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As one of the most advanced play forms in childhood, pretend play has demonstrated positive associations with child development in several domains. However, little research has been done to look at the association between pretend play and social skills. By observing children's outdoor pretend play, the main purpose of this study was to investigate the relationship between different types of pretend play and children's social skills, and also to examine the effects of several individual and home factors on this potential relationship. Results showed that overall pretend play was positively associated with assertiveness. Abstract pretend play was positively associated with assertiveness and cooperation. Social pretend play was positively associated with assertiveness, cooperation, and self-control. Social pretend play predicted all three social skills above and beyond other types of pretend play. No significant interaction was found for individual factors and pretend play. Parents' beliefs were significantly associated with children's social pretend play.

PRESCHOOLERS' OUTDOOR PRETEND PLAY AND SOCIAL COMPETENCE:  
DO INDIVIDUAL AND HOME FACTORS PLAY A ROLE?

by

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## **CHAPTER I**

### **INTRODUCTION**

Play is the primary activity in childhood, and especially for young children. It is regarded as the medium between learning and development, and helps children explore environments surrounding them, and also enables social interactions (Saracho & Spodek, 1998). For example, through play, children have more chances to explore spaces, materials, and rules. Play also motivates them to use different strategies to solve problems, to make friends with other children, and to ask for help from capable persons. However, as the requirement for academic achievement grows, there is a trend for parents, caregivers, and educators to pay more attention to cognitive development, and require children to attend different kinds of academic classes and activities, and that leaves less time for free play.

While there are many types of play, each with differential benefits for children's development, this study focuses on pretend play. As one of the most advanced play forms in preschool age children, pretend play requires children to break down boundaries between imagination and reality, and promotes cognitive development (Whittington & Floyd, 2009). In pretend play, abstract thinking must be used to play in a scenario that does not exist, or to play roles that are beyond oneself. It is acknowledged that abstract thinking is a more advanced stage than concrete thinking (Piaget, 1962). Pretend play can also be ideational (abstract) or object oriented (concrete) (Matthews, 1977; McLoyd,

1980) depending on whether the child is using a real object (e.g. a stick representing a magic wand) or an imaginary object (holding nothing while pretending to feed an imaginary dog). Children can engage in pretend play everywhere and with anything. A child can pretend to be a policeman at home or in child-care center, and it can be solitary (with no peers involved) or social (peers involved). The relationship between different forms of pretend play and child development remains unclear. However, studies show that social pretend play has more advantages than solitary pretend play (Coplan, Wichmann, & Lagace-Seguin, 2001; Nelson, Hart, & Evans, 2008). With different types (concrete/abstract) and forms (solitary/social), pretend play may have differential effects on children's development.

Past research suggests pretend play is associated with children's theory of mind (which is the ability to deduce others' thoughts and beliefs) (A. S. Lillard, 1993), language development (Mundy, Sigman, Ungerer, & Sherman, 1987), and emotion development (Lindsey & Colwell, 2003). Social competence, which is influential in all these basic abilities, also makes a contribution to children's pretend play. The examination of children's social skills is one of the best representations for social competence. There has been evidence demonstrating relationships between pretend play and several social skills, such as cooperation, helping, sharing, and emotion regulation (Bretherton, 1989; Fein, 1981). Some results, however, are contradictory in that children's pretend play is negatively associated with cooperation in the experimental environment (Swindells & Stagnitti, 2006). Results like these add to the importance of



reexamining the relationship between pretend play and social skills under different circumstances.

The majority of the research on pretend play in early childhood takes place in indoor settings, neglecting the wealth of pretend play opportunities that children may engage in outdoors. Outdoor environments permit children to engage in a wide range of pretend play scenarios. The play may vary in forms, themes, and peer groups from indoor settings. However, according to the literature, pretend play in outdoor environments has not been studied yet. Another important consideration of pretend play is the surrounding contextual influences on the young child. Parents may be an important source for children to acquire confidence and practice with pretend play.

Preschool children still depend a lot on their families, and are affected largely by parents. Parental beliefs and behavior have great impacts on children's behavior (Cornelius, 1988). Parents who think positively about pretend play are less likely to stop children's pretend play and may encourage them to engage in pretend play. Physical environment is also very important for children's play (Frost, Shin, & Jacobs, 1998). Parents who believe that pretend play is good for their children are more willing to create an environment in which children have enough access to toys that facilitate pretend play, such as kitchen toys, play houses, and costumes. Moreover, parents who think pretend play is beneficial to the child may engage in more pretend play and demonstrate play strategies to children. Thus, parental influences may be a main reason for children's preference in pretend play.

In summary, pretend play in general is important for young children's development across multiple developmental domains. Parents may make an important contribution to children's preferences in pretend play via their beliefs and behaviors. Grounded in the bioecological theory, which emphasizes the relationship between the individual and environment, this study attempts to investigate how pretend play, as a proximal process, is associated with children's social skills, and also how different elements of the theoretical model link to each other. According to Bronfenbrenner and Morris (2006), the microsystem is the daily living environment within which children have the closest relationships and contacts (e.g., home, workplace, and child care center). The current study focuses on the microsystem of the outdoor environment in child-care centers but considers the influences of the home environment. This second microsystem (i.e., home) will only be understood from parent report. Parents' beliefs and behaviors will be considered as positively associated with children's actual pretend play level, which is measured as frequency and type (abstract or concrete) in child-care center outdoor settings. Children's behaviors in child-care centers will be viewed as the product of both the family's and the institution's influences. Furthermore, children are not only affected by environments, but also bring their own characteristics and personalities to the environment. Both temperament and emotion regulation will be considered as moderators that may alter the relationship between pretend play and social skills in the current study. Research suggests that children's gender may also affect their pretend play level and social competence skills.

The overall purpose of this study is to examine the relationship between children's pretend play and several social skills within the context of the child-care center outdoor environment, while considering parents' beliefs and behaviors as influential in children's pretend play engagement. The analysis will be based on data collected from 28 preschool children from three child-care centers in Greensboro, North Carolina. All the observation sessions were conducted in outdoor environments. Teachers and parents answered questionnaires about children's social skills, emotion regulation, temperament, and their beliefs about pretend play. A detailed rational and literature review on each of these important aspects of pretend play will be presented after the theoretical foundation for the study is described in depth. Following the literature review, the specific research questions, study methodology, results and discussion will be presented.

## CHAPTER II

### THEORETICAL FRAMEWORK

Grounded in bioecological theory, the current study aims to explore the reciprocal relationship between individual development and the environment. The Bioecological Model, which was developed by Bronfenbrenner, is synonymous with the theory, and it aims to explain human development in a holistic manner. In this model there are four defining properties, which are Process, Person, Context, and Time (PPCT in short). Process is the interaction between the agent (i.e., individual) and the environment (Bronfenbrenner & Morris, 2006). Also known as *proximal process*, this is the most essential property in this model, because it is through proximal process that other properties function and influence individuals. Note that not any interactions between individuals and the environment can be called proximal process; only those interactions that happen reciprocally between the individual and the immediate environment over time in a relatively long period can be regarded as proximal process. Examples of proximal process are everyday practices such as playing with peers, going to school, and parent–child interactions. Accumulated activities or interactions can have prolonged influence on individuals who are involved. Proximal processes shape an individual’s thinking, behavior, reaction, and even characteristics through the forms they take, the ways of responding, and the outcomes they always yield (Bronfenbrenner & Morris, 2006). Examples which do not represent proximal process include a birthday, an

occasional visit, or a single competition. Even though there are interactions involved in those activities, they do not happen on a daily basis, and their influences are so small that they cannot predict an individual's development. Another important feature for proximal process is its reciprocal impact on every part of the interaction. In the previous examples for proximal process, playing with peers can affect not only the participants, but also the activity itself; going to school can affect students, teachers, and the school system as well; parent-child interaction will affect both the parent and child. Thus, interactions that occur on a daily basis play relatively important roles in certain periods of life. They function reciprocally between individuals and environment and can have great influence on individuals.

For the current study, the proximal process is pretend play in early childhood. As literature suggests, early childhood is the age when pretense emerges, and it tends to get increasingly complex along with children's growth (Overton & Jackson, 1973). Thus, preschool children engage in different sorts of pretend play in their daily life when they reach that developmental stage. Pretend play becomes one of the main play forms in children's daily life, and affects children's development, the constructing of the environment (e.g., materials provided, preferred peers), and their relationships with others. In this study, pretend play was observed in children's outdoor play time in child-care centers, which was different from the typical indoor environment where they usually engage in pretend. However, children were provided with costumes, similar to what is provided in indoor settings. The existence of costumes outdoors gave more opportunities for children to engage in pretend play as they usually do indoors. Thus, the amount of

pretend play will likely be close to their average level in their daily life, especially in child-care centers.

The second property in this model is Person. Person indicates the overall characteristic of the agent in the bioecological system. This agent or individual brings his/her own characteristics to the environment through proximal process, and are also being influenced by the environment through proximal process. As the theory suggests, the most influential personal characteristics are demand characteristics (e.g., age, gender, skin color), resources characteristics (e.g., skills, experience, knowledge), and force characteristics (Bronfenbrenner & Morris, 2006). Demand characteristics are the immediate impression that a person gives to others, and is based on characteristics such as age, skin color, gender, and height. It is the most apparent and genetic-based characteristic that can be viewed at first sight. Force characteristics are defined as how a person reacts, behaves, and feels spontaneously in response to different situations. It is based on both biological and environmental factors. Examples are temperament, motivation, and persistence. Resource characteristics are based more on one's force characteristics and available resources, such as education opportunities, academic achievement, peer acceptance, families, houses, and food. Proximal processes can influence all the characteristics. Other developmental factors can also be the outcome of influences. For example, behavior, skills, and relationships are some possible factors that can be affected and changed through proximal processes. Thus, person is the source as well as the purpose of development.

The current study includes children's gender, temperament and emotional regulation as predictive personal factors. Children's gender falls under the dimension of demand characteristics. Boys and girls at this age often differ on several developmental areas, such as cognitive, language, and emotion development (Hyde & Linn, 1988). Thus, gender may predict children's resource characteristic (i.e., social skills in this case) as well as pretend play. Temperament and emotion regulation both fall under the dimension of force characteristics. Motivation, effort control, and emotions are examples of this dimension. They are so basic that they can affect resource characteristics. Social skills, such as cooperation, assertiveness, and self-control are person characteristics. An example is that a child with an easy temperament will be more likely to cooperate with others well than a child with a difficult temperament, because the former has positive motivation and good effort-control when he/she interacts with people, while the later is more easily irritated and weak in effort-control. Of course, the environment should be taken into account every time, and the theory addresses the environment comprehensively.

