychology, 33*(4), 579-588.

Crick, N. R., & Dodge, K. A. (1992). Social-information-processing mechanisms in reactive and proactive aggression. .

Crick, N. R., & Dodge, K. A. (1994). A Review and Reformulation of Social Information-Processing Mechanisms in Children's Social Adjustment. *Psychological Bulletin, 115*(1), 74-101.

Crick, N. R., & Grotpeter, J. K. (1995). Relational aggression, gender, and social-psychological adjustment. *Child Development, 66*, 710-722.

Crick, N. R., & Ladd, G. W. (1990). Children's perceptions of the outcomes of aggressive strategies: Do the ends justify being mean? *Developmental Psychology, 26*, 612-620.

Crick, N. R., & Ladd, G. W. (1993). Children's perceptions of their peer experiences: Attributions, loneliness, social anxiety, and social avoidance. *Developmental Psychology, 29*, 244-254.

Crittendon, P. M., & Ainsworth, M. D. S. (1989). Child maltreatment and attachment theory. In D. Cicchetti & V. Carlson (Eds.), *Child maltreatment: Theory and research on the causes and consequences of child abuse and neglect.* (pp. 432-463). Cambridge, England: Cambridge University Press.

Crozier, W. R., & Burnham, M. (1990). Age related Differences in Children's Understanding of Shyness. *British Journal of Developmental Psychology, 8*, 179-185.

Cunningham, M. R. (1989). Reactions to Heterosexual Opening Gambits: Female Selectivity and Male Responsiveness. *Personality and social psychology bulletin, 15(1)* 27.

Cutting, A. L., & Dunn, J. (1999). Theory of Mind, Emotion Understanding, Language, and Family Background: Individual Differences and Interrelations. *Child Development, 70*(4), 853-865.

D'Andrade, R. (1987). A folk model of the mind. In D. Holland & N. Quinn (Eds.), *Cultural Models in Language and Thought* (pp. 112-50). New York: Cambridge University Press.

Davila, J., Karney, B. R., & Bradbury, T. N. (1999). Attachment change processes in the early years of marriage. *Journal of Personality and Social Psychology.*

Denham, S. A., & Almeida, C. M. (1987). Children's social problem-solving skills, behavioral adjustment, and interventions: A meta-analysis evaluating theory and practice. *Journal of Applied Developmental Psychology, 8*(4), 391-409.

Dewey, J. (1910). *How We Think.* Boston: Heath.

Dobson, K. S., & Craig, K. D. (Eds.). (1998). *Empirically Supported Therapies. Best Practice in Professional Psychology.* Thousand Oaks, London, New Delhi: Sage Publications.

Dodge, K. A. (1983). Behavioral antecedents of peer social status. *Child Development, 54*(1386-1399).

Dodge, K. A. (1986). A social information processing model of social competence in children. In M. Perlmutter (Ed.), *The Minnesota Symposium of Child Psychology* (Vol. 18, pp. 77-125). Hillsdale, NJ: Erlbaum.

Dodge, K. A. (1991). Emotion and social information processing. In J. Garber & K. Dodge (Ed.), *The development of emotion regulation and dysregulation* (pp. 159-181). New York: Cambridge University Press.

Dodge, K. A., & Feldman, E. (1990). Issues in social cognition and sociometric status. In S. R. Asher & J. D. Coie (Eds.), *Peer rejection in childhood* (pp. 119-155). Cambridge, England: Cambridge University Press.

Dodge, K. A., & Frame, C. L. (1982). Social cognitive biases and deficits in aggressive boys. *Child Development, 53,* 620-635.

Dodge, K. A., Murphy, R. R., & Buchsbaum, K. (1984). The assessment of intention-cue detection skills in children: Implications for developmental psychopathology. *Child Development, 55,* 163-173.

Dodge, K. A., & Newman, J. P. (1981). Biased decision making processes in aggressive boys. *Journal of Abnormal Psychology, 90,* 375-379.

Dodge, K. A., Pettit, G. S., McClasky, C. L., & Brown, M. M. (1986). Social competence in children. *Monographs of the Society for Research in Child Development, 51*(2), serial No. 213.

Dodge, K. A., & Price, J. M. (1994). On the Relation between Social Information Processing and Socially Competent Behavior in Early School-Aged Children. *Child Development, 65,* 1385-1397.

Dodge, K. A., & Somberg, D. R. (1987). Hostile attributional biases among aggressive boys are exacerbated under conditions of threats to the self. *Child Development, 58,* 213-224.

Donaldson, M. (1979). *Children's minds.* London: Fontana.

d'Zurrilla, T. J., & Goldfried, M. R. (1971). Problem solving and behaviour modification. *Journal of Abnormal Psychology, 78,* 107-126.

Dworetzky, J. P. (1995). *Human Development: A Life Span Approach.* New York: West Publishing Company.

Egeland, B., Kalkoske, M., Gottesman, N. & Erickson, M. F. (1990). Preschool behavior problems: Stability and factors accounting for change. *Journal of Child Psychology and Allied Disciplines, 31,* 891-909.

Eisenberg, N., & Fabes, R.A. (1992). Emotion regulation and the development of social competence. In M. S. Clark (Ed.), *Emotion and social behaviour: Vol. 14. Review of personality and social psychology,* (pp. 119-150). Newbury Park, CA: Sage.

Ekman, P., & Davidson, R. J. (1994). *The nature of emotion: Fundamental questions.* New York: Oxford University Press.

Elardo, P. T., & Caldwell, B. M. (1979). The effects of an experimental social development program on children in the middle childhood period. *Psychology in the Schools, 16,* 93-100.

Elias, M. (1984). *Project Aware: Social problem solving as prevention model* (36828). Washington, DC: National Institute of Mental Health.

Elias, M. J. (1980). *Developing instructional strategies for television-based preventive mental health curricula in elementary school settings.* , University of Connecticut, Storrs.

Elicker, J., Englund, M., & Sroufe, L. A. (1992). Predicting peer competence and peer relationships in childhood from early parent-child relationships. In R. D. Parke & G. W. Ladd (Eds.), *Family-peer relationships: Modes of linkages* (pp. 77-106). Hillsdale, NJ: Erlbaum.

Ellis, A. (1958). Rational psychotherapy. *Journal of General Psychology, 59*, 35-49.

Ellis, S., Rogoff, B., & Cromer, C. C. (1981). Age segregation in children's social interactions. *Developmental Psychology, 17*(339-407).

Erwin, P. (1993). *Friendship and Peer Relations in Children.* Chichester: John Wiley & Sons Ltd.

Erwin, P. (1998). *Friendship in Childhood and Adolescence.* London: Routledge.

Erwin, P. G. (1985). Similarity of Attitudes and Constructs in Children's Friendships. *Journal of Experimental Child Psychology, 40*, 470-485.

Erwin, P. G. (1993). Social Problem Solving, Social Behavior, and Children's Peer Popularity. *The Journal of Psychology, 128*(3), 299-306.

Erwin, P. G. (1994). Effectiveness of social skills training with children: a meta-analytic study. *Counselling Psychology Quarterly, 7*(3), 305-310.

Erwin, P. G., & Ruane, G. E. (1993). The effects of a short-term social problem solving programme with children. *Counselling Psychology Quarterly, 6*(4), 317-323.

Feldman, E., & Dodge, K. A. (1987). Social information processing and sociometric status: Sex, age, and situational effects. *Journal of Abnormal Child Psychology, 15*, 211-227.

Festinger, L. (1954). A theory of social comparison process. *Human Relations, 7*, 117-140.

