The Benefits of Parent-Child Play for the Social Development of Preschoolers with Varying Levels of Anxiety Problems

Caroline Sullivan

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ABSTRACT

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This study examined the contributions of parent play behaviors to children's positive social adjustment at preschool or daycare 4-6 months later. Fifty-five mothers and fathers were compared on their play behaviors, both in terms of types of play and roles used in play, to examine whether fathers make unique contributions to children's social development. Father contributions may be especially relevant for children with internalizing problems. Compared to mothers, fathers engaged in significantly more physical play, and were more likely to give their children control of play activities. Mothers' tendencies to observe rather than actively play with their children predicted teachers' reports that children were less socially competent and less well adjusted. On the other hand, fathers who engaged in fantasy play or who used play to teach their children about real-life things, had children who were rated as better adjusted overall, as reported by the children's teachers. Finally, mothers' use of a more peer-like approach in play predicted both social competence and general adaptation in their children. Taken together, the present findings indicate that children are having different play experiences with their mothers and their fathers, and the implications that these differential parent play behaviors have for children's development are outlined.

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Introduction

After decades of focusing predominantly on children's emotional and behavioral problems, developmental scientists have begun to direct more of their attention to children's positive and successful adjustment. Integral to positive development is the child's social competence or, more precisely, the ability to regulate their own emotions and behaviors in the social contexts of early childhood to support the effective accomplishment of relevant developmental tasks (Masten et al., 1995). For toddlers and preschoolers, this includes learning to follow rules, being accepted by and getting along with peers, and accomplishing one's social goals while maintaining positive relationships with others (Masten et al., 1995; Rose-Krasnor, Rubin, Booth, & Coplan, 1996).

Over 70 years ago, Piaget (1926, 1935) suggested that peer interactions advance children's awareness of the social world. The evenly balanced nature of peer relationships gives children ample opportunity to learn about taking the perspectives of others, resolving conflicts through negotiation, and reciprocity. Preschoolers who are more socially competent tend to be more accepted by their peers, and are also more frequently the recipients of positive initiations from peers (Renshaw & Asher, 1983; Rubin, 1982). Other benefits of early peer competence include having greater self-efficacy and confidence in one's abilities (Rubin & Krasnor, 1983; Rubin & Rose-Krasnor, 1992), maintaining positive relationships with peers into the elementary and secondary school years (Coie & Dodge, 1983; Parker & Asher, 1987), and performing better academically (Huffman & Speer, 2000). In light of this information, it is clear that

promoting children's early social competence is an important component of nurturing their continued positive development. Variations in parenting and home experiences may affect school readiness and social competence in preschoolers.

Socialization Theory

Parental socialization is an adult-initiated process by which developing children acquire the habits and values congruent with adaptation to their culture through insight, training, and imitation (Baumrind, 1980). At birth, a child may be viewed as having a range of possible characteristics or abilities that become defined through interactions with the training contexts in which the child develops. Individuals become who they are through reciprocal interaction with the environment, and the crucial environmental context for young children is the family. Thus the family in which a boy or girl develops will limit or expand the potentialities that can become manifested as socially useful and personally satisfying attitudes and actions. Successful socialization practices should endow children with a competent degree of self-regulation that supports conforming to social norms. Children thus adopt their parents' lessons as their own rules, and use those rules to guide their behaviors with others.

The effects of socialization extend beyond children's behavior with their families to their behavior in external settings, such as social competence with peers. In a two-part study examining the effects of socialization practices on dimensions of competence in preschool children, Baumrind and Black (1967) found that parents of the most assertive, self-reliant and self-controlled children were controlling, demanding, communicative, and loving. Parents of more unhappy and disaffiliated children were relatively controlling and detached, and parents of the least self-reliant and self-controlled group of

children were noncontrolling, nondemanding, and relatively warm. The findings suggested that parental practices which are intellectually stimulating and to some extent tension-producing (socialization and maturity demands, punitiveness, firmness in disciplinary matters) were associated with various aspects of competence in the young child. It is not clear, however, how these links occur and whether the associations found between parenting practices and child competence are causally related.

A possible explanation of the mechanism for socialization affecting social competence may be through the complementary nature of parent-child interactions and peer associations. The parent-child bond emphasizes caregiving and affection, providing children with the security they need to engage with the broader world. Peer interaction, in turn, consists mainly of play and conversation, permitting children to expand upon the social skills first acquired within the family (Hartup & Moore, 1990). However, there may be aspects of parent-child relationships that parallel the qualities of child-peer relationships. Qualities such as mutuality, synchrony, and power sharing (e.g., via collaboration and negotiation) which often occur in parent-child play, suggest that parent-child relationships can also contain qualities usually attributed to child-peer relationships (Russell, Mize, & Saebel, 2001). In accord with social learning theory (Bandura, 1989), the parent-child relationship can provide a kind of training ground for the peer context, allowing children opportunities to experience, learn about, and practice some of the skills that are involved in relationships with peers. Lindsey and Mize (2001a), for example, found that children whose parents engaged in more fantasy play during a free play session involving parent-child dyads, engaged in more fantasy play with a peer, whereas children whose parents engaged in more physical play engaged in more physical play

with a peer. Thus, children seem to be able to generalize what they learn from play with parents to play with peers.

Play has been recognized as an important activity for establishing connections between parenting behavior and children's ability to form and maintain positive relationships with peers (Lindsey & Mize, 2000). The qualities of play in family relationships provide children with the support and the opportunities to experience and practice parallel skills. These characteristics of play are similar to the attributes of peer play, suggesting children may learn these skills at home and subsequently use them in relationships with peers (Russell, Pettit, & Mize, 1998). Parent-child play can involve matching of affective states (Robinson, Little, & Biringen, 1993), turn-taking (Fiese, 1990), synchronous exchanges (Mize & Pettit, 1997), joint determination of the content and direction of play (Black & Logan, 1995), and mutual compliance during play (Lindsey, Mize, & Pettit, 1997a). These qualities are typical of horizontal relationships, which usually occur between individuals who consider themselves as having equal rights, and characteristically are described using terms such as egalitarian, cooperative, symmetrical, fair and collaborative. The more traditional perspective on parent-child interactions is that they represent vertical relationships, which involve unequal distributions of power or authority and interactions that are complementary and asymmetrical (Kochanska, 1992). Vertical aspects of parent-child interactions that are distinct from child-peer interactions include unbalanced power, control, and disciplinary practices (Russell et al., 1998; Russell et al., 2001). Most of these characteristics, however, occur within interactions other than parent-child play, such as discipline and teaching.

It is also evident that children actively contribute to play with parents, so that the form and content of the interactions that emerge are co-constructed (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000). The co-constructed quality of play is another way in which parent-child and child-peer play represent parallel contexts. The uniqueness of play as a developmental context is suggested by evidence that play represents a distinct component of parent-child interaction (Pettit, Brown, Mize, & Lindsey, 1998) and may be differentiated from other domains of the parent-child relationship such as attachment (Kerns & Barth, 1995) or discipline (Grusec & Goodnow, 1994).

Several studies have shown links between attributes of parent-child play and children's social status and behavior (e.g., MacDonald & Parke, 1984). However, the key elements of play that underlie these connections have not yet been isolated. It is possible that the play of socially competent children and their parents is more mutually balanced and that this provides a context for practicing regulation of the pace, focus, or affective tone of an interaction episode. In addition, Russell et al. (1998) proposed that parents who are better able to assume the role of a horizontal play partner, by means of turn- taking and sharing power with children, have children who benefit in terms of more skillful peer interactions and positive peer relationships. That is, competent children may come from parent-child dyads within which play is characterized by equality, rather than by one partner dominating the other. Such a balanced pattern of interaction between parent and child may be important in providing children with knowledge and skills that prepare them to establish positive, reciprocal relationships with individuals outside the family.

Paternal Influences on Children's Development

Before expanding upon the research on the relations between parent-child play and social competence, it is important to recognize that parents are not a singular group. The majority of the research that has contributed to our understanding of socialization has focused exclusively on the roles of mothers in children's development (e.g. Fiese, 1990; Mize & Pettit, 1997; Robinson et al., 1993). Despite acknowledging the importance of examining paternal contributions to development, few researchers have done so (Lindsey, Mize, & Pettit, 1997a; Parke, 1995). To the extent that researchers have examined fathers, most studies have simply documented mother and father differences in play without looking at whether the contributions of two parents may differentially affect social development (Parke, 1995). Research is beginning to demonstrate that mothers and fathers both play important roles in the socialization of their children, but that their roles differ.

Despite the relative paucity of research on the relations between father's childrearing and children's social competence, there are strong reasons to believe that fathers may contribute in unique ways to children's social adjustment, through fathers' special styles of interacting, namely play (Parke, 1995). Although in general fathers spend less time with their children compared to mothers, a greater proportion of the father-child time is spent in play (Clarke-Stewart, 1978; MacDonald & Parke, 1986). Kotelchuck (1976) found that fathers devote nearly 40% of their time with their infants in play, while mothers spend about 25% of their time in play. Lamb (1977) found marked differences in the reasons that fathers and mothers pick up their infants: fathers were more likely to hold the babies to play with them, whereas mothers were more likely to

hold them for caretaking purposes. In fact, children seem to prefer fathers over mothers as playmates, as children initiate more play with their fathers than with their mothers (Russell & Russell, 1987). Thus, play may be a domain where children's relationships with their fathers take on particular salience for children. Given that children's early peer interactions occur primarily in the context of play, the behaviors children learn and practice while playing with their fathers may be especially important to their interactions with peers.

One of the most widely recognized differences in the play behaviors of mothers and fathers lies in their most typical forms of play. Fathers and mothers differ not only in quantity of play but in the style of play as well. Fathers' play is more likely to be physical and arousing, whereas mothers' play is more verbal, didactic, and object-mediated (e.g., Carson, Burks, & Parke, 1993; Parke, 1979; Parke & Tinsley, 1981, 1987; Power & Parke, 1982). Object-mediated play is characterized by the use of a toy or object as the focus of play. Parke and his colleagues have documented a connection between parent-child physical play and children's social competence (Carson, Burks, & Parke, 1993; MacDonald & Parke, 1984). Although definitions vary, physical play is primarily characterized by rough and tumble activity such as wrestling, gross motor activity such as banging toys together, or by affectionate activity such as tickling (Lindsey, Mize & Pettit, 1997b). Other researchers have found a connection between parent-child pretense play and children's peer relationship skills (Dunn & Brown, 1994). Pretense or pretend play is primarily characterized by the use of role transformations and relabeling of objects (Lindsey et al., 1997b). In a study examining parent play with their preschool-aged child, both boys and girls were more likely to engage in pretense play in

the presence of mothers than in the presence of fathers (Lindsey et al., 1997b; Lindsey & Mize, 2001a). In addition, mothers were more likely to comply with children's play directives than were fathers. Thus, it seems as though both physical and pretense play between parent and child are associated with social skilfulness and that mothers and fathers use these types of play differently.

MacDonald and Parke (1984) observed mothers and fathers interacting separately with their preschool-aged children. They, like others, found that fathers engaged in more physical play than mothers, whereas mothers engaged in more object-mediated play. Fathers' physical play was associated with children's peer competence as measured by teachers' reports of child popularity and acceptance, and observations of peer interactions. However, mothers' physical play did not predict children's peer competence, and object-mediated play also did not predict social competence. This suggests that fathers may be particularly important socializers of children's competent behaviors with their peers.

Two important qualities of parent play that seem to be important for the relationship between parent-child play and social competence are mutuality and involvement in the play. Lindsey and Mize (2000), for example, examined the connections between parent-child pretense and physical play and preschool-aged children's social competence. They found that the most consistent pattern of correlations between parent-child play behavior and children's social competence involved mutual compliance, defined as balanced amounts of compliance to each partner's play initiations. Mother-child mutual compliance during both pretense and physical play was associated with teacher ratings of children's social competence. Father-child mutual compliance

during physical play was linked to children's peer acceptance scores. Interestingly, parent-child mutuality predicted children's social competence even after controlling for individual measures of parent and child behavior, including parent compliance or child compliance alone. Lindsey, Mize, and Pettit (1997a) also examined links between mutuality in parent-child play and children's social competence in a group of preschoolers. Only father-child mutual compliance, defined as the balance in compliance to play initiations between father and child, was associated with children's social competence (rated by teachers) and peer acceptance (rated by peers), after controlling for each individual's contribution to the interaction. The fact that only father-child mutual compliance, and not mother-child mutuality, consistently predicted competence adds evidence to the body of literature suggesting that father-child play bears special significance for young children. Father-child mutual compliance may index a bi-directional process in which both partners willingly collaborate in the construction of joint play outcomes (Russell, Pettit, & Mize, 1998) and it may be that mutuality is indeed a horizontal quality of the parent-child relationship.

Parental involvement in play has also been found to be an important quality of parent-child play. In a study examining three to five-year-old popular and rejected boys' and girls' interactions with their mothers and fathers in a free play session, dyads involving popular children and their parents engaged in play bouts for a longer period than dyads involving the rejected children and their parents, particularly when the popular children were with their fathers (Carson, Burks & Parke, 1993). In addition, Barth and Parke (1993) examined the links between time engaged in parent-child physical play and children's social adjustment at school. The amount of both mothers'

and fathers' physical play was positively related to social adjustment in school. In addition, a questioning and nondirecting, as opposed to a directing, parenting style during play interactions was predictive of favorable school behaviors. Lindsey and Mize (2000) also found that mother involvement in pretense play was associated with teacher ratings of competence and peer acceptance for girls, whereas father involvement in pretense play was associated with boys' and girls' teacher-rated competence. In both of these studies, physical play by both mothers and fathers was associated with social competence, suggesting it is an important context for socializing children's skilled peer behavior.

Pettit et al. (1998) identified the salience of involvement by examining the links between parent-child play and preschool-aged children's peer competence. Mothers and fathers were asked to play, separately, with their child as they normally would in the laboratory with a variety of toys. For the next play segment, an unknown peer was brought into the room and parents were asked to do what they would normally do if the children were playing together for the first time. Children's peer competence was rated by the child's peers for peer acceptance, and by the preschool teachers for social skillfulness. Fathers who were highly involved in the parent-child play session, i.e. who demonstrated an interest or participated in the child's play, had children who were more socially skilled, whereas no relation was found for mothers. In addition, mothers' involvement in play between their child and an unknown peer predicted lower levels of child competence, whereas fathers' involvement predicted higher levels of competence, as rated by their teachers.

The results from these studies seem to suggest that mutuality and involvement from both mothers and fathers are beneficial for children's adjustment. There was only

one negative correlation for mothers (Pettit et al., 1998), and overall the relations were stronger and more consistent for fathers' play than for mothers' play (Barth & Parke, 1993; Carson, Burks, & Parke, 1993; Lindsey & Mize, 2000; Lindsey, Mize, & Pettit, 1997b; Pettit et al., 1998). Perhaps this association is because physical play seems to be the best context for socializing peer skills and fathers have been shown to engage in this form of play more often than mothers. Conversely, it can be argued that a lack of parental involvement or mutuality in play could be associated with detrimental effects on children's adjustment.