The third property with the model is Context. It is basically the environments in which people are embedded. The microsystem is the most proximal context for a certain agent. For children, for example, one of the microsystems is family, including parents (caregivers) and siblings. It is their daily living environment within which children have the closest relationships and contacts. There is more than one microsystem in people's lives. The interaction between different microsystems is called the mesosystem (Bronfenbrenner & Morris, 2006). For example, the interaction between families and schools, families and work places, and between families and communities can be

considered as mesosystems. A larger context is the exosystem, which encompasses the environments that indirectly associate with people in the microsystem. For example, father is a person in the microsystem for a child. However, for the father there are other microsystems, such as the work place, or peer groups. He is affected by these systems as well. Those influences may spill over to the family and in turn affect the child. Thus, the work place for the father is an exosystem for the child. At last, the broadest context, the macrosystem, which includes all the systems mentioned above and is defined as social environment, and culture, or all above, can indirectly shape and confine every system and everyone's life.

The current study was conducted in child-care centers, and when children were engaging in outdoor activities. Child-care center and home are two microsystem in which children embedded. The mutual influence between these two microsystems is called the mesosystem. In the current study, the impact of home factors will be examined in relation to the child-care center. To be specific, this study will explore whether parental beliefs and behaviors about pretend play in the home environment associates with pretend play proximal processes (i.e., children's pretend play) in child-care centers. Beliefs and behaviors are not typically overtly conveyed; rather, they are rooted in everyday life, and create an environment that affects children's behavior gradually. Thus, the measurement of parents' beliefs (e.g., their positive or negative views of pretend play) and behaviors (e.g., providing materials and actual engagement in pretend play with their children) can indirectly influence the psychological as well as physical environment at home that relates to children's pretend play. Being immersed in an environment where parents think



positively about pretense, encourage, and are willing to provide materials for pretend play may be different from those whose parents think negatively about pretend play and provide few materials for children to engage in pretend play.

The last property in the model is time, which is closely related to context. Time, like context, is also divided into different layers. Micro-time refers to activities or interactions that happen during specific events, for example, activities that happen during a class warm-up session. Meso-time refers activities happen consistently during a certain period of time. Macro-time refers to the historical time that has its own feature and cultural background. The purpose of the present study is neither to examine a specific age in relation to another, nor is it to study individual children over extended periods of time. A sample of children's microtime interactions outdoors will be focused on to provide a snapshot of children's current pretend play behavior in relation to their reported experiences at home. These experiences across the two microsystems will be studied in relation to several 'person' components. Bioecological theory depicts a big picture as well as provides a theoretical base for process testing for the current study.

## **CHAPTER III**

### **REVIEW OF THE LITERATURE**

Based upon the theoretical foundations of the Bioecological model, it is clear that pretend play could function as a proximal process, connecting other propositions in this model. However, rather than testing the Bioecological theory directly, the study will be guided by this theory to investigate several relationships that are relevant. In this chapter the current research on children's pretend play will be examined. First, the definition and developmental sequence of pretend play will be explored followed by a look at how children's development is related to pretend play in the literature. Next parent's belief and behaviors related to pretend play will be examined. Along with the theoretical framework, this literature will provide information to guide the research questions and hypotheses presented in chapter 4.

#### **Pretend Play and Social Skills**

##### **Definition of Pretend Play**

Pretend play, sometimes also called role play, make-believe play, symbolic play or dramatic play, is the play that enables children to use their imagination to represent real events, or something that is symbolically treated as if it is something else (Fein, 1981). Pretend play helps children break down the boundaries between imagination and reality (Bretherton, 1989).

## **Development of Pretend Play**

Pretense, which is defined as using one object to symbolically represent another, emerges in the second year of life (e.g., a bowl as a hat) (Matthews, 1977). Piaget argued that pretend activities started at 2 years of age, then increased in frequency during the 3<sup>rd</sup> and 4<sup>th</sup> year of life. Some other literature also suggests that 4 years of age is the time when children start to engage in more social pretend play (Bretherton, 1989). According to Piaget (1962), there are two stages of pretend play. The first stage is solitary symbolic activity, which occurs between the age of 2 and 3 years old. The second stage is social symbolic play, which starts at the later part of the third year. Solitary symbolic play is when children engage in symbolic play alone. In contrast, social symbolic play is when children play symbolic play with someone else (e.g., peers, parents, or siblings). Thus, children who are 4 years old may have the ability to engage in social pretend play. Though most children reach the level of engaging in social pretend play at 4, evidence shows that children who prefer social pretend play over solitary pretend play benefit more. The effects of both types of pretend play will be further illustrated in a later part of the literature review.

Matthews (1977) distinguished two types of transformation in pretend play. One is object (material) transformation, and the other is ideational transformation. Object transformation involves using a concrete object to represent something else, for example, using a ball to represent a baby. Ideational transformation involves using abstract representations to symbolize something in a child's mind. For example, jumping over an imagined river, which neither exists nor is represented by a concrete object. More than 50%

of 4-year-old children demonstrate more ideational transformation than object transformation (Matthews, 1977; McLord, 1980). It is believed that ideational symbolic play is more advanced than object symbolic play (Piaget, 1962), because the ideational symbolic play is based on a more developed cognitive status, which enables children to think abstractly.

In order to understand how children's pretend play behavior develop as they age, Overton and Jackson (1973) examined the sequence of actions (e.g., what type of action comes first as child ages) in pretend play. Subjects in the study ranged from 3 to 8 years old. Thirty-six children were divided into three groups and were asked to enact three kinds of self-directed behavior (e.g., brushing their teeth) and three kinds of external-directed behavior (e.g., cutting food). Two of the groups had an object presented in front of them but the other group had nothing present when enacting the requested behavior. Result showed that older children were more likely to use symbolic representation (instead of using concrete objects) to facilitate the actions, and externally directed actions increased as children got older. The result is consistent with the former conclusions that suggested children are more likely and more capable of using symbolic representation as they get older. Even though children are mostly capable of using symbolic representation at 4 years of age, their preference of concrete versus abstract pretend play may lead to different developmental benefits. The more children engage in abstract pretend play, the more they get to practice abstract thinking; this practice may lead to other cognitive or social benefits. The developmental causes and consequences of engaging in concrete versus abstract pretend play is worth further consideration in research.

Based on the view that 4-year-old children engage in relatively high amounts of pretend play, the subjects in the current study were 4-year-old preschoolers. To further understand how children's development is associated with pretend play, a more careful examination of this literature will follow.

### **Relationship between Pretend Play and Child Development**

Evidence shows that pretend play is associated with children's cognitive, language, emotional, and social development.

**Cognitive.** Engaging in pretend play requires a high level of cognitive skills, self-control of affection, and negotiation skills (Connolly & Doyle, 1984; Doyle & Connolly, 1989; Whittington & Floyd, 2009). Studies in psychology also support the positive relationship between pretend play and creativity, coping strategies, hope, and emotion regulation (Pearson, Russ, & Spannagel, 2008; Russ, Robins, & Christiano, 1999).

Studies have demonstrated that pretend play is positively related to children's cognitive development (see Bergen, 2002 for a review). Pretend play provides opportunities for cognitive development in this area (Whittington & Floyd, 2009). In pretend play children are acting in imagined scenarios, which usually surpasses their real daily life and their daily conversation. For example, when children are pretending to be doctors and patients, they are actually playing the role of someone that is older and more sophisticated than themselves. Thus, they are trying to integrate what they have seen in hospitals or on television shows. It is through this process that they reach a higher level of development.

Despite the general association between pretend play and cognitive development, many scholars proposed that a more subtle concept, theory of mind, is important for understanding pretend play in children (Leslie, 1987). Theory of mind refers to the tendency to construct and predict others' minds (e.g., desire, personality, and intentions) according to the understanding of others' behaviors. Metarepresentation, which is the underlying mechanism of theory of mind, is described as an internal representation, and is how people manipulate mental representations in their minds. The relationship between pretense and theory of mind is very close. Lillard (1993) argued that pretend play incorporates at least three skills. The first is to separate two objects correctly, the second is to successfully represent one object with another, and the third is to mentally represent others' mental representation, or in another words, to successfully distinguish who is pretending and who is not. This ability prepares children to understand others views; the central notion within theory of mind. Thus, the ability underlying pretend play may be the preliminary form of a better understanding of others' minds. Overall this literature indicates that pretend play is based on as well as promotes cognitive development.

**Language.** It is widely agreed that social pretend play relies heavily on verbal communication (Garvey & Kramer, 1989). Doyle and Connolly (1989) proposed that negotiation is essential in promoting the enactment of play, which is considered to be the core of social pretend play. They suggested that it was through the back and forth conversation that players achieved agreement and cooperated to fulfill certain goals (e.g.,

pretending to be a mother and baby, fulfilling the movement roles such as feeding and patting).

Evidence shows that language development parallels pretend play in childhood (see McCune-Nicolich, 1981 for review). As pretend play gets more complex, children do not only play within a single pretense scheme, they can also design the sequence of a play. For example, a child pretending to cook food and then feed the baby illustrates a sequence of play. Thus, they are more likely to assert and claim a plan for their pretend play and this develops along with improvements in language skills.

Association between pretend play and language development was also found in 4-year-old children with autism. Mundy, Sigman, Ungerer, and Sherman (1987) examined the relationship among symbolic play, non-verbal communication and language ability in sixteen 3- to 4-year-old children with autism. Objects were presented in front of each child, whose behavior during a 20 to 30 minute period was observed. Results indicated that the number of symbolic actions was positively associated with a score on a language scale (both expressive and receptive language), while the number of functional actions (which involved no symbolic representations) was not associated with their language score. Given that the subjects are children with autism, which is a diagnosis characterized as having problems in communication, the positive link between pretend play and language is inspiring in that it may indicate that promoting pretend play in children with autism may buffer some of the negative effects of autism. These findings suggest that there is a positive association between language development and pretend play, and language is an important element in pretend play, especially in social pretend play. In

addition, pretend play may also facilitate language development.