Flavell, J. (1986). The development of children's knowledge about the appearance reality distinction. *American Psychologist, 41*, 418-425.

Flavell, J. (1988). The development of children's knowledge about the mind: From cognitive connections to mental representations. In J. W. Astington, P. L. Harris, & D. R. Olson (Ed.), *Developing Theories of Mind* (pp. 244-70), Cambridge: Cambridge University Press.

Fleshman, B., & Fryrear, J. L. (1981). *The Arts in Therapy.* Chicago: Nelson-Hall.

Forehand, R., Lautenschlager, G. J., & Graziano, W. G. (1986). Parent perceptions and parent-child interactions in clinic-referred children: A preliminary investigation of the effects of maternal depressive moods. *Behavior Research and Therapy, 24*, 73-75.

Foster, S. L., DeLawler, D. D. & Guevremont, D. C. (1986). A critical incidents analysis of liked and disliked peer behaviours and their situational parameters in childhood and adolescence. *Behavioral Assessment, 8*, 418-425.

Franke, S., & Hymel, S. (1984). *Social anxiety and social avoidance in children: The development of a self-report measure.* Waterloo, Ontario, Canada.

Furman, W., & Buhrmester, D. (1985). Children's perceptions of the personal relationships in their social networks. *Developmental Psychology, 21*, 1016-1024.

Garber, J. (1984). Classification of childhood psychopathology. *Child Development, 55*, 30-48.

Gardiner, M. F., Fox, A., Knowles, F., & Jeffrey, D. (1996). Learning improved by arts training. *Nature, 381*(23. May), 284.

Gersham, E. S., & Hayes, D. S. (1983). Differential stability of reciprocal friendships and unilateral relationships among preschool children. *Merrill-Palmer Quarterly, 29*, 169-177.

Gilroy, A., & Lee, C. (1995). Juxtapositions in art therapy and music therapy research. In A. Gilroy & C. Lee (Eds.), *Art and music: therapy and research* (pp. 1-18). London: Routledge.

Gnepp, J., Klayman, J., & Trabasso, T. (1982). A hierarchy of information sources for inferring emotional reaction. *Journal of Experimental Child Psychology, 33*, 111-123.

Goelman, H., & Pence, A. R. (1987). Effects of child care, family and individual characteristics on children's language development: The Victoria Day Care Research Project. In D. Phillips (Ed.), *Quality in Child Care: What does Research tell us? Research monographs of the National Association for the Education of Young Children.* (pp. 43-56). Washington, DC: National Association for the Education of Young Children.

Goethals, G. R., & Darley, J. M. (Eds.). (1977). *Social comparison theory: An attributional approach.* Washington, DC: Hemisphere.

Goleman, D. (1995). *Emotional Intelligence: Why it can matter more than IQ.* New York: Bantam.

Gopnik, A., & Meltzoff, A. N. (1985). From people, to plans, to objects. *Journal of Pragmatics, 9*, 495-512.

Gotlib, I., & Asarnow, R. F. (1979). Interpersonal and impersonal problem solving skills in mildly and clinically depressed university students. *Journal of Consulting and Clinical Psychology, 47*, 86-95.

Gottman, J. M. (1977). Toward a definition of social isolation in children. *Child Development, 48*, 513-517.

Gottman, J., Gonso, J., & Rasmussen, B. (1975). Social interaction, social competence, and friendship in children. *Child Development* (46), 709-718.

Gottman, J. M. (1986). Merging social cognition and behavior. *Monographs of the Society for Research in Child Development, 51*(2, Serial No. 213).

Greenberg, L. S., & Safran, J. D. (1984). Integrating affect and cognition: A perspective on the process of therapeutic change. *Cognitive Therapy and Research, 8*, 559-578.

Gresham, F. M. (1985). Utility of cognitive behavioral procedures for social skills training with children: A critical review. *Journal of Abnormal Child Psychology, 13*, 411-423.

Grossman, K. E., August, P., Scheurer-English, H., & Stefan, C. (1989). Attachment research: Lasting effects on domains of validity. *Paper presented at the biennial meeting of the International Society for the Study of Behavioral Development, Jyvaskyla, Finland, July 1989.*

Group for the advancement of psychiatry, c. o. p. p. (2000). Violent Behavior in Children and Youth: Preventive Intervention From a Psychiatric Perspective. *Journal of the American Academy of Child & Adolescent Psychiatry, 38*(3), 234-241.

Guerra, N. G., & Slaby, R. G. (1990). Cognitive mediators of aggression in adolescent offenders: 2. Intervention. *Developmental Psychology, 26,* 269-277.

Guglietti-Kelly, I., & Westcott, M. R. (1990). She's Just Shy: A Phenomenological Study of Shyness. *Journal of Phenomenological Psychology, 21*(2), 150-164.

Guilford, J. P. (1967). *The nature of human intelligence.* New York: McGraw-Hill.

Gunsberg, A. S. (1991). A method for conducting improvised musical play with children both with and without developmental delay in preschool classrooms. *Music Therapy Perspectives, 1991*(9), 46-51.

Gurlanick, M. J., & Paul-Brown, D. (1984). Communicative adjustments during behavior-request episodes among children at different developmental levels. *Child Development, 55,* 911-919.

Hargreaves, A., & Fullan, M. (2000). Mentoring in the new millennium. *Theory into Practice; Columbus, 39*(1), 50-58.

Harris, K. R. (1990). Developing self-regulated learners: The role of private speech and self-instructions. Special Issue: Self-regulated learning and academic achievement. *Educational Psychologist, 25,* 35-49.

Harrist, A. W., Zaia, A. F., Bates, J. E., Dodge, K. A., & Pettit, G. S. (1997). Subtypes of Social Withdrawal in Early childhood: Sociometric Status and Social-Cognitive Differences across Four Years. *Child Development, 6*(2), 278-294.

Harter, S., & Pike, R. (1984). The pictorial scale of perceived competence and social acceptance for young children. *Child Development, 55,* 1969-1982.

Hartup, W. W. (1970). Peer interaction and social organization. In P. H. Mussen (Ed.), *Carmichael's Handbook of Child Psychology* (Vol. 2,). New York: Wiley.

Hartup, W. W. (1983). Peer relations. In E. M. Hetherington (Ed.), *Handbook of Child Psychology* (Vol. 4). New York: Wiley.

Hartup, W. W., Glazer, J., & Charlesworth, R. (1967). Peer reinforcement and sociometric status. *Child Development, 38,* 1017-1024.

Hayes, D. S. (1978). Cognitive bases for liking and disliking among preschool children. *Child Development, 49,* 906-909.

Hayes, D. S., Gershman, E., & Bolin, L. J. (1980). Friends and enemies: Cognitive bases for preschool children's unilateral and reciprocal relationships. *Child Development, 51,* 1276-1279.

Hayvren, M., & Hymel, S. (1984). Ethical issues in sociometric testing: The impact of sociometric measures on interaction behavior. *Developmental Psychology, 20,* 844-849.

Hazan, C., & Shaver, P. R. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology, 59,* 270-280.

Heal, M., & O'Hara, J. (1993). The music therapy of an anorectic mentally handicapped adult. *British Journal of Medical Psychology, 66*, 33-41.

Healey, K. (1977). *An investigation of the relationship between certain social cognitive abilities and social behavior, and the efficacy of training in social cognitive skills for elementary retarded-educable children.* , Bryn Mawr College, Bryn Mawr, PA.

Healey, K. N. (1978). *Social problem solving skills in retarded-educable children.* Paper presented at the American Psychological Association, Toronto.

