Order Number 9314606

The relationship between maternal knowledge of developmental norms, mother-child interactions and children's social competence

Wyatt, Kathryn Parker, Ph.D.

The University of North Carolina at Greensboro, 1992

U·M·I
300 N. Zeeb Rd.
Ann Arbor, MI 48106

THE RELATIONSHIP BETWEEN MATERNAL KNOWLEDGE OF DEVELOPMENTAL NORMS, MOTHER-CHILD INTERACTIONS AND CHILDREN'S SOCIAL COMPETENCE

by

Kathryn Parker Wyatt

A Dissertation Submitted to
the Faculty of the Graduate School at
The University of North Carolina at Greensboro
In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

Greensboro
1992

Approved by

Dissertation Advisor

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

Dissertation Advisor L. P. Keane

Committee Members Timothy D. Hunter

Carol MacKinnon-Lewis

9/11/92
Date of Acceptance by Committee

9/3/92
Date of Final Oral Examination

WYATT, KATHRYN PARKER, Ph.D. The Relationship between Maternal Knowledge of Developmental Norms, Mother-Child Interactions and Children's Social Competence. (1992) Directed by Dr. Susan Phillips Keane. 83 pp.

The purpose of this study was to examine the relationship between mothers' knowledge of developmental norms, various aspects of the mother-child interaction and children's social competence. Seventy mother-child pairs participated in this study. Children's social competence was assessed both behaviorally and cognitively and mothers' knowledge of developmental norms was also evaluated. Mother-child pairs were observed and video-recorded during two conditions: a spontaneous three-minute waiting period and a semi-structured, seven-minute period in which mothers were asked to prepare their children to meet and play with a less socially skilled child.

Results indicated that mothers' knowledge of developmental norms and family socio-economic status were related to cognitive indices of children's social competence only. When knowledge of developmental norms was analyzed to assess if it acted as a mediator between mother-child interactions and children' social competence, no support was found for the mediational model. After covarying for the effects of socio-economic status and mother's knowledge of developmental norms, regression analyses revealed that mothers who taught their children about a less socially skilled peer by using explanations and relating information

to their child's own experiences had children who produced more alternative solutions and more socially appropriate solutions to peer-interaction problems. Within the instructional condition, results also showed a significant relationship between maternal directiveness (negative relationship) and play (positive relationship) and children's abilities to generate socially appropriate solutions to peer problems. In contrast, maternal play and conversation during the spontaneous condition were predictive only of behavioral indices of children's social competence. Implications for clinical applications and future directions in research are discussed.

ACKNOWLEDGMENTS

I would like to express my appreciation to my committee members: Drs. Anthony DeCasper, Timothy Johnston, Carol McKinnon, and David Rabiner for their input and constructive criticism regarding this dissertation. I am particularly grateful to my advisor and dissertation chairperson, Dr. Susan P. Keane, for acting as my mentor in so many areas of professional development: academic achievement, clinical training and supervision, and research design and analysis. Her active participation in the planning and execution of this project, as well as my graduate career, has been invaluable.

I would also like to thank Sigma Xi, the Scientific Research Society, whose award of a Grant-in-Aid of Research helped to defray the costs of this dissertation project.

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

LIST OF TABLES

LIST OF FIGURES

Page

CHAPTER I

INTRODUCTION

Overview

The development of social competence in children is considered by many to be an important aspect of the child's overall development (Thomas & Chess, 1980; Waters & Sroufe, 1983). Historically, research focusing on children's social competence has been characterized by two primary avenues of study. First, the relationship between children's social competence and subsequent adjustment problems appears to be well substantiated by the research literature (Asher & Hymel, 1981; Asher, Oden, & Gottman, 1977; Hartup, 1983). Children who have been identified as socially incompetent are more likely to have school difficulties including academic problems, have a higher incidence of truancy and identification as juvenile delinquents (Roff, Sells, & Golden, 1972), drop out of school (Ullmann, 1957), as well as experience mental health problems (Cowen, Pederson, Babigian, Izzo, & Trost, 1973; Kohlberg, LaCrosse, & Ricks, 1972). This research supports the premise that children who are poorly accepted by their peers will have a greater chance than others of developing later life difficulties (Parker & Asher, 1987).

It is this premise that has led researchers to attempt to delineate what particular social skills characterize adequate peer acceptance (Hartup, 1983; Putallaz & Gottman, 1981, 1983) and forms the basis for attempts to design effective intervention and social skills treatment programs (Asher & Renshaw, 1981; Combs & Slaby, 1977; Conger & Keane, 1981; Foster & Ritchey, 1979; Hops, 1982). Following from this, a second line of study has resulted in a plethora of research detailing specific behaviors and abilities that are related to children's social competence. The results of this body of work reveal a variety of distinguishing characteristics, both cognitive and behavioral, that can be used to delineate levels of children's social competence.

The study of children's social competence focusing on behavioral differentiation has been varied. In the area of perspective-taking, which looks at a child's ability to use referential communication, (Asher & Renshaw, 1981; Greenspan, 1981; Urbain & Kendall, 1980), research has shown that children of rejected social status (as assessed by peer-nomination sociometric) fail to tailor their social communications to the specific needs of their partner. In contrast, interactions of socially popular children reveal that they respond on the basis of their partner's present level of communication. Thus, children of varying levels of social competence have been found to differ in their ability to use referential communication skills.

Peer-entry skills have also been the focus of study related to the social competence of children (Dodge, 1984; Dodge, Schlundt, Schocken, & Delugach, 1983; Putallaz & Gottman, 1981a, 1981b). Socially competent children provide more positive reinforcement to their peers when entering a new group than do socially incompetent children. Likewise an analysis of their communications revealed that these children more often make statements reflecting their interest in the group's activities while not calling specific attention to themselves. In general, socially competent children "fit" into the pre-existing group and mold their behavior to the norm of the group, while socially incompetent children are less likely to do so. Rejected children, on the other hand, were more likely to call attention to themselves in a way that distracted from the group's cause rather than supporting it. They were also more likely to disagree with the members of the group, state their own opinions, and behave more negatively towards the group. In a word, they did not "fit" into the group's structure as well as did their socially competent counterparts (Coie, Dodge, & Kupersmidt, 1990; Hartup, 1983; Putallaz & Wasserman, (1990).

Consistent with this work, research has demonstrated that socially popular children (as designated by peer-nomination sociometric) can be distinguished from socially rejected children on the basis of others'

perceptions of these two groups (Dodge, Coie, Pettit, & Price, 1990; Putallaz & Wasserman, 1990). For instance, children and adults alike perceive popular children as more cooperative and as group leaders, in contrast to perceptions of rejected children as disruptive and more likely to be aggressive. The behaviors of the two groups of children are consistent with these different perceptions because socially popular children do, in fact, evidence more prosocial and interactive play which is likely to be consistent with the group norms. In contrast, socially rejected children are more likely to exclude others in their play, to play inappropriately, to be aversive in their physical and verbal behaviors towards others, and to react aggressively when they find something aversive (Dodge, Coie, Pettit, & Price, 1990; Putallaz & Wasserman, 1990). Thus, research reveals a consistency between the peer-nomination social status categories of popular and rejected and a variety of behaviors considered to be reflective of social competence.

While a major portion of the research has focused on behavioral differences which characterize children of varying levels of social competence, studies assessing possible differences in cognitive strategies abound as well. For example, early work by Spivack and Shure (1974) defined socially competent children as those children who could provide multiple solutions to social problems (alternative thinking), could judge the relative merit of the

consequences of their solutions (consequential thinking), and could use this information as the basis for the selection of an efficacious solution (means-end thinking). Results based on studies focusing on social problem-solving skills indicate that socially competent children do demonstrate the ability to generate more unique alternative solutions to problems than do socially incompetent children.

Work by Dodge, Murphy, and Buchsbaum (1984) revealed that differences in children's abilities to identify another's intention were related to their social competence level. Specifically, they found that children of rejected and neglected sociometric status were more likely to misattribute an ambiguous intention as being hostile when compared to children of popular and average sociometric status. Based on this work as well as other supportive studies, Dodge (1986) proposed a five-step social information processing model of social competence in children. Further work in this area has led Dodge and Somberg (1987) to conclude that aggressive boys display a hostile attributional bias when presented with an ambiguous intent, as well as being less skilled at accurately interpreting the intentions of peers.

In summary, the results from studies focusing on children's social competence allow us to make several conclusions. First, research provides substantial support for the conclusion that social competence is negatively

correlated with various adjustment problems that may occur in childhood and/or later in life. Second, children's levels of social competence can be categorized by characteristic behavioral and cognitive skills and abilities. In fact, in children as young as preschool and kindergarten age, we see a strong relationship between children's popularity, their social behavior, and their social knowledge (Asher & Renshaw, 1981; Hartup, Glazer, & Charlesworth, 1967; Marshall & McCandless, 1957; Putallaz, 1983; Rubin & Daniels-Beirness, 1983). Despite this firm foundation in the study of social competence in children, only recently have investigators in this area begun to ask specifically how children develop into socially competent beings. Thus, although the construct of social competence has been an active research endeavor for the past fifty years, it is only recently that an analysis of the family's role in the development of social competence has been pursued.

Family Role and Children's Social Competence

Most notably, researchers have begun to examine the role that the child's general environment as well as specific aspects of the parent-child relationship may play in the development of children's social competence. Taking a broad perspective of the role of the family, researchers have attempted to assess the impact of the family's socio-

economic status on children's social competence. Early work by Spivack and Shure (1974) found that the child's ability to generate alternative solutions to social problems with peers was related to the socio-economic status of the child's family. They proposed that the socio-economic status of the family influenced the development of the child's cognitive and verbal skills, which included the child's alternative thinking skills, a measure of children's social competence. More recently Dishion (1990) examined the "family ecology" and boys' peer relations in middle childhood. Results of this study revealed that the socio-economic status of the families of socially rejected boys was significantly lower than that of families of socially average boys. Dishion suggests the need for a longitudinal examination of the role of socio-economic status and parenting processes and child behavior in peer rejection at different points in development. These studies suggest then that socio-economic status, a broad indicant of the child's general family environment, may play a significant role in the development of children's social competence. Narrowing the scope and focusing more specifically on the relationship between parenting practices and children's social competence, research by Baumrind (1967, 1971) has shown that hostile, inconsistent parenting predicts the development of socially incompetent and aggressive behavior in children, while conversely, socially competent behavior with peers is

predicted by warm, responsive parenting practices. In addition, proactive methods, such as parental teaching and "dialoguing," have also been linked to children's development of competence (Keane, Brown, & Crenshaw, 1990; Pettit & Bates, 1987; Spivack, Platt, & Shure, 1976). Similarly, Roopnarine (1987) looked at the relationship between mothers' ability to reason with her child to help him/her learn acceptable behavior and children's behavior with peers. Results revealed an inverse relationship between maternal reasoning guidance and children's use of negative behaviors with peers. Taken as a whole these studies suggest that the way in which parents "parent" their children is related to how their children respond to and interact with their peers.