**Emotion.** The relationship between pretend play and emotional competence is also discussed in several research studies. For example, Lindsey and Colwell (2003) compared the difference between pretend play and physical play, and found a positively relationship with emotion regulation, emotion understanding, and emotional competence in 5-year-old preschoolers. To be specific, girls' and boys' emotion understanding were all positively related to pretend play levels, however, the positive association between pretend play and emotion regulation or competence was only found for girls. Physical play was associated positively with emotion competence only for boys. This study suggests that the type of play as well as gender is associated with children's emotion development. For the purpose of the present study, the results provide evidence for the link between pretend play and emotion development.

In the study conducted by Connolly and Doyle (1984), children were presented two illustrated stories, and were asked to answer questions about the characters' feelings. Results showed that the score on affective role taking was positively related to both pretend play amount and complexity. Affective role taking ability is the ability that enables people to understand others' feelings from others' perspectives. This ability is associated with empathy, and in turn, with prosocial behavior (Eisenberg, et al., 1996). The relationship between pretend play and affective role taking ability should be reciprocal in that children who are high on pretend play levels should be more capable in understanding others' feelings, and vice versa.



### **Social Competence and its Component—Social Skills**

Pretend play is regarded to be associated with social competence in general (Bretherton, 1989; Fein, 1981, 1984). Although few studies have examined the direct relationship between pretend play and components of social competence such as prosocial behavior, cooperation, assertion, and self-control, links between pretend play and affective role taking, cognition, and language, and how these basic abilities relate to social skills (e.g., cooperation, assertion, and self-control) suggest a possible linkage between pretend play and those social skills.

**Definition.** Social competence refers to the extent to which a child can be successful in social life. Rose-Krasnor (1997) proposed a theoretical model—the social competence prism, which consists of three levels. The upmost is the theoretical level, the middle layer is the index level, and at the bottom is the skill level. Theoretical level is the definition of social competence; the index level is the outcome of social performance, such as peer acceptance, quality of interaction, and self-efficacy; and the skill level describes the social, emotional, and cognitive abilities and motivations that make children socially competent. According to the author, the evaluation of children's social competence lies in the index level and skill level. The social skill level is the foundation of both index and theoretical level. The relationships between adaptive behaviors and social skills were discussed by Gresham and Elliott (1987). They asserted that social skills were behaviors that could predict social outcomes for children and youth, while adaptive behavior represented the degree to which children's behavior met social

requirements. Thus social skills are more fundamental abilities that enable children to enact appropriate behavior. This study will only focus on the examination of social skills.

Social skills describes the actual skills that make-up social competence (Rose-Krasnor, 1997), such as cooperation, self-control, prosocial behavior, and assertion.

The basic components of social skills are language, cognition, affect, and motor skills (Odom, McConnell, & McEvoy, 1992). Integration of the four components directly impact and lead to social skills. For example, children who have higher cognitive and language skills are better in communicating their own feelings with others, such as asking for help, or making people understand their opinions. Children who have higher cognitive and affective skills are more capable in understanding others' feelings and showing empathy. The development of all four components enables children to cooperate with others well because they can understand others, while expressing themselves well, and also having the ability to enact wanted behavior, which involves motor skills. Thus, we can see social skills as building on basic development and also as the fundamental factors to predict children's social performance.

According to the above discussion, it is possible to define social skills as the skills that enable children to behave effectively and to achieve social goals. It is built on language, cognitive, affection, and motor development. It can be reinforced through practice and also influenced by the environment. The criteria to evaluate social skills are children's social performances, such as group status, peer acceptance, and social interactions. Theoretically speaking, possessing certain social skills cannot necessarily predict social outcomes. For example, children with good communication skills can

remain silent in group discussions if they like, which may result in unpopularity in the group. However, children rarely curtail their ability in social interactions purposely in environments where they view as supportive or safe. Thus, social skills can be an effective index to predict children's social outcomes.

Although there are different ways to categorize social skills, there are several skills that are common components of social competence, such as prosocial, cooperative, assertive, and self-control behaviors.

**Prosocial behavior.** Prosocial behavior, which is defined as voluntary behavior enacted with the intent of benefiting others (Eisenberg & Fabes, 2006), includes helping, sharing, comforting, guiding, rescuing, cooperating, and defending others (Eagly, 2009). Studies demonstrate that children's helpfulness level when they entered kindergarten is at a similar level when they finished primary school, regardless of the variation of both raters and years (Cote, Tremblay, Nagin, Zoccolillo, & Vitaro, 2002). Thus, preschoolers' prosocial behavior is representative of their prosocial level for a relatively long time. Prosocial behavior is an important index of social competence and has positive influences on child outcomes. One study found that prosocial behavior was positively related to emotion comprehension in 3- to 6 year-old preschoolers (Belacchi & Farina, 2010). The ability to be prosocial during the preschool years may have important implications for successful engagement in pretend play with peers. Although cooperation is one of the most important dimensions of prosocial behavior, it can also be regarded as an independent component of social competence (Anderson & Messick, 1974).

**Cooperation.** Cooperation is based on the shared goals among at least two people (Warneken & Tomasello, 2007). Cooperation incorporates helping, sharing, and complying with rules (Gresham & Elliott, 1990). It emerges at a very young age. Studies concentrated on finding out when children demonstrate their abilities to share with others, help people, and cooperate with each other found that those abilities emerge before 2 years of age, and keep developing as children grow (Brownell & Carriger, 1990; Hay, 1979; Howes, 1985). Cooperation was mostly observed in children who were more than 24 months, which is the age for the emergence of the ability to pretend (Leslie, 1987).

Cooperation is usually assessed via peer nomination, teacher ratings, or parent ratings in different studies. Its relationship with pretend play was thought to be significantly positive (Fein, 1984). However, using the Child Initiated Pretend Play Assessment (ChIPPA) and parent or teacher reports, researchers examined the relationship between pretend play and social competence in 4–5-year-old children (Swindells & Stagnitti, 2006). They found unexpectedly a significant and negative relationship between cooperation and sharing and pretend play scores from parent's ratings. One possible explanation for this result was that children with low levels of pretend ability may need more help from others, for example, a more skilled partner, so that more sharing and cooperating behavior were observed by parents. However, as the authors point out, the result may be due to possible bias in parents' reports; they suggested that it would be better to have teachers report on children's prosocial behavior, in order to rule out the possibility of parents' biased reports.

**Assertion.** Assertion refers to the ability to initiate communication or actions, manipulate the environment, and explore with confidence (Gresham & Elliott, 1990). For example, asking for a toy, introducing oneself, and responding to others expressively. Assertion has been studied from different perspectives, such as social competence and leadership (Alvarado, 2004; Dorman, 1973; Patterson, Littman, & Bricker, 1967). Assertion, as one of the components of social skills, is positively associated with several desirable outcomes, such as comprehension, verbal skills, and discrimination in 5-9 year-old children (Patterson et al., 1967). Even according to Piaget, as early as in infancy, when children show their interest in something through their glances, it is a signal of early assertion (Piaget, 1962). This component of social skills seems to be examined less in preschool age children in the literature. Children who are assertive may be more effective in starting or maintaining pretend play scenarios.

**Self-control.** Self-control refers to the ability to inhibit one's behavior against desire (Logue & Chavarro, 1992). It is sometimes asserted to be the most adaptive ability of humans (Tangney, Baumeister, & Boone, 2004). Self-control predicts better grades, good adjustment, and interpersonal success in undergraduates (Tangney, et al., 2004). The study by (Arslan, Durmusoglu-Saltali, & Yilmaz, 2011) examined the relationship between different individual traits and social competence in preschoolers and found that self-control was significantly and positively related to emotion regulation, school readiness, social confidence, and family involvement. This study indicates that self-control is an important trait that is closely associated with social competence. The ability

to maintain self-control during play may provide more success during social pretend play situations for preschool age children.

Previous literature illustrates both direct relationships between pretend play and children's development as well as provides some indirect connections. Although it is clear that cognitive, language, and emotional development play an important role in pretend play, this study is going to focus more directly on social competence and social skills in relation to pretend play. As illustrated previously, social skills clearly connect to all aspects of children's development but there are gaps or conflicting results related to pretend play and social experiences or skills. For example, according to the literature, whether children play alone or play with others matters for their adjustment. Cophan, et al. (2001) concluded that solitary play was associated with internalizing problems, difficult temperament, and less attentive tendency in children between the age of 45 to 57 months. And Nelson, Hart, and Evans (2008) also observed 357 preschool children when they were playing on playground, using both teacher rating and peer sociometric ratings to indicate children's social competence. They concluded that solitary pretend play was positively related to children's maladjustment. On the contrary, Lloyd and Howe (2003) drew a different conclusion as solitary play behavior was positively linked to divergent thinking. However, the relationship between solitary pretend play and social pretend play, and their possible effects on social development remain unclear because when different contexts are taken into account, outcomes may vary. It is important to retest those relationships within different contexts and situations.

As previously mentioned, as children get older, they are more likely to engage in abstract pretend play than younger children, and this is likely due to their cognitive development. However it is unclear what might be associated with some 4-year-olds engaging in more abstract pretend play and others participating in more concrete pretend play. Regarding the type of play (abstract versus concrete, and solitary versus social), the current study is going to examine the associations between children's social skills and their abstract or concrete pretend play behaviors as well as their tendency to engaged in solitary versus social pretend play.

Pretend play is certainly influenced by the environmental context and social opportunities, however, each child also is born with different characteristics and behavioral styles, and these may affect children's preferences, interpretations, and behaviors. Thus, individual differences should also be included and examined in relation to pretend play and social skills.

### **Person Characteristics that Influence the Relationship Between Pretend Play and Social Skills**

In the bioecological model, person is an important component. Some person characteristics associated with pretend play and social skills are children's gender, temperament, and emotion regulation.

#### **Gender**

Children's gender is an important consideration in research on preschoolers' pretend play behaviors. Ambiguous conclusions often come from different studies on which pretend play was differentiated by gender (Johnson & Ershler, 1981; Jones &

Glenn, 1991). The majority of studies show girls engaged in more pretend play than boys. For example, Jones and Glenn (1991) found slightly but significantly more pretend play in girls than in boys. Gleason (2005) also had similar finding in preschool-aged children. However, when Johnson and Ershler (1981) compared different types of play in two different classrooms—one was using a formal education structure, the other using less traditional and less structured (discovery)—they found that boys engaged in more pretend play than girls in discovery classroom while no gender differences were found in the formal education classroom.