Herbert, M. (1994). Etiological considerations. In T. H. Ollendick, N. J. King, & W. Yule (Eds.), *International handbook of phobic and anxiety disorders in children and adolescents.* . New York: Plenum Press.

Herbert, M. (1998). *Clinical Child Psychology. Social Learning, Development and Behaviour.* (2nd ed. ed.). Chichester: John Wiley & Sons.

Hergenhahn, B. R. (1992). *An Introduction to the History of Psychology.* Belmont, CA: Wadsworth, Inc.

Herman, M. S., & Shantz, C. U. (1983). Social problem solving and mother-child interactions of educable mentally retarded children. *Journal of Applied Developmental Psychology, 4*, 217-226.

Higgins, E. T., & Parson, J. E. (1983). Social cognition and the social life of the child: Stages as subcultures. In E. T. Higgins, D. N. Ruble, & W. W. Hartup (Eds.), *Social cognition and social development.* Cambridge, England: Cambridge University Press.

Higgins, J. P., & Thies, A. P. (1981). Problem solving and social position among emotionally disturbed boys. *American Journal of Orthopsychiatry, 51*, 356-358.

Hill, C. R., & Stafford, F. P. (1980). Parental care of children: Time diary estimate of quantity, predictability, and variety. *Journal of Human Resources, 15*, 219-239.

Hollon, S. D., Shelton, R. C., & Loosen, P. T. (1991). Cognitive therapy and pharmacotherapy for depression. *Journal of Consulting and Clinical Psychology, 59*, 88-99.

Holloway, S. D., & Reichhart-Erickson, M. (1989). Child care quality, family structure, and maternal expectations: Relationship to preschool children's peer relations. *Journal of Applied Developmental Psychology, 4*, 99-107.

Howes, C. (1990). Can the age of entry into child care and the quality of child care predict adjustment in kindergarten? *Developmental Psychology, 26*, 292-303.

Howes, C., Phillips, D. A., & Whitebook, M. (1992). Thresholds of quality; Implications for the social development of children in center-based child care. *Child Development, 63*, 449-460.

Hymel, S. & Rubin, K. H. (1985). Children with peer relationship and social skills problems: Conceptual, methodological, and developmental issues. *Annals of Child Development, 2*, 251-297.

Intagliata, J. (1978). Increasing the interpersonal problem-solving skills of an alcoholic population. *Journal of Consulting and Clinical Psychology, 46*, 489-498.

Ipsa, J. (1981). Peer support among Soviet day care toddlers. *International Journal of Behavioral Development, 4*, 225-269.

Ironsmith, M., & Poteat, G. M. (1990). Behavioral correlates of preschool sociometric status and the prediction of teacher ratings of behavior in kindergarten. *Journal of Clinical Child Psychology, 19*(1), 17-25.

Jacobson, J. L., & Wille, D. E. (1984). Influence of attachment and separation experience on separation distress at 18 months. *Developmental Psychology, 20,* 477-484.

Jahoda, M. (1958). *Current Concepts of Positive Mental Health.* New York: Basic Books.

Jennings, K. D. (1975). People versus object orientation, social behavior, and intellectual abilities in children. *Developmental Psychology, 11,* 511-519.

Joffe, L. S., & Vaughn, B. E. (Eds.). (1982). *Infant-mother attachment: Theory, assessment, and implications for development.* Englewood Cliffs, NJ: Prentice-Hall.

Jones, D. C., Rickel, A. U., & Smith, R. L. (1980). Maternal childrearing practices and social problem-solving strategies among preschoolers. *Developmental Psychology, 16,* 241-242.

Jones, W. H. (1989). Research and theory on loneliness: A response to Weiss's reflections. In M. Hojat & R. Crandall (Eds.), *Loneliness: Theory, Research, and Applications.* Newbury Park, CA: Sage.

Kagan, J., Reznick, J. S., & Snidman, N. (1987). The physiology and psychology of behavioral inhibition in children. *Child Development, 58,* 1459-1473.

Kagan, J., Reznick, J. S., & Snidman, N. (1988). Biological Bases of Childhood Shyness. *Science, 240,* 167-171.

Kahneman, D., & Tversky, A. (1973). On the psychology of prediction. *Psychological Review, 80,* 237-251.

Kanfer, F. H. (1970). Self regulation: Research, issues and speculations. In C. Neuringer & J. L. Michael (Eds.), *Behaviour modification in clinical psychology.* New York: Appleton Century-Crofts.

Kanfer, F. H. (1975). Self management methods. In F. H. Kanfer & A. P. Goldstein (Eds.), *Helping people change* (pp. 309-355). New York: Pergamon Press.

Kashima, Y., Yamaguchi, S., Kim, U., Choi, S. C., Gelfand, M. J., & Yuki, M. (1995). Culture, gender, and self: A perspective from individualism-collectivism research. *Journal of Personality and Social Psychology, 69,* 925-937.

Kazdin, A. E. (1989). Developmental psychopathology: Current research, issues, and directions. *American Psychologist, 44,* 180-187.

Kazdin, A. E. (2000). Understanding Change: From Description to Explanation in Child and Adolescent Psychotherapy Research. *Journal of School Psychology, 38,* (4) 337-347.

Kazdin, A. E., & Weisz, J. R. (1998). Identifying and Developing Empirically Supported Child and Adolescent Treatments. *Journal of Consulting and Clinical Psychology, 66*(1), 19-36.

Keane, S. P., Brown, K. P., & Crenshaw, T. M. (1990). Children's intention-cue detection as a function of maternal social behavior: Pathways to social rejection. *Developmental Psychology, 25,* 1004-1009.

Kendall, P. C. (1993). Cognitive-behavioural therapies with youth: Guiding theory, current status and emerging developments. *Journal of Consulting and Clinical Psychology, 61*, 235-247.

Kobak, R. R., & Sceery, A. (1988). Attachment in late adolescence: Working models, affect regulation, and representations of self and others. *Child Development, 59*, 135-146.

Kolko, D. J. (1989). Conduct disorder. In M. Hersen (Ed.), *Innovations in child behavior therapy* (pp. 324-352). New York: Springer.

Kraemer, S. (2000). The fragile male. *British Medical Journal, 321*, 1609-1612.

Krasnor, L. R., & Rubin, K. H. (1981) The assessment of social problem-solving skills in young children. In T. Merluzzi, C. Glass, & M. Genest (Ed.), *Cognitive Assessment.* New York: Guilford Press.

Kurdek, L. A., & Krile, D. (1982). A developmental analysis of the relation between peer acceptance and both interpersonal understanding and perceived social self-competence. *Child Development, 53*, 1485-1491.

Ladd, G. W. (1981). Effectiveness of a social learning model for enhancing children's social interaction and peer acceptance. *Child Development, 52*, 171-178.

Ladd, G. W., Kochenderfer, B. J., & Coleman, C. C. (2000). Friendship Quality as a Predictor of Young Children's Early School Adjustment. In W. Craig (Ed.), *Childhood Social Development. The Essential Readings.* (pp. 139-166). Malden, Massachusetts: Blackwell Publishers Inc.

Ladd, G. W., & Mars, K. T. (1986). Reliability and validity of preschoolers' perceptions of peer behavior. *Journal of Clinical Child Psychology, 15*, 16-25.

Ladd, G. W., & Price, J. M. (1986). Promoting children's cognitive and social competence: The relations between parent's perceptions of task difficulty and children's perceived and actual competence. *Child Development, 57*, 446-460.