Another area of research has attempted to assess the impact of parental behavior on children's social competence. Significant work by Putallaz (1987) examined the potential connection between the social behavior of mothers and the social behavior and sociometric status of their first-grade children. Results based on direct observation of mother-child, mother-mother, and child-child interactions provided some support for a direct relation between the behaviors mothers displayed with their children and the behaviors exhibited by their children, both with their mothers and with peers. Putallaz found that mothers of children with higher social status were more positive,

focused on feelings, and were less disagreeable and demanding when interacting with their children than mothers of children with lower social status. She concluded that "children may acquire at least some of their social behavior repertoire through interaction with their mothers, which in turn may influence their social status" (p. 336).

Another important study, conducted by MacDonald and Parke (1984), revealed that different patterns of maternal and paternal behavior were associated with the social competence of girls and boys. Specifically, these researchers found that maternal directiveness was positively correlated with daughters' popularity, while paternal directiveness was negatively related to both sons' and daughters' popularity. Also, paternal engagement and physical play as well as maternal verbal behavior were positively related to children's social competence with peers, although more so for boys than girls.

Similarly, research by Keane, Brown, and Crenshaw (1990) sought to assess through observation of mother-peer, child-peer, and mother-child dyads the nature of the association between children's social competence and mothers' relationships with family and peers. Results from this study revealed that children's social status was related to mothers' ability to provide socially appropriate resolutions to conflict. Mothers of popular children provided more prosocial resolutions to conflict whereas

mothers of rejected status children provided more hostile resolutions. As these authors note, these findings are consistent with the hypothesis that maternal values and behaviors influence children's social competence. Continuing the focus on family determinants of children's social competence, Pettit, Dodge and Brown (1988) found that several facets of the family experience of 4- and 5-year-old children were predictive of classroom social competence and social problem solving. At this age level, early experience with peers, as well as exposure to deviant maternal values and expectations were both predictive of social competence with peers, although problem solving ability mediated this relationship for the maternal variables. They concluded that children who were more socially competent in the classroom were less likely to have restrictive mothers or mothers who had deviant values, such as endorsing the use of aggression, and deviant expectations, such as making hostile attributions about their own child in hypothetical contexts.

While Pettit, Dodge and Brown (1988) examined the relationship between maternal values and expectations and children's social competence, others have assessed the relationship between mothers' knowledge and expectations and childhood psychopathology. Work by Rickard, Graziano, and Forehand (1984) focused on the relationship between mothers' knowledge of child developmental norms and childhood

behavioral deviance in clinic-referred and non-clinic referred children. They determined that there were significant differences in patterns of knowledge and expectations for these two groups. This study revealed that individual differences in parental knowledge and expectations about children and child rearing practices discriminated between clinic-referred and non clinic-referred mother-child pairs.

Purposes of the Study

Clearly, the results of these studies indicate that the family's general environment, as well as parental behavior, knowledge, and expectations are important factors in the development of children's social competence. But we also recognize and acknowledge that the relationship between parents and children is both dynamic and reciprocal. Thus, the direction of causality, what factors cause some children to be more socially competent than their peers, remains a primary question to be answered. The difficulty though in determining the direction of influence is multifaceted as the relationships within a family are dynamic. Just as parents influence their children, children also impact upon their parents' decisions and actions. Specifically, the difficulties of determining the direction of causality in a research study such as this are two-fold. First, correlational analyses do not directly address the direction

of influence. Second, the causal relationship within the family context is both multi-directional and changing through time. Thus, even if a direct experimental manipulation of the relationships were possible, it would be difficult to confidently infer the direction of influence. That is, trying to assess the direction of influence using a linear model is most probably overly simplistic and not reflective of the complexity of the interactions within the family. Despite this, the nature of research is to broaden and clarify our understanding of the development of children's social competence by focusing on specific areas and aspects of the complex whole. Therefore, keeping in mind the complex relationships which constitute any family constellation, this study undertakes to examine only several specific facets of the large whole.

A major purpose of this research was to continue to extend this knowledge base on children's social competence through an examination of how four- and five-year-old pre-kindergarten age children learn appropriate social skills. The focus of this work is two-fold and assesses the relationship between mother's knowledge of developmental norms, various aspects of the mother-child interaction and children's social competence. Children's social competence was assessed both behaviorally, through daycare teachers' classroom ratings, and cognitively, through a measure of children's social problem-solving skills. Each mother's

knowledge of developmental norms was also assessed. Mother-child interactions were analyzed in the context of two conditions analogous to those that normally occur between mother and child, i.e., mothers and children were observed and video-recorded in both an unstructured, spontaneous interaction and in a semi-structured, instructional interaction. The goal of this research was to analyze the relationship between a mother's knowledge of what is developmentally appropriate for her child, how and what mothers choose to instruct their children about appropriate social behavior with peers and children's social competence.

Hypotheses

Based on previous research findings, the following hypotheses were proposed. At a general level, children's social competence was thought to be related to how mothers provided social information regarding appropriate behavior with a peer. Previous work has shown that more socially competent children are more skilled communicators and are more likely to use referential communication when conveying information to their peers. A well established body of work (Baumrind, 1967, 1971; Keane, Brown, & Crenshaw, 1990; Pettit & Bates, 1987; Roopnarine, 1987; Spivack, Platt, & Shure, 1976) further suggests that the ways in which parents teach and provide information is related to children's social skills and abilities. Based on these findings two

hypotheses were formulated. First, it was hypothesized that a mother's communication with her child would be related to the child's social competence. Specifically, it was hypothesized that mothers whose communication included explanations and reasoning which related information about a peer to the child's own experiences (both aspects of perspective-taking) would have children who evidenced higher levels of social competence. And second, it was hypothesized that mothers who actively provided their children with more prosocial strategies and recommendations for interacting with peers would, in turn, have children who were more socially competent. Thus children's social competence was hypothesized to be related to how mothers taught and communicated social information to their children, as well as the specific strategies they recommended.

Based on the research literature which has focused on the mother-child relationship, several additional hypotheses were formulated which looked at the relationship between children's social competence and various aspects of the mother-child interaction. Related to the work of McDonald and Parke (1984), it was hypothesized that mothers who initiated more conversations about their children's day and activities and engaged their children in more play during the course of their time together, would have children who were more socially competent. Second, based on a large body

of work assessing patterns of child-rearing, including early studies conducted by Baumrind (1967, 1971) and more recent work by Rothbaum (1986) and Ladd and Golter (1988), it was further hypothesized that mothers' ability to interact with their children using less coercive and intrusive means of managing and controlling their children's behavior would be predictive of children's social competence.

Recent work by Pettit, Dodge, and Brown (1988) indicates that mothers' values and expectations for their children's behavior are related to children's social competence. In a related way, Rickard, Graziano, and Forehand (1984) determined that mothers' knowledge of developmental norms is related to her behavior with her child as well as to her child's social competence. Thus, it was hypothesized that mothers' knowledge of developmental norms would have a pervasive influence in the mother-child relationship and hence impact on the development of children's socially competence.

In a similar manner, it was also hypothesized that the family's socio-economic status would have a broad influence on the child's development. Specifically, Spivack and Shure (1974) have suggested that the family's socio-economic status influences the child's cognitive and verbal development and hence the development of social competence as well. Since the effects of family socio-economic status and mothers' knowledge of developmental norms are

hypothesized to exert a global influence on the development of children's social competence, the effects of these variables will be partialed out statistically prior to determining the effects of all other independent variables on children's social competence.

CHAPTER II

METHOD

Subjects

The subjects were 70 mothers and their 4 and 5-year-old children who were recruited from daycare centers in Greensboro, North Carolina. In order to have a representative sample, eleven daycare centers were selected which served a broad range of socio-economic areas of the city. After permission was received from the daycare directors, a consent form (Appendix A) describing the study was sent home to the mothers of all four and five-year-old children. Mothers who returned a signed consent form indicating their willingness to participate were contacted individually and further information regarding the study was provided. Participation was scheduled at the subjects' convenience in the Psychology Department at The University of North Carolina at Greensboro.

While participation in this study was voluntary, mothers were paid $10.00 as an incentive to participate and to reimburse them for their travel costs and time. Children were provided with gift certificates at local fast-food restaurants and were given several small toys and gifts in thanks for their participation. While the mother-child pairs were the primary focus of this investigation, each

child's daycare teacher also participated by completing a behavioral rating scale assessing the child's social competence with his or her daycare peers. For their participation, the daycare teachers were paid $2.00 for each child they rated.

Mothers' Measures

During their scheduled appointment time, each mother completed a biographical data sheet, detailing basic information such as educational level, occupation, marital status, age, race, and gender (Appendix B). From this information, the family's socio-economic status was computed using Hollingshead's four-factor index of social status (Hollingshead, 1975). This determination of socio-economic status consists of the weighted sum of the educational level and occupational status for both parents if both have regular contact with the child (Appendix C).

In addition, mothers completed one subscale of the Maternal Expectations, Attitudes and Belief Inventory (Rickard, Graziano, & Forehand, 1984) known as the Maternal Knowledge of Developmental Norms. This subscale assesses maternal awareness of appropriate child developmental norms for four and five year old children. The Maternal Knowledge of Developmental Norms (DEVELOP) consists of 20 items which include motor, cognitive/intellectual, self-help, moral, and behavioral skills. Mothers respond on a 7-point Likert

rating system which denotes the level of agreement with each statement (Appendix D). Rickard, Graziano, and Forehand (1984) assessed two kinds of reliability for this subscale: the test-retest correlation across a three week interval for DEVELOP was r = .70 and Cronbach's alpha coefficient, an index of internal consistency, was alpha = .67. Computation of Cronbach's alpha coefficient based on the sample in this study resulted in a comparable value of alpha = .65.

Children's Measures

While mothers were completing both measures, their children individually completed the Social Problem-Solving Test - Revised (SPST-R) (Rubin, 1988) which was derived from Spivack and Shure's (1974) Preschool Interpersonal Problem-Solving Test. The SPST-R consists of eight stories and accompanying pictures: five focusing on object acquisition issues and three focusing on friendship initiation. According to the manual directions, "Each child is presented individually with a series of problem situations in which a story character either wishes to gain access to a toy or material in another child's possession or to meet and become friendly with an unfamiliar child. The child being tested is then asked what the story character could do or say in each situation to accomplish the desired goal. Two such responses are requested for each situation. The child is then asked what he/she him/herself might do in such a

situation" (The Social Problem-Solving Test-Revised Manual, p. 2, Rubin, 1988). The eight stories were presented in random order and the child's responses were recorded verbatim for later scoring.