When comparing abstract pretend play and concrete pretend play in both genders, studies show that boys engage in more concrete pretend play than girls, and girls engage in more abstract pretend play than boys (Jones & Glenn, 1991; Matthews, 1977; McLoyd, 1980). Though no significant differences were found in boys and girls in terms of the overall pretend play behavior, Jones and Glenn (1991) found that boys engaged in more object fantasy play (which was defined as using objects in fantasy play) while girls seldom used objects in their fantasy play, and showed more person fantasy play (which was defined as the representation of an imagined character). Matthews (1977) also found that boys started with an object mode (concrete) and shifted to ideational mode (abstract), while girls kept the balance at first and then shifted to ideational mode as the most favored play form. These findings suggest that pretend play level may differ as a function of gender. In addition, boys and girls tend to engage in different kind of pretend play (i.e., abstract versus concrete), with boys are more likely to engage in concrete pretend play, while girls are more into abstract pretend play at this age.



Parents hold different views toward boys' and girls' pretend play, and use different strategies to promote boys' and girls' pretend play (Gleason, 2005; Lindsey, Mize, & Pettit, 1997). Lindsey et al. (1997) found that parents of daughters were more likely to engage in pretend play than parents of sons. In the study by Gleason (2005) both fathers and mothers reported that they provided more pretend play material to daughters than to sons. Thus, the difference between boys and girls pretend play levels may be largely affected by parents' belief and behavior. However, children also bring their own personalities and characteristics into the world which also influence pretend play behaviors.

### **Temperament**

Despite different ways of defining temperament, many researchers view temperament as the consistent patterns of behavior children show when responding to the environment, and believe it emerges in infancy and remains relatively stable across situations and through one's life (Thompson & Goodvin, 2005; Rudasill & Konold, 2008). Temperament is considered to be biological based but shaped by experiences early in life. Temperament is sometimes divided into categories of 'easy' and 'difficult.' Infants who have an easy temperament adapt to new environments quickly, demonstrate positive emotion and mood, and also have normal sleeping and eating patterns. On the contrary, babies with difficult temperaments are easily irritated, tend to be very emotional, and cry a lot (Thomas, Chess, Birch, Hertzig & Korn, 1968). However, the influence of temperament can vary according to the match of the child's temperament with the environment. That is to say, even some children who have difficult temperaments, if they

were exposed to an environment which allowed for their emotional expression, and also provided opportunities for them to explore, they had better achievement than children with an easy temperament under the same circumstance (Thompson & Goodvin, 2005).

A more comprehensive way to understand temperament is to look at its dimensions. The most common dimensions are: activity level, emotionality, motivation, and attention (Putnam & Rothbart, 2006; Rothbart & Derryberry, 1981). Activity level refers to children's activity energy; that is, whether they have high or low energy levels. A child with high energy may find sitting quietly for 5 minutes to be intolerable whereas a child with low energy prefers drawing over running. Emotionality refers to children's emotional status under most circumstances. There are positive and negative emotions. Positive emotion and its reaction include being cheerful, happy, smiling, and seldom being irritated. Negative emotion includes being angry, frustration, fearful, sad, and uncomfortable. Motivation describes children's willingness to initiate an activity—the impulsivity level under most circumstances. Attention refers to children's ability to focus on a task and their persistence when they are faced with distractions.

The interaction of temperament and other environmental factors can yield different effects on outcomes. Since temperament is a relatively consistent characteristic in childhood, we should not ignore its power on affecting the relationship between pretend play and social skills.

**Pretend play and temperament.** The relationship between pretend play and temperament has not been clearly addressed in the literature, however there is one study examining the moderation effect of impulsive behavior on sociodramatic play and

preschoolers' self-regulation (one of the components of social competence). Elias and Berk (2002) conducted a longitudinal study to examine the change in children's self-regulation with sociodramatic play or with solitary play. Subjects were 3- to 4-year-old children. They used both observations and questionnaires to assess different variables. Play activities were acquired through observation. The Children's Behavior Questionnaire (CBQ) was used to assess temperament (impulsivity). Self-regulation was observed during clean-up and circle time. Results showed that solitary play was negatively associated with self-regulation during clean-up period, while sociodramatic play was positively associated with self-regulation in the same period. The study also found that high-impulsive children benefited more from sociodramatic play than low-impulsive children in terms of their self-regulation score. These results indicated that impulsiveness may moderate the relationship between sociodramatic play and self-regulation.

Another study (Lagacé-Séguin & d'Entremont, 2006) examined the interaction among parenting style, negative affect, and play types in preschool children. The authors first identified several non-adaptive play types, which included reticent, solitary-active, and rough-and-tumble play. In this specific study these play behaviors were found to be linked with maladjustment for children. Coaching parenting (which was characterized by parents' awareness of children's emotional states and doing things to benefit their emotional development) and rough-and-tumble play were found to be negatively and significantly correlated; however, when negative affect was included in this model they found that this significant relationship only existed when children were low in negative

affect. That is to say, children who were less likely to be fearful, angry, and frustrated were less affected by a strict parenting style in terms of participating in aggressive play. In this sense, temperament (negative affect) played a role in moderating the relationship between parenting style and play behavior.

Though the direct relationship between pretend play and temperament has not been specifically investigated by previous studies, the above studies indicate that the effects of play behavior could be altered by temperament, or the combination of the environment and temperament may impact play behaviors.

**Social skills and temperament.** Compared to pretend play, social competence/skills have much a more direct association with temperament according to the abundant literature. For example, several studies found that shy and withdrawn children had less prosocial behavior than bolder children (Coplan, Rubin, Fox, Calkins, & Stewart, 1994; Rydell, Bohlin, & Thorell, 2005). The interaction between temperament and other factors is also well studied from different aspects. For example, Corapsi (2008) investigated the interaction among inhibition, cumulative risk (defined as the total number of risk factors for each family), and social competence. Social competence was acquired from teacher ratings and observations during peer interaction. Subjects were Head Start preschool children. The study found more inhibited children did not differ significantly under different risk levels in terms of their competence score rated by teachers, while less inhibited children received lower scores on teacher ratings as risk increased. Another study (Blair, Denham, Kochanoff, & Whipple, 2004) also found

coping strategies moderated the relationship between different temperament dimensions and preschoolers' maladjustment.

The interactions of different dimensions of temperament are also probed in studies. Rudasill and Konold (2008) focused on looking for the influences of shyness and self-control on social skills in preschool children. The CBQ was used to assess temperament, and the Social Skill Rating System (SSRS) assessed social skills. The results showed that both shyness and self-control contributed to social skill ratings. To be specific, high self-control, shyness, and attentional focusing were positively associated with the cooperation score. Though it was the bolder children who had higher scores on assertion, the combination of shyness and attentional focusing was also associated with a high assertive score.

Thus, the relationship between temperament and social competence is direct and is also interweaving with other environmental factors. And different dimensions of temperament also affect each other and yield different results. Care needs to be taken to untangle these dimensions and variables in studies.

### **Emotion Regulation**

Emotion regulation as well as emotion understanding is associated with children's social competence (Cole, et al., 2009; Eisenberg, 2006). Moreover, emotion regulation also relates to quality of social functioning (Eisenberg, Fabes, Guthrie, & Reiser, 2000). Emotion regulation is the ability to control emotional arousal. Findings suggest that overcontrol is related to constricted, nonadaptive behavior, whereas under control is related to out-of-control behavior (Block & Block, 1980). Optimal regulation with

moderately high use of inhibitory control, relatively high use of activational control, attentional regulation, proactive and problem-focused coping strategies, and flexible use of self-regulatory strategies is associated with spontaneous prosocial behavior (Eisenberg, et al., 2000).

**Pretend play and emotion regulation.** Emotion regulation is an important lesson for children to learn, because it involves the processes of modulating intensity and duration of one's feeling and arousal in order to reach the goal (Eisenberg & Fabes, 2006). Play turns out to be an ideal scenario for children to explore this skill, especially in pretend play.

During pretend play, children use different strategies to perceive a conceptual scenario, which requires children to manage the boundary between pretense and reality. Research by Harris, Marriott, Whittall, and Harmer (1991) introduced a perceived monster into an initiated pretend play situation. Children who felt fearful tended to avoid the box in which a pretend monster was located. With better emotion regulation, which means one can sufficiently control emotion arousal, it might be easier to manage the boundary between pretense and reality. Pretend play is also used as an effective approach in the therapy of traumatized children (Haight, Black, Ostler, & Sheridan, 2008). Evidence showed that pretend play was used for children aged 5 through 8 to cope with stress, serious illness and worrisome symptoms (Haight, et al., 2008). The authors believe that pretend play offers children a safe place to express negative emotions in a context in which there are no real-world consequences (Haight, et al., 2008).

Two relevant studies which illustrate the relationship between pretend play and emotion regulation both affirm that pretend play is positively related to preschoolers' emotion regulation. The first one was by Galyer and Evans (2001). They observed adult-child pretend play in an experimental environment. They introduced an uncomfortable emotionally arousing situation into the play and children's responses were observed. Scores both on the ability to resolve this uncomfortable emotion, and the ability to keep the play going were coded. Results indicated that the ability to keep the play going was more associated with higher emotion regulation level than the ability to resolve the emotion arousal. And moreover, the frequency of children's pretend play outside of the experiment was related to parents' ratings of the children's emotion regulation. Children who engaged in daily pretend play had significantly higher emotion regulation scores than children who engaged in less pretend play.

The other study by Lindsey and Colwell (2003) examined the relationship between preschoolers' emotional competence and pretend play. They defined the emotional competence as the ability to regulate emotional arousal during social interaction and the ability to identify emotional expression (Lindsey & Colwell, 2003). Results showed gender differences. Girls were observed having more pretend play and they also received higher scores on mother's rating of emotion regulation. The results also indicated that girls who engaged in higher levels of pretend play were rated by mothers as being better emotion regulators, but this was not the case for boys.

According to the association between the two variables, pretend play level may alter as a function of emotion regulation. Thus, it is important to include emotion regulation as a factor in affecting the relationship between pretend play and social skills.