As mutuality is a peer-like quality of play (Lindsey & Mize, 2001b; Lindsey, Mize, & Pettit, 1997a; Russell, Mize & Saebel, 2001), the studies described above provide evidence for the fact that the role that parents assume during play with their child is related to children's social adjustment. Specifically, parents who assume roles that parallel those which peers take on during play (such as turn-taking and mutual compliance), may be especially beneficial for children's social development. Russell, Mize, and Saebel (2001) designed the parent-toddler play coding scheme (PTPCS) based on the vertical/horizontal distinction, in order to develop codes that assessed "peerlike" qualities in parent-child play. Three parental play roles were outlined: Director, Facilitator and Coplayer. In the Director role, the parent organizes the play, takes charge and assumes responsibility for the play. In the Facilitator role, the parent validates and supports the child's activity, and encourages the child's ideas, so that the direction of the play is shaped mostly by the child. Finally, a Coplayer engages with the child as an equal playmate, so that the play is jointly constructed by parent and child. Research using the PTPCS found that the Director role was used more in physical play than in toy play

whereas the Facilitator role was used more in toy play than in physical play (Russell, Pettit, & Mize, under review; Russell & Staebel, 1997). Parents who were classified as having mainly a Director role were found to rate social skills as more important for children than parents classified as having mainly a Facilitator role. In addition, if parents used the Facilitator role more with their children, children were rated as higher on enthusiasm/self-esteem, playfulness, assertiveness, and cheerfulness during peer play than were children whose parents used the Facilitator role to a lesser degree. If the Director role was more salient in the behavior of parents, children were rated as lower on autonomy, positive affect, engagement in play and on directing attention to the other during play. This may mean that parents who adopted the role of Director saw their children's social difficulties and were trying to actively improve their children's skills, whereas parents of more competent children were comfortable letting their children play as they wished. Finally, parents who used the Coplayer role more with their girls had girls who were rated as higher on positive affect and initiations in the peer play situation. This same effect was not found in boys.

Taken together, mothers and fathers seem to provide children with distinctly different types of stimulation and learning opportunities (Power & Parke, 1982). These findings suggest that fathers' versus mothers' play involvement may have differential salience for children's peer competence. Specifically, fathers may be particularly beneficial for children's skilled social development.

Gender Effects of Children

There is evidence that the characteristics of parent-child play differ as a function of gender of the child. Parents seem to adjust their play styles to match their children.

Lindsey and Mize (2000) found that mothers engaged in more joint play with daughters in the pretense play session than they did with sons, whereas fathers engaged in more joint play with sons during the physical play session than they did with daughters. Moreover, parents of girls were more likely to be involved in pretense play than parents of boys. Fathers of boys were more likely to be involved in physical play than fathers of girls or mothers of boys or girls. Sequential analysis revealed that parents of girls were somewhat more likely to comply with their children's play leads than were parents of boys (Lindsey & Mize, 2001a; Lindsey et al., 1997b).

Although MacDonald and Parke (1984) found that paternal physical play was associated with peer popularity and acceptance, this effect was moderated by child gender. Specifically, fathers' physical play predicted boys' social competence more strongly than girls. In addition, paternal directiveness was negatively related to popularity for boys and girls as well as peer acceptance in boys, while maternal directiveness was positively linked with popularity for girls. Similarly, although Pettit et al. (1998) found that mothers and fathers who were highly involved in the play session had children who were more socially skilled, this effect was moderated by child gender. Both mothers and fathers who were highly involved in the play session had boys, but not girls, who were rated as more accepted by their peers. In addition, mothers' involvement in play between their child and an unknown peer predicted lower levels of child competence, whereas fathers' involvement predicted higher levels of competence, as rated by their teachers. Both of these effects were stronger for boys than for girls.

A number of studies have documented that boys and girls experience different types of play with boys being the recipients of physical play more often than girls, and

girls the recipients of more pretense play than boys when engaging in play behavior with their parents (Lindsey et al., 1997b). This pattern is seen in children as young as a few months old (Parke, O'Leary, & West 1972) to preschool-aged children (MacDonald & Parke, 1984).

Taken together, the results of these studies suggest that parents may contribute to children's gender-specific styles of play, and model particular play behaviors and/or provide differential patterns of reinforcement to sons and daughters. In other words, if physical play predicts better social behavior in children, and boys are more often the recipients of this form of play, then one can conclude that boys should be expected to be, overall, more socially skilled. However, this argument could also hold true for girls as they are more often the recipients of pretense play and that form of play has also been shown to have positive effects on social development. Possibly, boys and girls learn distinct social lessons from their play experiences that contribute to gender-specific forms of social competence. A closer examination of these gender differences is warranted.

Anxiety

Given the benefits of social competence discussed earlier, it is noteworthy that a large number of children experience difficulties adjusting to the transition from a home environment to a school-based one. In fact, kindergarten teachers have reported that over 40% of their new students do not exhibit the degree of social and emotional competence considered to be "normal" for their age group (Rimm-Kaufman, Pianta, & Cox, 2000). Internalizing disorders are pervasive in childhood, with 5.7% - 17.7% of children suffering from anxiety disorders (Costello & Angold, 1995). These statistics do not include the multitude of children who suffer from sub-clinical levels of internalizing

problems. Children with internalizing problems are prone to inappropriate or excessive and prolonged experiences of sadness, fear, anxiety, and worry (Zahn-Waxler, Klimes-Dougan, & Slattery, 2000). Children with internalizing problems often suffer from a myriad of physical (e.g. headaches and stomach-aches), social (e.g. social avoidance and inadequate social skills), and academic difficulties (Siqueland, Kendall, & Steinberg, 1996). Problems at school often arise from refusal to attend school, problems in academic work (Siqeland et al., 1996), and social difficulties. Internalizing problems in childhood have been found to show significant stability over time (Barrios & Hartmann, 1988; Bruch & Cheek, 1995; Majcher & Pollack, 1996; Rubin, Burgess, & Hastings, 2002). The development and stability of internalizing problems is influenced by the experiences children have, such as variations in parental socialization (Baumrind, 1967; Dumas, LaFreniere, & Serketich, 1995; Rubin, Hastings, Stewart, Henderson, & Chen, 1997; Rubin et al., 2002; Siqueland et al., 1996).

Numerous investigations have identified specific parenting variables that are associated with children's internalizing problems (Dumas et al., 1995; Rubin et al., 2002; Rubin et al., 1997; Siqueland et al., 1996). In particular, parents who are over-involved, controlling, and over-protective are thought to prevent their children from facing and overcoming challenging situations, which prevents the children from developing a sense of independence and autonomy (Barber, 1996). These factors have been found to predict children's internalizing problems. For example, Rubin, Burgess, and Hastings (2002) found that mothers who were intrusively controlling of their toddlers, had children who were more behaviorally inhibited (i.e. anxious, distressed or wary in unfamiliar or challenging situations) and socially reticent at age 4. Children of mothers who were

neither intrusive nor derisive, on the other hand, were not found to be inhibited or socially reticent at age 4. In other words, maternal behaviors moderated the relation between toddler's peer inhibition and preschoolers' social reticence. To the extent that parents' play behaviors mirror these parenting styles, certain predictions can be made in the present study. For example, a more controlling or over-involved style can be seen in parents who engage in the Director role whereas parents who engage in the Coplayer role would be characterized as more mutually responsive and reciprocal. Thus, parents who engage in more of a supportive style with children who are at risk for internalizing problems may have beneficial effects on their social development. On the other hand, parents who engage in more of a controlling and directive style with children who are at risk for internalizing problems may hinder their children's social development.

In order to measure parenting play styles, two main observational contexts have typically been used. In one methodology, parent-child dyads are placed in a room with a variety of toys (such as Nerf ball and bat, puppets, dolls, dinosaur figures, blocks, etc.) thought to elicit various types of play (such as physical or pretense), and are asked to "play as you normally would" for a period of time (see Pettit et al., 1998; Lindsey & Mize, 2000). In another methodology commonly used, parent-child dyads are placed in a room and asked specifically to play a certain way for a period of time, such as "in physical manner such as tickling or wrestling", and are given toys to elicit that form of play (see Barth & Parke, 1993). In some studies both methodologies are combined; parents are asked to first play as they normally do, and then asked to engage in a specific type of play with their child (see MacDonald & Parke, 1984), creating two separate play sessions.

In all of the reviewed studies on parent-child play, hand puppets were used as one of the toy choices. Puppets were effective for eliciting fantasy, instructional, physical and other forms of play. Thus, puppets are a useful technique to elicit a broad range of interaction possibilities and one that both children and adults find engaging and amusing.

Several limitations of the studies described above warrant attention. One limitation of this literature is that researchers have only studied normative, i.e. non-clinical, samples. It is not clear that the same processes would be in place for children with anxiety problems, who are particularly at risk of experiencing social difficulties. Thus, research examining the associations between parent-child play and social competence is greatly needed for these populations of children. Do fathers and mothers play differently with anxious children compared to non-anxious children? Does parent play predict the same benefits? If the benefits are just as great in children with anxiety problems then intervention programs could be developed in order to assist these children and their families with learning socialization strategies, such as play styles that parallel peer-play, to improve children's adjustment.

Second, many studies used quite different definitions of social competence. In some of the studies described earlier, the researchers were predicting children's adjustment with strangers in a laboratory setting and not with familiar peers (Pettit, Brown, Mize, & Lindsey, 1998). Many preschool-aged children tend to be anxious with children who are unknown to them, and a familiarization period is critical for these children to become more socially comfortable (McDonnell & Beck, 1986). In fact, of the 65% of children who can be classified into a temperament type (such as difficult, easy and slow to warm up), 15% of them are temperamentally characterized as "slow to warm

up" (McDonnell & Beck, 1986). Slow to warm up, cautious, or fearful children respond negatively to new situations and people and adapt to them slowly. Once the child becomes accustomed to a new situation, however, she feels comfortable and demonstrates more positive and outgoing behavior. Thus, studies in which children are asked to interact with strangers are probably underestimating the proportion of socially skilled children and may not be generalizable to a normal situation.

Preschoolers who still display withdrawn and socially wary behavior after an adjustment period has occurred, in which they have become familiar with their peers, could more accurately be described as more anxious or less socially competent. The school is one context where this can be examined. As the peers become familiar, within a few months of beginning the school year, children who still display anxious behavior would be more accurately defined as less socially competent. Thus, using teacher reports of levels of social competence in individual children may be highly useful because teachers, more than most other individuals in the child's life, spend time with different children and can easily make comparisons among them (Gray, Clancy, & King, 1981). In addition, teachers have the opportunity to observe the children with familiar peers over extended periods of time.

Finally, very few studies have directly examined the differential effects of mothers and fathers on their children's social development. Rather, the literature has tended to focus on maternal and paternal differences in terms of quantity and type of play and not on what roles they assume in play nor how they influence their children's social adjustment. However, for the reasons described earlier, fathers may be contributing in unique ways to children's social development.

The Present Study

Children who display anxiety problems at a young age are more likely than children without anxiety problems to continue to experience problems throughout their development and into adolescence. One protective factor that may help children with these difficulties to become better socially adjusted is socialization from parents who are highly playful and who display a play style that is comparable to the style of play displayed by peers. This seems to be especially relevant for fathers. Parents, especially fathers, who engage in more fantasy and/or physical play tend to have children who are more socially competent. Parents also adjust their play style depending on the gender of their children; for example, they tend to use more of a physical play style with boys.

The goals of the current study are to examine whether parents play differently with more versus less anxious children, to illuminate the potential benefits of parent-child play on more and less anxious children's social adjustment to daycare and preschool, and to determine if fathers make unique contributions to social development. Strengths of this project include utilizing a risk sample, directly comparing mothers and fathers, and examining play as it predicts to social adjustment with familiar peers. Identifying which aspects of parent behavior may contribute to children's more successful social development could lead to parent training programs for parents of children who are at risk for developing anxiety problems.

Hypotheses

1) *Mother-father differences in types of play:* It is hypothesized that, compared to mothers, fathers will engage in more physical play, whereas mothers will engage in more instructional play than fathers.

The use of play types will depend on the nature of:

a) *Children's gender:* Fathers will engage in more physical play with their sons than with their daughters. Mothers will engage in more pretense play with their daughters than with their sons.

b) *Children's levels of internalizing problems:* Although there is no past research on parental play with anxious versus non-anxious children, three exploratory hypotheses were proposed. Parents will be more likely to observe rather than to interact directly with more anxious than with less anxious children. Parents will engage in more physical and fantasy play with less anxious children than with more anxious children.

2) *Mother-father differences in play roles:* Fathers will act as Coplayer more often in their play styles compared to any other play role, and more than mothers. Mothers, on the other hand, will act as Director more often in their play style compared to any other play role, and more than fathers.

The use of play roles will depend on the nature of:

a) Children's levels of internalizing problems: Mothers and fathers will act as Director more often with children who are rated as high on internalizing problems. On the other hand, mothers and fathers will act as Coplayer more often with children who are rated as low on internalizing problems.

3) *Play types predicting social competence:* Parents who engage in more physical and pretense play will have children who are more socially competent. Parents who are more often uninvolved in play will have children who are less socially competent. These associations will be especially strong for fathers.

Moderated by:

a) *Children's levels of internalizing problems:* Fathers who have children at high risk for anxiety problems and who engage in more physical and fantasy types of play will have children who are better socially adjusted in daycare or preschool. This relationship will not be significant for mothers.

4) *Play roles predicting social competence:* Fathers who act as Coplayer more often in their play, will have children who are better socially adjusted. This same relationship will not be significant for mothers.

Method

Participants

Participants were recruited through both open invitation and targeted advertisements in local French and English newspapers, and posters in daycares and preschools in the Montreal area. Targeted recruitment strategies were used to attract children with anxiety problems (e.g. "Is your child shy with other children?"). Parents who responded to the advertisements were called back and given further information about the study and were administered screening instruments over the telephone to determine if their children met criteria for the study. Of the 171 families who responded to the advertisements, 97 families participated in the study: 30 families were seen in the summer of 2001 and 67 families were seen in the summer of 2002. Because the parent-child play procedures were only included in the second year of data collection, only the latter families were included in the current study. In addition, due to the objective of directly comparing mothers and fathers, only two-parent families that completed the interaction in question for this study were included in the final sample. Thus, 55 children and their mothers and fathers were included in the present investigation.

Families that expressed an interest in the study were first screened on the telephone. Children who were not fluent in either French or English, who would not be attending daycare or preschool during the entire academic year, or who suffered from any disability or handicap were excluded from the study. Of the two-parent families screened for the 2002 summer study (n = 65), 5 were excluded from the study for any of the above reasons, and 5 families dropped out of the study for their own reasons (e.g. moved away, child no longer in daycare, etc.).

The 23 male and 32 female children in this sample were currently enrolled in daycare or preschool (for a mean of 20 months). Mean age for the children of this sample was 3.49 (*SD* = .73) with a range from 2.1 and 4.8 years at the time of first contact. In terms of child language, 31 of the children's first language was English, 20 children spoke French predominately, and 4 had a first language other than French or English but were also able to speak either French or English. Fifty of the children were Caucasian.

Of the 55 mothers, the mean age was 35.03 (*SD* = 5.06) with a range from 19 to 46, and average number of years of education was 15.60 (*SD* = 1.94). Thirty of the mothers in this sample had English, seventeen had French, and eight had a language other than English or French as a first language. Fifty-one of the mothers were Caucasian, two were Asian/Indian, and one was Hispanic. Of the 55 fathers, the mean age was 37.43 (*SD* = 5.74) with a range of 25 to 55, and average number of years of education was 15.11 (*SD* = 2.41). Twenty-four of the fathers in this sample had English, twenty had French, and eleven had a language other than English or French as a first language. Fifty of the fathers were Caucasian, one was Asian/Indian, one was Hispanic, one was middle eastern/north African, and one was of an ethnic background other than the 4 listed above. Family income ranged from 10, 000 to over 200, 000 dollars a year (*M* = 80,000 – 90,000).