Scoring for the SPST-R first consisted of summing the total number of unique responses (not verbatim repetitions of a previous response) that each child provided for the five object-acquisition stories and separately for the three friendship stories. Based on this sample assessing internal consistency, Cronbach's alpha coefficients were computed for the summed responses to the object-acquisition stories (alpha = .98) and to the summed responses to the friendship stories (alpha = .92). Based on the correlation between these two summed scores for this sample, $r = 0.73$, $p = .0001$, they were combined into one variable to reflect the proportion of total responses that were unique alternatives (SOCALT), (i.e., not verbatim repetitions of previous responses). Second, the quality of the responses was coded using the following content categories: aggressive, seek adult intervention, general prosocial, specific prosocial, offer a bribe, and inept/irrelevant (see Appendix E for definitions and examples of each category). Using these categories, the proportion of prosocial responses (including both general and specific categories) was computed and labeled POSPROP.

The correlation between the variables POSPROP and

SOCALT is $r = .6338$, $p = .0001$. While this indicates that these two variables are related, Rubin (1988) defined the ability to generate multiple alternatives as different from the ability to produce socially appropriate responses. Because these two are conceptually different, POSPROP and SOCALT will be examined as separate measures of children's social competence.

Teachers' Measures

Each child's daycare teacher completed the Teacher Rating of Social Competence (Pettit, Dodge, & Brown, 1988), a 24-item checklist assessing children's classroom social competence (Appendix F). This measure consists of four scales designed to assess a child's ability to get along with his/her peers (PEERREL), the child's general use of social skills (SOCSKILL), proactive use of aggression (PROACT), and reactive use of aggression (REACT). Assessing the internal consistency of each scale, Dodge (1986) reported Cronbach alpha coefficients ranging from .95 to .98.

Procedure

After completing all measures, each mother-child pair participated in two conditions, hereafter referred to as the Spontaneous Condition (SC) and the Instructional Condition (IC). The IC always followed the SC, as randomization was implausible given the nature of the two conditions.

In the SC a mother and her child were escorted into a small waiting room consisting of a sofa facing a one-way mirror and a small table. Each mother-child pair was reminded that another mother and child were scheduled to arrive soon and that the two children would be asked to play with each other in a playroom without their mothers present. They were also instructed that the other child would be of the same race, gender, and age as the subject child, but that he/she did not go to the same daycare center. The mother-child pair was instructed to wait together until they were notified of the other child's arrival. The SC was three-minutes long, the interaction between mother and child was video-recorded through a one-way mirror and no toys or books were present in the waiting room.

At the termination of the SC, the examiner informed the mother-child pair that the other child was running late. In the absence of the child, each mother was given the following information:

> The child's mother called and said that they are running late because the little boy/girl was in a bad mood and was not cooperating. His/her mom said that he/she had a bad day at school and when that happens he/she is not real easy to get along with. She said that he/she is pretty unhappy today and may have a hard time meeting and playing with someone he/she doesn't know. He/she has been known to tease other children, hit others and start fights. This boy/girl is not very good at sharing and does not like to play many games or with different toys. Most children do not think this child is fun to be with when

> he/she is like this. In order to make best use of your time while we are waiting, I want you to make sure that your child is prepared to meet and play with this child. I want you to take some time to help your child in any way you can or usually do to be ready to meet and play with this child.

The mother and child were then escorted back into the waiting room and told that they would be notified when the other child arrived. The IC lasted for seven minutes and was also video-recorded.

After the seven minute IC, the mother-child pair was informed that the other child was not able to participate in the study. In the debriefing, mothers were told that the focus of this study was upon her interaction with her child and that no other child had been scheduled. The study was explained in detail and an opportunity for questions and comments was provided. Each mother was allowed to explain the other child's absence to her own child as she wished. At this point, the mother was paid and the child was presented with small gifts.

For both the IC and SC, the video-recorded interactions between mother and child were transcribed verbatim and resulted in the coding of four variables. Based upon earlier work by Baumrind (1967), for the first variable the unit of interaction between mother and child was defined as two or more causally related acts containing a single message and involving both mother and child in an

interchange initiated by the mother. This unit of interaction was labeled an initiation sequence. For example, an initiation sequence was coded if the mother told her child to remove his shoes from the sofa and the child did or did not comply with her request. Thus, an initiation sequence was coded whenever a mother attempted to influence or control the actions or behavior of her child, regardless of whether the child complied.

Coding of the mother initiations followed a categorization which Baumrind (1967) posited to reflect the sophisticated means by which mothers could induce their children to comply with maternal demands. For the SC and the IC, variables reflecting the mother initiations were coded resulting in the following variables: DIRECTIVE:S, PERSUASIVE:S, COERCIVE:S, and DIRECTIVE:I, PERSUASIVE:I, COERCIVE:I. These variables reflect increasing levels of control as well as greater use of intrusive means by the mother to get her child to comply with her requests or demands (see Appendix G for definitions).

Next, the content of the interactions between mother and child was coded for frequency of acts of play initiated by the mother during both SC and IC (PLAY:S and PLAY:I) and frequency of general conversation initiated by the mother regarding the child's day and activities (CONVERSE:S and CONVERSE:I). These variables reflect frequency, not duration, of both play and conversation.

For the next mother-child interaction variable, the primary focus was on the ways in which the mothers conveyed specific information to their children about the other child. This consisted of coding for the presence of three different means of communication in which mothers prepared their children to meet and interact with another child: QUESTION, EXPLAIN, and RELATE. When a mother simply asked her child what he/she would do when the other child arrived, or asked what he/she would do if the other child hit or teased, this was coded as QUESTION. When a mother talked about why the other child may act or feel the way he/she does, this was coded as EXPLAIN. For instance, if a mother stated that the other child was in a bad mood because she/he had a bad day at school, this would be coded as an explanation. RELATE was coded when mothers attempted to describe the other child's feelings and possible responses in terms of their own child's feelings and responses or in terms of a family member's feeling and reactions. For example, RELATE was coded when a mother described an event and/or feelings her own child had experienced and then stated that this had also happened to the other child (i. e., "Remember how sad you felt when the other children at school didn't let you play with them? Well, that is how this boy feels and is probably why he is in a bad mood.")

Conceptually, these three variables were thought to reflect three qualitatively different levels in which a

mother could provide information to her child, and thus prepare him/her to meet and interact with the other child. Questioning provided the least information to the child and if any information was provided it was secondary to the question being asked. Explaining was generally descriptive in nature, allowing mothers to selectively choose what information they felt important to impart to their children. Finally, relating provided information in a way which directly related the behavior and/or feelings of the other child to the mother's own child, thereby making a basic connection between the two children. This method of providing information was a referentially-based one in which mothers actively used perspective-taking techniques to convey information to their children. Based on this conceptualization, a composite variable reflecting the weighted sum of these three variables was formed using this formula: TEACH = 1(QUESTION) + 2(EXPLAIN) + 3(RELATE).

Finally, the specific strategies and recommendations that mothers suggested to their children were coded for presence and type. Appendix H lists the seven strategies mothers typically used. To further reduce the total number of variables, these seven levels were collapsed into a single variable, STRATEGY, with four levels reflected by the following system: 0= No Strategy (Suggestion 1), 1= Confrontational strategies (Suggestions 2 and 3), 2= Nonconfrontational strategies (Suggestions 4 and 5), and 3= Prosocial strategies (Suggestions 6 and 7).

CHAPTER III

RESULTS

Demographic Statistics

Seventy children participated in this research project, 36 females and 34 males. This may represent a very select sample as hundreds of consent forms were sent home to mothers, and only a small fraction of the mothers contacted returned the forms and consented to participate. The average age of the children was 4-years, 8-months, and ranged from 4-years, 1-months to 5-years, 11-months. As all children were enrolled in pre-kindergarten programs, no distinction among subjects was made by age. Based on computation of the socio-economic status (SES) using Hollingshead's four-factor criteria, the variable SES for this sample was found to have a normal distribution (Mean = 43.85, SD = 10.18, range = 22 to 62).

Since preliminary analyses revealed no significant differences related to the child's gender on any measure of social competence, gender was not used as an independent variable in initial analyses. Also, while the racial composition of this sample was somewhat unbalanced, 60 whites and 10 blacks, preliminary analyses revealed no significant differences by race on each of the dependent outcome measures. For these reasons, race was not

considered as an independent variable in any statistical analyses.

Internal Consistency

Assessing the internal consistency of the Teacher Rating of Social Competence for this sample, the following Cronbach alpha coefficients were computed: SOCSKILL, alpha = .87; PEERREL, alpha = .22; PROACT, alpha = .90; and REACT, alpha = .91. Due to the low coefficient of internal consistency computed for the PEERREL factor, this variable was not used in any statistical analyses. Based on the moderately high, statistically significant correlation between PROACT and REACT ($r = .85$, $p = .0001$), and the high alpha coefficient (alpha = .95), the total number of variables was further reduced by summing the average scores for both variables related to the use of aggression (AGGRESS = PROACT + REACT). While the resulting correlation between the variables SOCSKILL and AGGRESS was $r = -0.66$, $p = .0001$, conceptually, these two are believed to represent different measures of social competence. Thus, for the purposes of this study, SOCSKILL and AGGRESS will be examined as separate indices of children's social competence.

Reliability

All tapes and transcriptions were coded first by the primary investigator who remained blind to the social competence of the children. Twenty-one (30%) of the

interactions were then re-coded by a graduate student also blind to any rating of social competence. Interobserver agreement was calculated using Cohen's kappa statistic which represents an agreement measure for both occurrence and nonoccurrence of behavior, corrected for chance agreement between observers (Ciminero, Calhoun, & Adams. 1986). Interobserver agreement for the three levels of mother initiation sequences (DIRECTIVE, PERSUASIVE, COERCIVE), original seven levels of STRATEGY, original three levels of TEACH, and both PLAY and CONVERSE ranged from 0.67 to 0.82 and were considered to reflect acceptable values of agreement.

In a similar manner, responses to each of the seven items of the SPST-R were coded by the primary investigator and then re-coded by a second graduate student. Interobserver agreement was computed and found to range from 0.77 to 0.98 for these items. These values again reflected adequate levels of agreement.

General Treatment of Data

Based on previous research findings and the hypotheses formulated, the family's socio-economic status (SES) and maternal knowledge of developmental norms were entered into all analyses as covariates. This was to partial out the effects of these variables prior to assessing the effects of the independent variables on measures of children's social

competence. The mother-child interaction variables, independent predictor variables, assessed within the spontaneous condition included mother initiation sequences (DIRECTIVE:S, PERSUASIVE:S, COERCIVE:S), as well as PLAY:S, and CONVERSE:S. These variables were also assessed within the instructional condition (DIRECTIVE:I, PERSUASIVE:I, COERCIVE:I, PLAY:I, and CONVERSE:I) as were TEACH and STRATEGY. Table 1 presents the intercorrelations among the independent variables.