**Social skills and emotion regulation.** A primary focus in the emotion literature is its relationship with children's maladjustment behavior. Emotional dysregulation is associated with externalizing behavior (regulation difficulties) or internalizing behavior (over-regulation) (Rubin, Coplan, Fox, & Calkins, 1995). Children in playgroups that are characterized by negative emotion and anger are less competent in social interactions (Denham, et al., 2001). On the other hand, appropriate emotion regulation is associated with high scores on adult-ratings of social competence (Eisenberg, et al., 1993).

Eisenberg et al. (1993) found that emotion regulation served as a moderator of emotionality in affecting preschoolers' social skills. They specified emotion regulation as coping strategies and attentional control. The combination of high level of emotion intensity (one of the dimensions of emotionality) and low level of *constructive coping* and *attentional regulation* was associated with a low score on adult-ratings of social scores. And this relationship was more obvious for boys than for girls.

A study by Rubin et al. (1995) observed 96 4-year-old preschoolers' play with unfamiliar same-sex peers and categorized them into 5 groups that were grouped by the combination of emotion regulation ability and social interaction behavior (e.g., low social interaction and good emotion regulation group, or low social interaction and poor emotion regulation group, and average group). Results showed that children with poor emotion regulation skills demonstrated more internalizing and externalizing behavior



depending on their social interaction level: low interaction level was associated with internalizing problem, while high interaction level was associated with externalizing problem. The two studies above together suggest that emotion regulation is an effective predictor of social competence.

Pretend play scenarios provide lots of opportunities for children to engage in social interactions. Children who are active in pretend play with others and have good emotion regulation skill may demonstrate more appropriate social skills.

Regarding the factors that may affect children's pretend play levels, there are several that are likely most influential: parents, the classroom, and the cultural environment. As the one of the most proximal environments, the home plays a very important role in influencing children's play behavior. As illustrated in theory section, parents' beliefs and behaviors may create an environment that promotes or inhibits children's pretend play on a daily basis, and in turn, affects children's actual pretend play levels.

### **Parents' Beliefs and Behaviors Related to Pretend Play**

Embedded in different cultures and different families, children's play behavior is affected by cultural and familial contexts in many ways (Cornelius, 1988; Haight, Masiello, Dickson, & Huckleby, 1994; Haight, Parke, & Black, 1997). Parents' beliefs particularly provide a frame for the strategies they use to socialize their children. Though few studies are devoted to discussions about the relationships between parents' belief on pretend play and children's actual pretend play level, one study did find a relation between parents' belief and participation and toddlers' pretend play behavior.

Haight et al. (1997) investigated how fathers' and mothers' beliefs on pretend play and their participation in pretend play with children might have different influences on toddlers' pretend play. All the subjects were European-American, middle-class families. Parents were observed and interviewed about their beliefs and behavior during data collection. The results demonstrated differences as well as similarities between fathers and mothers in terms of their preference of activities for children, with fathers preferring rough-and-tumble play the most, and mothers preferring reading activities the most, and the reasons they gave for promoting pretend play. Pretend play was generally regarded as a way to promote social role development and creativity in children both by fathers and mothers. Almost all parents participated in pretend play with their children. Findings also indicated that mothers' but not fathers' beliefs on the importance of pretend play and participation in pretend play, had significantly positive effects on children's actual pretend play proportion during free play. Those results suggest parents' beliefs about pretend play have an influence on children's play behavior, especially for the duration and proportion of pretend play. But they did not pursue whether parents' participation was a predictor of toddlers' pretend play level.

Another study by Gleason (2005) examined how individual differences related to parent's beliefs on pretend play. It also examined how the environment that was provided to children to engage in pretend play may influence children's play. Results showed that mothers viewed pretend play more positively than fathers. Children who reported that they had imaginary companions (invisible, imaginary, and pretend peer) had fathers who set fewer limits on pretense, however, this effect disappeared when using fathers'

perceptions of whether their children had imaginary companions. This finding indicates that if fathers (parents) provide relatively free environments for children's imaginary play this affects children's actual pretend play status (whether they have or do not have imaginary companions).

According to the two studies mentioned above, parents' beliefs, parents' behavior (i.e., encouragement or discouragement, participation, and limitations), and materials provided are basic factors in the home that may affect children's pretend play level.

### **Summary**

Guided by the Bioecological theory, pretend play, which frequently occurs in 4-year-old children's lives, is regarded as the proximal process in this study. Pretend play happens frequently in this stage and the literature reviewed indicates that children may gain developmental benefits as well as promote development through engaging in pretend play. Pretend play usually takes place at home as well as in child-care centers for young children. These two places in this study are both viewed as contexts within the Bioecological theory since parents' beliefs about pretend play can create a psychological environment that encourages or discourages children's pretend play behavior. And in addition, parents' beliefs can also affect their own behavior in creating a physical environment for children to engage more or less in pretend play. Thus, parents' beliefs and behavior will be measured as a proxy of the home environment in this study. Through proximal process (pretend play), the home environment can affect what happens in another environment—child-care center. Children's social skills in child-care centers will be affected by proximal process (pretend play) that occurs both in the home and in

the center. Finally, children's characteristics represent the proposition of person in the theoretical model. Gender, temperament and emotional regulation are characteristics that are brought by children and may affect proximal process.

Pretend play has been shown by empirical studies to be positively related to children's cognitive, language, emotion, and social development, which are the characteristics of children. However, other studies suggest that pretend play is negatively associated with cooperation, which is one of the social skills in preschoolers (Swindells & Stagnitti, 2006). Thus, the relationship between pretend play and social skills needs to be reexamined and further probed, especially under different circumstances. The first research question will address this difference in the literature by examining the relationship between pretend play (as a proximal process) and social skills in preschoolers.

Studies have also noted the differences between solitary pretend play and social pretend play and children's development (Cophan, et al., 2001). It is necessary to probe further the differences between the two types of pretend play in terms of their relationship to social skills. So the second research question explores whether solitary pretend play is less related to social skills than social pretend play.

Empirical studies have also shown that both temperament and emotion regulation have direct relationships with pretend play and social competence. To be specific, impulsivity may moderate the relationship between pretend play and self-control score according to one study (Elias & Berk, 2002). That is, high-impulsive children who engage in more pretend play may have higher scores on self-control compared with low-

impulsive children who engage in the same amount of pretend play. However, according to literature review, gender may only relate to pretend play rather than changing the relationship between pretend play and social skills. So the current study proposes that the association between pretend play and social skills will differ as a function of temperament and emotion regulation. Pretend play will differ as a function of gender.

The last research question derives from the notion that behavior can be affected by environmental factors. Parents create an environment in which children are encouraged or discouraged from engaging in pretend play. The measuring of parents' beliefs and behaviors gives a comprehensive picture of the home environment that relates to pretend play. From Bronfenbrenner's theoretical perspective, the environment has an impact on proximal process, and two environmental systems can affect each other. For the current study, it is the influence of the factors (beliefs and behaviors) within one microsystem (i.e., home) on the proximal process (i.e., pretend play) in another microsystem (i.e., child-care center). Thus, one of the research questions will be to address whether the home environment has an impact on one of the proximal processes in another environment—child-care center. According to the literature review, only a few researchers have studied the relationship between parents' beliefs and behaviors and children's actual pretend play, and they found positive correlations between parents' beliefs or behaviors and children's pretend play. The present study also aims to reexamine this relationship.

## CHAPTER IV

### RESEARCH QUESTIONS AND HYPOTHESES

Based upon the theoretical framework and literature review the following research questions and hypotheses are proposed. The questions are divided according to main effects and moderation effects.

#### **Main Effect—The Relationship between Pretend Play and Social Skills**

*Research Question 1.* What is the relationship between children’s pretend play and their social skills?

*Hypothesis 1a.* The ratio of pretend play to overall play (referred to as ‘pretend play amount’ in the following text) will be positively associated with the total score and subscale scores of social competence from teachers’ ratings on the Social Skills Rating System (SSRS).

*Hypothesis 1b.* The ratio of abstract pretend play to overall pretend play (referred to as ‘abstract pretend play amount’) will be positively associated with the total score and subscale scores of teachers’ ratings on the Social Skills Rating System (SSRS) respectively.

*Hypothesis 1c.* The ratio of social pretend play to overall pretend play (referred to as ‘social pretend play amount’) will be positively associated with subscale scores of teachers’ ratings on the Social Skills Rating System (SSRS) respectively.

*Research question 2.* How does pretend play amount differ as a function of gender?

*Hypothesis 2.* Overall, girls will engage in a higher proportion of pretend play than boys. Boys will engage in more concrete pretend play than girls, while girls will engage in more abstract pretend play than boys.

### **Moderation Effect—The Effect of Impulsivity and Emotion Regulation**

*Research question 3.* Does the association between pretend play amount and social skills (total and subscale scores) vary as a function of children's impulsivity level and emotional regulation?

*Hypothesis 3a:* Children with higher impulsivity level will benefit more from pretend play in terms of their self-control score.

*Hypothesis 3b:* Children with higher emotion regulation score will benefit more from pretend play in terms of their total social skill score.

### **Environmental Effect—The Effect of Parents' Influences**

*Research question 5.* How are parent beliefs and behaviors associated with children's pretend play amounts?

*Hypothesis 5a.* Children whose parents think more positively about pretend play will show a higher ratio of pretend play than children whose parents think negatively or neutrally about pretend play.

*Hypothesis 5b.* Children whose parents support pretend play through their behaviors (e.g., provide materials, play with children, demonstrate encouragement) will

show higher ratios of pretend play than children whose parents do not support pretend play behaviors.



## **CHAPTER V**

### **METHOD**

This study will be conducted using secondary data analyses from data collected for the research project: “Could Costumes Create Change? An Examination of Children’s Physical Activity in Relation to Pretend Play Opportunities Outdoors.” This original study was designed to focus on children’s physical activity levels and children’s pretend play behaviors outdoors. Data for this project were collected in May, June, and July 2011. For the current project the data from outdoor observations, teacher questionnaires, and parent questionnaires will be used.