Children were assigned to high and low anxiety groups by performing a median split on their broadband internalizing problems T-scores from the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2000; Appendix A). The median was 53, thus children with a score of 53 and above were classified as "high" and children with a score below 53 were classified as "low". For females, 18 were rated as "high" on internalizing

problems and 14 as "low" whereas for males, 11 were rated as "high" and 12 as "low" on internalizing problems.

Of the 55 children in this study, three of their preschool teachers or supervisors did not complete the report on school adjustment. Two of these children had dropped out of daycare and one child's teacher failed to return the questionnaire. Therefore, 52 teachers from 45 different daycares/preschools completed the questionnaire. There were 29 English and 23 French teachers, and all were female.

Measures

The Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2000).

For the initial screening, a shortened version of the original CBCL was used. The shortened CBCL included 40 items from the original scale (which contains 100 items), with 13 positively worded items that were added as fillers. All items relating to the externalizing dimension were excluded for the purposes of this study so that all questions related to only internalizing problems. Responses ranged from not true, somewhat or sometimes true, to very or often true. T-scores were obtained for the narrow-band scores of emotionally reactive, anxious/depressed, withdrawn, and social problems, as well as the broad-band internalizing score. For the current study, primarily the broad-band internalizing dimension was of interest. The CBCL has high test-retest reliability, ranging from .68 to .87 on the syndrome profiles and .90 on the internalizing dimension (Achenbach & Rescorla, 2000). In addition, it has moderate cross-informant agreement with reliability coefficients (Pearson correlations) of .59 on the internalizing dimension, and ranging from .48 to .66 on the syndrome profiles. Finally, the CBCL has been demonstrated to have high content validity, supported by the extensive process by which

items were selected and refined, criterion validity, supported by significant discrimination between referred and nonreferred children, and construct validity, supported by concurrent and predictive associations with a variety of other measures.

Social Competence and Behavior Evaluation Scale (SCBE; LaFreniere & Dumas, 1995; Appendix B).

The SCBE is an 80-item questionnaire. Each item is a statement that describes a child's behavior in one of three broad categories: emotional adjustment, social interactions with peers, and social interactions with adults. It yields T-scores for eight specific profiles, three broadband dimensions and one overall level of adjustment. High T-scores on this measure reflect more positive adjustment. For the current study, the interest was in the overall rating of adjustment as well as one of the broadband scores: Social Competence. Items are rated on a 6-point scale from 0: never occurs to 5: almost always occurs. Interrater agreement has been shown to be high, with reliability estimates ranging from .72 to .89. Internal consistency is also high, ranging from .80 to .89. Finally, convergent and discriminant validity of the SCBE was established with substantial correlations with CBCL-TRF (CBCL-Teacher Report Form: Achenbach & Rescorla, 2000) ratings and the ability of each scale to differentiate a smaller clinical sample from the complete sample. Construct validity was further demonstrated with respect to classroom social participation and peer sociometrics (LaFreniere & Sroufe, 1985).

Procedure

The first part of the study consisted of a telephone screening. To assess children's internalizing problems, a telephone-administered screening instrument (the CBCL) was

administered to the mothers. The CBCL, as described above, measures various levels of children's functioning, including internalizing problems. The mean internalizing T-score on the CBCL was 51.24 (*SD* =10.14) with a range from 29 to 76.

During the summer of 2002, each family was seen in their homes for a visit that lasted approximately three hours. Parents provided written consent for themselves and their children (Appendix C); children also provided assent. Each parent was asked to complete a series of tasks with their child including telling a story, playing with puppets, working on a puzzle, finishing story stems involving dolls, doing origami and then cleaning up all of the materials. The second task in this series, playing with puppets, was the focus of the current study.

Parents and children were videotaped as they interacted in a five-minute free play task involving puppets. This play paradigm was designed for the current study but was based on several other paradigms used in the literature on parent-child play (see Russell, et al., 2001; Lindsey & Mize, 2000). The parent-child dyads were given a box of 8 puppets: 2 child puppets (1 girl and 1 boy), 2 adult puppets (1 woman and 1 man), 2 professional adult puppets (either a nurse and a mailman, or a construction worker and a policeman) and 2 animal puppets (a lion and a frog). Parents were asked to "play as you normally would if you were at home and had some free time together." Children were observed interacting separately with each parent. The order of mother-child and father-child interactions was counter-balanced across families. Within this sample, 29 of the mother-child dyads were observed first.

Upon completion, each child was given one gift worth a value of $5 to $10. Each parent received $20 for the home visit.

Finally, in December, teachers were mailed questionnaires and were asked to report on children's adjustment to daycare or preschool and their social and emotional competence. The questionnaire package included a series of questionnaires, one of which was the SCBE. The SCBE was completed and returned by 52 teachers who each received $10 for their completion of the questionnaire package. Teachers' ratings of children's general adaptation on the SCBE yielded *T* scores ranging from 32 to 70 (M = 49.44, SD = 10.26), and ratings of children's social competence on the SCBE yielded *T* scores ranging from 30 to 70 (M = 50.92, SD = 8.01).

Coding

Two aspects of parents' involvement in play were assessed from the puppet procedures: Types of play and Roles in play. For more detailed descriptions of each code, please refer to Appendix D for the detailed coding manual.

The types of play codes were developed from the coding scheme used by Lindsey, Mize and Pettit (1997, 1998, 2000, 2001). This modified scheme included eight codes: Affectionate Physical Play, Rough and Tumble Physical Play, Fantasy, Instructional: Rules of Play, Instructional: Familiarize with Materials, Instructional: Teach about Life, Observer, and Uncodable. Affectionate Physical Play included any minor physical play that reflected warmth and affection such as hugging and tickling. Rough and Tumble Physical Play was coded for major physical activity like chasing or wrestling, as well as any gross motor activity such as banging the puppets together. Fantasy was coded when a parent used the puppets as characters or active agents. It also included verbal relabeling of objects such as "let's say this is their house", role transformations such as "let's pretend this is the uncle", and narration for scenes being enacted. Instructional: Rules of

Play was coded when a parent explicitly taught their child how to play such as "we have to take turns making our puppet speak." Instructional: Familiarize with Materials included: teaching or showing the child how to work puppets, what puppets represent, organizing the puppets, and modeling. Instructional: Teach about Life included any attempt at teaching the child something to do with reality such as "this is the mailman and he delivers letters to people." Observer was coded when the parent simply watched the child playing, without doing anything him/herself. Finally, Uncodable was given when the dyad was either off-camera or when what they were doing was unidentifiable.

The types of play were coded using 10-second time samples. For each time segment, each type of play was coded as 0 (absent), 1 (slightly present; that play type only occured once or twice at mild intensity), or 2 (strongly present; the play type occurred more than twice per segment, or was present for most of the segment). The codes for type of play were not mutually exclusive; therefore, more than one type of play could occur within a given time segment.

The parental role codes were based on research by Russell, Mize, and Saebel (2001) and included: Director, Facilitator, Coplayer and Uncodable. A Director was a parent who ran the agenda, was in control of the play by determining and shaping the form and content of play, and prevented the child from taking any initiative. This was usually not aggressively intrusive or controlling, but nevertheless had the feature of being parent-centered. A Facilitator was a parent who was child-centered, who explored or expanded on the child's idea(s), but who did not put in his/her own input. A Coplayer was a parent who acted as the child's playmate by being equal to the child, and by jointly shaping the direction of play with the child. Once again, Uncodable was coded when the

dyad was off-camera or if one could not tell what they were doing. Parents were assigned one of these codes for each 10-second time segment, whichever one was present for the majority of the 10-second segment.

Reliability

The present investigator and a senior undergraduate student independently scored a random 20% of the videotaped mother- and father-child interactions in order to establish inter-rater reliability on the Puppet Play Paradigm (Sullivan & Hastings, 2002). The coefficients are reported in Table 1.

Play types could be coded as 0, 1 or 2 for each time segment, and thus constituted an ordinal scaled response. Intraclass correlations (ICC) were computed to assess coder agreement. ICCs for play type ranged from .83 to .99 with a mean of .85. The exception to this was for Uncodable, which had an ICC of .40. This was due to the exceptional rarity of this code, which occurred only 6 times in 614 observed time segments. This code was dropped from all further analyses.

Because Roles were mutually exclusive codes within each time segment, a Kappa coefficient was calculated for parental play roles, $\hat{e} = .67$. Examination of coders' differences revealed that the disagreements more frequently occurred between Facilitator and Coplayer ($n = 26$), or Coplayer and Director ($n = 26$), than between Director and Facilitator ($n = 9$). The Coplayer role can be conceptualized as involving intermediate levels of parental control or leadership during play, compared to Facilitator (low) or Director (high), indicating that the coders agreed on codes that were more similar in definition.

Table 1

Inter-Rater Reliabilities for Type of Play Codes

Variables	Intraclass *r*
Affectionate Physical	.99
Rough and Tumble	.88
Fantasy	.92
Instructional: Rules of Play	1.0
Instructional: Familiarize	.92
Instructional: Teach about Life	.83
Observer	.85
Uncodable	.40

Note Parental types of play were rated on a 3-point scale (from 0 = *not at all*, to 2 = *very*).

Results

Descriptive Statistics

In order to account for the fact that each parent interacted with their child for different periods of time (M = 276.2 seconds, SD = 47.75 seconds, *range:* 110 to 510 seconds), scores for all of the parent behaviors were proportionalized by total number of time segments. Thus, for types of play, all codes (of 0, 1 or 2) were summed for each parent, then divided by total number of time segments. Consequently, these scores are proportionalized play types with a range of zero to two for each parent. Because parental play roles were mutually exclusive, the totals for each role were summed and divided by the total number of time segments. Consequently, proportionalized parental roles correspond to percentage of time segments spent in each role, and sum up to one (100%) for each parent. Descriptive statistics for all of the proportionalized parenting behaviors are presented in Table 2.

Only 7 mothers and 8 fathers behaved at any time in accordance with the definition of Instructional: Rules of Play. Within this group, mothers used this play type a maximum of 4 times during the entire interaction, and fathers used this play type a maximum of once during the entire interaction. Therefore, due to lack of variability, this code was dropped from all further analyses. In addition, the following codes had negatively skewed distributions: affectionate physical play, rough and tumble, teach about life, and observer for both mothers and fathers. To correct for skew, all outliers (values that were more than 2.5 standard deviations above the mean) were assigned a value equal to 2.5 standard deviations from the mean. In total, 22 outliers were corrected, after which there were no skews.

Table 2

Means and Standard Deviations for Parenting Codes

Variables	Mothers	Fathers
Affectionate Physical Play	.19 (.27)	.34 (.56)
Rough and Tumble Play	.03 (.07)	.09 (.12)
Fantasy Play	1.09 (.37)	1.05 (.40)
Instructional: Rules of Play	.01 (.03)	.07 (.02)
Instructional: Familiarize with Materials	.61 (.21)	.67 (.29)
Instructional: Teach about Life	.11 (.11)	.08 (.08)
Observer	.09 (.13)	.13 (.15)
Uncodeable	.02 (.04)	.01 (.04)
Director Role	.50 (.24)	.21 (.22)
Facilitator Role	.27 (.17)	.35 (.18)
Coplayer Role	.22 (.19)	.43 (.24)
Uncodeable	.01 (.05)	.01 (.05)

Note. All parent codes are proportionalized according to total interaction time.

Mother-Father Differences in Types of Play

In order to examine the hypothesis that mothers and fathers used the types of play differently, a 2×6×2×2 repeated-measures analysis of variance was conducted. Preliminary analyses revealed that there was no parent-order effect present for use of parental play types. Therefore, parent order was not controlled for in this analysis. The analysis included two within-subjects variables, Parent Gender (2 levels) and Play Types (6 levels), and two between-subjects variables, Child Gender (2 levels) and level of Internalizing Problems (2 levels: high or low). The proportionalized play type scores were the dependent variables (see Appendix E.1). Analyses revealed main effects of Parent Gender and Play Types, and also a trend for an interaction between Parent Gender and Play Types, F (5, 255) = 2.07, p = .07. Follow-up paired t-tests for mother and father play types indicated that fathers used significantly more Affectionate Physical, t (54) = -2.40, $p < .05$, as well as Rough and Tumble types of play, t (54) = -3.47, $p < .01$ than mothers (see Table 2 for the means and standard deviations).

Child Gender. As indicated in the above analysis, mothers and fathers did not use types of play significantly differently with boys and girls.

Child Internalizing Problems. In addition, contrary to hypotheses, mothers and fathers did not use types of play significantly differently with more versus less anxious children.

Mother-Father Differences in Play Roles

In order to examine the hypothesis that mothers and fathers used the play roles differently, three repeated-measures analyses of variance were conducted. Due to the fact that the three proportioned parental roles were mutually exclusive and sum to one for

each participant, separate analyses of variance were performed for each play role. Preliminary analyses revealed that a parent-order effect was present for use of parental roles. Fathers used the role of Facilitator more often when they went first (M = .42 versus M = .30 if went second). Therefore, parent order was entered as a covariate in all further analyses of roles.

Director. First, the analysis for Director included a within-subjects variable, Parent Gender, and two between-subjects variables, Child Gender and level of Internalizing Problems (high or low) as well as a covariate, Parent Order. The proportionalized Director scores for mothers and fathers were the dependent variables (see Appendix E.2).

Child Internalizing Problems. The ANOVA revealed a significant interaction between Parent Gender and Internalizing Problems for the Director role, F (1, 50) = 8.41, $p < .01$. Follow-up independent samples t-tests for mother and father play roles indicated, contrary to hypotheses, that mothers used the Director role significantly more with their children rated low on internalizing problems (M = .57, SD = .25) than with their children rated high on internalizing problems (M = .44, SD = .21), t (53) = 2.17, $p <$ .05. The t-test was not significant for fathers, t (53) = -1.37. Figure 1 illustrates these results.

Child Gender. The ANOVA also revealed a significant main effect of Child Gender for the Director role, F (1, 50) = 5.52, $p < .05$. Mothers and fathers used the Director role more often with their sons (M = .42, SD = .26) than with their daughters (M = .31, SD = .20).