The dependent, outcome variables included the variables resulting from the teachers' assessment of the children's social competence (SOCSKILL and AGGRESS) and the variables arising from the coding of the children's responses to the Social Problem-Solving Task - Revised (SOCALT and POSPROP). These two assessments of social competence were used as separate measures because they are conceptually different measures of the construct of social competence, one reflecting a more cognitive assessment and the other a more behavioral assessment of social competence. Variables resulting from these two assessments were found to be statistically uncorrelated with each other (Table 2).

The presentation of the results of all reported analyses will follow the same pattern in which the variables included in the multiple regression analysis will be specified using the following format: dependent variable = (covariate + covariate) + independent variables. Results

from analyses based upon the prediction of the cognitively based children's social competence variables (SOCALT and POSPROP) are presented first, followed by the results from analyses based upon the behaviorally based children's social competence variables (SOCSKILL and AGGRESS).

Prediction of Social Competence: Spontaneous Condition

Multiple regression analyses were performed to determine if children's abilities to generate unique solutions to social problems (SOCALT), as well as socially appropriate solutions (POSPROP), could be predicted by mother initiation sequences during the SC. The model SOCALT = (SES + DEVELOP) + DIRECTIVE:S + PERSUASIVE:S + COERCIVE:S was statistically significant, $F(5, 64) = 3.91$, $p = 0.0037$, R-square = 0.23. Results (Table 3) indicate that only SES and DEVELOP, contributed significantly to the model.

Table 3. SOCALT: Standardized Beta Coefficients, F-Table, and Partial R-Squares for the Spontaneous Condition, Mother Initiations

Source	Beta Coefficient	F	p	Partial R-Square
SES	0.347	9.31	0.003	0.114
DEVELOP	0.257	5.27	0.025	0.076
DIRECTIVE:S	0.144	1.48	0.229	0.012
PERSUASIVE:S	0.116	1.03	0.315	0.012
COERCIVE:S	-0.127	1.22	0.273	0.020

Together, SES and DEVELOP accounted for a substantial portion (partial R-square of 18%) of the variance accounted for by the full model (23%). Mothers of higher socio-economic status who had a greater knowledge of developmental norms had children who were able to generate more unique solutions to peer-interaction problems. The model POSPROP = (SES + DEVELOP) + DIRECTIVE:S + PERSUASIVE:S + COERCIVE:S was significant, $F(5, 64) = 2.56$. $p = 0.0357$, R-square = 0.17, with only SES contributing in a statistically significant manner (Table 4).

Table 4. POSPROP: Standardized Beta Coefficients, F-Table, and Partial R-Squares for the Spontaneous Condition, Mother Initiations

Source	Beta Coefficient	F	p	Partial R-Square
SES	0.323	7.43	0.008	0.109
DEVELOP	0.118	1.02	0.316	0.012
DIRECTIVE:S	0.070	0.32	0.572	0.005
PERSUASIVE:S	0.106	0.79	0.376	0.007
COERCIVE:S	-0.158	1.74	0.192	0.033

Multiple regression analyses were also performed to determine if children's use of aggression (AGGRESS) and social skills with peers (SOCSKILL) could be predicted by mother initiation sequences during the SC. The model

AGGRESS = (SES + DEVELOP) + DIRECTIVE:S + PERSUASIVE:S + COERCIVE:S was found to be non-significant, $F(5, 64) = 1.26$, $p = 0.2932$, R-square = 0.09. Predicting SOCSKILL, the model SOCSKILL = (SES + DEVELOP) + DIRECTIVE:S + PERSUASIVE:S + COERCIVE:S was also found to be non-significant, $F(5,64) = 1.72$, $p = 0.1420$, R-square = 0.12.

In similar analyses the predictive ability of maternal play and conversation during the SC were analyzed. The model SOCALT = (SES + DEVELOP) + PLAY:S + CONVERSE:S was significant, $F(4, 65) = 4.24$, $p = 0.0041$, R-square = 0.21. Results (Table 5) indicate that only the covariates, SES and DEVELOP, contributed significantly to the model.

Table 5. SOCALT: Standardized Beta Coefficients, F-Table, and Partial R-Squares for the Spontaneous Condition, PLAY:S and CONVERSE:S

Source	Beta Coefficient	F	p	Partial R-Square
SES	0.345	9.47	0.003	0.114
DEVELOP	0.283	6.44	0.014	0.076
PLAY:S	-0.116	1.05	0.309	0.013
CONVERSE:S	0.057	0.27	0.608	0.003

Again, mothers of higher socio-economic status who had more accurate knowledge of developmental norms had children who were able to generate more solutions to peer problem

situations.

For POSPROP, the model was also significant, $F(4, 65) = 3.08$, $p = 0.0221$, R-square = 0.16, and results (Table 6) revealed that only POSPROP contributed significantly to the model.

Table 6. POSPROP: Standardized Beta Coefficients, F-Table, and Partial R-Squares for the Spontaneous Condition, PLAY:S and CONVERSE:S

Source	Beta Coefficient	F	p	Partial R-Square
SES	0.317	7.50	0.008	0.109
DEVELOP	0.130	1.28	0.262	0.016
PLAY:S	-0.020	0.03	0.864	0.001
CONVERSE:S	0.170	2.20	0.143	0.028

For the dependent variable AGGRESS, the model AGGRESS = (SES + DEVELOP) + PLAY:S + CONVERSE:S was significant, $F(4, 65) = 3.35$, $p = 0.0148$, R-square = 0.17. Results (Table 7) indicate that both PLAY:S and CONVERSE:S are significant predictors of AGGRESS. Both are negatively related to AGGRESS and account for a partial R-square of 15% out of the total variance accounted for of 17%. This indicates that mothers who initiated more play during the spontaneous condition had children who were rated as less aggressive by their teachers. Also, mothers who initiated more

conversations regarding their child's day during the spontaneous condition had children who were rated as less aggressive by their teachers.

Table 7. AGGRESS: Standardized Beta Coefficients, F-Table, and Partial R-Squares for the Spontaneous Condition, PLAY:S and CONVERSE:S

Source	Beta Coefficient	F	p	Partial R-Square
SES	-0.031	0.07	0.791	0.001
DEVELOP	0.122	1.15	0.289	0.014
PLAY:S	-0.309	7.20	0.009	0.083
CONVERSE:S	-0.273	5.73	0.020	0.073

For the dependent variable SOCSKILL, the model SOCSKILL = (SES + DEVELOP) + PLAY:S + CONVERSE:S was significant, $F(4, 65) = 3.87$, $p = 0.0070$, R-square = 0.19. Results (Table 8) indicate that DEVELOP contributed significantly to the model and that PLAY:S was a significant predictor of SOCSKILL. Mothers who had more accurate knowledge of developmental norms and who initiated more play with their children during the spontaneous condition had children who were rated by their teachers as more socially skilled with peers.

Table 8. SOCSKILL: Standardized Beta Coefficients, F-Table, and Partial R-Squares for the Spontaneous Condition, PLAY:S and CONVERSE:S

Source	Beta Coefficient	F	p	Partial R-Square
SES	0.090	0.63	0.431	0.023
DEVELOP	0.258	5.24	0.025	0.059
PLAY:S	0.340	8.92	0.004	0.106
CONVERSE:S	0.139	1.52	0.222	0.019

Prediction of Social Competence: Instructional Condition

Within the IC, similar multiple regression analyses were performed to determine if the cognitive and behavioral measures of children's social competence could be predicted by the mother initiation variables. The model SOCALT = (SES + DEVELOP) + DIRECTIVE:I + PERSUASIVE:I + COERCIVE:I was statistically significant, $F(5, 64) = 4.04$, $p = 0.0030$, R-square = 0.24. Results (Table 9) indicate that only the covariates contributed significantly to the model. Mothers of higher socio-economic status who had a more accurate knowledge of developmental norms had children who were able to generate more unique solutions to peer-interaction problems. DIRECTIVE:I approached significance suggesting an inverse relationship in which mothers who were less directive with their children in the instructional condition

had children who generated more alternative solutions to peer problems.

Table 9. SOCALT: Standardized Beta Coefficients, F-Table, and Partial R-Squares for the Instructional Condition, Mother Initiations

Source	Beta Coefficient	F	p	Partial R-Square
SES	0.271	5.49	0.022	0.114
DEVELOP	0.236	4.53	0.037	0.076
DIRECTIVE:I	-0.231	3.17	0.080	0.043
PERSUASIVE:I	-0.073	0.39	0.535	0.005
COERCIVE:I	0.039	0.12	0.735	0.002

The model POSPROP = (SES + DEVELOP) + DIRECTIVE:I + PERSUASIVE:I + COERCIVE:I was significant, $F(5, 64) = 3.15$. $p = 0.0132$, R-square = 0.20, with SES and DIRECTIVE:I contributing to the model in a statistically significant manner (Table 10). Mothers of higher socio-economic status who were less directive in managing their children while waiting had children who were able to generate more socially appropriate solutions to problems.

Table 10. POSPROP: Standardized Beta Coefficients, F-Table, and Partial R-Squares for the Instructional Condition, Mother Initiations

Source	Beta Coefficient	F	p	Partial R-Square
SES	0.256	4.64	0.035	0.119
DEVELOP	0.096	0.70	0.406	0.010
DIRECTIVE:I	-0.270	4.12	0.047	0.054
PERSUASIVE:I	-0.109	0.84	0.364	0.012
COERCIVE:I	0.042	0.12	0.726	0.002

Multiple regression analyses were also performed to determine if children's use of aggression (AGGRESS) and social skills with peers (SOCSKILL) could be predicted by mother initiation sequences during the IC. The model AGGRESS = (SES + DEVELOP) + DIRECTIVE:I + PERSUASIVE:I + COERCIVE:I was found to be non-significant, $F(5, 64) = 0.41$, $p = 0.8427$, R-square = 0.04. Predicting SOCSKILL, the model SOCSKILL = (SES + DEVELOP) + DIRECTIVE:I + PERSUASIVE:I + COERCIVE:I was also found to be non-significant, $F(5,64) = 1.14$, $p = 0.3479$, R-square = 0.08.

In similar analyses the predictive ability of maternal play and conversation during the IC were analyzed. The model SOCALT = (SES + DEVELOP) + PLAY:I + CONVERSE:I was significant, $F(4, 65) = 4.10$, $p = 0.0050$, R-square = 0.20 and results (Table 11) indicate that only the covariates

(SES and DEVELOP) contributed significantly to the model.