#### **Participants**

Initially 36 preschoolers were recruited for this study. During data collection, however, 8 children came to the child-care center for less than 3 days and one child was older than preschool age (81 months). Thus, 9 children were dropped from the final analyses. The final participants included 18 boys, and 10 girls from four classrooms from three different child-care centers. The 28 children had an average age of 48.4 months, with the youngest being 36 months and oldest being 67 months. In the first child-care center we recruited 10 children: 6 boys and 4 girls. The children came from two classrooms, but had the same outdoor play schedule on a daily base. One of the teachers was a White female with no formal educational degree, but had been working in child-

care centers for decades. She had been with this group of children for 1 month. The other was an African American female with a 2-year-college degree. She had been with this group of children for 2 months. In the second child-care center there were six participants, 4 boys and 2 girls from the same classroom. Two teachers were in this class. One of the teachers was a White female, who had a 4-year BK college degree, and had been with the group of children for 1 year. The other teacher was a Latina female with a high school education level and had been with this group of children for 2 months. In the third child-care center, there were 11 participants, 7 boys and 4 girls. The two teachers in this classroom were both White females. One teacher had a 4-year degree in Human Development and Family Studies, and the other teacher had a 4-year degree in Psychology. They had both been with this group of children for 12 months. Overall, 17 children were White/Caucasian, 6 were Black/African American, and 3 were Asian or Pacific Islander. Thirty-seven percent of parents had 4-year college degrees, and 44.8% had higher than a 4-year college degree. Though household annual income varied from low to high; the median of families' annual incomes was in the range of \$60,000-\$72,000.

### **Procedures**

Three researchers collected data outdoors over a period of 12 days at each site. On day 1, children's height and weight were taken. Although this information was not used in the current study, it helped researchers to get to know the children. There were three periods of observation. From day 2 to day 4 was the first period which included three days of visiting each outdoor environment when the children were playing as they

typically would. The second period was from day 5 to day 10 when the costumes were presented. Children wore costumes that were developed based on teacher interviews that were conducted at the very beginning of the project. The costumes included two red, blue, green, and purple tinsel capes (8 total), one lion, cheetah, and kitty cat ear-tail set, one lion, dog, and kitty cat mask (when you press the nose you can hear the animal's sound), two butterfly wings (one was realistic, one was neon-colored), two kinds of tutu wrist scarves (one was blue and purple, one was red and yellow) with jingle bells attached, and two kinds of tutu skirts (the same color as the scarves) (see costume photos in Appendix A). The costumes were brought out on days 5 to 10 and any children who were outside were allowed to choose to wear them. No child was required to wear the costumes. From day 11 to day 12 was the third period, and during this time frame there were no costumes available. Questionnaires for teachers were delivered at the beginning of the second period. All the forms were given to teachers in the classrooms, and they helped to deliver and collect the parents' forms. Data analyses for this study will be based on only the second period of observation when the pretend play costumes were available. Since the goal for this study is not to compare the differences across the situations, only the second period will be analyzed.

## **Measurements**

### **Pretend Play**

Children's pretend play frequency and type as well as peer group, teachers' involvement, and children's verbalization were recorded using a time sampling procedure. Children were individually observed during 20 second intervals (10 seconds to observe

and 10 seconds to record). Each child was observed for 3 minutes (9 intervals) before moving on to the next child's name on the list. Two waves of data were collected on each child each day. A modified rating system was used to capture different types of pretend play behaviors (see attachment in Appendix B). This rating system was based on the rating scale developed by McLord (1980) who distinguished pretend play as an object mode of transformation and an ideational mode of transformation. The modified rating system used concrete pretend play and abstract pretend play to identify and describe different types of pretend play. The concrete pretend play had to involve concrete items, for example, using a stick to represent a sword. The abstract pretend play category involved only imagination, for example, children pretending to look at a dog that actually does not exist in front of them. The number of peers was categorized into five groups, which included: no peers, 1 peer, small group (2-3), medium group (4-6), and large group (7 or more). However, given the purpose of the study is to see whether playing alone is different from playing in social groups (with peers), the second to the fifth groups were collapsed into a single group—'social group'. Thus, one credit was given to "no peer" situation, while 2 credits were given to each "with peer(s)" situation. Social group was computed by averaging the sum of the credits on each observation of peer number (with 1 for "no peer," and 2 for "one or more than one peer"). Thus, the score on group size ranged from 1 to 2; the larger the value the more likely children were with peers when engaging in pretend play.

Inter-observer reliability (percent agreement) was established at 85% or better. The first reliability check was before data collection in child-care center 3. Kappa

coefficient was .795. For inter-observer reliability, researcher 1 was 89% and researcher 2 was 86%. The second check was during the observation in the child-care center 2. Kappa coefficient reached .727. For inter-observer reliability, researcher 1 was 89% and researcher 2 was 86%. The last check was during the observation in the child-care center 1, with kappa coefficient reaching .714. For inter-observer reliability, researcher 1 reached 93%, and researcher 2 reached 88%.

### **Social Skills**

Social Skill Rating System (age 3-5, teacher report) (Gresham & Elliott, 1990) was used to evaluate children's social skills. This 48-item scale includes the assessment of social skills and problem behaviors. In this study, only the rating of social skills was used, which is a 30-item scale. It was adjusted to a 27-item scale with 3 items being eliminated because of their inapplicability to the specific sample. The scale includes questions regarding children's cooperating skills, self-control, and assertion skills. Questions about cooperating skills include 7 questions, such as helping others, and sharing materials. An example is "uses free time in an acceptable way." Questions regarding self-control abilities also include 10 questions, such as taking turns and compromising. An example is "controls temper in conflict situations with peers." Questions regarding assertion skill include 10 questions in total, such as initializing an activity, asking for help, and responding to actions of others. An example is "makes friends easily." Internal consistency reliability was reported by the authors as .90 on cooperation and assertion scales, and .91 on self-control scale (Gresham & Elliott, 1990). A final score was computed for the cooperation scale, assertion scale and self-control scale.

## **Temperament**

Parents completed the very short version of Children's Behavior Questionnaire (CBQ) (Putnam & Rothbart, 2006). The 36-item very short version was developed from the 94-item standard Children's Behavior Questionnaire, which is a 7-point Likert scale. Example items include: "Seems to be at ease with almost any person" and "Notices it when parents are wearing new clothing." Alpha coefficients obtained for the very short form were .75, .72, and .74 respectively for Surgency, Negative Affect, and Effortful Control (Putnam & Rothbart, 2006). Example items for surgency are "Likes going down high slides or other adventurous activities" and "Often rushes into new situations". Example items for negativity affect are "Is quite upset by a little cut or bruise" and "Tends to become sad if the family's plans don't work out". Example items for effortful control are "Prepares for trips and outings by planning things s/he will need" and "Likes being sung to". Only the subscale scores were used in the analysis.

## **Emotion Regulation**

The Emotional Regulation Checklist (Shields & Cicchetti, 1997) consists of two subscales, which include emotional regulation, and liability/negativity subscale. The emotional regulation subscale was used to assess children's emotion regulation abilities in this study. Teachers completed this scale. It evaluates the frequency of behaviors that show emotional awareness, empathy, and affective appropriateness (Shields & Cicchetti, 1997). Examples of items include "is a cheerful child" and "moves well from one activity to another". Liability/negativity subscale is composed of items that display a lack of flexibility, negative emotion, and mood liability. Examples of items include "is easily

frustrated” and “is prone to angry outbursts or tantrums easily”. This measure has 24 items which are rated on a 4-point Likert scale. Internal consistency reliability was reported as 0.81 and .90 for emotional regulation and liability/negativity subscale respectively. The negative subscale was reverse scored and averaged with emotional regulation subscale to create a total score on emotion regulation (Shields & Cicchetti, 1997).

### **Parents’ Beliefs about Children’s Pretend Play**

Parents completed a self-developed questionnaire which consisted of 28 questions related to beliefs about pretend play and activities/materials in the home environment which promote pretend play. The first part of the questionnaire asks about what parents think about the role of pretend play in their children’s life. Examples of items include: “How important is pretend play to your child” and “How comfortable do you feel about your child’s pretend play.” The second part asks questions about how parents actually promote children’s pretend play. Example items include: “How much do you encourage/discourage your child from engaging in pretend play” and “Please circle which of the toys listed you have provided for your child.” In analyses, both scores were combined to form a final score. To be specific, question 1, 4, and 5 were computed as parent beliefs. Question 5 is an open-ended question (“Would you like your child to engage in more/less/the same amount of pretend play as s/he does now? Please explain.”). One, zero and minus one credit was given to those who wrote “more”, “the same”, and “less” respectively. The questionnaire can be seen in Appendix B. Questions 2, 11, and 8 were computed as parent behavior. For question 8, the total number of the type of toys

was its score. The total score of each dimension (i.e., parent belief and parent behavior) was dichotomized at each mean to generate a high and a low score for parent belief and parent behavior respectively.



## **CHAPTER VI**

### **RESULTS**

#### **Preliminary Analyses**

Data analyses for this study were based on the second period of observations when the pretend play costumes were available. Data were analyzed using the Statistical Package for Social Sciences (SPSS) version 20 software program. Preliminary analyses were conducted before addressing the research questions. First, scores on pretend play amount were standardized to z scores. No outliers were detected using the principle of larger or smaller than  $\pm 2.5$ . Thus, there was no need to delete any data from the current data set. Second, skewness was within -2 to 2 range, suggesting all independent variables are approximately normally distributed. Mean, standard deviation, and range for each variable are displayed in Table 1.

#### **Descriptive Analysis**

Descriptive analysis was conducted to understand the overall ratio of pretend play as well as different kinds of pretend play children engaged in during observation episodes. As seen in table 1, children spent 20% of the time engaging in pretend play on average. Of the pretend play episodes children engaged in concrete pretend play 28% of the time and spent 73% of their time in abstract pretend play. Recall that both abstract and concrete pretend play could be coded in the same episode. Thus, the sum of the

variables is not 1. On average children spent 81% of their time in social pretend play versus solitary pretend play, which indicates that children engaged in more social pretend play than in solitary pretend play across the observation episodes. Scores on Social Skill Rating System (SSRS) total is the sum of scores on three subscales, including cooperation, self-control, and assertive. A higher score indicates a better performance on a certain dimension of social skill based on teacher's report. Most of the children fell into the 75<sup>th</sup> percentile of the total score and sub-scale scores. Scores on parents' beliefs indicates the degree to which parents thought about pretend play as positive for their children's development. A higher score indicates a more positive belief. For this particular sample, most parents thought positively about children's engagement in pretend play. Scores on parents' behavior indicate the degree to which parents created an environment to encourage children's pretend play. A higher score indicated parents were more likely to engage in pretend play with the child, or create an environment in which pretend play materials are rich. For this particular sample, a mean score of 6.62 is close to the maximum score of 8, which suggests most parents thought positively about their behavior regarding encourage children's pretend play engagement. Parent beliefs and behaviors were divided into high and low groups using the mean as the cut-point.