Facilitator. Second, the analysis for Facilitator included a within-subjects variable, Parent Gender, and two between-subjects variables, Child Gender and level of

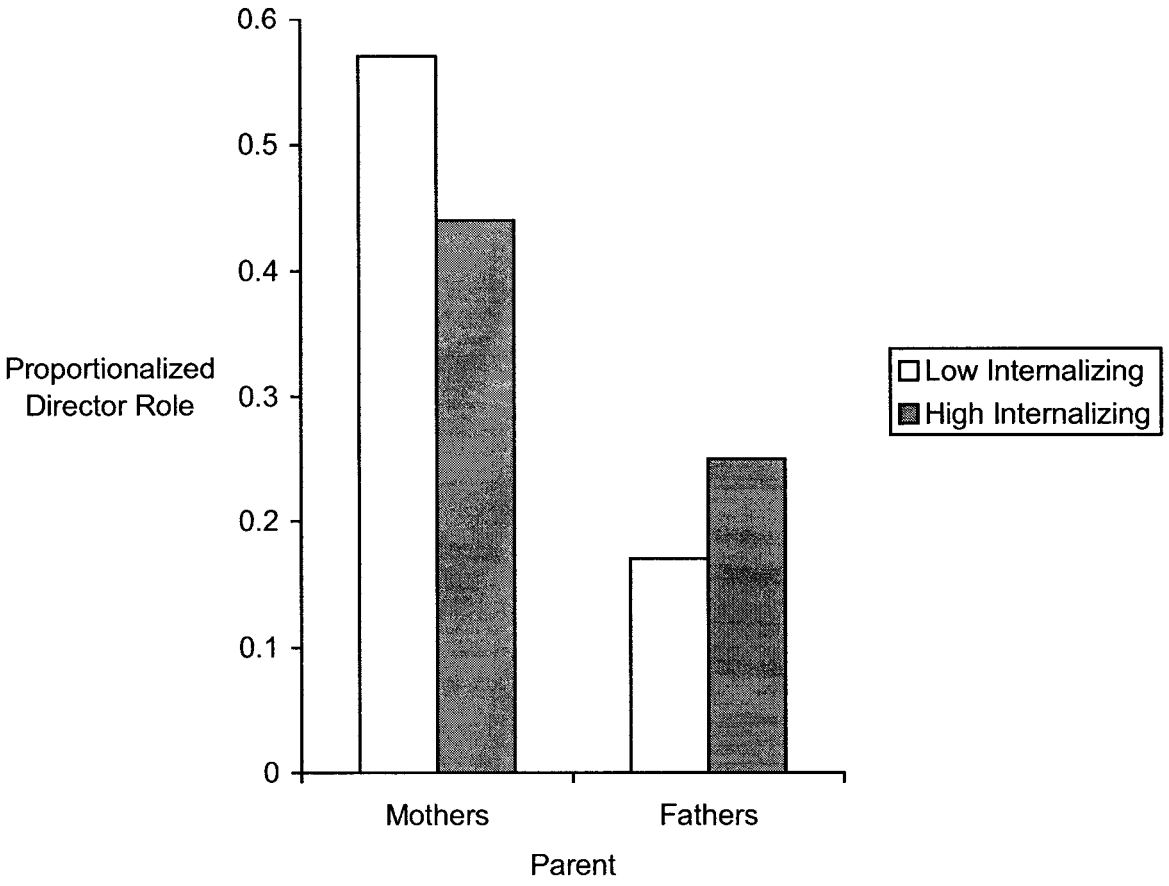

Figure 1. Mother-Father use of Director role as a function of children's level of internalizing problems.

Internalizing Problems (high or low) as well as a covariate, Parent Order. The proportionalized Facilitator scores for mothers and fathers were the dependent variables (see Appendix E.3). A trend for a main effect of Parent Gender was indicated, F (1, 50) = 3.74, p = .059. Fathers used the Facilitator role significantly more than mothers did (see Table 2).

Child Internalizing Problems. The ANOVA revealed a significant interaction between Parent Gender and Internalizing Problems for the Facilitator role, F (1, 50) = 9.01, $p < .01$ (see Figure 2). Follow-up independent samples t-tests for mother and father play roles indicated that mothers used the Facilitator role significantly more with children rated high on internalizing problems (M = .33, SD = .18) than with children rated low on internalizing problems (M = .20, SD = .13), t (53) = -2.98, $p < .01$. The t-test was not significant for fathers, t (53) = .82. In addition, a paired samples t-test revealed that mothers and fathers differed in their use of the Facilitator role only with children rated as low on internalizing problems, t (25) = -4.36, $p < .001$, and not high on internalizing problems, t (28) = -0.09, *ns*.

Child Gender. The ANOVA also revealed a significant main effect of Child Gender for the Facilitator role, F (1, 50) = 4.13, $p < .05$. Mothers and fathers used the Facilitator role more often with their daughters (M = .34, SD = .18) than with their sons (M = .28, SD = .16).

Coplayer. Third, the analysis for Coplayer included a within-subjects variable, Parent Gender, and two between-subjects variables, Child Gender and level of Internalizing Problems (high or low) as well as a covariate, Parent Order. The proportionalized Coplayer scores for mothers and fathers were the dependent variables

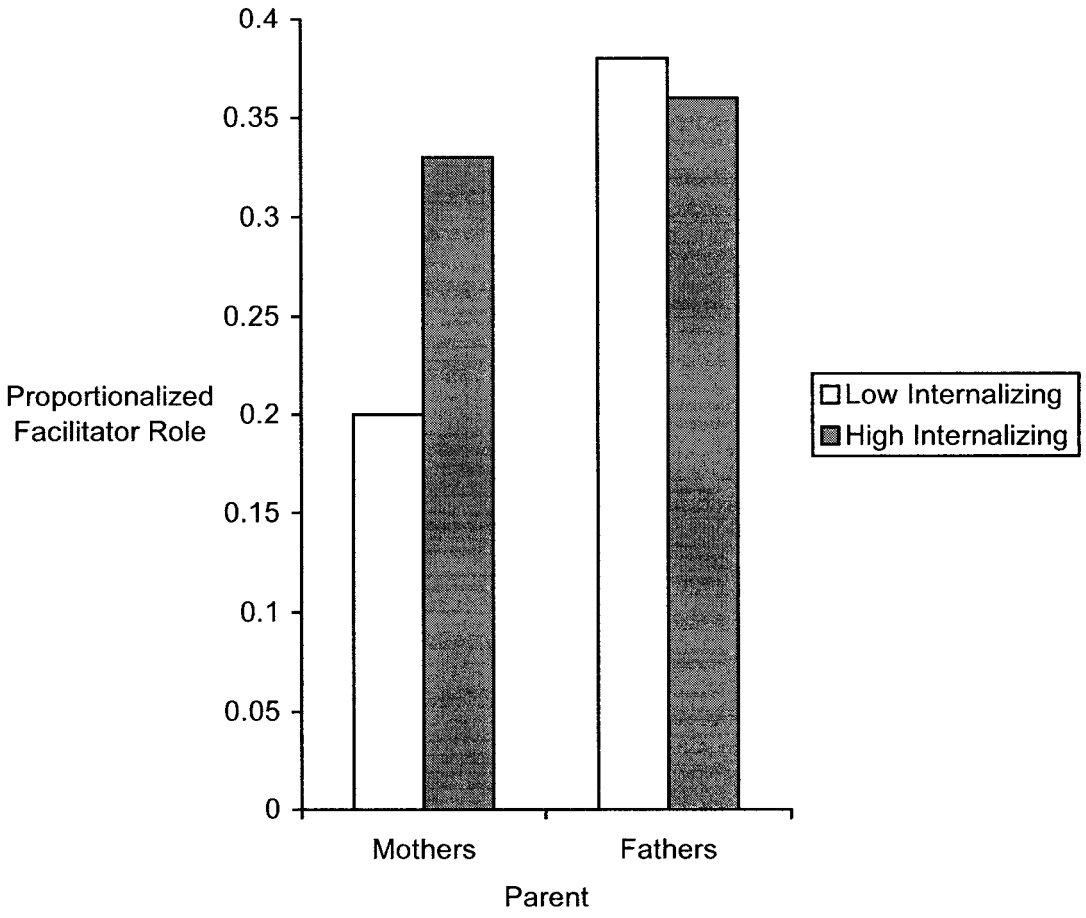

Figure 2. Mother-Father use of Facilitator role as a function of children's level of internalizing problems .

(see Appendix E.4).

A significant main effect of Parent Gender was indicated, F (1, 50) = 4.61, $p <$ .05. Fathers used significantly more of the Coplayer role than mothers (see Table 2).

Child Internalizing Problems. Contrary to hypotheses, mothers and fathers did not act as Coplayer significantly differently with children rated as high or low on internalizing problems.

Child Gender. Mothers and fathers did not act as Coplayer significantly differently with their boys or girls.

Correlations

Correlational analyses were conducted as a preliminary examination of the associations between parental play types and roles and the two measures of social adjustment (see Table 3). Results indicated a significant association between maternal observer behavior and children's general adaptation as well as social competence. Thus, mothers who often acted as an observer in the parent-child interactions, had children who were rated as both less generally adapted and less socially competent by their teachers.

In addition, a significant association between maternal Coplayer role and social competence was found. Thus, mothers who often acted as Coplayer during the parent-child play interactions, had children who were rated as more socially competent by their teachers. No significant associations between paternal play types or roles and children's

Table 3

Correlations between Parenting Types and Roles and Social Adjustment for Mothers and Fathers

	Mothers		Fathers	
Variables	GA	SC	GA	SC
1.Affectionate Physical	-.01	-.04	-.20	-.13
2. Rough and Tumble	-.16	-.05	-.05	-.04
3. Fantasy	.12	.18	.14	.06
4. Familiarize	.10	-.10	-.09	-.05
5. Teach about Life	-.07	-.08	.15	.10
6. Observer	-.34*	-.42**	.08	.11
1. Director	-.06	-.12	.06	-.04
2. Facilitator	-.18	-.23†	-.20	-.09
3. Coplayer	.25†	.37**	.10	.11

Note. GA = General Adaptation scale of the SCBE, SC = Social Competence scale of the SCBE

$^{\dagger}p<.10$, $*p<.05$, $**p<.01$, $***p< .001$.

social adjustment were found.

Hierarchical Regression Analyses: Types of Play Predicting Social Adjustment

Overview. In order to explore the relations between children's internalizing problems, the parental play types, and the various outcome variables, a series of hierarchical regression analyses was performed. The goal of these analyses was to assess the extent to which the various types of play predict the indices of children's social competence. Preliminary analyses revealed that there were no significant interactions between parental play types and children's internalizing scores for the prediction of social adjustment. Therefore, these were not included in the regressions. Separate regression equations were computed for mothers' and fathers' use of the types of play to predict each of the outcome variables. Outcome variables were *T*-scores on the SCBE for general adaptation and social competence. Therefore, four regression analyses were initially conducted. Child gender was controlled for by entering it as a covariate in the first step of the regression equations.

Types of Play for Mothers. Rough and Tumble Physical Play, having been displayed by only 12 mothers, was not included in the regression analyses for predictions of social adjustment from mother-child play interactions. Results for the regression analysis relating mothers' play types to teacher reports of children's social competence on the SCBE are presented in Table 4. The first and second steps of the regression were not statistically significant. The third step, however, approached significance $\ddot{A}R^2 = .19$, $p < .10$; 8% of the variability in social competence scores was explained by mothers' use of the five play types together. The standardized beta for maternal use of the Observer play type was significant, such that teachers reported less social competence in children

Table 4

Summary of Hierarchical Regression Analysis for Mother Types of Play as Predictors of Children's Social Competence T-scores on the SCBE ($N = 52$)

Step	$\ddot{A}R^2$	*df*	$\ddot{A}F$	Predictor	*â*	*t*
1.	.02	1, 50	.75	Gender	-.12	-.86
2.	.00	1, 49	.13	Int	-.05	-.36
3.	.19	5, 44	2.07†	Aff	-.15	-.95
				Fan	-.09	-.47
				Fam	-.08	-.39
				Teach	-.04	-.29
				Obs	-.46	-2.87**

Note. Int = Internalizing t-score of the CBCL, Aff = Affectionate Physical play, Fan = Fantasy play, Fam = Instructional: Familiarize with Materials, Teach = Instructional: Teach About Life, Obs = Observer. Final adjusted $R^2 = .08$, $F(7, 44) = 1.61$, *ns.*

†$p<.10$, *$p<.05$, **$p<.01$, ***$p< .001$.

of mothers who acted as Observer more often in the play session, $t = -2.89$, $p < .01$. That is, mothers who were more likely to watch their child play without engaging in play themselves, had children who were seen by teachers as less socially competent.

Results for the regression analysis relating mothers' play types to teacher reports of children's general adaptation on the SCBE are presented in Table 5. The first step of the regression was statistically significant, $\ddot{A}R^2 = .09$, $p < .05$; 7% of the variability in general adaptation scores was explained by child gender alone, such that teachers reported better general adaptation for boys ($M = 53.00$, $SD = 8.62$) than for girls ($M = 46.83$, $SD = 10.71$), $t = -2.17$, $p < .05$. No other steps were significant. The standardized beta for maternal use of the Observer play type was significant, such that teachers reported lower general adaptation in children of mothers who acted as Observer more often in the play session, $t = -2.07$, $p < .05$. That is, mothers who were more likely to watch their child play without engaging in play themselves, had children who were seen by teachers as less well adapted overall.

Types of Play for Fathers. Results for the regression analysis relating fathers' play types to teacher reports of children's social competence on the SCBE are presented in Table 6. None of the steps in the regression accounted for a significant portion of the variance in social competence scores. In addition, no statistically significant effects were found for any predictor variables on their own.

Results for the regression analysis relating fathers' play types to teacher reports of children's general adaptation on the SCBE are presented in Table 7. The first step of the regression was statistically significant, with a main effect of Child Gender (as mentioned earlier). The third step, however, also approached significance $\ddot{A}R^2 = .20$, $p < .10$; 16%

Table 5

Summary of Hierarchical Regression Analysis for Mother Types of Play as Predictors of Children's General Adaptation T-scores on the SCBE ($N = 52$)

Step	$\ddot{A}R^2$	*df*	$\ddot{A}F$	Predictor	*â*	*t*
1.	.09	1, 50	4.94*	Gender	-.30	-2.22*
2.	.00	1, 49	.17	Int	-.06	-.41
3.	.15	5, 44	1.69	Aff	-.21	-1.38
				Fan	.12	.61
				Fam	.31	1.59
				Teach	.08	.52
				Obs	-.33	-2.07*

Note. Int = Internalizing t-score of the CBCL, Aff = Affectionate Physical play, Fan = Fantasy play, Fam = Instructional: Familiarize with Materials, Teach = Instructional: Teach About Life, Obs = Observer. Final adjusted $R^2 = .12$, F (7, 44) = 1.98, *ns.*

$^{\dagger}p<.10$, $*p<.05$, $**p<.01$, $***p< .001$.

Table 6

Summary of Hierarchical Regression Analysis for Father Types of Play as Predictors of Children's Social Competence T-scores on the SCBE ($N = 52$)

Step	$\ddot{A}R^2$	*df*	$\ddot{A}F$	Predictor	*â*	*t*
1.	.02	1, 50	.75	Gender	-.12	-.86
2.	.02	1, 49	.13	Int	-.05	-.36
3.	.11	6, 43	.71	Aff	-.10	-.60
				Rough	.01	.04
				Fan	.38	1.30
				Fam	.23	.88
				Teach	.21	1.27
				Obs	.29	1.34

Note. Int = Internalizing t-score of the CBCL, Aff = Affectionate Physical play, Rough = Rough and Tumble play, Fan = Fantasy play, Fam = Instructional: Familiarize with Materials, Teach = Instructional: Teach About Life, Obs = Observer. Final adjusted $R^2 = .00$, $F(8, 43) = .64$, *ns.*

$^{\dagger}p<.10$, $*p<.05$, $**p<.01$, $***p< .001$.

Table 7

Summary of Hierarchical Regression Analysis for Father Types of Play as Predictors of Children's General Adaptation T-scores on the SCBE ($N = 52$)

Step	$\ddot{A}R^2$	*df*	$\ddot{A}F$	Predictor	*â*	*t*
1.	.09	1, 50	4.94*	Gender	-.30	-2.22*
2.	.00	1, 49	.17	Int	-.06	-.41
3.	.20	6, 43	2.01†	Aff	-.13	-.93
				Rough	-.04	-.26
				Fan	.57	2.19*
				Fam	.31	1.35
				Teach	.36	2.41*
				Obs	.34	1.79†

Note. Int = Internalizing t-score of the CBCL, Aff = Affectionate Physical play, Rough = Rough and Tumble play, Fan = Fantasy play, Fam = Instructional: Familiarize with Materials, Teach = Instructional: Teach About Life, Obs = Observer. Final adjusted R^2 = .16, $F(8, 43) = 2.22$, $p < .10$.