Table 11. SOCALT: Standardized Beta Coefficients, F-Table, and Partial R-Squares for the Instructional Condition, PLAY:I and CONVERSE:I

Source	Beta Coefficient	F	p	Partial R-Square
SES	0.338	8.40	0.005	0.114
DEVELOP	0.288	5.79	0.019	0.076
PLAY:I	-0.077	0.34	0.559	0.010
CONVERSE:I	0.051	0.16	0.694	0.001

For POSPROP, the model was also significant, $F(4, 65) = 3.75$, $p = 0.0083$, R-square = 0.19, and results (Table 12) reveal that SES contributed significantly to the model and that PLAY:I was a significant predictor of POSPROP.

Table 12. POSPROP: Standardized Beta Coefficients, F-Table, and Partial R-Squares for the Instructional Condition, PLAY:I and CONVERSE:I

Source	Beta Coefficient	F	p	Partial R-Square
SES	0.263	5.02	0.029	0.119
DEVELOP	0.055	0.20	0.653	0.011
PLAY:I	0.285	4.59	0.036	0.047
CONVERSE:I	0.117	0.81	0.370	0.010

Mothers of higher socio-economic status who initiated more play with their children had children who produced more socially appropriate solutions to peer problems.

For the dependent variable AGGRESS, the model AGGRESS = (SES + DEVELOP) + PLAY:I + CONVERSE:I was not significant, $F(4, 65) = 1.29$, $p = 0.2845$, R-square = 0.07. As well, for the dependent variable SOCSKILL, the model SOCSKILL = (SES + DEVELOP) = PLAY:I + CONVERSE:I was not significant, $F(4, 65) = 1.33$, $p = 0.2699$, R-square = 0.08.

Next, multiple regression analyses were performed to determine if the children's social competence variables could be predicted from the ways in which mothers communicated with and taught their children during the IC. For SOCALT, the model SOCALT = (SES + DEVELOP) + TEACH + STRATEGY was statistically significant, $F(4, 65) = 5.71$, $p = 0.0005$, R-square = 0.26. Results are presented in Table 13.

Table 13. SOCALT: Standardized Beta Coefficients, F-Table, and Partial R-Squares for the Instructional Condition, TEACH and STRATEGY

Source	Beta Coefficient	F	p	Partial R-Square
SES	0.276	6.33	0.014	0.114
DEVELOP	0.220	3.87	0.053	0.076
TEACH	0.249	5.25	0.025	0.053
STRATEGY	-0.137	1.46	0.231	0.017

These results indicate that TEACH contributed in a significant way to the model after the significant effects of the covariates, SES and DEVELOP, were partialed out. Mothers who were more likely to teach their child about a less socially skilled peer by explaining and relating information about the peer to her child's own experiences had children who were able to produce a greater number of solutions to peer-interaction problems.

For POSPROP, the model was also found to be significant, $F(4, 65) = 4.10$, $p = 0.0050$, R-square = 0.20. Results of this analysis (Table 14) indicate that TEACH contributed in a significant way to the model after the significant effects of SES and the non-significant effects of DEVELOP were partialed out.

Table 14. POSPROP: Standardized Beta Coefficients, F-Table, and Partial R-Squares for the Instructional Condition, TEACH and STRATEGY

Source	Beta Coefficient	F	p	Partial R-Square
SES	0.282	6.15	0.016	0.109
DEVELOP	0.109	0.88	0.352	0.015
TEACH	0.272	5.82	0.019	0.070
STRATEGY	-0.048	0.17	0.682	0.002

Mothers whose teaching was more likely to include explaining

and relating information to their child's own experiences had children more able to produce socially appropriate solutions to peer interaction problems.

Analyzing the model, AGGRESS = (SES + DEVELOP) + TEACH + STRATEGY, no significant findings resulted, $F(4, 65) = 0.59$, $p = 0.6698$. R-square = 0.04. For the model SOCSKILL = (SES + DEVELOP) + TEACH + STRATEGY, no significant findings resulted, $F(4, 65) = 1.55$, $p = 0.1971$, R-square = 0.09.

Based on the literature cited earlier which suggests that gender differences exist in children's play and other areas (MacDonald & Parke, 1984), further analyses were conducted. The purpose of this further testing was to assess if the interaction between gender and the independent variables played a statistically significant role in predicting children's social competence. Thus, for each independent variable previously determined to be a significant predictor of social competence after the effects of SES and knowledge of developmental norms were controlled, the following general model was tested: SOCIAL COMPETENCE = (SES + DEVEL) + PREDICTOR + GENDER + GENDER*PREDICTOR. Based on earlier results, the following predictor variables were tested to assess the effect of gender by predictor interaction: PLAY:S, PLAY:I, CONVERSE:S, DIRECTIVE:I, and TEACH.

For all models except one, the interaction between gender and the predictor variable was non-significant. The

only exception was for the following model: POSPROP = (SES + DEVEL) + TEACH + GENDER + GENDER*TEACH which was statistically significant, $F(5, 64) = 5.16$, $p = 0.0005$, R-square = .29. After the significant effects of SES and the non-significant effects of DEVEL were controlled, the GENDER*TEACH interaction term was a significant predictor of POSPROP ($F = 7.74$, $p = 0.0071$). This interaction indicates that children's ability to generate socially appropriate solutions to social problems is a function of how their mothers teach them and that this differs by children's gender. Specifically, it was determined that as mothers used higher levels of TEACH with their daughters, the social competence levels of girls increased at a significantly greater rate than it did for the boys. The mean TEACH scores by gender follow: for boys, Mean = 3.7, and for girls, Mean = 4.0.

Next, to determine if DEVEL was acting to mediate the relationship between social competence variables and predictor variables, a mediational model was tested (Figure 1).

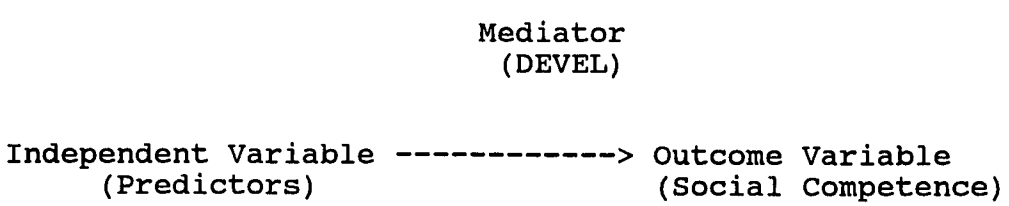

Figure 1. Mediational Model

To hypothesize and test a mediational model, Baron and Kenny (1986) have outlined the necessary criteria to determine mediation. First, regressing the mediator on the independent variable must result in a significant model. Second, regressing the dependent variable on the independent variable must result in a significant model. Third, regressing the dependent variable on both the independent variable and mediator must result in a significant model and "the mediator must affect the dependent variable in the third equation" (Baron & Kenny, 1986, p. 1177). This mediational model was tested for each of the predictor variables and the social competence variables but no model met the necessary criteria for mediation. Thus, these data and results do not provide support for the idea that knowledge of developmental norms mediates between a variety of mother-child interaction variables and children's social competence. The results of testing the mediational model are consistent with the findings of the original analyses. As originally determined, PLAY:S, PLAY:I, CONVERSE:S, DIRECTIVE:I and TEACH were significant predictors of children's social competence.

CHAPTER IV

DISCUSSION

Maternal Teaching, Instructional Strategies, and Children's Social Competence

The results of this study provide support for the hypothesis that the way in which mothers communicated information to their children about interacting with a less socially skilled peer would be predictive of children's social competence. This was not found to be true for all assessments of social competence, rather, only for the cognitively based indices of children's social competence. When mothers were asked to talk with their children during the instructional condition, those whose communication was more likely to include explaining and relating to peers through the child's own experiences had children whose cognitively based social competence was higher. Furthermore, the finding that a gender by maternal teaching interaction was a significant predictor of children's ability to generate socially appropriate responses suggests that mothers' may be teaching girls differently than boys. While no other gender or gender interactions were found to be statistically significant, this result does provide some indication that mothers' interactions with their children may differ by children's gender.

Contrary to the prediction that mothers who actively provided more prosocial suggestions to their children to prepare them to play with another child would have children who had higher levels of social competence, this hypothesis was not supported for any assessment of social competence, behavioral or cognitive. These findings suggest that the way in which mothers communicate with their children, rather than the specific recommendations that they make, may be an important factor related to children's abilities to generate alternative solutions and socially appropriate solutions to social problems with peers. As Putallaz (1987) and others (Keane, Brown, & Crenshaw, 1990) have suggested, while children may be taught in direct ways how to interact appropriately with peers, the acquisition of social skills and competence may also be learned in indirect ways as well.

Maternal Conversation, Play, and Children's Social Competence

Partial support was provided for the hypotheses that mothers who initiated more conversations with their children and engaged in more play with their children during both the spontaneous and instructional conditions would have children who were more socially competent. After controlling for the effects of both socio-economic status and maternal knowledge of developmental norms, this predictive relationship was found to be true only within the spontaneous condition and

only for the behavioral measures of children's social competence. This discrepancy across conditions may reflect the very different nature of the conditions. In the instructional condition, mothers generally followed directions and used their time to instruct and teach their child how to interact with the less socially skilled peer, while in the spontaneous condition mothers were free to do whatever they wished. Within the spontaneous condition, teachers' ratings of children's use of aggression in the daycare were found to be inversely related to both maternal play and conversation. Mothers who initiated more play and conversations about their children's day were found to have children rated as less aggressive with their peers. Also, within the spontaneous condition, teacher's ratings of children's general use of social skills were positively related to maternal play. Mothers who played more during the spontaneous condition had children who were rated by their teachers as higher in social skills with peers.

For maternal conversation and play, these results are consistent with the findings of MacDonald and Park (1984) who determined that maternal verbal behavior was positively related to children's peer relations, especially for boys. This consistency across studies was apparent despite differences in the definition of maternal conversation. In the MacDonald and Park (1984) study, verbal behavior was defined as the number of times the mother spoke to her

child, while in this study maternal conversation was more narrowly defined as conversation initiated by the mother which focused on the child's day.

Initiation Sequences and Children's Social Competence

Mothers' initiation sequences were found to be of limited value in predicting children's social competence. Within the instructional condition only, mothers' use of directives was found to be inversely related to children's ability to generate appropriate solutions to social problems. Consistent with the hypothesis, mothers who were less directive had children who produced more socially appropriate solutions to problems.

These results along with other research findings appear to provide convergent support for the relationship between mothers' directive style and children's social competence. While Baumrind defined directive style as a characteristic of the mother's basic parenting style, others (Ladd & Golter, 1988) have defined it as the mothers' tendency to be present with or participate in their children's activities. Despite these differences in how researchers have characterized the directive nature of mothers in managing their children, the results appear to provide convergent sources of validation for the premise that mothers who are more directive have children who are less skilled in a variety of areas including alternative thinking skills and

social maladjustment in school (Ladd & Golter, 1988).