LaFreniere, P. J., & Sroufe, L. A. (1985). Profiles of peer competence in the preschool: Interrelations between measures, influence of social ecology, and relation to attachment history. *Developmental Psychology, 21*(1), 56-69.

Lagerspetz, K. M. J., Bjorkqvist, K., & Peltonen, T. (1988). Is indirect aggression more typical of females? Gender differences in aggressiveness in 11-12 year-old children. *Aggressive Behavior, 14*, 403-414.

LaGreca, A. M., Dandes, S. K., Wick, P., Shaw, K., & Stone, W. L. (1988). Development of the social anxiety scale for children - reliability and concurrent validity. *Journal of Clinical Child Psychology, 17*(1), 84-91.

Lamb, M. E., & Nash, A. (1989). Infant-mother attachment, sociability and peer history. *Developmental Psycholgy, 21*, 56-69.

Lamb, M. E., Thompson, R. A., Gardner, W. P., Charnov, E. L., & Estes, D. (1984). Security of infantile attachment as assessed in the "strange situation" Its study and biological interpretation. *The Behavioral and Brain Sciences, 7*, 127-171.

Lambert, M. J., & Bergin, A. E. (1994). The effectiveness of psychotherapy. In A. E. Bergin & S. L. Garfield (Eds.), *Handbook of psychotherapy and behavior change.* New York: Wiley.

Lambert, M. J., & Hill, E. H. (1994). Assessing psychotherapy outcomes and processes. In A. E. Bergin & S. L. Garfield (Eds.), *Handbook of psychotherapy and behavior change*. (4th ed. ed.). New York: John Wiley.

Larcen, S., Spivack, G., & Shure, M. B. (1972). *Problem-solving thinking and adjustment among dependent-neglected preadolescents*. Paper presented at the Paper presented at the meeting of the Eastern Psychological Association, Boston.

Lebrun, Y., & Leleux, C. (1985). Acquired stuttering following right brain-damage in dextrals. *Journal of fluency disorders, 10*(2), 137-141.

Lee, K., & Homer, B. (1999). Children as Folk Psychologists: The Developing Understanding of The Mind. In A. Slater & D. Muir (Eds.), *The Blackwell Reader In Developmental Psychology*. (pp. 228-252). Oxford: Blackwell Publishers Ltd.

Lemerise, E. A., & Arsenio, W. F. (2000). An Integrated Model of Emotion Processes and Cognition in Social Information Processing. *Child Development, 71*(1), 107-118.

Levine, M., Spivack, G., Fuschillo, J., & Tavernier, A. (1959). Intelligence and measures of inhibition and time sense. *Journal of Clinical Psychology, 15*, 224-226.

Levy, K. N., Blatt, S. J., & Shaver, S. J. (1998). Attachment styles and parental representations. *Journal of Personality and Social Psychology, 74*, 407-419.

Lewis, M., & Feiring, C. (1989). Early predictors of children's friendships. In T. Berndt & G. Ladd (Eds.), *Peer relationships in child development*. (pp. 246-274). Hillsdale NJ: Erlbaum.

Lipsey, M. W. (1998). Design Sensitivity: Statistical Power for Applied Experimental Research. In L. Bickman & D. J. Rog (Eds.), *Handbook of Applied Social Research Methods*. (pp. 39-68). London: Sage Publications.

Luborsky, L., Singer, B., & Luborsky, L. (1975). Comparative studies of psychotherapy. *Archives of General Psychiatry, 32*, 995-1008.

Luria, A. (1961). *The role of speech in the regulation of normal and abnormal behaviours*. New York: Liveright.

Luria, A. R. (1976). *Cognitive development: Its cultural and social foundations*. Cambridge, MA: Harvard University Press.

Maccoby, E. E. (1988). Gender as a social category. *Developmental Psychology, 45*, 755-765.

Maccoby, E. E. (1990). Gender and relationships. *American Psychologist, 45*, 513-520.

Maccoby, E. E. (1991). Gender and relationships: A reprise. *American Psychologist, 46*, 538-539.

Main, M., Kaplan, N., & Cassidy, J. (1985). Security in infancy, childhood and adulthood: A move to the level of representation. *Monograms in Social Research and Child Development, 50*(1-2), (Serial no. 209): 6-104.

Mannarino, A. P., Christy, M., Durlak, J. A., & Magnussen, M. G. (1982). Evaluation of social competence training in the schools. *Journal of School Psychology, 20*, 11-19.

Masten, A., Best, K., & Garmezy, N. (1991). Resilience and development: Contributions from the study of children who overcome adversity. *Development and Psychopathology, 425-444.*

Masten, A. S. (1994). Resilience in individual development: Successful adaptation despite risk and adversity. In M. Wang & E. Gordon (Eds.), *Risk and resilience in inner city America: Challenges and prospects* (pp. 3-25). Hillsdale, NJ: Erlbaum.

Masters, J. C., & Furman, W. (1981). Popularity, individual friendship selection and specific interaction among children. *Developmental Psychology, 17,* 344-350.

McCartney, K. (1984). The effect of quality of day care environment upon children's language development. *Developmental Psychology, 20,* 244-260.

McCartney, K., Scarr, S., Phillips, D., & Grajek, S. (1985). Day care as intervention: Comparisons of varying quality programs. *Journal of Applied Developmental Psychology, 6,* 247-260.

McCartney, K., Scarr, S., Rocheleau, A., Phillips, D., Eisenberg, M., Keefe, N., Rosenthal, S., & Abbott-Shim, M. (1997). Social development in the context of typical center based child care. *Merrill-Palmer Quarterly, 43*(3), 426-450.

McClure, L. F., Chinsky, J. H., & Larcen, S. W. (1978) Enhancing social problem solving performance in an elementary school setting. *Journal of Educational Psychology, 70,* 504-513.

McCown, W. (1993). *ICPS curriculum for reducing HIV risk behavior in developmentally disabled adolescents.* Orangeburg, NY.

McCown, W., & DeSimone, P. (1993). *ICPS curriculum for boosting healthy behavior in normal elderly.* Unpublished manuscript, Nathan Kline Institute for Psychiatric Research, Oranceburg, NY.

Meichenbaum, D. (1975). Self instruction methods. In F. H. Kanfer & A. P. Goldstein (Eds.), *Helping people change* (pp. 357-391). New York: Pergamon Press.

Meichenbaum, D., & Goodman, J. (1971). Training impulsive children to talk to themselves: A means of developing self control. *Journal of Abnormal Psychology, 77,* 115-126.

Michael, W. B. (1977). Cognitive and affective components of creativity in mathematics and the physical sciences.In J. C. Stanley, W. C. George, & C. H. Solano (Eds.), *The gifted and creative: A fifty-year perspective.* Baltimore, MD: Johns Hopkins University Press.

Miller, P. H. (1989). *Theories of developmental psychology.* San Francisco: Freeman.

Miller, S. B., & Toca, J. M. (1979). Adapted melodic intonation therapy - case - study of an experimental language. Program for an autistic-child. *Journal of Clinical Psychiatry, 40*(4), 201-203.

Mitchell, P. (1997). *Acquiring a conception of mind: A review of psychological research and theory.* Hove, UK: Psychology Press.

Mize, J., & Ladd, G. W. (1990). A Cognitive-Social Learning Approach to Social Skill Training With Low-Status Preschool Children. *Developmental Psychology, 26*(3), 388-397.

Moreno, J. (1988). The Music Therapist: Creative Arts Therapist and Contemporary Shaman. *The Arts in Psychotherapy, 15*, 271-280.