### **Main Effect Analysis**

To answer the first research question about the relationship between children's pretend play and their social skills. Pearson correlations were conducted first to see the basic relationships between all the independent and dependent variables in this study (see

Table 2). Generally speaking, results showed that pretend play amount was positively correlated with the assertiveness score ( $r = .471, p = .013$ ). Concrete pretend play was not significantly correlated with any social skill variables. Abstract pretend play, however, was positively correlated with cooperation, assertiveness, as well as total SSRS score. Social pretend play was positively correlated with scores on assertiveness, self-control, and the SSRS total score.

To further decide which type of pretend play could predict social skills, a multiple regression with all types of pretend play (i.e., concrete pretend play, abstract pretend play and social pretend play) as the independent variables was run. Results showed that social pretend play significantly predicted scores on cooperation, assertiveness, and self-control, while abstract pretend play did not (see Table 3). The results from correlation and regression analyses showed that the more advanced pretend play types were positively related to different kinds of social skills, while others were not.

The second research question addressed how the ratio of pretend play to overall play differed as a function of gender. An independent t-test was conducted. Results demonstrated that there were no significant differences between boys and girls (pretend play,  $t(26) = .633, p > .5$ ; concrete pretend play,  $t(26) = -.142, p = .88$ ; abstract pretend play,  $t(26) = .965, p > .1$ ; social pretend play,  $t(26) = .409, p > .5$ ).

The third research question looked at whether the association between pretend play and social skills (total and subscale scores) varied as a function of children's impulsivity score, and emotion regulation. To address this research question, GLM (general linear model) was used. The final result was generated through several models.

In the first model, pretend play and the two types of pretend play were entered as independent variables at the same time or separately. Scores on the total and subscales of social skills were entered as dependent variables respectively. Age and gender were controlled. Significance levels of predictors were determined based on Type III sums of squares. Results showed that none of the main effects were significant. In addition, neither age nor gender showed any significant effect on social skills in this model. Thus, in the following models, age and gender were no longer controlled. The second model, without age or gender, revealed significant positive relationships similar to the correlations shown in the previous analysis (see Table 2). In the third model, in the first step, pretend play and the two types of pretend play were entered as independent variables at the same time or separately. Scores on the pretend play were entered as dependent variables. The second step was to add impulsivity score as independent variables. In this model, the interaction terms of pretend play and impulsivity were defined. Results showed that neither the main effect nor any interaction term had a significant result, which indicated that the relationship between pretend play and self-control was not moderated by impulsivity. Parallel with the third model, the test of the moderation effect of emotion regulation is as the same with the test for the moderation effect of impulsivity. In the first step, pretend play and the two types of pretend play were entered as independent variables at the same time or separately. Scores on the social skills were entered as dependent variables respectively. The second step was to add emotion regulation score as independent variables. In this model, the interaction terms of pretend play and emotion regulation was defined. Results showed that neither the main

effect nor any interaction term had a significant result, which indicated that the relationship between pretend play and social skills was not moderated by emotion regulation either.

The last research question centered on how parent beliefs and behaviors were associated with children's pretend play amounts. This question was addressed using independent t-tests. Parents' beliefs and behaviors were dichotomized by their means as the cut point to create two groups of parents. Parents' reported behaviors were not associated with any variables significantly. However, parents' beliefs differed significantly on the proportion of social pretend play children displayed ( $p = .013$ ). This indicates that positive parental beliefs of pretend play were associated with children engaging in more social versus solitary pretend play. Correlation analysis also revealed the same result, that parents' beliefs were associated with children's engagement in social pretend play ( $r = .48, p = .013$ ) (see Table 4).

## **CHAPTER VII**

### **DISCUSSION**

Grounded in the Bioecological theory, the major purpose of this study was to empirically test whether a direct link exists between preschool children's pretend play and several social skills, and also to look at what home factors may be connected to preschool children's pretend play. Pretend play is an activity that children at preschool age regularly engage in in their daily lives. Thus, it could be treated as proximal process in the Bioecological model. Personal characteristics may interact with proximal process in predicting child outcomes. Within one of the microsystems—home - parents are significant adults that have great influences on child outcomes. In the present study different types of pretend play (i.e., concrete pretend play, abstract pretend play, and social pretend play) as well as overall pretend play amounts were used as proximal process. Based on literature, children's characteristics were measured as impulsivity and emotion regulation. Parents' beliefs and behavior regarding pretend play may be essential for children's preferences and opportunities for pretend play. Thus, they were included as home factors.

Results suggested that pretend play overall, as well as two types of pretend play, abstract pretend play and social pretend play, were significantly associated with scores both on overall social skills and on the subscales. To be specific, results demonstrated

that overall pretend play was positively related to one of the indices of social skills: assertion. The most robust results came from abstract pretend play and social pretend play. Both abstract pretend play and social pretend play positively correlated with children's assertion and cooperation. These results support the main hypothesis that pretend play is positively associated with social skills from different dimensions. In addition, social pretend play appeared to be related to social skills. No moderation effects were found in this study. In terms of the associations with home factors, social pretend play was the only type of pretend play that showed a correlation trend with parents' beliefs, but not parents' behavior.

A major contribution of this study was providing the support for a direct link between preschoolers' pretend play and several social skills. The results supported the hypotheses under the first research question that claimed that pretend play, abstract pretend play (versus concrete pretend play), and social pretend play (versus solitary pretend play) are positively correlated with scores on total social skills and its subscales. As one of the most advanced play forms in early childhood, pretend play has long been associated with children's cognitive, emotional, and linguistic development. This study provides further support that pretend play is also associated with more complex abilities. It is important to remember that this study was not designed to find causal relationships. Thus the correlations between any two variables could be interpreted in several ways: It could be that pretend play engagement enriched children's social skills, or that the accumulated social skills enabled children to engage in more pretend play. It is likely that

the dynamic nature of children's development in these areas during proximal processes allows for bidirectional influences such that pretend play experiences promote more social skills while better social skills invite more pretend play opportunities. Another finding was that social pretend play predicted social skills above and beyond total pretend play and abstract pretend play. In another words, social pretend play was the pretend play form that mostly related to children's social skills. The following discussion will be organized based on my research questions.

## **Pretend Play**

### **Pretend Play and Assertiveness**

Overall pretend play amount was the only variable significantly related to teachers' ratings of children's assertiveness. This finding is valuable, since to my knowledge there is no literature available so far that explicitly demonstrates either a direct or an indirect association between pretend play and assertion. Assertion is also the social skill that showed the most frequent association with pretend play and its subtypes in this study.

Assertiveness refers to the ability to initiate communication or actions, manipulate the environment, and explore with confidence (Gresham & Elliott, 1990). It also implies the attitude of the spoken person. It can be a strong and confident declaration and statement, while not making others feel offended. In the literature, assertion is sometimes regarded as a step toward aggression, which is considered as one of the maladaptive behaviors in children (Fagot & Hagan, 1985; Patterson, et al., 1967). However, one study (Hegland & Rix, 1990) found that assertiveness was associated with positive social



behavior and instrumental aggressiveness (versus hostile aggression), which is not driven by hostility, and is one way to solve problems (Felson, 2002). Assertion is also related to independence, self-esteem, (Patterson, 1972; Yutani, Takahashi, & Miyaoka, 2011) and communication skills (Yutani, et al., 2011).

Pretend play in preschool age children typically becomes more complex overtime and may include dialogue between or among children. This assumption was supported by the coding records. According to the coding records, across all 6 observation days, children spent 70% of their time talking, articulating, and making sounds during pretend play. In comparison, they only spent 32% of their time talking or verbalizing when they were not engaging in pretend play. There are several possible explanations. First, children were more likely to interact with others when they were engaging in pretend play. The group offers children sufficient chance to speak, question, and assert. Second, the nature of imagination is the internalization of children's play. Vygotsky said imagination is the internalization of previous experiences and feelings to construct a different experience (de Oliveira & Valsiner, 1997). However, children of 4 to 5 years old are limited in their internalization ability (Piaget, 1962), which enables imagination be operated only in one's mind; children need to utter what they are thinking in their minds to assist themselves in constructing the imagination.

The third reason, and probably the most important reason, is that negotiation is one of the major components of pretend play. One study showed that children who were more likely to engage in pretend play had higher levels of negotiation skill than those who were less likely to engage in pretend play (Howe, Petrakos, & Rinaldi, 2008).

Children need to express themselves in order to decide the roles in the play. For example, when children engage in a household pretend play scenario, they need to negotiate who is going to play different family members, and who is going to serve dinner. In that case they will need to assert their preference for being the mother or the baby while trying not to cause conflict, because strong assertion without taking others' feelings into account may result in the end of the play. In addition, the notion of a script within pretend play describes a sequence of a play, which is hierarchically organized. The script also needs to be discussed and decided before or during pretend play. Such communication and negotiation about one's willingness and desire to engage in pretend play requires good communication skills and high self-confidence.

### **Pretend Play and Cooperation**

No significant results were found for the relationship between overall pretend play amount and cooperation, neither positive nor negative. One possible reason why pretend play was not related to cooperation was that in this study cooperation was measured as following rules, acting appropriately, and finishing requirements on time. It is more like compliance in some ways. Since this questionnaire is designed for teachers' use, cooperation sometimes means the compliance to teachers' requirements and classroom rules. However, cooperation in pretend play includes not only compliance, but also negotiation and turn taking. Cooperation with peers may differ from cooperation with teachers or parents. Since teachers or parents are authority figures, such cooperation may be influenced by external forces, such as the potential threat of being punished, or not being able to play with a favorite toy. However, cooperation with peers may

sometimes be compared with compromising, but the purpose is to eventually maximize one's as well as others' benefits. For instance, in a household pretend play scenario, all the girls may want to play the mother, but if they decide there can only be one then the play may stop. To keep the game going, they need to decide who is the most appropriate child to be the mother, and the rest need to compromise and play other characters instead. In this situation, although they are forced to choose a less optimal character, the force is more internal rather than driven by authority. It may involve an intentional compromise in order to keep the game going. Thus, children who are willing to compromise in pretend play may not be the same when teachers require them to follow directions because they may fail to see the benefits of obeying.