Maternal Knowledge of Developmental Norms and Children's Social Competence

The results of this study provide support for the hypothesis that maternal knowledge of developmental norms would be related to children's social competence. Maternal knowledge of developmental norms was significantly related to one cognitive index of children's social competence: the ability to generate alternatives to social problems with peers. It was not found to be related to either of the behaviorally based indices of children's social competence. Across both the spontaneous and instructional conditions, maternal knowledge of developmental norms accounted for a large portion of the total variance in children's alternative thinking skills, second only to the family's socio-economic status.

One possible explanation for this finding is that mothers who have a greater understanding of what is developmentally appropriate for their children may be more likely to interact with, communicate with, and teach their children in ways which are consistent with this knowledge. Because of this they may be more effective at influencing their child's social skills and competencies. That is to say that these mothers may be using their knowledge of developmental norms (whether directly or indirectly) to

guide their own interactions with and responses to their children. This may, in turn, increase the likelihood that their children will understand and incorporate new information and ideas into their own repertoires of social competencies.

Other researchers have proposed a similar rationale. For instance, Dix and Grusec (1985) argued that change in parents' cognitions regarding their children's behavior could influence change in parents' responses which, in turn, could influence developmental changes in the child. As well, based on their research findings, Pettit, Dodge, and Brown (1988) have suggested the "possibility of a developmental path of influence running from maternal values and expectations to child social cognition to child social competence with peers" (p. 116).

When this mediational conceptualization was tested in this study, no results substantiated that mothers' knowledge of developmental norms mediated between mothers' responses to their children and children's social competence. This may be related to the measurement of mothers' knowledge of developmental norms. As Baron and Kenny (1986) noted, the use of multiple regression to estimate a mediational model requires that there be no measurement error in the mediator. They suggest that multiple measures of the mediator may result in less measurement error than a single mediator variable as was used in this study (DEVEL). This would

result in several measures used to define a mediator construct rather than a single measure.

Socio-Economic Status and Children's Social Competence

The results of this study also indicate that there is a significant relationship between the socio-economic status (SES) of the family and both cognitive indices of children's social competence: the child's abilities to generate alternative solutions as well as to produce socially appropriate solutions to peer interaction social problems. In both conditions when both SES and mothers' knowledge of developmental norms were controlled, socio-economic status accounted for the largest portion of the total variance (partial R-square accounted for by socio-economic status was equal to 11%). The relationship between socio-economic status and cognitive indices of social competence, language-based means of generating options to dealing with social problems with peers, has been noted before. In fact, this finding appears to confirm previous work (Spivack & Shure, 1974) which has determined that socio-economic status is closely related to a variety of cognitively based skills in children.

Confirmation of the hypothesis that socio-economic status is a related to some indices of children's social competence highlights the need to carefully define what abilities and behaviors are thought to reflect social

competence in children. For instance, in this study socio-economic status was not found to be a predictor of the behaviorally based assessment of children's social competence, yet contributed substantially to the prediction of the cognitively based measures of children's social competence.

As described earlier, Hollingshead's four-factor method of computing socio-economic status includes the weighted sum of both father's and mother's educational and occupational levels (when both parents have contact with the child). Thus, it may be that parents with more years of education and correspondingly higher level jobs are able to provide their children with opportunities that enhance their verbal skills and that this in turn affects the children's language based cognitive abilities to generate verbal solutions to social problems. Whatever the causal pattern, it would appear important to consider the socio-economic status of the child's family when assessing more cognitive/language mediated measures of children's social competence.

Summary, Implications and Future Directions

Broadly, this investigation sought to analyze the relationship between maternal knowledge of developmental norms, several indices of the mother-child interaction and children's social competence. The results provided support for the general hypothesis that maternal expectations and

behaviors are related to children's social functioning. While this study did not attempt to formulate and test a causal model describing the relationship between mother-child interactions and children's social competence, several findings suggest the importance of further investigation into the nature of this relationship.

Perhaps one of the most striking findings resulting from this study is that no independent variable was found to be predictive of both cognitively and behaviorally based indices of children's social competence. Generally, cognitive measures of children's social competence were predicted by socio-economic status, maternal knowledge of developmental norms, mothers' use of directives, and how mothers communicated with their children. These predictive relationships were found in both the spontaneous and instructional conditions. In contrast, behavioral measures of children's social competence were predicted by maternal play and conversation in the spontaneous condition only.

This different pattern of results for the behavorially based and cognitively based indices of children's social competence suggests that these are not equivalent measures of the same construct. Indeed, the low correlation between these indices indicates that these two measures are not related. For this sample of pre-kindergarten age children, social competence in one domain does not necessarily reflect social competence in the other domain as well.

While the rationale for this discrepancy is not intuitively obvious, several possible explanations deserve further consideration. First, perhaps over the course of the development of a child's social competence, one index is more highly correlated with the child's actual social competence than is another at the same time. For example, it may be that at the pre-kindergarten age, children decide who to play and interact with based not on another's ability to problem-solve solutions to peer interaction problems, but rather on whether or not the other child hits or is nice to them. Another possibility is that children may be able to generate solutions at an early age within a structured setting, but in a real life situation, they may not base their behavior on a cognitively generated list of possibilities. It may be that as development progresses higher-order cognitive functioning such as reasoning, planning, and considering multiple courses of actions may be a more accurate predictor of children's behavior than it might be at relatively younger ages.

The idea is a complex one to consider as cognitive functioning and behavior surely interact in a reciprocal way. Several possible explanations for the discrepancy between results for the cognitive and behavioral measures of children's social competence are worth considering. First, in this study the cognitive indices of children's social competence were generated by the children, while the

behavioral indices were teacher generated ratings. It may be that peer-rated assessments of children's social competence may have been a better indicator than were the teacher rated assessments. Thus, two different sources for the measurements may account for some differences. Another source of differences may be due to the two very different situations in which the assessments were taken. The cognitive indices resulted from a structured interaction with an adult in which children viewed pictures and listened to brief stories about other children. The child's job was to provide possible solutions to the stories. In contrast, teacher ratings resulted from their assessment of the child's daily interactions of the children in all aspects of the day-care day: both structured and unstructured activities, and generally with other children present and involved. Thus, one assessment was more naturalistic and one more contrived by the demands of the study.

This discussion leads one full circle back to the primary research which has related poor social competence to a variety of problems and difficulties in later life. This conclusion is largely based on retrospective studies, not prospective work. Prospective studies which assess children's social competence in a multi-modal, multi-method way may provide a more refined and detailed picture of the relationship of social competence to later life adjustment. Specific information regarding social competence, whether

cognitive or behavioral, may provide a better foundation upon which to develop and implement treatment programs. It may be that cognitive treatment at a particular age/stage of a child's development may be a more effective means of changing social skills than another type at the same time.

The finding that mothers' knowledge of developmental norms was significantly related to cognitively based measures of children's social competence leads to the formulation of several research possibilities. A longitudinal assessment of the relationship between knowledge of developmental norms and children's social competence at various points in development would further define the nature of this relationship. It may be that there is a developmental progression in children's social competence that reflects a similar progression in the development of children's language. The question is thus whether cognitively based social competence precedes behaviorally based social competence analogous to the way in which receptive language precedes expressive language in children.

As well, research which assessed the impact of teaching mothers what is developmentally appropriate for their children in their interactions with their children, as well as in their children's social functioning, might help to define the causal nature of this relationship. As Rickard, Graziano, and Forehand (1984) have proposed, it may be

beneficial to teach parents not only child management techniques but also basic normative information about children.

In attempting to determine more precisely the roles mothers may play in teaching and enhancing their children's social competence, results of this study appear consistent with previous research findings. While specific strategies were not found to be predictive of children's social competence, the way in which mothers presented information to their children was. Mothers who were less directive in managing their children and who explained and related information based on their own child's experiences had children with higher levels of cognitively based indices of social competence. Although these findings substantiate the idea that mothers' interactions with their children do bear a significant relationship to certain measures of children's social skills and abilities, they do not specify the direction of influence between mother and child. As others have proposed, while it is highly likely that mothers' knowledge, expectations and behaviors do impact on their children's social competence, it is also plausible that this relationship is bi-directional in nature. Children's responses and behaviors also may influence how their mothers interact with them. Thus, the direction of influence relating how mother and child interact and how children learn to be socially competent is likely to be found to be a

reciprocal one. While this was not examined in this study, it remains another avenue for future research study.

BIBLIOGRAPHY

Asher, S. R., & Hymel, S. (1981). Children's social competence in peer relations: Sociometric and behavioral assessment. In J. D. Wine & M. D. Smyne (Eds.), Social competence. New York: Guilford.

Asher, S. R., Oden, S. L., & Gottman, J. M. (1977). Children's friendships in school settings, In L. G. Katz (Ed.), Current topics in early childhood education, (Vol. 1, pp. 33-61). Norwood, NJ: Ablex.

Asher, S. R., & Renshaw, P. D. (1981). Children without friends: Social knowledge and social skill training. In S. R. Asher & J. M. Gottman (Eds.), The development of children's friendships (pp. 273-296). New York: Cambridge University Press.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of personality and social psychology, 51(6), 1173-1182.

Baumrind, D. (1967). Child care practices anteceding three patterns of preschool behavior. Genetic Psychology Monographs, 75, 43-88.

Baumrind, D. (1971). Current patterns of parental authority. Developmental Psychology Monographs, 4, (1, P. 2).

Bolstad, O. D., & Johnson, S. M. (1977). The relationship between teachers' assessment of students and students' actual behavior. Child Development, 48, 570-578.

Ciminero, A. R., Calhoun, K. S., & Adams, H. E. (1986). Handbook of Behavioral Assessment. New York: John Wiley and Sons.

Coie, J. D., Dodge, K. A., & Kupersmidt, T. B. (1990). Peer group behavior and social status. In S. R. Asher & J. D. Coie (Eds.), Peer rejection in childhood (pp. 17-59). Cambridge, England: Cambridge University Press.

Coie, J. D. & Kupersmidt, T. B. (1983). A behavorial analysis of emerging social status in boys' groups. Child Development, 54, 1400-1416.

Conger, J. C., & Keane, S. P. (1981). Social skills intervention in the treatment of isolated or withdrawn children. Psychological Bulletin, 90, 478-495.

Cowen, E. L., Pederson, A., Babigian, H., Izzo, L. D., & Trost, M. (1973). Long-term follow-up of early detected vulnerable children. Journal of Consulting and Clinical Psychology, 41, 438-446.

Dishion, T. J. (1990). The family ecology of boys' peer relations in middle childhood. Child Development, 61, 874-892.