Moreno, J. L. (1934). *Who shall survive? Foundations of sociometry, group psychotherapy and sociodrama.* New York: Beacon House.

Moreno, J. L., Jennings, H. H., Criswell, J. H., Katz, L., Blake, R. R., Mouton, J. S., Bonney, M. E., Northway, M. L., Loomis, C. P., Proctor, C., Tagiuri, R., & Nehnevajsa, J. (Eds.). (1960). *The Sociometry Reader.* Illinois: The Free Press.

Moskowitz, D. S., & Schwartzman, A. E. (1988). Painting group portraits: Assessing life outcomes for aggressive and withdrawn children. *Manuscript cited by Caspi et al., (1988).*

Natov, I. (1981). *An intervention to facilitate interpersonal cognitive problem-solving skills and behavioral adjustment among emotionally handicapped children.* , Ford ham University, New York.

Nesbitt, A., Madren-Braun, J., Bruckner, M., Caldwell, R., Dennis, N., Liddell, T., & McGloin, J. (1980). *A problem-solving approach: Final Evaluation.* (Law Enforcement Assistance Administration 77-2A). Commerce City, CO: Children's Resource Center, Adams County Department of Social Services.

Newell, A., & Simon, H. A. (1972). *Human problem solving.* Englewood Cliffs, NJ: Prentice Hall.

Nordoff, P., & Robbins, C. (1977). *Creative Music Therapy.* New York: John Day.

Oden, S., & Asher, S. R. (1977). Coaching children in social skills for friendship making. *Child Development, 48*, 495-506.

Oppenheim, D., Sagi, A., & Lamb, M. E. (1988). Infant-adult attachments on the kibbutz and their relation to socioemotional development four years later. *Developmental Psychology, 24*, 427-433.

O'Rourke, K., & Worzbyt, J. C. (1996). *Support groups for children.* London: Taylor & Francis.

Parke, R. D., & Slaby, R. G. (1983). The development of aggression. In P. H. Mussen & E. M. Hetherington (Eds.), *Socialization, personality, and social development.* (Vol. 4, pp. 567-641). New York: Wiley.

Parker, J. G., & Asher, S. R. (1987). Peer relations and later personal adjustment: Are low-accepted children at risk? *Psychological Bulletin, 102*, 357-389.

Parker, J. G., & Asher, S. R. (1993). Friendship and friendship quality in middle childhood: Links with peer group acceptance and feelings of loneliness and social dissatisfaction. *Developmental Psychology, 29*, 611-621.

Parker, J. G., & Gottman, J. M. (1989). Social and emotional development in a relational context. In T. J. Berndt & G. W. Ladd (Eds.), *Peer Relationships in Child Development.* New York: Wiley.

Pastor, D. L. (1980). The quality of mother-infant attachment and its relationship with toddlers' initial sociability with peers. *Paper presented at the International Conference on Infant Studies. New Haven, CT, April 1980.*

Pellegrini, D. S., & Urbain, E. S. (1985). An evaluation of interpersonal cognitive problem solving training with children. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 26*(1), 17-41.

Pence, A. R., & Goelman, H. (1987). Silent partners: Parents of children in three types of day care. *Early Childhood Research Quarterly, 2*, 103-118.

Pennebaker, J. W., Hendler, C. S., Durett, M. E., & Richards, P. (1981). Social factors influencing absenteeism due to illness in nursery school children. *Child Development* (52), 692-700.

Pepler, D. J., & Ross, H. S. (1981). The effects of play on convergent and divergent problem solving. *Child Development* (52), 1202-1210.

Perner, J., & Ogden, J. E. (1988). Knowledge for hunger: Children's problem with representation in imputing mental states. *Cognition, 39*, 51-69.

Piaget, J. (1965). *The moral judgment of the child.* London: Routledge & Kegan Paul.

Piaget, J. (1967). *Six Psychological Studies.* New York: Vintage Books.

Piaget, J. (1971). *Biology and Knowldege.* Edinburgh: Edinburgh University Press.

Piaget, J. (1977 (originally published 1932)). *The Moral Judgement of the Child.* Harmondsworth: Penguin.

Platt, J. J., Scura, W. C., & Hannon, J. R. (1973). Problem-solving thinking of youthful incarcerated heroin addicts. *Journal of Community Psychology, 1*, 278-281.

Plomin, R., & Daniels, D. (1986). Genetics and shyness. In W. H. Jones, J. M. Cheek, & S. R. Briggs (Eds.), *Shyness: Perspectives on research and treatment.* . New York: Plenum.

Quiggle, N. L., Garber, J., Panak, W. F., & Dodge, K. A. (1992). Social Information Processing in Aggressive and Depressed Children. *Child Development, 63*, 1305-1320.

Rabiner, D. L., Lenhart, L., & Lochman, J. E. (1990). Automatic versus reflective social problem solving in relation to children's sociometric status. *Developmental Psychology, 26*, 1010-1016.

Ramey, C., & Ramey, S. (1992). Early educational intervention with disadvantaged children - to what effect? *Applied and Preventive Psychology, 1*, 131-140.

Rauscher, F. H., Shaw, G. L., & Ky, K. N. (1993). Music and spatial task performance. *Nature, 365*(14. October), 611.

Renken, B., Egeland, B., & Marvinney, D. (1989). Early childhood antecedents of aggression and passive-withdrawal in early elementary school. *J. Pers., 57*, 257-281.

Rholes, W. S., & Ruble, D. N. (1984). Children's understanding of dispositional characteristics of others. *Child Development, 55*, 550-560.

Rice, C., Koinis, D., Sullivan, K., Tager-Flusberg, H., & Winner, E. (1997). When 3-year-olds pass the appearance-reality test. *Developmental Psychology, 33*, 54-61.

Richard, B. A., & Dodge, K. A. (1982). Social maladjustment and problem-solving in school aged children. *Journal of Consulting and Clinical Psychology, 38*, 348-353.

Richmond, V. P. (Ed.). (1984). *Implications of quietness: Some facts and speculations*. Beverly Hills, CA: Sage.

Richmond, V. P., Beatty, M. J., & Dyba, P. (1985). Shyness and Popularity: Children's View. *The Western Journal of Speech Communication, 49*(Spring), 116-125.

Rixon, R., & Erwin, P. G. (1999). Measures of effectiveness in a short-term Interpersonal Cognitive Problem Solving programme. *Counselling psychology, 12*(1), 87-93.

Rogoff, B. (1986). Adult assistance of children's learning. In T. E. Raphael (Ed.), *The Contexts of School-Based Literacy.* . New York: Random House.

Rogoff, B. (1990). *Apprenticeship in Thinking - Cognitive Development in Social Context*. New York: Oxford University Press.

Rogoff, B., & Morelli, G. (1998). Perspectives on Children's Development from Cultural Psychology. In D. Messer & J. Dockrell (Eds.), *Developmental Psychology* (pp. 309-320). London: Arnold.

Rosenblatt, D. (1977). Developmental trends in infant play. In B. Tizard & D. Harvey (Eds.), *Biology of Play: Clinics in Developmental Medicine No 62.* . London: SIMP/Heinemann.

Rosenthal, R. & Rubin, D. B. (1986). Meta-analytic procedures for combining studies with multiple effect sizes. *Psychological Bulletin, 99*, 400-406.

Ross, L., Lepper, M. R., Strack, F., & Steinmetz, J. (1977). Social explanations and social expectation: Effects of real and hypothetical explanations on subjective likelihood. *Journal of Personality and Social Psychology, 35*, 817-829.