†$p<.10$, *$p<.05$, **$p<.01$, ***$p< .001$.

of the variability in general adaptation scores could be explained by fathers' use of the six play types together. The standardized beta for paternal use of Fantasy play was significant, such that teachers reported better general adaptation in children of fathers who engaged in Fantasy play more often. In other words, fathers who were more likely to engage in make believe play, had children who were seen by teachers as better adjusted overall. A statistically significant main effect was also found for paternal use of Instructional: Teach about Life, such that teachers reported better general adaptation in children of fathers who engaged in the Instructional: Teach about Life play type more often. That is, fathers who were more likely to use the play session to teach their children about real-life things, had children who were seen by teachers as better adjusted overall. Finally, a main effect of paternal Observer play type approached significance, such that teachers tended to report better general adaptation in children of fathers who engaged in the Observer play type more often.

Fathers' Unique Contributions. The unique predictors that had emerged as significant in the prior regressions were entered in a step-wise regression in order to examine the hypothesis that fathers' use of the types of play would predict children's social competence above and beyond mothers' play. Results for the regression analysis relating mothers' and fathers' play types to teacher reports of children's general adaptation on the SCBE are presented in Table 8. The first step of the regression was statistically significant, with the same main effect of Child Gender mentioned earlier. None of the other steps in the regression were statistically significant. However, the main effect of maternal use of the Observer play type remained, $t = -2.01$, $p = .05$. In addition, once controlling for maternal play types, the main effects of paternal use of Fantasy play and

Table 8

Summary of Hierarchical Regression Analysis for Mother and Father Types of Play as Predictors of Children's General Adaptation T-scores on the SCBE ($N = 52$)

Step	$\ddot{A}R^2$	*df*	$\ddot{A}F$	Predictor	*â*	*t*
1.	.09	1, 50	4.94*	Gender	-.30	-2.22*
2.	.00	1, 49	.17	Int	-.06	-.41
3.	.09	3, 46	1.64	MFan	-.03	-.19
				MTeach	-.03	-.19
				MObs	-.31	-2.01*
4.	.10	3, 43	2.06	FFan	.29	1.78†
				FTeach	.27	1.79†
				FObs	.21	1.38

Note. Int = Internalizing t-score of the CBCL, Mfan = Mother Fantasy Play, Mteach = Mother Instructional: Teach About Life, MObs = Mother Observer, FFan = Father Fantasy play, FTeach = Father Instructional: Teach About Life, FObs = Father Observer. Final adjusted $R^2 = .15$, $F(8, 43) = 2.15$, *ns.*

†$p<.10$, *$p<.05$, **$p<.01$, ***$p< .001$.

Instructional: Teach about Life became trends, such that teachers still tended to report better general adaptation in children of fathers who engaged in Fantasy play, $t = 1.78$, $p < .10$ or Instructional: Teach about Life, $t = 1.79$, $p < .10$, more often. In other words, fathers who were more likely to engage in make believe play or to teach their children about real-life things, had children who tended to be seen by teachers as better adjusted overall. The only father play type that no longer showed a trend, once mother types of play were controlled for, was the Observer type of play. In line with hypotheses, therefore, fathers did seem to make some unique contributions to their children's adjustment above mothers' contributions.

Parental Roles Predicting Social Adjustment. Due to the fact that the three proportionalized parental role scores summed to one for each participant, hierarchical regressions were not possible as a means of examining the relations between the mother-father play roles and children's social competence. Rather, parents were assigned to one parental role group, the one they most frequently used in the interaction with their child. The three roles were seen on a continuum from least amount of control (Facilitator) to the most amount of control (Director). Thus, those parents who spent equal amounts of time in two different roles ($n = 1$), were "coded up" and assigned the role group that was characterized by the use of more control. Forty-six parents were assigned to the Director role (10 fathers and 36 mothers), 26 to the Facilitator role (17 fathers and 9 mothers), and 38 to the Coplayer role (28 fathers and 10 mothers).

In order to examine the hypothesis that mother and father play roles would predict children's social adjustment, two one-way analyses of variance were first computed, separately for mothers and fathers. One analysis including both mother and father roles

could not be computed due to low representation in some cells (e.g. Father Director and Mother Coplayer, n = 3). For mothers, significant main effects were found for both general adaptation, F (2, 49) = 3.15, p = .05, and social competence, F (2, 49) = 6.12, p < .01. The results of these analyses are presented in Table 9. Post-hoc analyses using Tukey tests revealed that children of mothers who used the Coplayer role most often were significantly more well-adapted and socially competent than children of mothers who used the Facilitator role most often (see Table 10 for the means). Adaptation and competence scores of children of mothers who predominately used the Director role were immediate to, and not significantly different than, children in the other two groups. For fathers, no significant effects emerged (see Table 11).

Because child characteristics and order of observing parents were associated with parents' use of different roles, univariate analyses of covariance (ANCOVAs) were carried out to predict social adjustment (general adaptation or social competence on the SCBE) from parental role group after controlling for child gender, level of internalizing problems (high or low) of the child, and parent order. Both analyses remained significant; children varied in their general adaptation, F (2, 46) = 4.08, p < .05 (see Table 12), and social competence, F (2, 46) = 6.43, p < .01 (see Table 13), depending on mothers' role group. The ANCOVAs for fathers' role groups still did not reach statistical significance for general adaptation, F (2, 46) = .59, or for social competence, F (2, 46) = .18.

Table 9

ANOVA Summary Table: Mother Play Roles and Measures of Social Adjustment

Source	Sum of Squares	df	Mean Square	*F*	Eta²
General Adaptation					
Between	612.18	2	306.09	3.15*	.20
Error	4760.65	49	97.16		
Social Competence					
Between	654.40	2	327.20	6.12**	.11
Error	2619.29	49	53.46		

Note. $^{\dagger}p<.10.$, $*p<.05$, $**p<.01$, $***p<.001$.

Table 10

Mean Summary Table: Children's Adjustment T-scores on the SCBE by Mothers' Play Role Group

SCBE Scale	Mother Director (n=33)	Mother Coplayer (n=9)	Mother Facilitator (n=10)
General Adaptation	49.73	54.30	43.00
	(10.47)	(9.70)	(7.14)
Social Competence	51.03	56.30	44.56
	(7.35)	(7.59)	(6.82)

Note. $^{\dagger}p<.10$, $*p<.05$, $**p<.01$, $***p< .001$.

Table 11

ANOVA Summary Table: Father Play Roles and Measures of Social Adjustment

Source	Sum of Squares	df	Mean Square	*F*	Eta²	Power
General Adaptation						
Between	224.66	2	112.33	1.07	.04	.23
Error	5148.16	49	105.07			
Social Competence						
Between	25.19	2	12.60	.19	.01	.08
Error	3248.50	49	66.30			

Note. $^{\dagger}p<.10$, $*p<.05$, $**p<.01$, $***p< .001$.

Table 12

ANCOVA Summary Table: Mother Play Role as a Function of Child Gender, Level of Internalizing Problems, and Parent Order on General Adaptation

Source	Sum of Squares	df	Mean Square	*F*
Parent Order	283.59	1	283.59	3.23†
Child Gender	583.56	1	583.56	6.64*
Internalizing	13.63	1	13.63	.16
Mother Role Group	717.94	2	358.97	4.08*

Note. $^{\dagger}p<.10$, $*p<.05$, $**p<.01$, $***p< .001$.

Table 13

ANCOVA Summary Table: Mother Play Role as a Function of Child Gender, Level of Internalizing Problems, and Parent Order on Social Competence

Source	Sum of Squares	df	Mean Square	*F*
Parent Order	64.04	1	64.04	1.17
Child Gender	62.29	1	62.29	1.14
Internalizing	20.16	1	20.16	.37
Mother Role Group	702.29	2	351.14	6.43**

Note. $^{\dagger}p<.10$, $*p<.05$, $**p<.01$, $***p< .001$.

Discussion

The general objective of the present investigation was to examine the contributions of parents' play behaviors to children's positive social adjustment at preschool or daycare 4-6 months later. Specifically, the goals were to directly compare mothers and fathers on their play behaviors, to examine whether fathers make unique contributions to children's social development, and to determine whether parental contributions are especially relevant for children with internalizing problems.

Several findings emerged from the current study. First, mothers and fathers differed in the ways in which they played with their children, with fathers engaging in more affectionate and rough and tumble physical play. Second, mothers and fathers differed in the roles that they took on during play, with fathers allowing children to direct the play activities more often than mothers. In addition, parents' use of the roles differed as a function of their children. Mothers of less anxious children directed and took control of the play significantly more often than mothers of more anxious children, and mothers let more anxious children lead the play more than less anxious children. Parents also took control of the play more with their sons than with their daughters and let their daughters control the play more than their sons. Third, in terms of social adjustment, teachers reported that boys were overall better adjusted than girls. Mothers who often observed their children playing without participating, had children who were rated as less socially competent and less well adjusted by their teachers. On the other hand, fathers' who engaged in fantasy play and who used the play to teach their children about real-life things, had children who were better overall adjusted to daycare or preschool. Finally,

mothers' use of a more peer-like, horizontal approach in play predicted both social competence and general adaptation in their children.

Parental Types of Play

Clearly, children were having different play experiences with their mothers and their fathers. In line with hypotheses, fathers engaged in both affectionate and rough and tumble physical play more than mothers. This is consistent with previous research (see Carson, Burks, & Parke, 1993; Parke, 1979; Parke & Tinsley, 1981, 1987; Power & Parke, 1982) and has important implications, as this type of play has been found to be most consistently associated with social competence in children (MacDonald & Parke, 1984). Thus, how fathers play with their children is distinct from how mothers play with their children, which may have differential effects on the children's social development. Contrary to hypotheses, however, mothers did not engage in more instruction than fathers. This may be due to the fact that the use of puppets as a play paradigm requires that the parent teach the child how to use the puppets correctly. Due to the young age of the children in this study, and the complexity of the puppets used, almost every parent needed to assist their child in placing the puppets on their hands. As such, instructional play was coded often for each parent, possibly reducing or flushing out potential parent differences.

In addition, use of the different types of play did not differ with either the gender or level of internalizing problems of the children as was predicted. Some prior studies have failed to show that parents play differently with sons and daughters (MacDonald & Parke, 1986; Lindsey & Mize, 2000; Barth & Parke, 1993). Most of the past studies that have found gender differences utilized older samples of children than in the present

study, and thus gender effects may only emerge later in childhood (Lindsey & Mize, 2000; Lindsey, Mize, & Pettit, 1997b). In addition, there may be a generational change, with current parents engaging in less gender-typed behavior than has been seen in the past. In fact, some evidence suggests that fathers are often engaging in physical play with their daughters, which has not been the case before (Lindsey & Mize, 2001). The hypothesis that parents would engage in different types of play depending on their children's level of internalizing problems was exploratory. Perhaps parents are playing similarly with anxious and non-anxious children because there is nothing unfamiliar about the play context. In other words, as the parent is a familiar play partner to the child, and the home a safe context to engage in play, there is nothing stressful to provoke the different behavior patterns of anxious and non-anxious children and thus there may be no reason for parents to play differently with them.

There were interesting relations between these play behaviors and children's social competence. In line with hypotheses, acting as an observer in play was associated with less social adjustment in children. Surprisingly, however, this effect was only significant for mothers. The finding that mothers who act as observers have children who are less socially competent, is consistent with the literature that has shown that parent involvement in play is predictive of positive outcomes (Barth & Parke, 1993; Lindsey & Mize, 2000; Pettit et al., 1998). Acting as an observer is defined as being disengaged and uninvolved; simply observing the child in play and not participating. Thus, children are neither directly nor indirectly learning from the parent when he/she does not contribute to play. There was, however, a weak trend for the opposite effect in fathers; those who acted as observers in play tended to have children who were more well-adapted to

daycare or preschool. However, once mothers' behavior was controlled for, the trend disappeared. Therefore, this parental difference must be interpreted with caution and future research should examine the possibility that mothers' and fathers' uninvolvement in play may have differential effects on children's social development.

Fathers who engaged in more fantasy play or who spent more time teaching their children about real-life things, had children who were more well-adjusted, as reported by teachers. Fantasy play was expected to predict favorable outcomes, as has been shown in previous studies (Dunn & Brown, 1994; Lindsey & Mize, 2000). Fantasy play has been linked to cognitive advances in children, such as a more advanced understanding of others' minds (Lindsey & Mize, 2000). In this way, children who are more skilled at pretend play may develop positive peer relationships by being responsive play partners. Thus, by engaging children in fantasy play, some fathers may be teaching children to be more attractive playmates to peers. Teaching about real-life things however, was not hypothesized to predict positive adjustment. Teaching children about how aspects of play relate to the "real world" may help to provide a context for children to understand how play behavior fits into their lives. Perhaps the fathers who engaged in this form of teaching during play also provided children with "lessons" across a variety of circumstances, providing a wealth of information on how to engage with others. Research has shown that this form of instructional teaching to at-risk preschoolers is related to social and emotional competence (Denham & Burton, 1996).

Interestingly, even after controlling for the effects of maternal play types, father fantasy play and teaching about real-life things showed trends towards predicting better adaptation of their children. In light of research beginning to examine the contributions

of fathers to children's development, this is an important, although weak, finding. Not only do fathers matter for children's social development, but they seem to be contributing in ways above and beyond mothers' contributions. It has been known for some time that fathers are important play partners, but it has never been reported that they may make unique contributions. This highlights the importance of including fathers in research on children's development, and future research will need to take into consideration the fact that parents may be making independent contributions when comparing mother and father effects on children's development.

Surprisingly, parents' use of physical play did not predict better social adjustment. This is an interesting finding because physical play and social competence is an association that has been demonstrated repeatedly in the literature (Barth & Parke, 1993; Carson, Burks, & Parke, 1993; Lindsey & Mize, 2000; MacDonald & Parke, 1984). Physical play was not used very often by parents in this study, and this lack of variability may explain the lack of association. Another possibility is that, at least for the context of puppet play, other types of play are more important for children's socialization. This study exclusively utilized puppets to elicit different forms of play; most other studies have utilized various toys at once. Perhaps parents play differently depending on the constraints that are placed upon them. Future research should examine the differences in choice of play type depending on types of toys available.

Finally, contrary to hypotheses, none of these associations were moderated by children's level of internalizing problems. Parents' impact seems to be similar for both high and low anxious children suggesting that anxious children benefit just as much as non-anxious children from their fathers' play types. The hypothesis of moderation was

based on the assumption that a main effect of internalizing problems would be found, with high anxious children exhibiting less social competence. However, this association was not found in this study, suggesting that parents and teachers may not be reporting on the same thing. Once again, these hypotheses were exploratory and as the present sample was non-clinical in nature, it is possible that research using a more clinical sample of children would demonstrate different findings.

Parental Roles in Play

Mothers and fathers also differed in their use of the different roles in play. In line with hypotheses, fathers engaged in play as peers more often than mothers. Surprisingly, however, only mothers differed in their use of these roles depending on the nature of their children, with mothers' directing more with less anxious and facilitating play more with more anxious children. Past research demonstrated that parents who were classified as having mainly a directing role were found to rate social skills as more important for children than parents classified as having mainly a facilitating role (Russell & Staebel, 1997). This could suggest that mothers of the more anxious children in this sample valued social skills less than mothers of the less anxious children. By allowing more anxious children to lead play, it may be that mothers were more indulgent of their anxious children, and did not try to use play as a teaching context.