Dix, T. H., & Grusec, J. E. (1985). Parent attribution processes in the socialization of children. In I. E. Sigel (Ed.), Parental belief systems: The psychological consequences for children. (pp. 201-233). Hillsdale, N. J.: Erlbaum.

Dodge, K. A. (1986). A social information processing model of social competence in children. In M. Perlmutter (Ed.), Minnesota Symposium on Child Psychology (Vol. 18, pp. 77-125). Hillsdale, N. J.: Erlbaum.

Dodge, K. A., Coie, J. D, Pettit, G. S., & Price, J. M. (1990). Peer status and aggression in boys' groups: Developmental and contextual analyses. Child Development, 61, 1289-1309.

Dodge, K. A., Murphy, R. M., & Buchsbaum, K. (1984). The assessment of intention-cue detection skills in children: Implications for developmental psychopathology. Child Development, 55, 163-173.

Dodge, K. A., Schlundt, D. C., Schoken, I., & Delaguch, J. D. (1983). Social competence and children's sociometric status: The role of peer group entry strategies. Merrill- Palmer Quarterly, 29(3), 309-336.

Dodge, K. A., & Somberg, D. R. (1987). Hostile attributional biases among aggressive boys are exacerbated under conditions of threats to the self. Child Development, 58, 213-224.

Estrada, P., Arsenio, W. F., Hess, R. D., & Holloway, S. D. (1987). Affective quality of the mother-child relationship: Longitudinal consequences for children's school-relevant cognitive functioning. Developmental Psychology, 23(2), 210-215.

Foster, S. L., & Ritchey, W. L. (1979). Issues in the assessment of social competence in children. Journal of Applied Behavioral Analysis, 12, 625-638.

French, C., & Waas, G. (1985). Teachers' ability to identify peer-rejected children: A comparison of sociometrics and teacher ratings. Journal of School Psychology, 23, 347-353.

Greenspan, S. (1981). Defining childhood social competence: A proposed working model. Advances in Special Education, 3, 1-39.

Hartup, W. W. (1983). Peer relations, In E. M. Hetherington (Ed.), P. H. Mussen (Series Ed.), Handbook of child psychology: Vol. 4. Socialization, personality, and social development (pp. 103-196). New York: Wiley.

Hartup, W. W., Glazer, J. A., & Charlesworth, R. (1967). Peer reinforcement and sociometric status, Child Development, 38, 1017-1024.

Hollingshead, A. B. (1975). Four factor index of social status. Unpublished manuscript, Yale University.

Hops, H. (1982). Social skills training for socially withdrawn/isolated children. In P. Karoly & J. Steffen (Eds.), Improving children's competence (Vol.1, pp. 39-102). Lexington, MA : Lexington Books.

Keane, S. P., Brown, K. P., & Crenshaw, T. M. (1990). Children's intention-cue detection as a function of maternal social behavior: Pathways to social rejection. Developmental Psychology, 26(6), 1004-1009.

Kohlberg, L., LaCrosse, F., & Ricks, D. (1972). The predictability of adult mental health from childhood behavior. In B. Wolman (Ed.), Manual of child psychopathology (pp. 1217-1284). New York: McGraw-Hill.

Ladd, G. W., & Golter, B. S. (1988). Parents' management of preschooler's peer relations: Is it related to children's social competence. Developmental Psychology, 24(1), 109-117.

MacDonald, K. & Parke, R. D. (1984). Bridging the gap: Parent-child play interaction and peer interactive competence. Child Development, 55, 1265-1277.

Marshall, H. R., & McCandless, B. R. (1957). A study in prediction of social behavior of preschool children.

Child Development, 28, 149-159.

Parker, J. G., & Asher, S. R. (1987). Peer relations and later personal adjustment: Are low-accepted children "at risk"? Psychological Bulletin, 102, 357-389.

Pettit, G. S., & Bates, J. E. (1987). Family interaction patterns and children's behavior problems from infancy to age four years. Unpublished manuscript, University of Tennessee, Knoxville.

Pettit, G. S., Dodge, K. A., & Brown, M. M. (1988). Early family experience, social problem solving patterns, and children's social competence. Child Development, 59, 107-120.

Putallaz, M. (1983). Predicting children's sociometric status from their behavior. Child Development, 54, 1417-1426.

Putallaz, M. (1987). Maternal behavior and children's sociometric status. Child Development, 58, 324-340.

Putallaz, M., & Gottman, J. M. (1981a). Social skills and group acceptance. In S. R. Asher & J. M. Gottman (Eds.), The development of children's friendships (pp. 116-149). New York: Cambridge University Press.

Putallaz, M., & Gottman, J. M. (1981b). An interactional model of children's entry into peer groups. Child Development, 52, 986-994.

Putallaz, M., & Gottman, J. M. (1983). Social relationship problems in children: An approach to intervention. In B. B. Lahey & A. E. Kazdin (Eds.), Advances in clinical child psychology (Vol. 6, pp. 1-39). New York: Plenum Press.

Putallaz, M., & Wasserman, A. (1990). Children's entry behavior. In S. R. Asher & J. D. Coie (Eds.), Peer rejection in childhood (pp. 60-89). New York: Cambridge University Press.

Rickard, K. M., Graziano, W., & Forehand, R. (1984). Parental expectations and childhood deviance in clinic-referred and non-clinic children. Journal of Clinical Child Psychology, 13(2), 179-186.

Roff, M., Sells, B., & Golden, M. M. (1972). Social adjustment and personality development in children. Minneapolis: University of Minnesota Press.

Rothbaum, F. (1986). Patterns of maternal acceptance. Genetic, Social and General Psychology Monographs, 112(4), 435-458.

Roopnarine, J. L. (1987). Social interaction in the peer group: Relationship to perceptions of parenting and to children's interpersonal awareness and problem-solving ability. Journal of Applied Developmental Psychology, 8, 351-362.

Rubin, K. H. (1988). The Social-Problem Solving Test - Revised. Unpublished manuscript, University of Waterloo, Waterloo, Canada.

Rubin, K. H., & Daniels-Beirness, T. (1983). Concurrent and predictive correlates of sociometric status in kindergarten and grade 1 children. Merrill-Palmer Quarterly, 29, 337-351.

Spivack, G., Platt, J. J., & Shure, M. B. (1976). The problem-solving approach to adjustment. San Francisco: Jossey-Bass.

Spivack, G., & Shure, M. B. (1974). Social adjustment of young children: A cognitive approach to solving real life problems. San Francisco: Jossey-Bass.

Thomas, A., & Chess, S. (1980). The dynamics of psychological development. New York: Bruner/Mazel.

Ullmann, C. A. (1957). Teachers, peers, and tests as predictors of adjustment. Journal of Educational Psychology, 48, 257-267.

Urbain, E. S., & Kendall, P.C. (1980). Review of social-cognitive problem-solving interventions with children. Psychological Bulletin, 88(1), 109-143.

Waters, E., & Sroufe, L. A. (1983). Social competence as a developmental construct. Developmental Review, 3, 79-97.

APPENDIX A

CONSENT FORM

Dear Mother,

I am a graduate student in clinical psychology at UNCG who is interested in examining children's abilities to get along with other children. The director of your child's daycare center has given his/her permission for me to send this project description home to you. I would like your consent for you and your 4 or 5 year old child to assist me with this project.

In this project you will be asked to complete a biographical data sheet and a questionnaire about children's behaviors. Your child will be asked to meet and play briefly with another child. All interactions will be video-taped. Your child's teacher will also be asked to complete a short rating scale concerning children's behavior in school. All responses to the questionnaires, rating scales, and video-tapes will remain strictly confidential.

Your participation and that of your child will be greatly appreciated. For your cooperation, I will reimburse you $10.00 for your time and travel and all children will receive a gift certificate at a local fast food restaurant and several small gifts.

Again, thank you for your cooperation. I appreciate your help with this project and look forward to scheduling a convenient time for us to meet.

Kathryn P. Brown, M.A.
Graduate Student
Psychology Department
334-5662

Susan P. Keane, Ph.D.
Associate Professor
Psychology Department
334-5235

Please return this portion to your child's daycare teacher.

_____Yes, my child and I would like to participate.

Child's name_____
School_____
Mother's signature_____
Mother's name (please print)_____
Home phone_____ Address_____
Work phone_____ _____

_____No, my child and I will not be able to participate.

APPENDIX B

BIOGRAPHICAL DATA SHEET

Subject #_____

Child's name_____
Birthdate_____ Sex_____
School_____ Teacher_____

Mother's name_____ Age_____
Address_____ Race_____
_____Zip code___ Phone_____

Mother's marital status (check one)
_____single
_____married
_____divorced
_____widowed
_____other

Mother's job/occupation_____
Company name_____

Mother's highest level of school complete.
_____less than 7th grade
_____junior high school, 9th grade
_____partial high school, 10th or 11th grade
_____high school graduate
_____partial college, at least one year
_____standard college or university graduation
_____graduate professional training, graduate degree

If the child's father contributes to his/her financial welfare, please complete the following:

Father's job/occupation_____
Company name_____

Father's highest level of school complete.
_____less than 7th grade
_____junior high school, 9th grade
_____partial high school, 10th or 11th grade
_____high school graduate
_____partial college, at least one year
_____standard college or university graduation
_____graduate professional training, graduate degree

Please list all members of your child's household:

Name	Sex	Age	Relationship to mother

APPENDIX C

HOLLINGSHEAD'S INDEX OF SOCIAL STATUS

5(Father's occupation) + 3(Father's education) = X

5(Mother's occupation) + 3(Mother's education) = Y

Social Status = (X + Y)/2

APPENDIX D

MATERNAL KNOWLEDGE OF DEVELOPMENTAL NORMS

Subject #_____

Directions: Please circle the number that most closely approximates your answer to each question.