Rubin, K. H. (1972). Relationship between egocentric communication and popularity among peers. *Developmental Psychology, 7*, 364.

Rubin, K. H. (1982a). Non-social play in preschoolers: Necessarily evil? *Child Development, 53*, 651-657.

Rubin, K. H., & Asendorph, J. B. (1993). *Social Withdrawal Inhibition and Shyness in Childhood*. London: LEA.

Rubin, K. H., & Krasnor, L. R. (1986). Social-cognitive and social behavioral perspectives on problem solving. In M. Perlmutter (Ed.), *Cognitive perspectives on children's social and behavioral development* (pp. 1-68). Hillsdale, NJ: LEA.

Rubin, K. H., LeMare, L., & Lollis, S. (1988). Peer relationships, social skills and infant attachment: A continuity model. In J. Belsky (Ed.), *Clinical implications of infant attachment* (pp. 219-252). Hillsdale, NJ: Erlbaum.

Rubin, K. H., LeMare, L., & Lollis, S. (1990). Social withdrawal in childhood: Developmental pathways to peer rejection. In S. R. Asher & J. D. Coie (Eds.), *Peer rejection in childhood*. New York: Cambridge University Press.

Rubin, K. H., & Mills, R. (1988). The many faces of social isolation in childhood. *Journal of Counselling and Clinical Psychology* (56), 916-924.

Rubin, Z., & Sloman, J. (1984). How parents influence their children's friendships. In M. Lewis (Ed.), *Beyond the dyad*. New York: Plennum Press.

Ruble, D. N. (1983). The development of social-comparison processes and their role in achievement-related self-socialization. In E. T. Higgins, D. N.

Ruble, & W. W. Hartup (Eds.), *Social cognition and social development* (pp. 134-157). Cambridge, England: Cambridge University Press.

Rutter, M. (1975). *Helping troubled children*. Harmondsworth, Middlesex: Penguin Books Ltd.

Saarni, C., Mumme, D.L., & Campos, J. (1999). *The development of emotional competence.* New York: Guilford.

Sacks, O. (1991). *Awakenings, revised edition.* London: Pan.

Sagotsky, G., Woodschneider, M., & Konop, M. (1981). Learning to cooperate - effects of modeling and direct instruction. *Child Development, 52*(3), 1037-1042.

Sameroff, A., & Chandler, M. (1975). Reproductive risk and the continuum of caretaking casualty. In F. D. Horowitz (Ed.), *Review of child development research* (Vol. 4, pp. 187-244). Chicago: University of Chicago Press.

Sapp, F., Lee, K., & Muir, D. (1997). *Three-yar-olds' difficulty with the appearance-reality distinction: Is it apparent or real,* Poster presented at the Society for Research in Child Development, Washington, DC.

Scarr, S. (1998). American Child Care Today. *American Psychologist, 53*(2), 95-108.

Scarr, S. (1999). American Child Care Today. In A. Slater & D. Muir (Eds.), *The Blackwell Reader in Developmental Psychology* (pp. 375-401). Oxford: Blackwell Publishers Ltd.

Scarr, S., Eisenberg, M., & Deater-Deckard, K. (1994). Measurement of quality of child care centers. *Early Childhood Research Quarterly, 9,* 131-151.

Scarr, S., Weinberg, R. A., & Levine, A. (1990). *Understanding development.* San Diego, CA: Harcourt Brace Jovanovich.

Schneider, B. H. (1993). *Children's Social Competence in Context. The contributions of family, school and culture.* (First ed.). Oxford: Pergamon Press.

Schneider, B. H., & Byrne, B. M. (1985). Children's social skills training: A meta-analysis. In B. H. Schneider, K. Rubin & J. E. Ledingham (Eds.), *Children's peer relations: Issues in assessment and intervention* (pp. 175-192). New York: Springer-Verlag.

Schneider, B. H. (1992). Didactic methods for enhancing children's peer relations: A quantitative review. *Clinical Psychology Review, 2,* (363-382).

Schneider, B. H., & Byrne, B. M. (1989). Parents rating children's social behavior: How focused the lens? *Journal of Clinical Child Psychology, 18,* 237-241.

Schwartz, J. C. (1972). Effects of peer familiarity on the behavior of preschoolers in a novel situation. *Journal of Personality and Social Psychology, 24,* 276-284.

Selman, R. (1981). The child as a friendship philosopher: A case study in the growth of interpersonal understanding. In S. R. Asher & J. M. Gottman (Eds.), *The Development of Children's Friendships.* Cambridge: Cambridge University Press.

Selman, R. L. (1980). *The Growth of Interpersonal Understanding.* New York: Academic Press.

Selman, R. L. (1985). The use of interpersonal negotiation strategies and communicative competence: A clinical-   developmental exploration in a pair of troubled early adolescents. In R. A. Hinde, A. Perret-Clermont, &

J. Stevenson-Hinde (Eds.), *Social relationships and cognitive development* (Vol. 208-232). Oxford: Clarendon.

Shantz, C. U. (1983). Social cognition. In J. Flavell & E. Markman (Eds.), *Handbook of child psychology* (4th ed., Vol. 3, Cognitive development, pp. 495-555). New York: Wiley.

Sharp, S., & Cowie, H. (1998). *Counselling and Supporting Children in Distress.* London: Sage Publications Ltd.

Shatz, D. W., & Gelman, R. (1973). The development of communication skills. Modifications in the speech of young children as a function of the listener. *Monographs of the Society for Research in Child Development, 38*(152), whole.

Shure, M. B. (1992a). *I Can Problem Solve (ICPS): An Interpersonal Cognitive Problem Solving program [preschool].* Champaign, IL: Research Press.

Shure, M. B. (1992b). *I Can Problem Solve (ICPS): An Interpersonal Cognitive Problem Solving program [kindergarten/primary grades].* Champaign, IL: Research Press.

Shure, M. B. (1992c). *I Can Problem Solve (ICPS): An Interpersonal Cognitive Problem Solving program [intermediate elementary grades].* Champaign, IL: Research Press.

Shure, M. B. (1993). I can problem solve (ICPS): Interpersonal cognitive problem solving for young children. *Early Child Development and Care, 96,* 49-64.

Shure, M. B. (1994). *Raising a Thinking Child.* New York: Pocket Books, a division of Simon & Schuster Inc.

Shure, M. B. (1994). Very young Children can learn how to think--not what to think. *Brown University Child & Adolescent Behavior Letter, 10*(10), p1, 2p.

Shure, M. B. (1997). Teach your child how, not what, to think: A cognitive approach to behavior. *Brown University Child & Adolescent Behavior Letter, 13*(5), following p4, 2p.

Shure, M. B., & Spivack, G. (1970). *Cognitive problem-solving skills, adjustment and social class.* (26). Philadelphia: Department of Mental Health Sciences, Hahnemann Medical College and Hospital.

Shure, M. B., & Spivack, G. (1972). Means-end thinking, adjustment and social class among elementary school-aged children. *Journal of Consulting and Clinical Psychology, 38,* 348-353.

Shure, M. B., & Spivack, G. (1979). Interpersonal Cognitive Problem Solving and Primary Prevention: Programming for Preschool and Kindergarten Children. *Journal of Clinical Child Psychology, Summer,* 89-94.

Shure, M. B., & Spivack, G. (1980). Interpersonal Problem Solving as a Mediator of Behavioral Adjustment in Preschool and Kindergarten Children. *Journal of Applied Developmental Psychology, 1,* 29-44.