Another, more positive, possibility is that mothers were sensitive to anxious children's characteristics. By allowing the children to take the lead, in order to practice or learn active play behaviors, mothers were providing an opportunity for their anxious children to engage in play in a way that they would normally not do, because the mothers had provided a safe environment for them to explore new behaviors. This could have

beneficial effects on these anxious children's social adjustment. By allowing the children to develop autonomy and confidence in their play, mothers may be allowing their children to develop skills that could then be used with peers. More research, using a more clinical sample of children, is required to examine this hypothesis.

Another intriguing finding was that parents engaged in the director role more with their sons than their daughters and the facilitator role more with their daughters than their sons. Although this has not been found previously in the literature on parent-child play, some research in other parent-child contexts have found similar results. For example, parents have been found to be more likely to comply with the leads of their daughters than of their sons (Lindsey & Mize, 2001a; Lindsey, Mize, & Pettit, 1997b). In addition, some research on parental discipline and control has found that parents are more strict and exert more control on their sons than on their daughters (Macdonald, 1971; Sorbring, Roedholm-Funnemark, & Palmerus, 2003; Xie, 1998). This gender difference has interesting implications considering that in the present study, boys were found to be better socially adjusted overall than girls were. It is possible that parents who direct or control the play more with their sons, and who may place more importance on social skills as described earlier (Russell & Staebel, 1997), have sons who are more socially competent. Future research should examine these gender differences and the relations, if any, between them more closely.

Finally, only mothers' use of coplayer predicted positive social adjustment in their children. Fathers' use of the roles in play did not significantly predict adjustment. This is a fascinating finding, as fathers were found to use the coplayer role significantly more than mothers and have been consistently found to be more involved in play than mothers,

and high involvement has been shown to predict social competence (Barth & Parke, 1993; Pettit et al., 1998). In fact, some research has demonstrated that maternal involvement in play is associated with less social competence (Pettit et al., 1998). It is possible that as fathers act as a peer in play more often with their children, when mothers do the same it is especially beneficial to children as it is unexpected and novel. In addition, mothers are more likely to act as the disciplinarians in the family, so when they act as a peer player with their children, it is a change of roles in the children's eyes (Macdonald, 1971; Xie, 1998).

Contrarily, even though fathers spend a greater proportion of their time playing as peers with their children, it is possible that mothers engage in more total play time because they spend more time with their children overall. The actual amount of maternal coplaying may be greater, suggesting that perhaps quantity may matter more than quality. The beneficial effects of maternal coplaying on children's social development are important. Children may be learning important social skills through play with their mothers that they are not learning in play with their fathers, and then are able to use these skills in play with peers. Mothers' use of a more horizontal play style, characterized by mutuality and high levels of involvement, with their children is what seems to be important for positive social adjustment. This finding needs to be replicated, as it is the first study to demonstrate that mothers have a special role to enact in play with their children. Prevention programs may benefit from targeting the importance of mothers in play with their children, a role they are less likely to assume than fathers.

Overall, the results suggest that mothers and fathers are contributing to their children's social development, in both similar and different ways. Mothers and fathers

did not differ on four of the six types of play, suggesting that they share some similar qualities in play. On the other hand, the current study replicated the two most commonly identified differences; that fathers use more physical play and act more like peers in play. *What fathers do* during play predicts children's positive development. However, it is not the physical play that is important but rather the other features. It is possible that because most fathers engage in some form of physical play, that it is the fathers who complement that form of play with fantasy or instruction who have the most competent children. *How mothers play*, on the other hand, predicts children's positive development. Whatever the content of play (fantasy, physical, etc.), the mothers who use the peer-like, horizontal approach of coplayer seem to promote their children's social competence. In other words, what fathers do and how mothers play are different but important determinants of children's positive social development. Perhaps children internalize the rules they learn from each parent differently. Future research should try to examine the reasons for this difference.

Parent-gender differences were much more evident than were differences based on child characteristics. Parents played similarly with sons and daughters as well as with low and high internalizing problem children. We may be currently in a time of change, where parents are no longer acting within stereotyped roles. As fathers are becoming more involved in homecare and mothers are working more outside of the home, generational changes may be producing developmental changes in the children. These results have implications for the positive development of children, and parents need to be educated as to the beneficial effects of certain play behaviors and the potential detrimental effects of others.

Research Limitations and Future Directions

Some limitations of the present study should be noted. First, by using parent reports of internalizing problems, the most accurate assessment of these problems may not have been obtained. An important point to note is that children were rated similarly by their teachers on social competence and general adaptation, regardless of whether they were rated as more or less anxious by their parents. Some research has shown that parents and teachers differ on their reports of children's level of problems (Gray, Clancy, & King, 1981). It is very likely that the two reporters are using very different frames of reference for evaluating children's levels of difficulties. Teachers have received some specific training regarding identification of socially adaptive versus maladaptive behaviors. They have, in a sense, acquired an "observational set" that they are assumed to apply to preschool children in a fairly systematic and uniform fashion. On the other hand, parents are the product of the value systems specific to their own families and cultural groups. They are also limited to observations within the contexts of the home, where the parent is close by and may be providing a secure base. In addition, parents were asked to report on their children's levels of internalizing problems, whereas teachers were reporting on children's competencies. It is possible that anxiety problems and deficient competencies do not co-exist at this age, but rather do so later in the children's development. Adding different measures of internalizing problems and social adjustment, such as clinical interviewing or observational measures (Rubin, 1989), may have provided a more accurate measure of these variables.

In addition, future research needs to extend these findings by utilizing a more clinical, larger and more diverse sample. Internalizing problems may not have moderated

any of the relationships between parent play and social adjustment because modest, rather than clinical, levels of internalizing problems were indicated in this study. The current study utilized a risk sample, which was comprised of children who displayed predisposing characteristics known to be associated with a diagnosable problem later on, such as anxiety. In contrast, a clinical sample is comprised of children with diagnosable problems such as anxiety. Research utilizing a clinical sample, instead of a risk sample of children may be beneficial to examine whether different play behaviors vary as a function of anxiety problems. The current sample may not have consisted of enough children with more severe anxiety problems to detect a difference. In addition, due to the limited age range of our sample, age effects were not examined. As such, future research needs to examine age effects of the various forms of parent-child play on development.

The Puppet Play Paradigm (Sullivan & Hastings, 2002) is a new observational coding technique, developed for this study. Although it was adapted from other reliable and valid coding schemes (Lindsey, Mize, & Pettit, 1997; Russell, Mize, and Saebel, 2001) and high inter-rater reliabilities were established between two independent coders, other measures of reliability and validity for this measure have not been established.

Similarly, families were quite constrained in their possibilities to express various forms of play. In the current study, families were constrained to certain types of play given the nature of the puppets and the environmental constraints (having to be seated in front of a camera). In addition, an examiner was present with the camera during these interactions. Thus, the ecological validity of these interactions is questionable. Future research would benefit from a more lenient assessment of parent-child play; one that allows parents to choose from a variety of toys and gives them the freedom to move

around in a large area, to facilitate physical forms of play (see Pettit et al., 1998; Lindsey & Mize, 2000).

Finally, the present investigation was not experimental, and as such causality cannot be inferred. It is difficult to know whether parental play behavior fuels the child's anxiety or whether the child's anxiety fuels parental behavior. Future research should examine this question. In addition, due to the limited sample size, there was relatively low statistical power for detecting interactions in the regression analyses. Replicating the current findings with alternative methods and larger samples will be important. Future research would also benefit from examining more complex models of effects such as Hierarchical Linear Modeling, in order to examine multiple levels of influence (such as social and psychological) on children's development.

Summary

The results of this study indicate that parent-child play is one process through which children can be supported and practice social interaction skills. This study has confirmed the importance of examining both maternal as well as paternal influences on children's development as well as children of varying levels of difficulties. Mothers and fathers shared some similar qualities in play but also demonstrated important differences. What fathers do and how mothers play are different but important determinants of children's positive social development. Perhaps children internalize the rules they learn from each parent differently. The present results are consistent with policies to support education for parents about the importance of play with their children not only to enhance play skills and cognitive development, but also to benefit the child's social interaction skills.

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Appendix A

The Child Behavior Checklist

Interviewer: _____ Date: _____
Time: _____ SID: _____

CHILD BEHAVIOR CHECKLIST: SCREENING

	Not True	Somewhat or sometimes true	Very true or often true.
1. Aches or pains (without medical cause; **do not** include stomach or headaches)	0	1	2
2. Acts too young for age	0	1	2
4. Avoids looking others in the eye	0	1	2
A. Smiles and laughs often	0	1	2
7. Can't stand having things out of place	0	1	2
10. Clings to adults or too dependent	0	1	2
21. Disturbed by any change in routine	0	1	2
B. Plays active games (running, skipping)	0	1	2
22. Doesn't want to sleep alone	0	1	2
23. Doesn't answer when people talk to him/her	0	1	2
24. Doesn't eat well (describe):_____	0	1	2
C. Helps you with chores or tasks	0	1	2
33. Feelings are easily hurt	0	1	2
37. Gets too upset when separated from parents	0	1	2
38. Has trouble getting to sleep	0	1	2
D. Plays quiet games (dolls, board games)	0	1	2
39. Headaches (without medical cause)	0	1	2
43. Looks unhappy without good reason	0	1	2
45. Nausea, feels sick (without medical cause)	0	1	2
E. Gets along well with other children	0	1	2
46. Nervous movements or twitching (Describe):	0	1	2
47. Nervous, high strung, or tense	0	1	2
48. Nightmares	0	1	2
F. Interested in reading/looking at books	0	1	2
51. Shows panic for no good reason	0	1	2
62. Refuses to play active games	0	1	2
64. Resists going to bed at night	0	1	2
G. Gets excited about going places with you	0	1	2
67. Seems unresponsive to affection	0	1	2
68. Self-conscious or easily embarrassed	0	1	2
70. Shows little affection towards people	0	1	2
H. Wants to play with other children	0	1	2

SID: _____

	Not True	Somewhat or sometimes true	Very true or often true.
71. Shows little interest in things around him/her	0	1	2
74. Sleeps less than most children during day and/or night (describe): _____	0	1	2
78. Stomachaches or cramps (without medical cause)	0	1	2
I. Carefree and easy-going	0	1	2
79. Rapid shifts between sadness and excitement	0	1	2
82. Sudden changes in mood or feelings	0	1	2
83. Sulks a lot	0	1	2
J. Affectionate with you	0	1	2
84. Talks or cries out in sleep	0	1	2
86. Too concerned with neatness or cleanliness	0	1	2
87. Too fearful or anxious	0	1	2
K. Plays make-believe or pretends	0	1	2
90. Unhappy, sad, or depressed	0	1	2
92. Upset by new people or situations (describe): _____	0	1	2
93. Vomiting, throwing up (without medical cause)	0	1	2
L. Likes to spend time playing outside	0	1	2
94. Wakes up often at night	0	1	2
97. Whining	0	1	2
98. Withdrawn, doesn't get involved with others	0	1	2
99. Worries	0	1	2
M. Draws, paints, or colours	0	1	2

Appendix B

The Social Competence and Behavior Evaluation Scale

Social Competence and Behavior Evaluation–Preschool Edition (SCBE)

Peter J. LaFreniere, Ph.D.

Instructions

The following is a list of statements describing a child in three broad categories: emotional adjustment, social interactions with peers, and social interactions with adults. Use the following scale to rate the child by circling *one choice for each statement* to indicate the child's typical behavior or emotional state. Each of the ratings indicates how often a typical emotional state or behavior occurs:

Rating	Description
1	Almost NEVER occurs.
2 or 3	SOMETIMES occurs.
4 or 5	OFTEN occurs.
6	Almost ALWAYS *occurs.*

If you want to circle another number *after you have made* a choice for the same item, cross out your prior choice and *circle another one. Do not erase* the unwanted choice because it may damage the form.

Make every effort to assign a rating to each statement; leave an item blank only if you have no way of evaluating the child on that particular statement. If more than a few items are left without any rating, the results may not be meaningful.

Child's Name ______

Gender: ☐ M ☐ F Age ___ yrs. ___ mos. ID ______

School ______

Child's Class Teacher ______

Evaluator ______

Date of Evaluation ______

PLEASE PRESS HARD WHEN CIRCLING YOUR RESPONSE

Item	Never	Sometimes		Often		Always
1. Enjoys demonstrating new songs, games and other things he/she has learned.	1	2	3	4	5	6
2. Maintains *neutral facial* expression (doesn't smile or laugh).	1	2	3	4	5	6
3. Sensitive to another's problem.	1	2	3	4	5	6
4. Wets or dirties pants at school.	1	2	3	4	5	6
5. *Curious.*	1	2	3	4	5	6
6. Tired.	1	2	3	4	5	6
7. Easily frustrated.	1	2	3	4	5	6
8. Gets angry when interrupted.	1	2	3	4	5	6
9. *Looks directly* at you when speaking.	1	2	3	4	5	6
10. Irritable, gets mad *easily.*	1	2	3	4	5	6
11. Worries.	1	2	3	4	5	6
12. Laughs easily.	1	2	3	4	5	6
13. *Easily* adjusts to *new* situations.	1	2	3	4	5	6
14. Gets bored quickly and appears *uninterested* in playing.	1	2	3	4	5	6
15. In a good mood.	1	2	3	4	5	6
16. Patient and tolerant.	1	2	3	4	5	6
17. Takes *pleasure in own* accomplishments.	1	2	3	4	5	6
18. Tolerates interruptions and disturbances.	1	2	3	4	5	6
19. Difficult to console when he/she cries.	1	2	3	4	5	6
20. Self-confident.	1	2	3	4	5	6
21. Explores *his/her environment.*	1	2	3	4	5	6
22. Readily adapts to difficulties.	1	2	3	4	5	6
23. Timid, afraid (e.g., avoids new situations).	1	2	3	4	5	6
24. Sad, unhappy or depressed.	1	2	3	4	5	6
25. Anxious, nervous (e.g., *bites fingernails*).	1	2	3	4	5	6
26. Active, ready to play.	1	2	3	4	5	6
27. Whines or complains easily.	1	2	3	4	5	6
28. *Inhibited or uneasy* in the group.	1	2	3	4	5	6
29. Listens attentively when spoken to.	1	2	3	4	5	6
30. Screams or yells easily.	1	2	3	4	5	6
31. Bullies weaker children.	1	2	3	4	5	6
32. Forces *other children* to do things they don't want to do.	1	2	3	4	5	6
33. Gets upset when the teacher attends *to another* child.	1	2	3	4	5	6
34. Inactive, watches the other children play.	1	2	3	4	5	6
35. Negotiates solutions to conflicts with other children.	1	2	3	4	5	6
36. Remains apart, *isolated from* the group.	1	2	3	4	5	6
37. Children seek him/her out to play with *them.*	1	2	3	4	5	6
38. Does not respond to other children's invitations to play.	1	2	3	4	5	6
39. *Takes* other children and their point of view into account.	1	2	3	4	5	6
40. Self-centered, does not recognize other children's interests.	1	2	3	4	5	6

Please turn the form over and complete items 41 through 80.