Example:
A 4 or 5 year old should be able to correctly carry out the following:

A. Count his/her fingers.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

A 4 or 5 year old should be able to correctly carry out the following:

1. Copy a square.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

2. Tell own sex (whether a boy or girl)

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

3. Ride a bicycle.

Strongly	Moderately	Slightly	Neither Agree Nor	Slightly	Moderately	Strongly

Disagree	Disagree	Disagree	Disagree	Agree	Agree	Agree
1	2	3	4	5	6	7

4. Recite numbers to 30's.

Strongly Disagree	Mod-erately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Mod-erately Agree	Strongly Agree
1	2	3	4	5	6	7

5. Tell how a boat and an airplane are alike.

Strongly Disagree	Mod-erately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Mod-erately Agree	Strongly Agree
1	2	3	4	5	6	7

6. Stop having specific fears (e.g., fear of dark, fear of dogs, etc.).

Strongly Disagree	Mod-erately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Mod-erately Agree	Strongly Agree
1	2	3	4	5	6	7

7. Go to bed unassisted.

Strongly Disagree	Mod-erately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Mod-erately Agree	Strongly Agree
1	2	3	4	5	6	7

8. Draw a man consisting of 4 parts (e.g., head, body, legs).

Strongly Disagree	Mod-erately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Mod-erately Agree	Strongly Agree
1	2	3	4	5	6	7

9. Be over food finickiness.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

10. Stop having problems with temper.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

11. Comb or brush own hair.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

12. Answer phone and take messages.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

13. Feel miserable when naughty.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

14. Ask to go to the toilet.

Strongly Disagree	Mod-erately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Mod-erately Agree	Strongly Agree
1	2	3	4	5	6	7

15. Brush own teeth.

Strongly Disagree	Mod-erately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Mod-erately Agree	Strongly Agree
1	2	3	4	5	6	7

16. Walk down stairs alternating feet (one step per tread).

Strongly Disagree	Mod-erately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Mod-erately Agree	Strongly Agree
1	2	3	4	5	6	7

17. Tell own age.

Strongly Disagree	Mod-erately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Mod-erately Agree	Strongly Agree
1	2	3	4	5	6	7

18. Give names for "penny", "nickel", and "dime".

Strongly Disagree	Mod-erately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Mod-erately Agree	Strongly Agree
1	2	3	4	5	6	7

19. Understanding taking turns.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

20. Wash own face.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

APPENDIX E

CONTENT CODING CATEGORIES

Aggression: Verbal Aggression including verbal attacks, threats, implied threats, non-physical aggression, non-physical retaliation, negative bargaining, insults. Physical Aggression including physical attack on person or object and forcibly removing object from another's possession.

Seek Adult Intervention: Authority Punishment including an appeal to authority figure to intervene and punish the other child. Authority Intervention including an appeal to authority figure to help the child achieve the goal.

Specific Prosocial: Ask including simply stating "please" as well as a question which asks for the desired object or information. Ask may include questions which contain prosocial explanations and/or qualifiers. Tell including a statement of what is wanted. Share/ Take Turns includes any stated or implied mutual activity.

General Prosocial: General Assertive including any response that is relevant and prosocially assertive but is not specific enough to be coded as Specific Prosocial. General Niceness including showing affection, giving gifts or simply being nice to the other child.

Offer a Bribe: Trade, Bargain, Bribe, Make a Deal including sharing that is not prosocial, manipulation, and neutral and positive bargaining.

Inept/Irrelevant: Ineffective or Irrelevant responses including those that do not offer a solution to obtaining either the desired object or information.

APPENDIX F

TEACHER RATING OF SOCIAL COMPETENCE

School_____Subject #_____
Teacher_____Child's name_____

For each of the following statements, please circle the number that best applies. Use the following scale to determine the number that best applies.

Circle 1 i this statement is NEVER true of this child.
Circle 2 if this statement is RARELY true of this child.
Circle 3 if this statement is SOMETIMES true of this child.
Circle 4 if this statement is USUALLY true of this child.
Circle 5 if this statement is ALMOST ALWAYS true of this child.

1. This child gets along well with peers of the same age.....1 2 3 4 5
2. This child gets along well with peers of the opposite sex.....1 2 3 4 5
3. This child isolates him/her self from the peer group.....1 2 3 4 5
4. This child is accepted by the peer group 1 2 3 4 5
5. Other children like this child and seek him/her out for play.....1 2 3 4 5
6. Other children actively dislike this child and reject him/her from their play.....1 2 3 4 5
7. This child starts fights with peers....1 2 3 4 5
8. This child gets into verbal arguments with peers.....1 2 3 4 5
9. This child says mean things to peers in name calling and teasing.....1 2 3 4 5
10. This child refuses to share things with peers.....1 2 3 4 5
11. This child disrupts the peer group by inappropriate or attention-getting behavior.....1 2 3 4 5
12. When this child has been teased or threatened, he/she gets angry easily and strikes back.....1 2 3 4 5
13. This child always claims that other children are to blame in a fight and feels that they started the trouble..1 2 3 4 5

14. When a peer accidentally hurts this child (such as bumping into him or her), this child assumes that the peer meant to do it, and then overreacts with anger and fighting...1 2 3 4 5
15. This child gets other kids to gang up on a peer that he/she does not like.....1 2 3 4 5
16. This child uses physical force (or threatens to use force) in order to dominate other kids.....1 2 3 4 5
17. This child threatens or bullies others in order to get his/her own way.....1 2 3 4 5

How good is this child at each of the following skills? Circle the appropriate response. Use the following scale in answering.

Circle 1 if this child is VERY POOR at his skill most of the time.
Circle 2 if this child performs SOMEWHAT POORLY at this skill.
Circle 3 if this child performs about AVERAGE at this skill.
Circle 4 if this child performs WELL at this skill.
Circle 5 it this child performs VERY WELL at this skill.

1. Understanding others' feelings.....1 2 3 4 5
2. Being socially aware of what is happening in a situation.....1 2 3 4 5
3. Accurately interpreting what a peer is trying to do.....1 2 3 4 5
4. Refraining from over-impulsive refraining.....1 2 3 4 5
5. Generating many solutions to interpersonal problems.....1 2 3 4 5
6. Generating good quality solutions to interpersonal problems.....1 2 3 4 5
7. Being aware of the effects of his/her behavior on others.....1 2 3 4 5

APPENDIX G

MOTHER INITIATION SEQUENCES

DIRECTIVE: directive statement with or without reason or explanation.

PERSUASIVE: persuasive statement with realistic reason, indirect manipulation with source of power disguised, appeal made to social or religious mores.

COERCIVE: coercive statement with or without reason, physical intervention, threat of physical intervention.

APPENDIX H

MATERNAL STRATEGIES

Suggestion 1: don't let him hit you, don't hurt him, don't be ugly, watch out, be careful

Suggestion 2: verbal and/or physical aggression

Suggestion 3: correct the other child, tell him how to act, or that what he is doing is not nice

Suggestion 4: seek adult intervention in any way

Suggestion 5: play alone, leave the situation, let him be, ignore the behavior

Suggestion 6: general prosocial advice such as be nice, be friendly, be good, be patient, understand, be kind, be gentle

Suggestion 7: specific prosocial advice such as play, share, introduce yourself, talk to him

Table 1. Pearson Correlations and Level of Significance (p) for the Independent, Predictor Variables

	SES	DEVELOP	PLAY:S	PLAY:I
SES		0.01668 (0.8910)	0.15979 (0.1864)	0.16979 (0.1600)
DEVELOP			0.10625 (0.3814)	0.25308 (0.0345)
PLAY:S				0.51711 (0.0001)
CONVERSE:S	0.08695 (0.4742)	0.09150 (0.4513)	-0.03025 (0.8037)	-0.06056 (0.6185)
CONVERSE:I	0.15518 (0.1996)	0.15085 (0.2126)	-0.03735 (0.7589)	-0.37680 (0.0013)
TEACH	0.14110 (0.2440)	0.08126 (0.5037)	0.07802 (0.5209)	0.16557 (0.1708)
STRATEGY	-0.16480 (0.1728)	-.27330 (0.0221)	0.07560 (0.5339)	-0.06909 (0.5698)
DIRECTIVE:S	-0.22297 (0.0635)	0.00760 (0.9502)	-0.09750 (0.4220)	-0.05282 (0.6641)
DIRECTIVE:I	-0.28086 (0.0185)	-0.16182 (0.1808)	0.06225 (0.6087)	0.00204 (0.9867)
PERSUASIVE:S	0.03018 (0.8041	-0.05765 (0.6355)	-0.04574 (0.7069)	0.07227 (0.5521)
PERSUASIVE:I	0.00315 (0.9794)	-0.03750 (0.7579)	0.01286 (0.9159)	0.04941 (0.6846)
COERCIVE:S	-0.11447 (0.3454)	-0.19722 (0.1017)	-0.10210 (0.4003)	0.00862 (0.9436)
COERCIVE:I	-0.05488 (0.6518)	0.02739 (0.8219)	0.07796 (0.5212)	0.12770 (0.2921)

Table 1. (continued) Pearson Correlations and Level of Significance (p) for the Independent, Predictor Variables

	TEACH	STRATEGY	CONVERSE:S	CONVERSE:I
CONVERSE:I	-0.05208 (0.6685)	-0.00898 (0.9412)	0.20836 (0.0835)	
TEACH		0.06570 (0.5890)	-0.00220 (0.9856)	-0.05208 (0.6685)
STRATEGY			0.25554 (0.0328)	-0.00898 (0.9412)
DIRECTIVE:S	-0.18938 (0.1164)	-0.09980 (0.4111)	-0.23324 (0.0520)	-0.05891 (0.6281)
DIRECTIVE:I	-0.33975 (0.0040)	0.04940 (0.6847)	0.08613 (0.4783)	-0.19015 (0.1149)
PERSUASIVE:S	-0.01432 (0.9064)	0.01594 (0.8958)	0.15418 (0.2025)	0.01356 (0.9113)
PERSUASIVE:I	0.02175 (0.8582)	-0.09589 (0.4297)	-0.16499 (0.1723)	-0.19089 (0.1134)
COERCIVE:S	-0.12073 (0.3195)	-0.11184 (0.3566)	-0.13772 (0.2556)	-0.16554 (0.1708)
COERCIVE:I	0.08178 (0.5009)	-0.09526 (0.4328)	-0.19556 (0.1047)	-0.28136 90.0183)

Table 1. (continued) Pearson Correlations and Level of Significance (p) for the Independent, Predictor Variables

	DIRECTIVE:S	DIRECTIVE:I	PERSUASIVE:S
DIRECTIVE:S		-0.01673 (0.8907)	-0.27381 (0.0218)
DIRECTIVE:I			-0.03274 (0.7879)
PERSUASIVE:I	0.13396 (0.2689)	-0.30473 (0.0103)	-0.012361 (0.8462)
COERCIVE:S	-0.17069 (0.1577)	-0.01323 (0.9134)	0.10125 (0.4043)
COERCIVE:I	0.20363 (0.0909)	-0.29194 (0.0142)	0.04167 (0.7320)

Table 1. (continued) Pearson Correlations and Level of Significance (p) for the Independent, Predictor Variables

	PERSUASIVE:I	COERCIVE:S	COERCIVE:I
PERSUASIVE:I		0.10125 (0.4043)	0.04167 (0.7320)
COERCIVE:S			0.19584 (0.1042)

Table 2. Pearson Correlations and Level of Significance (p) for the Dependent Social Competence Variables

	POSPROP	AGGRESS	SOCSKILL
SOCALT	0.6338 (0.0001)	0.0587 (0.6296)	0.0373 (0.7590)
POSPROP		-0.0298 (0.8068)	-0.1229 (0.3109)
AGGRESS			-0.6476 (0.0001)