Shure, M. B., & Spivack, G. (1982). Interpersonal Problem-Solving in Young Children: A Cognitive Approach to Prevention. *American Journal of Community Psychology, 10*(3), 341-356.

Shure, M. B., & Spivack, G. (1988). Interpersonal cognitive problem solving. In R. H. Price, E. L. Cowen, R. P. Lorion, & J. Ramos-McKay (Eds.), *14 ounces of prevention: A casebook for practitioners* (pp. 69-82). Washington, DC: American Psychological Association.

Shure, M. B., Spivack, G., & Jaeger, M. (1971). Problem-Solving thinking and Adjustment Among Disadvantaged Preschool Children. *Child Development, 42*, 1791-1803.

Siegal, M., & Share, D. L. (1990). Contamination sensitivity in young children. *Developmental Psychology, 26*(3), 455-8.

Skinner, B. F. (1957). *Verbal behavior*. Englewood Cliffs, NJ: Prentice Hall.

Slater, A., & Muir, D. (Eds.). (1999). *The Blackwell Reader in Developmental Psychology*. Oxford: Blackwell Publishers Ltd.

Slee, P. T. (1993). Bullying: A preliminary investigation of its nature and the effects of social cognition. *Early Child Development and Care, 87*, 47-57.

Sodian, B., & Wimmer, H. (1987). Children's understanding of inferences as a source of knowledge. *Child Development, 58*(2), 424-33.

Solso, R. L. (1991). *Cognitive Psychology*. Boston: Allyn and Bacon.

Spence, S. H. (1994). Practitioner Review: Cognitive Therapy with Children and Adolescents: From Theory to Practice. *Journal of Child Psychology and Psychiatry, 35*(7), 1191-1228.

Spivack, G., & Levine, M. (1963). Self-regulation in acting-out and normal adolescents. Report No. M-4531. .

Spivack, G., Levine, M., & Springle, H. (1959). Intelligence test performance and the delay function of the ego. *Journal of Consulting Psychology, 23*, 428-431.

Spivack, G., Platt, J. J., & Shure, M. B. (1976). *The problem-solving approach to adjustment*. San Francisco: Jossey-Bass.

Spivack, G., & Shure, M. B. (1972)

Spivack, G., & Shure, M. B. (1974). *Social adjustment of young children. A cognitive approach to solving real life problems*. London: Jossey Bass.

Spivack, G., & Shure, M. B. (1976). *A cognitive approach to solving real-life problems*. San Francisco: Jossey-Bass.

Spivack, G., & Shure, M. B. (1985). ICPS and Beyond: Centripetal and Centrifugal Forces. *American Journal of Community Psychology, 13*(3), 226-243.

Spivack, G., Standen, C., Bryson, J., & Garrett, L. (1978). *Interpersonal problemsolving thinking among the elderly*. Paper presented at the American Psychological Association, Toronto.

Sroufe, L. A. (1983). Infant-caregiver attachment and patterns of adaptation in preschool. The roots of maladaptation and competence. In M. Perlmutter (Ed.), *Minnesota Symposium on Child Psychology* (Vol. 16, pp. 41-81). Hillsdale, NJ: Erlbaum.

Sroufe, L. A. (1985). Attachment classification from the perspective of infant-caregiver relationships and infant temperament. *Child Development, 56*, 1-14.

Sroufe, L. A., & Fleeson, J. (1986). Attachment and the construction of relationships. In W. Hartup & Z. Rubin (Eds.), *Relationships and development* (pp. 51-71). New York: Erlbaum.

Sroufe, L. A., & Rutter, M. (1984). The domain of developmental psychopathology. *Child Development, 55*, 17-29.

Stark, K. D., Rouse, L. W., & Livingston, R. (1991). Treatment of depression during childhood and adolescence: Cognitive-behavioural procedures for

the individual and family. In P. C. Kendall (Ed.), *Child and adolescent therapy: Cognitive-behavioural procedures* (pp. 165-208). New York: Guilford Press.

Steinlauf, B. (1979). Problem-solving skills, locus of control and the contraceptive effectiveness of young women. *Child Development, 50,* 268-271.

Stern, R. (1989). Many ways to grow: Creative art therapies. *Pediatr-Ann., 18*(10), 645, 649-652.

Strayer, F. (1980). Child ethology and the study of preschool social relations. In H. C. Foot, A. J. Chapman, & J. R. Smith (Eds.), *Friendships and social relations in children.* . New York: Wiley.

Suess, G. J., Grossmann, K. E., & Sroufe, L. A. (1992). Effects of infant attachment to mother and father on quality of adaptation in preschool: From dyadic to individual organization of self. *International Journal of Behavioral Development, 15,* 43-65.

Sullivan, H. S. (1953). *The interpersonal theory of psychiatry.* New York: Norton.

Suomi, S. J., & Kraemer, G. W. (1981). Inherited and experiential factors associated with individual differences in anxious behavior displayed by rhesus monkeys. In D. F. Klein & J. Rabkin (Eds.), *Anxiety: New Research and Changing Concepts*: Raven Press.

Sutton, J., Smith, P. K., & Swettenham, J. (1999). Social cognition and bullying: Social inadequacy or skilled manipulation? *British Journal of Developmental Psychology, 17,* 435-450.

Tabachnick, B. G., & Fidell, L. S. (1996). *Using Multivariate Statistics.* (Third ed.). New York: HarperCollins College Publishers.

Taylor, M. (1988). The development of children's understanding of the seeing-knowing distinction. In J. W. Astington, P. L. Harris, & D. R. Olson (Eds.), *Developing Theories of Mind* (pp. 207-25). Cambridge: Cambridge University Press.

Thomas, R. M. (1985). *Comparing theories of child development.* (2 ed.). Belmont, CA: Wadsworth.

Tomasello, M., & Farrar, M. (1984). Cognitive bases of lexical development: object permanence and relational words. *Journal of Child Language, 11,* 477-495.

Torres, M. V. T., Moya, T. R., & Sánchez, Á. M. (1990). Una intervencion psicoeducativa sobre las habilidades de solucion de problemas interpersonales en preescolar. *Análisis y Modificación de Conducta, 16*(50), 587-625.

Touchet, M. E., Shure, M. B., & McCown, W. G. (1993). Interpersonal Cognitive Problem Solving as Prevention and Treatment of Impulsive Behaviors. In W. G. McCown, J. L. Johnson, & M. B. Shure (Eds.), *The Impulsive Client. Theory, research, and treatment.* (pp. 387-404). Washington, DC: American Psychological Association.

Tronick, E. Z., Morelli, G. A., & Ivey, P. K. (1992). The Efe forager infant and toddler's pattern of social relationships: Multiple and simultaneous. *Developmental Psychology, 28,* 568-577.

Turkington, D., & Kingdon, D. (2000). Cognitive-behavioural techniques for general psychiatrists in the management of patients with psychoses. *British Journal of Psychiatry, 177*(August), 101-106.

Urbain, E. S., & Kendall, P. C. (1980). Review of social-cognitive problem-solving interventions with children. *Psychological Bulletin, 8,* 109-143.

Van Dam, M., & van IJsendoorn, M. H. V. (1991). Working mothers and their infants: Insecure attachment relationships. *Paper presented at the biennial meeting of the International Society for the Study of Behavioral Development, Minneapolis, MN, July.*

Vandell, D. L. (1985). Relations between infant-peer and infant-mother interactions: What we have learned. Paper presented at the biennial meeting of the Society for Research in Child Development, Toronto, April 1985. .