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PLEASE PRESS HARD WHEN CIRCLING YOUR RESPONSE

	Never	Sometimes	Often	Always
41. Is involved wherever the children are having lots of fun.	1	2 3	4 5	6
42. Hits, bites or kicks other children.	1	2 3	4 5	6
43. Cooperates with other children in group activities.	1	2 3	4 5	6
44. Gets into conflict with other children.	1	2 3	4 5	6
45. Comforts or assists another child in difficulty.	1	2 3	4 5	6
46. Has to be first.	1	2 3	4 5	6
47. Refuses to share toys.	1	2 3	4 5	6
48. Takes care of toys.	1	2 3	4 5	6
49. Doesn't talk or interact during group activities.	1	2 3	4 5	6
50. Attentive towards younger children.	1	2 3	4 5	6
51. Stays calm when there are conflicts in the group.	1	2 3	4 5	6
52. Initiates or proposes games to other children.	1	2 3	4 5	6
53. Spontaneously apologizes to other children for causing a problem.	1	2 3	4 5	6
54. Makes games competitive.	1	2 3	4 5	6
55. Spontaneously helps a child pick up toys or other objects.	1	2 3	4 5	6
56. Delights in playing with other children.	1	2 3	4 5	6
57. Goes unnoticed in a group.	1	2 3	4 5	6
58. Works easily in groups.	1	2 3	4 5	6
59. Takes pleasure in hurting other children.	1	2 3	4 5	6
60. Shares toys with other children.	1	2 3	4 5	6
61. Recovers quickly when he/she falls or hurts self (doesn't cry very long).	1	2 3	4 5	6
62. Hits teacher or destroys things when angry with teacher.	1	2 3	4 5	6
63. Helps with everyday tasks (e.g., distributes snacks).	1	2 3	4 5	6
64. Persistent in solving own problems.	1	2 3	4 5	6
65. Disrespectful of teacher.	1	2 3	4 5	6
66. Accepts compromises when reasons are given.	1	2 3	4 5	6
67. Clear and direct when he/she wants something.	1	2 3	4 5	6
68. Stops talking immediately when asked.	1	2 3	4 5	6
69. Needs teacher's presence to function well.	1	2 3	4 5	6
70. Asks for help when it is unnecessary.	1	2 3	4 5	6
71. Opposes the teacher's suggestions.	1	2 3	4 5	6
72. Cries for no apparent reason.	1	2 3	4 5	6
73. Is autonomous and able to organize him/herself.	1	2 3	4 5	6
74. Defiant when reprimanded.	1	2 3	4 5	6
75. Clingy towards teacher in novel situations (e.g., field trip).	1	2 3	4 5	6
76. Takes initiative in situations with new people.	1	2 3	4 5	6
77. Ignores directives and continues what he/she is doing.	1	2 3	4 5	6
78. Accepts teacher's involvement in own activity.	1	2 3	4 5	6
79. Cries when parent leaves.	1	2 3	4 5	6
80. Asks permission when necessary.	1	2 3	4 5	6

Appendix C

Parent and Child Consent Forms

CONSENT FORM TO PARTICIPATE IN RESEARCH (primary caregiver)

I agree to participate in a program of research being conducted by Dr. Paul D. Hastings of the Department of Psychology of Concordia University. The purpose of the research is to examine how children with different personality characteristics develop social skills and adjust to daycare and preschool. Part of the research involves looking at the socialization experiences that children receive at home, and part of the research involves examining children's physiological activity patterns. The research program will examine whether these factors predict children's social behaviour.

For this research, I will answer a variety of questions about my child, myself, and my relationship with my child. I will sit quietly with my child for a few minutes while my child's heart rate is recorded in our home, and then I will do a series of activities with my child. I will escort my child to the Department of Psychology of Concordia University for a one-hour visit sometime this winter. Some of the questions that I answer will be asked in an interview over the telephone, some will be asked in my home, and some will be in questionnaires that I will complete on my own time and then will mail to the researchers. I will answer the rest of the questions while my child is in the laboratory playroom at Concordia University.

The telephone interview and questionnaires about my child will assess the extent to which my child engages in a variety of behaviours or exhibits a variety of characteristics. Some of these could be seen as positive or desirable, and others could be seen as negative or undesirable. I will be completing the questionnaires about my child during the visit to the laboratory playroom.

The other questionnaires will be about myself and the ways in which I am raising my child. I will complete one questionnaire about childrearing during the visit to my home. I will complete four more questionnaires on my own time and mail them to the researchers in a stamped, pre-addressed envelope that they will leave with me. After one year has passed, I will complete these five questionnaires again. Copies of the questionnaires will be mailed to me, and I will complete them on my own time and mail them to the researchers in a stamped, pre-addressed envelope.

During the hour in our home, my child and I first will sit quietly and look at a children's book or watch a children's video for a few minutes. Then we will play some games. After that, my child and I will complete a set of activities. These activities include talking about pictures from a storybook, playing with puppets, completing a puzzle, using dolls to tell some stories about my child and other children, learning how to fold paper into origami shapes, and tidying up the play materials. These activities will be videotaped.

I will receive two honorariums as thanks for my willingness to participate in this research. The first honorarium will be $40, which I will receive as a cheque when I bring

my child to Concordia University. The second honorarium will be for $10, which I will receive as a cheque when I complete the final set of questionnaires one year from now.

I understand that I am free to withdraw my consent and discontinue my participation in this research at any time, without any negative consequences. If I withdraw from the study before all activities have been completed, I will receive an honorarium equivalent to the proportion of the activities that I completed. I also understand that I can refuse to do any specific part of the procedures or refuse to answer any specific questions without withdrawing from the study and without any negative consequences.

I understand that my participation in this study will be revealed to my child's daycare supervisor or preschool teacher. However, in all other respects, my participation in this research will be confidential. That means that the researcher will not reveal my identity in any written or oral reports about this study. I will be assigned a coded number, and that number will be used on all materials collected in this study. My name will not appear on any of these materials. All materials collected in this study will be stored in secure facilities at Concordia University. In addition, I understand that information I provide in the telephone interview and on the questionnaires will not be shared with my child's daycare supervisor or preschool teacher, unless I make a written request that such information be shared.

I understand that this study is being coordinated and conducted by researchers at Concordia University. My child's daycare is not responsible for any aspect of the study. If I have any questions or concerns, I should address them to the researchers at the ABCD Lab.

If I have any questions about my rights as a research participant, I am free to contact Concordia University's Office of Research Services, at 514-848-4887. Ms. Andrea Rodney will serve as my liaison for this project.

I HAVE CAREFULLY STUDIED THE ABOVE AND UNDERSTAND THIS AGREEMENT. I FREELY CONSENT AND VOLUNTARILY AGREE TO PARTICIPATE IN THIS STUDY.

MY CHILD'S NAME (please print) _____

MY NAME (please print) _____

SIGNATURE _____ DATE _____

WITNESSED BY _____ DATE _____

Sometimes researchers find it useful to show parts of videotaped research activities during presentation to academic audiences, for example, at conferences or in lectures. By signing in the space marked ACCEPT, I am giving permission for Dr. Paul D. Hastings to use the videotapes of me and my child for such purposes. I understand that under no circumstances would these videotapes be shown on any public media, or used for other, non-academic purposes. If I do not want the videotapes of me and my child to be used for the purpose of academic instruction, I will put my initials in the space marked DECLINE.

ACCEPT (signature) _____ DECLINE (initials) _____

CONSENT FORM TO PARTICIPATE IN RESEARCH
(secondary caregiver)

I agree to participate in a program of research being conducted by Dr. Paul D. Hastings of the Department of Psychology of Concordia University. The purpose of the research is to examine how children with different personality characteristics develop social skills and adjust to daycare and preschool. Part of the research involves looking at the socialization experiences that children receive at home, and part of the research involves examining children's physiological activity patterns. The research program will examine whether these factors predict children's social behaviour.

For this research, I will answer a variety of questions about my child, myself, and my relationship with my child. I will sit quietly with my child for a few minutes while my child's heart rate is recorded in our home, and then I will do a series of activities with my child. Some of the questions that I answer may be asked in an interview over the telephone, some will be asked in my home, and some will be in questionnaires that I will complete on my own time and then will mail to the researchers.

The telephone interview and questionnaires about my child will assess the extent to which my child engages in a variety of behaviours or exhibits a variety of characteristics. Some of these could be seen as positive or desirable, and others could be seen as negative or undesirable.

The other questionnaires will be about myself and the ways in which I am raising my child. I will complete one questionnaire about childrearing during the visit to my home. I will complete seven more questionnaires on my own time and mail them to the researchers in a stamped, pre-addressed envelope that they will leave with me. After one year has passed, I will complete these eight questionnaires again. Copies of the questionnaires will be mailed to me, and I will complete them on my own time and mail them to the researchers in a stamped, pre-addressed envelope.

During the hour in our home, my child and I first will sit quietly and look at a children's book or watch a children's video for a few minutes. Then we will play some games. After that, my child and I will complete a set of activities. These activities include talking about pictures from a storybook, playing with puppets, completing a puzzle, using dolls to tell some stories about my child and other children, learning how to fold paper into origami shapes, and tidying up the play materials. These activities will be videotaped.

I will receive two honorariums as thanks for my willingness to participate in this research. The first honorarium will be $20, which I will receive as a cheque when I complete the first set of questionnaires. The second honorarium will be for $15, which I will receive as a cheque when I complete the final set of questionnaires one year from now.

I understand that I am free to withdraw my consent and discontinue my participation in this research at any time, without any negative consequences. If I withdraw from the study before all activities have been completed, I will receive an honorarium equivalent to the proportion of the activities that I completed. I also understand that I can refuse to do any specific part of the procedures or refuse to answer any specific questions without withdrawing from the study and without any negative consequences.

I understand that my participation in this study will be revealed to my child's daycare supervisor or preschool teacher. However, in all other respects, my participation in this research will be confidential. That means that the researcher will not reveal my identity in any written or oral reports about this study. I will be assigned a coded number, and that number will be used on all materials collected in this study. My name will not appear on any of these materials. All materials collected in this study will be stored in secure facilities at Concordia University. In addition, I understand that information I provide in the telephone interview and on the questionnaires will not be shared with my child's daycare supervisor or preschool teacher, unless I make a written request that such information be shared.

I understand that this study is being coordinated and conducted by researchers at Concordia University. My child's daycare is not responsible for any aspect of the study. If I have any questions or concerns, I should address them to the researchers at the ABCD Lab.

If I have any questions about my rights as a research participant, I am free to contact Concordia University's Office of Research Services, at 514-848-4887. Ms. Andrea Rodney will serve as my liaison for this project.

I HAVE CAREFULLY STUDIED THE ABOVE AND UNDERSTAND THIS AGREEMENT. I FREELY CONSENT AND VOLUNTARILY AGREE TO PARTICIPATE IN THIS STUDY.

MY CHILD'S NAME (please print) _____

MY NAME (please print) _____

SIGNATURE _____ DATE _____

WITNESSED BY _____ DATE _____

Sometimes researchers find it useful to show parts of videotaped research activities during presentation to academic audiences, for example, at conferences or in lectures. By signing in the space marked ACCEPT, I am giving permission for Dr. Paul D. Hastings to use the videotapes of me and my child for such purposes. I understand that under no

circumstances would these videotapes be shown on any public media, or used for other, non-academic purposes. If I do not want the videotapes of me and my child to be used for the purpose of academic instruction, I will put my initials in the space marked DECLINE.

ACCEPT (signature) _____ DECLINE (initials) _____

CONSENT FORM FOR CHILD'S PARTICIPATION IN RESEARCH

I agree to allow my child to participate in a program of research being conducted by Dr. Paul D. Hastings of the Department of Psychology of Concordia University. The purpose of the research is to examine how children with different personality characteristics develop social skills and adjust to daycare and preschool. Part of the research involves looking at the socialization experiences that children receive at home, and part of the research involves examining children's physiological activity patterns. The research program will examine whether these factors predict children's social behaviour.

For this research, my child will wear a monitor to record his or her heart rate. My child will wear the monitor on four separate occasions. My child will wear the monitor (1) for about an hour in our home today, (2) for about an hour in his or her daycare or preschool in the autumn, (3) for about an hour in a laboratory playroom in the Department of Psychology of Concordia University this winter, and (4) for about an hour in his or her daycare, preschool or kindergarten in the autumn of next year. The heart rate monitor is completely safe and records heart rate from the surface of the skin. The monitor will be held in place on my child's chest using an elasticized band, and it will transmit signals to a small receiver unit. The receiver unit will be placed in a belt-pouch that my child will wear around the waist.

My child also will be asked to provide twelve saliva samples. These saliva samples will be collected by having my child chew on a cotton pad sprinkled with sugar-free flavour crystals for one minute. Two saliva sample will be collected in our home today. I will get a saliva sample on the morning of the first daycare or preschool visit this autumn. Three samples will be collected during each of the visits to my child's daycare or preschool. Finally, three samples will be collected in the laboratory playroom. The cotton pads will be stored in plastic containers and taken to a laboratory to have the saliva extracted. The saliva will be examined to determine the levels of a hormone called cortisol. This hormone occurs naturally in everyone. It is produced in the adrenal glands, and it is involved in responses to challenges and stress.

During the hour in our home, my child and I first will sit quietly and look at a children's book or watch a children's video for a few minutes. Then we will play some games. After that, my child and I will complete a set of activities. These activities include talking about pictures from a storybook, playing with puppets, completing a puzzle, using dolls to tell some stories about my child and other children, learning how to fold paper into origami shapes, and tidying up the play materials. My child will do some similar activities with my spouse. The activities involving my child and me, and my child and my spouse, will be videotaped.

During the one-hour visits to my child's daycare, preschool, or kindergarten, my child will be engaging in his or her normal activities. These visits will not be videotaped. There will be a researcher present in my child's daycare, preschool, or kindergarten for

each of the visits. The researcher will observe and make notes about my child's play behaviours for the periods of time that my child is wearing the heart rate monitor.

During the hour in the laboratory playroom, my child will be observed completing some activities with two other children. These children will also be participants in this research study. They will be the same age as my child, but my child will not have met these children previously. For example, these children will not be from the same daycare or preschool as my child. The children will be asked to do several activities while they are in the laboratory playroom. First, the children will be allowed to play with a variety of toys. Second, they will be asked to put the toys away. Third, each child will be asked to sing a song or tell a story about himself or herself. Fourth, the children will work together on a puzzle. Fifth, the children will be given another toy, for them to play with together. Finally, the children will be given a snack. The activities in the playroom will be videotaped. I will bring my child to Concordia University and I will stay there while my child is in the playroom, but I will not be in the playroom with my child. However, if my child becomes upset and wants to see me, I will be brought into the playroom or my child will be brought to me.

One or more of my child's daycare supervisors, preschool teachers, or kindergarten teachers also will be participating in this research. They will be completing questionnaires that will be used to learn about my child's behaviours and emotions while engaged in the normal activities of daycare or preschool, and about my child's general adjustment to being in daycare or preschool.

As thanks for his or her participation in these activities, my child will receive four small gifts (e.g., a toy, doll, or book) worth a total of approximately $25. One gift will be given to my child in our home, one will be given in each of the two visits to my child's daycare or preschool, and one will be given in the visit to the laboratory playroom.

I understand that I am free to withdraw my consent and discontinue my child's participation in this research at anytime, without any negative consequences. My child also will be asked to give his or her verbal assent to participate in the research, and if my child does not provide assent, then he or she will not be required to participate in the research. I also understand that I can refuse to allow my child, or my child can refuse, to do any specific part of the procedures without withdrawing from the study and without any negative consequences.

I understand that my child's participation in this study will be revealed to his or her daycare supervisors or preschool teachers. I also understand that my child's daycare supervisors or preschool teachers will be providing the researcher with information about my child's behaviour at daycare or preschool. However, in all other respects, my child's participation in this research will be confidential. That means that the researcher will not reveal the identity of my child in any written or oral reports about this study. My child will be assigned a coded number, and that number will be used on all materials collected in this study. My child's name will not appear on any of these materials. All of the

physiological information, questionnaire data, and videotapes collected in this study will be stored in secure facilities at Concordia University.