Vandell, D. L., & Wilson, K. S. (1987). Infants' interactions with mother, sibling, and peer: Contrasts and relations between interaction systems. *Child Development, 85,* 176-186.

Van IJsendoorn, M. H., R. Van der Veer, & Vliet-Visser, S. V. (1987). Attachment three years later: Relationships between quality of mother-infant attachment and emotional/cognitive development in kindergarten. In L. W. C. Tavecchio & M. H. Van Ijsendoorn (Eds.), *Attachment in social networks* (pp. 185-224). Amsterdam: North Holland.

Van IJzendoorn, M. H., & Kroonenberg, P. M. (1988). Cross-cultural patterns of attachment: A meta analysis of the strange situation. *Child Development, 59,* 1451-1459.

Vosk, B., Forehand, R., Parker, J. B., & Rickard, K. (1982). A multimethod comparison of popular and unpopular children. *Developmental Psychology, 18*(4), 571-575.

Vygotsky, L. (1962). *Thought and language.* New York: Wiley.

Vygotsky, L. S. (1978). Play and its role in the mental development of the child. In M. Cole, V. John-Steiner, S. Scribner, & E. Souberman (Eds.), *Mind in Society.* Cambridge, Massachusetts: Harward University Press.

Wallach, M. A. (1970). Creativity. In P. H. Mussen (Eds.), *Carmichael's manual of child psychology (*3rd. ed., pp. 1211-1272*).* New York: Wiley.

Wartner, U. G., Grossmann, K., Fremmer-Bombik, E., & Suess, G. (1994). Attachment patterns at age six in South Germany: Predictability from infancy and implications for preschool behavior. *Child Development, 65,* 1014-1027.

Wasik, B. H., & Ramey, C. T. (1990). A longitudinal study of two early intervention strategies: Project CARE. *Child Development, 61,* 1682-1696.

Watson, J. B. (1926). What the nursery has to say about instincts. In C. Murchison (Ed.), *Psychologies of 1925* (pp. 1-34). Worcester, MA: Clark University Press.

Weiner, J. A. (1978). *A theoretical model of the affective and social development of learning-disabled children.* , University of Michigan, Ann Arbor.

Weisfeld, G. E. (1980). Social dominance and achievement motivation. In D. R. Omark, F. F. Strayer, & D. G. Freedman (Eds.), *Dominance relations.* New York: Garland.

Weisner, T. S., & Wilson-Mitchell, J. E. (1990). Nonconventional family life-styles and sex typing in six-year-olds. *Child Development, 61,* 1915-1933.

Weiss, R. S. (1989). Reflections on the present state of loneliness research. In M. Hojat & R. Cradall (Eds.), *Loneliness: Theory, Research, and Applications.* . Newbury Park, CA: Sage.

Weissberg, R. P., Gesten, E. L., Carnrike, C. L., Toro, P. A., Rapkin, B. D., Davidson, E., & Cowen, E. (1981). Social problem-solving skills training: A competence-building intervention with second- to fourth-grade children. *American Journal of Community Psychology, 9,* 411-423.

Weissberg, R. P., Gesten, E. L., Rapkin, B. D., Cowen, E. L., Davidson, E., Apodaca, R. F. d., & McKim, B. J. (1981). The evaluation of a social problem solving training program for suburban and inner-city third grade children. *Journal of Consulting and Clinical Psychology, 49,* 251-261.

Weisz, J. R. (1998). Empirically Supported Treatments for Children and Adolescents. Efficacy, Problems, and Prospects. In K. S. Dobson & K. D. Craig (Eds.), *Empirically Supported Therapies. Best Practice in Professional Psychology.* (pp. 66-92). Thousand Oaks, London, New Delhi: Sage Publications.

Weisz, J. R., Weiss, B., Alicke, M. D., & Klotz, M. L. (1987). Effectiveness of psychotherapy with children and adolescents: A meta-analysis for clinicians. *Journal of Consulting and Clinical Psychology, 55,* 542-549.

Weisz, J. R., Weiss, B., Han, S. S., Granger, D. A., & Morton, T. (1995). Effect of psychotherapy with children and adolescents revisited: A meta-analysis of treatment outcome studies. *Psychological Bulletin, 117,* 450-468.

Wellman, H. (1990). *The Child's Theory of Mind.* Cambridge, MA: MIT Press/Bradford Books.

Welsh, M., Parke, R. D.,Widaman, K., & O'Neil, R. (2001). Linkages Between Children's Social and Academic Competence: A Longitudinal Analysis. *Journal of School Psychology, 39* (6), 463-481.

Whitebook, M., Howes, C., & Phillips, D. (1991). *Who Cares? Child care teachers and the quality of care in America.* . Oakland, CA: Center on Child Care Staffing.

Will, J. A., Self, P. A., & Datatn, N. (1976). Maternal behavior and perceived sex of infant. *American Journal of Orthopsychiatry, 46,* 135-139.

Winer, J. I., Hilpert, P. L., Gesten, E. L., Cowen, E. L. & Shubin, W. E. (1982) The evaluation of a kindergarten social problem solving program. *Journal of Primary Prevention, 2,* 205-216.

Winfrey, L. P. L., & Goldfried, M. R. (1986). Information processing and the human change process. In R. Ingram (Ed.), *Information processing approaches to clinical psychology.* (pp. 241-258). San Diego: Academic Press.

Wood, D., & Wood, H. (1996). Vigotsky, Tutoring and Learning. *Oxford Review of Education, 22,* 5-16.

Wood, D. J., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry, 17*(2), 89-100.

You, H. S., & Malley-Morrison, K. (2000). Young adult attachment styles and intimate relationships with close friends. A Cross-Cultural Study of Koreans and Caucasian Americans. *Journal of Cross-Cultural Psychology, 31*(4), 528-534.

Youngblade, L. M., & Belsky, J. (1992). Parent-child antecedents of 5-year olds'close friendships: a longitudinal analysis. *Developmental Psychology, 28*, 700-13.

Younger, A., Gentile, C., & Burgess, K. (1993). Children's Perceptions of Social Withdrawal: Changes Across Age. In K. H. Rubin & J. B. Asendorpf (Eds.), *Social Withdrawal, Inhibition, and Shyness in Childhood.* (pp. 215-235). Hillsdale, New Jersey: LEA.

Younger, A. J., & Boyko, K. A. (1987). Aggression and withdrawal as social schemas underlying children's peer perceptions. *Child Development, 58*, 1094-1100.

Younger, A. J., & Daniels, T. M. (1992). Children's reasons for nominating their peers as withdrawn: Passive withdrawal versus active isolation. *Developmental Psychology, 28*, 955-960.

Younger, A. J., & Piccinin, A. M. (1989). Children's recall of aggressive and withdrawn behaviors: Recognition memory and likability judgments. *Child Development, 60*, 580-590.

Youniss, J. (1980). *Parents and peers in social development: A Sullivan-Piaget perspective.* Chicago: University of Chicago Press.

Youniss, J., & Volpe, J. (Eds.). (1978). *A relational analysis of children's friendships.* (Vol. 1). San Francisco: Jossey-Bass.

Yu, P., Harris, G. E., Solovitz, B. L., & Franklin, J. L. (1986). A social problem solving intervention for children at high risk for later psychopathology. *Journal of Clinical Child Psychology, 15*, 30-40.

Zajonc, R. B. (1980). Feeling and thinking: Preferences need no inferences. *American Psychologist, 35*.

Zimbardo, P. G., & Radl, S. L. (1981). *The Shy Child.* New York: McGraw-Hill.