In addition, I understand that information collected about my child's physiological functions will not be shared with my child's daycare supervisors or preschool teachers, and the videotape of the activities in the laboratory playroom will not be shown to them, unless I make a written request that such information be shared. Information that my child's daycare supervisors or preschool teachers provide about my child to the researcher will not be shared with me, unless a supervisor or teacher provides written permission for this information to be shared.

I understand that this study is being coordinated and conducted by researchers at Concordia University. My child's daycare is not responsible for any aspect of the study. If I have any questions or concerns, I should address them to the researchers at the ABCD Lab.

If I have any questions about my child's rights as a research participant, I am free to contact Concordia University's Office of Research Services, at 514-848-4887. Ms. Andrea Rodney will serve as my family's liaison for this project.

I HAVE CAREFULLY STUDIED THE ABOVE AND UNDERSTAND THIS AGREEMENT. I FREELY CONSENT AND VOLUNTARILY AGREE TO ALLOW MY CHILD'S PARTICIPATION IN THIS STUDY.

MY CHILD'S NAME (please print) _____

MY NAME (please print) _____

SIGNATURE _____ DATE _____

WITNESSED BY _____ DATE _____

Appendix D

The Puppet Play Paradigm

General Guidelines

Parent-child dyads were asked to play with puppets "as you normally would if you were at home together and had some free time." The dyads interacted for five minutes on camera. Two different coders watched the videos. Each coder coded half of the mother-child interactions and half of the father-child interactions. However, neither coder coded both the mother- and the father-child dyads from the same family to prevent coding biases.

Coding began as soon as the child examiner had placed the puppets in front of the parent and child, had taken away the container, and had spoken her last words.

When coding, coders were asked to keep in mind that each code should be made in the context of what that behavior could possibly be **as a whole**, i.e. across different families, and not simply what would it could be in the context of the specific family in question. In other words, the coding scheme is to be used in the same way for each family.

Coders watched each interaction 3 times.

1- The whole thing was watched through, to record start and stop times. Then the tape was rewound to the beginning time, and the counter was set to 0:00 on the VCR.

3- Each 10 second segment was then coded using the scheme described in this manual.

4- Finally, the entire segment was watched again to confirm the codes and to code the overall ratings.

1- Types of Play

For each 10-second segment of the play session, parent's behavior will be coded for the type of activity they perform. For each play behavior, coders will decide if the play behavior is, (blank) not at all, **1)** a little bit (if that play type is **only present once** or **twice at very mild intensity**), or **2)** strongly present (if the play type occurs **more than once** per segment, OR if the **same behavior** occurs for all 10 seconds). This way we can capture whether more than one play type is occurring in each time segment.

Note: Each 10 second segment should be coded independently. Thus, what happens in one segment will not influence how the following segment is coded. However, if the meaning of the behavior in a particular segment is meaningless, then what occurred in the last segment must be taken into account in order to be interpretable and so context can be taken into account. In addition, information can only be taken from the last ten seconds, and not from any segments before that. This rule is only applicable to cases where the interaction does not make sense. **If a behavior** occurs at the tail end of a ten second segment, and thus **is interrupted**, then that **code** must be used **in the next ten second segment**, once the behavior is fully completed. In addition, it is important to keep in mind that **only the parents' behavior** is getting **coded**. Finally, the **same behavior cannot be coded as two different behaviors** even if the same behavior occurs in two different segments.

1) Physical Play:
Specify if:

a) Affectionate Physical Play:

Coded based on **minor physical play** that reflects high warmth and affection such as tickling, nuzzling, holding child on lap and rocking or swaying.

b) Rough and Tumble Physical Play:

Coded based on **major physical**, rough-and-tumble activity such as wrestling or fighting with the puppets, as well as any **gross motor** activity such as banging the puppets together.

2) Pretend/Fantasy/Role Play:

Coded based on **using puppets** as players **assuming play roles** such as "this is the Daddy." Also includes **verbal relabeling of objects** such as making the nurse a fireman. Be careful not to code this if the parent simply mistakes the uniform, such as labeling the postman a policeman or the nurse a doctor. It must be a clear difference in the label. This code also includes **role transformations**, such as making a puppet talk, and **narrating** the play (while the child acts it out or while they both act it out. The play must be **acted out,** not just said.

Often, physical play will occur within fantasy play. As a general rule, if both occur in a given segment, **code up** to physical play. If, however, the physical component only occurs once and the rest of the segment is fantasy, code a 1 for physical and a 2 for fantasy.

3) Instructional Play:

Any type of parental behavior aimed at teaching something to the child.

Specify if:

a) Rules of Play:

The parent must **explicitly teach a rule**, through verbalization, such as the principal of turn-taking.

b) Familiarize with Materials:

This includes many behaviors: teaching or showing child **how to work puppets** (such as helping with putting on the puppet, showing how to put fingers in the head etc.), **what puppets represent** (e.g mailman, girl), **organizing the puppets** (laying them all in a row), and **modeling** (if parent is placing the puppet on his/her own hands for the entire segment) as a preparation for play. Do not code this if the parent is simply parroting the child's verbalizations.

c) Teach about "life":

This can include any attempt at **teaching the child something to do with reality** such as what each profession does, what you do when you're hurt, where certain body parts are etc.

4) Observer:

When the parent simply **watches the child** playing, **without doing anything** him/herself (does not include preparing for play such as placing puppets on own hands). The parent may also be simply **parroting** what the child has said while watching the child, i.e. **no**

actions. The parent would also get this code if he/she is simply **unoccupied**, with periodic glances at the child. This would coincide with the facilitator role.

5) Uncodable:

If off-camera or cannot tell what they are doing. Only code this as a last resort.

2- Parental Roles

For each 10-second segment, coders will indicate which role the parent is engaging in during play. More than one role can occur per segment, but coders must choose the one that was present for the **majority of the 10 seconds** and best characterizes the parent interaction for that time segment. The latter point is especially relevant when coding for co-player. Obviously, turn-taking is taking place, and thus what occurs **overall** for that time period is important for making a choice. Finally, if the parent or child says something in the last segment and the next 10-second segment is a reply to what was previously said, the coder must take what was previously said into account to give the appropriate code.

Director Role

The "Director": structures the play for the child by providing props, and is primarily responsible for maintaining roles and the action. When playing with the child, the "Director" usually **gets involved** and **is active** in the situation, possibly making suggestions or directing the child about what he/she might do, or drawing the child's attention to what the adult is doing. For example, the "Director" might select certain puppets and draw the child's attention to them ("look at this"), or have the child watch while the "Director" does something. Sometimes, the "Director" may not be involved in the play at all, but because of their **excessive demand on the child's attention**, away from the child's own agenda, they practically **prevent the child from taking any initiative.** For example, the "Director", upon seeing the child picking up a certain puppet, may start to 'test' the child about what someone in the profession might do in a day, and who they work with etc. The **intrusive** manner (e.g. urgency, rate and length of

questioning) in which the questions are thrown at the child prevent the latter from realizing any ideas of their own.

The "Director" is an **organizer**, he/she takes responsibility for the play, and sometimes tries to help the child's learning, i.e. he/she may use the play to teach something to the child. On the other hand, the "Director" **may take over the play** completely, clearly disregarding the child. The child may simply observe the parent. In all cases, the "Director" is in an **adult role**; he/she **runs the agenda** of the play, shaping its direction and outcomes. The "Director" **owns the play**, not like "Facilitator" who supports the client in his/her activity, or "Co-player" who constructs the activity jointly with the child. If the parent **asks the child a direct question**, it falls under the director role (e.g., what is the girl going to say when she gets to the Doctor's?). In this example, the parent is asking the child directly for her input, it is not given spontaneously by the child. If it were, then it would fall under co-player.

When assessing how salient the director play style was for the parent, instances where clearly the parent was **managing the child's behavior** are **not to be taken into account** (e.g., when a parent has to discipline the child, or when he/she has to issue commands in an attempt to bring the child back into the camera view).

Facilitator Role

The "Facilitator": supports the child's activity, validates the child's activity (ideas) by allowing, assisting, and encouraging the child to explore and/or expand on his/her own ideas so that the direction of the play/activity is **shaped mostly by the child**. This may happen in a number of ways: The "Facilitator" watches what the child does, comments on it, or asks relevant questions intended to **facilitate and encourage the**

child's activity. The parent in the role of "Facilitator" is **child centered**, i.e. he/she is entirely in tune with the **child's line of play.** In so doing, he/she is **expanding or exploring an idea or activity that is the child's**, i.e. that is initiated/owned by the child (in contrast to the "Director" play style where it is the parent's ideas that are at the core of parent-child interaction). Like the "Director", the "Facilitator" too may provide play opportunities for the child, but will allow the child choice (e.g., "there's lots of puppets here, which ones would you like to play with now?"), as opposed to the "Director" who might say, "look at these puppets, you can be the lion and I can be the frog and we can pretend we're in the jungle." The "Facilitator" can follow child leads as an active partner, but **does not put in own input**, as that would then constitute "co-player" role. The parent allows the child to lead the play, although at times, he/she may provide a little practical assistance within the child's activity (e.g., helping child to place puppet on hand).

Co-player Role

The "Co-player": engages in play with the child as a **playmate**, being a child with the child, having fun as an **equal to the child**, being like a child, at times doing the same things the child does. Being co-player also means that the child feels and behaves like he/she has an equal partner in play. For example, both the parent and the child might make suggestions about the play, and the **direction of the play is shaped jointly by the parent and the child.**

To assess how salient this play style was for the parent, mainly look at the degree of equality occurring between the parent and child, whether in play or in communication during a play segment. Note that a play segment may in fact consist of play only, conversation about toys/play materials only (but parent must

add something new), or a mixture of both. If there is reciprocity, the "power" balance in terms of who is shaping the interaction does not seem to favor either of the partners. That is to say, a play activity may have originally been started by the parent, for example, but during its course, the parent and the child will several times swap the roles of leader and follower.

Possible signs indicating a high degree of equality in parent-child interaction:

1. **Easy flowing** conversation/dialogue, i.e. it is a **circular** as opposed to one-sided process, maintained **voluntarily** by both participants. The questions, comments, etc., will frequently but not always follow from the other's activities, utterances, etc. The emphasis here is on "sharing the floor" so to speak, regardless of the level of sophistication of the child's language.
2. **Turn-taking** (e.g. making the puppet say something and waiting for the other to reply, taking turns being the same puppet, etc.).
3. Both **the parent and the child seem to need each other** as partners in the interaction; they expand on each others' contributions, regardless of who has initiated them (i.e. the parent might participate in a child's activity, and vice versa). In other words, they seem to feed off each other's actions/verbalizations. This interdependence is also indicated by their body language: most of the time, the play partners face each other squarely; they make eye contact frequently, especially when talking to the other. In general, the parent and the child seem to be in tune with each other.

Puppet Coding Sheets

ID _____ **Start Time** _____ **Coder** _____ **MOM** **DAD**

Code	10	20	30	40	50	**1:00**	10	20	30	40	50	**2:00**	10	20	30	40	50	**3:00**
1a) Affectionate Physical Play																		
1b) Rough and Tumble Physical Play																		
2) Fantasy																		
3a) Instructional: rules of play																		
b) Instructional: familiarize materials																		
c) Instructional: teach about life																		
4) Observer																		
5) Uncodable																		
A) Director																		
B) Facilitator																		
C) Co-player																		
D) Uncodable																		

ID _____

Code	10	20	30	40	50	**4:00**	10	20	30	40	50	**5:00**	10	20	30	40	50	**6:00**
1a) Affectionate Physical Play																		
1b) Rough and Tumble Physical Play																		
2) Fantasy																		
3a) Instructional: rules of play																		
b) Instructional: familiarize materials																		
c) Instructional: teach about life																		
4) Observer																		
5) Uncodable																		
A) Director																		
B) Facilitator																		
C) Co-player																		
D) Uncodable																		

Appendix E

ANOVA Summary Tables

Table E1

ANOVA Summary Table: Play Types as a Function of Child Gender and Level of Internalizing Problems

Source	Sum of Squares	df	Mean Square	*F*	Partial Eta²
Within					
Parent Gender	.60	1	.26	9.15**	.15
Parent Gender × Child Gender	.03	1	.03	1.16	.02
Parent Gender × Internalizing	.002	1	.002	.06	.00
Parent Gender × Child Gender × Internalizing	.04	1	.04	1.43	.03
Play Types	87.73	5	17.55	162.19***	.76
Types × Child Gender	.13	5	.03	.23	.01
Types × Internalizing	.98	5	.20	1.81	.03
Types × Child Gender × Internalizing	.50	5	.01	.92	.02
Parent Gender × Types	.57	5	.12	2.07†	.04
Parent Gender × Types × Child Gender	.19	5	.04	.68	.01
Parent Gender × Types × Internalizing	.20	5	.04	.72	.01
Parent Gender × Types × Child Gender × Internalizing	.09	5	.02	.34	.01
Between					
Child Gender	.01	1	.01	.17	.00
Internalizing	.14	1	.14	2.57	.05
Child Gender × Internalizing	.01	1	.01	.13	.00

Note. †p<.10, *p<.05, **p<.01, ***p< .001.

Table E2

ANOVA Summary Table: Director Play Role as a Function of Child Gender and Level of Internalizing Problems

Source	Sum of Squares	df	Mean Square	*F*	Partial Eta^2
Within					
Parent Gender	.01	1	.01	.28	.01
Parent Gender × Parent Order	.14	1	.14	2.95†	.06
Parent Gender × Child Gender	.00	1	.00	.01	.00
Parent Gender × Internalizing	.40	1	.40	8.41**	.14
Parent Gender × Child Gender × Internalizing	.01	1	.01	2.03	.04
Between					
Child Gender	.26	1	.26	5.52*	.10
Internalizing	.01	1	.01	.17	.00
Child Gender × Internalizing	.00	1	.00	.003	.00

Note. †p<.10., *p<.05, **p<.01, ***p< .001.

Table E3

ANOVA Summary Table: Facilitator Play Role as a Function of Child Gender and Level of Internalizing Problems

Source	Sum of Squares	df	Mean Square	*F*	Partial Eta^2
Within					
Parent Gender	.09	1	.09	3.74†	.07
Parent Gender × Parent Order	.23	1	.23	9.19**	.16
Parent Gender × Child Gender	.01	1	.01	.33	.01
Parent Gender × Internalizing	.23	1	.23	9.01**	.15
Parent Gender × Child Gender × Internalizing	.01	1	.01	.24	.01
Between					
Child Gender	.11	1	.11	4.13*	.08
Internalizing	.02	1	.01	.69	.01
Child Gender × Internalizing	.06	1	.06	2.30	.04

Note. †p<.10., *p<.05, **p<.01, ***p< .001.

Table E4

ANOVA Summary Table: Coplayer Play Role as a Function of Child Gender and Level of Internalizing Problems

Source	Sum of Squares	df	Mean Square	*F*	Partial Eta²
Within					
Parent Gender	.18	1	.18	4.61*	.08
Parent Gender × Parent Order	.01	1	.01	.28	.01
Parent Gender × Child Gender	.01	1	.01	.33	.01
Parent Gender × Internalizing	.03	1	.03	.66	.01
Parent Gender × Child Gender × Internalizing	.06	1	.06	1.43	.03
Between					
Child Gender	.03	1	.03	.62	.01
Internalizing	.00	1	.00	.04	.00
Child Gender × Internalizing	.05	1	.05	.99	.02

Note. †p<.10., *p<.05, **p<.01, ***p< .001.