### **Pretend Play and Self-control**

Overall pretend play amount was not found to be associated with self-control either. However, social pretend play significantly predicted self-control. Thus, the effects of overall pretend play on self-control maybe offset by other types of pretend play that are less associated with self-control (i.e., concrete pretend play, abstract pretend play, and solitary pretend play).

### **Abstract Pretend Play**

#### **Abstract Pretend Play and Assertiveness**

Besides total pretend play amount, abstract pretend play was also positively associated with assertiveness. Abstract pretend play, in contrast to concrete pretend play, is a more advanced form of pretend play (Matthews, 1977). Abstract pretend play is linked to children's cognitive development. According to Piaget, symbolic representation

emerges at the second developmental period, which is from two to seven years old. It is during the second developmental period (2 to 7 year-old) children begin to be capable of using mental representation to construct their experiences and knowledge. That is to say, new knowledge can now be incorporated independently of touching, seeing, or feeling concrete objects. And in another way, imagination can also be represented independently of concrete objects.

Some researchers have suggested that assertion is not only related to assertive skills, but it might also be linked to cognitive development (Derry & Stone, 1979; Eisler, Frederiksen, & Peterson, 1978; Vagos & Pereira, 2010). In fact, those researchers called for attention to assess the cognitive dimension in relation to assertiveness. As we learned from the literature, cognitive development is one of the core dimensions that make the shift from concrete pretend play to abstract pretend play possible. Thus, if the assumption that the children who are good at assertion are better off in their cognitive development is real, then we may guess that a good performance in assertion is a sign that children's cognitive development is at a certain level that allows them to make the shift from concrete pretend play to abstract pretend play (although the shift is a gradual process).

When children are cognitively ready, they may engage in abstract pretend play. The primary definition of abstract pretend play is that children perform out their imaginations through, and only through their movements, or representative objects (e.g., banana as a telephone), rather than through realistic tools (e.g., toy telephone). When children are using an object to represent a totally different thing, or only through their movements (e.g., open their hand to show the invisible diamond on their palm), they need

to make others understand what is there in their minds, so they need to speak it out.

Abstract pretend play in this study was positively associated with assertiveness and this may stem from a cognitive as well as a necessity perspective.

### **Abstract Pretend Play and Cooperation**

Results also showed that abstract pretend play was positively associated with the teacher-rated cooperation score. As noted before, cooperation was measured more as compliance to instruction and rules. In the light of a well developed cognitive skill, children who are doing well in enacting abstract pretend play maybe those who are good at understanding the rules and instructions that teachers give. As noted in literature review, pretend play has proven to be positively associated with theory of mind, which closely links to the ability to take other people's perspectives (A. Lillard, 2001). Thus the association between abstract pretend play and cooperation measured by Social Skills Rating System makes sense to this degree. However, it would be important in the future studies to see whether this relationship is linked through children's cognitive development.

### **Abstract Pretend Play and Self-control**

No significant correlation was found in the relationship between abstract pretend play and self-control in this study. Self-control refers to one's attempt to control one's emotion or, behavior in order to reach a long-term goal or benefit (Muraven & Baumeister, 2000). Cognitive development is related to self-control ability. In fact, cognitive training was widely used in helping children with self-control problems. For instance, researchers used cognitive-behavioral treatment (CBT), which is featured by

self-instructional training via modeling and behavioral contingencies, in a group of 8 to 12-year-old children with non-self-controlled problems. They found that cognitive-behavioral treatment significantly improved children's score on teacher-rated self-control, even when the other two treatment groups—behavioral, and attention-control treatment failed to make a significant improvement (Kendall & Braswell, 1982). Based on the evidences, we should expect that abstract pretend play would be associated with self-control. However, the study failed to find this relationship.

However, when we look at the measurement, self-control was measured as controlling one's emotion and regulating one's behavior during negative social experiences (e.g., peer teasing, criticism, and conflict), putting much emphasis on dealing with the relationships with peers or adults. The ability to deal with such situations may weigh more on social-emotional development rather than cognitive development. In this case, we may expect a stronger association between social activity and self-control.

### **Social Pretend Play**

#### **Social Pretend Play and Assertiveness**

In this study social pretend play was measured as pretend play with peers. Result showed that it is positively associated with assertiveness. As noted in the pretend play and social skill section, pretend play, especially social pretend play, involves negotiation of roles and sequence of play (or script of play). Three kinds of social pretend play were identified (Howes, Unger, & Matheson, 1992). The first is simple social pretend play, which is parallel pretend play without interactions. The second one is associate social pretend play, which only involves script but not roles. The last one is cooperative pretend

play, which involves both a script and roles. In the present study, we did not measure specific types of social pretend play. However, according to our observation notes, children were very likely to engage in sequential pretend play in which children played different roles. Thus, we may expect that dialogues are going on in their social pretend play, which provides opportunities for assertion.

From another perspective, it is also possible that children who are more capable in asserting their needs are more likely to engage in social pretend play. Compared to children who are not good at asserting, children with assertive skills are more likely to play the roles that follow their wishes in social pretend play, which makes them be more willing to engage in social pretend play. For social abstract pretend play, children who are good at explaining things may be more likely to engage in the kind of pretend play that requires lots of illustration and explanation.

### **Social Pretend Play and Cooperation**

Social pretend play was found to be only modestly associated with the cooperation score in this study. This is a little surprising, since the negotiation about roles and scripts requires back and forth discussion before and during the play, and there should also be compromising and collaboration among participants. Thus, as noted before, the measurement of cooperation in this study focused more on compliance and following rules and instructions of adults (i.e., teachers). The mechanism underlies cooperation with peers may differ from what underlies compliance to instructions. This difference may need further exploration in the future studies.

## **Social Pretend Play and Self-control**

Social pretend play was found to be positively associated with self-control. This finding is in accordance with Vygotsky's theory, which claims that self-control is a fundamental outcome of pretend play (Vygotski, 1978). Two features of pretend play are closely linked with self-control according to Vygotsky. The first one is the imaginary situation, in which children need to consciously separate imagination from reality. The second feature is that there are potential rules in pretend play. By following social rules, Vygotsky claimed that children are more likely to be satisfied in pretend play than not following the rules. They need to self-regulate themselves to enact the "right" action in order to reach the pretense goals.

When pretend play emerges, children only manage very limited pretend play skills, and are not able to endorse a role or a script to their pretend play. It is mostly randomly enacted pretense when they play alone. It is adults, typically parents, who illustrate a scenario that lines things up to form a complete script with roles in it. As children grow older, they start to play with peers. At this point they need to construct the scripts on their own. That is to say they are now independent of adults' help in forming a story all by themselves. In this case, the process of pretend play is transformed from adult guided to self-regulated. That is why social pretend play is related to self-regulation as children grow older and become better pretend players. Social pretend play is the play form that needs the most integration of roles and scripts. Thus it makes sense that social pretend play is more likely to be positively related to self-control than solitary pretend play.



### **Social Pretend Play Predicting Social Skills**

Among all types of pretend play, social pretend play is the only type of pretend play that predicted social skills significantly ( $p < .1$ ). The results indicated that social pretend play measured in this study captured most of the variance of skills that children used in pretend play that are corresponded to the social skill measurement. Even when social pretend play included both abstract pretend play and concrete pretend play, it was still a significant predictor of children's social skills. Thus, we may conclude that playing with peers in pretend play is beneficial for children's development in terms of their assertiveness, cooperation, and self-control skills. This is not to say that other forms are not important. Abstract pretend play could also have a positive influence on some of children's social skills. It is just on another dimension of pretend play. Social pretend play has some features that abstract play does not have in terms of connecting to social skills.

### **Summary of Pretend Play**

From a Bioecological perspective, pretend play is a proximal process that has the potential to impact child outcomes. Since for preschool age children pretend play can occur in different locations and at various times during the day, the power of this proximal process may be quite strong. In comparing the different type of pretend play, the study found that social pretend play maybe the most beneficial form that affects children's assertive, cooperation, and self-control skills. Abstract pretend play may also be an advanced form that contributes to children's assertive and cooperation skills, but whether it is through children's cognitive development needs to be further studied.

## **Individual Factors**

### **Impulsivity**

The results in this study failed to find moderation effects for impulsivity on the relationship between pretend play and social skills. From a Bioecological perspective, impulsivity can be thought of as a Person characteristic, just like gender and age. Impulsivity is considered to be one of the dimensions of temperament which is relatively stable across time. The assumption that impulsivity may interact with proximal processes (in this case, pretend play) derives from the Bioecological theory, which claims that person characteristics may affect child outcomes through the interaction with proximal processes. Empirical research has also showed that impulsivity may moderate the relationship between pretend play and self-control (Elias & Berk, 2002). In this relationship, impulsivity is a stable trait, while self-control is an observable behavior.

Two reasons might underlie the lack of a significant finding. One reason could be the small sample size in this study. With a sample of 28 children, the power is fairly limited, which may introduce more type II error, and inhibit significant findings. Another reason could be that the current measurement of self-control is different from what other researchers have used in their studies. For example, Elias and Berk (2002) observed and coded children's behavior during several instances to decide their self-regulation under different circumstances. They found impulsivity moderated the relationship between pretend play and self-regulation only under one situation—during clean-up time, rather than group circle time. This suggested that self-regulation, or self-control, might be different under different situations, and when children were with different people. In the

study described above, self-regulation was measured as the ability to regulate oneself to do something which is not very desirable for children—clean up things. The measurement of self-control in this study focused more on children’s behavioral and emotional control in the face of frustrations. Thus, impulsivity may be able to moderate how pretend play affects self-regulation during an undesirable task, but not show a connection to self-regulation during frustration. Further studies examining children’s self control skills during social situations might lead to stronger moderation effects during observed pretend play episodes.

### **Emotion Regulation**

Similarly, emotion regulation was not found to moderate the relationship between pretend play and social skills. The same reason as for impulsivity could apply for emotion. Emotion regulation is a personal trait that could affect child outcomes through interacting during proximal processes. A small sample size may account for non-significant finding again. Furthermore, a high correlation was found between emotion regulation and all three social skills variables. This could be a confounding effect that high correlation between moderator and dependent variable may hide any other effect, such as the main effect (i.e., pretend play) or the interaction effect (i.e., pretend play by emotion regulation). In future studies, emotion regulation could be treated as a covariate to see whether pretend play still has a significant effect on social skills when controlling for emotion regulation.

## **Gender**

In the current study, no gender differences were found for pretend play variable, nor for home factors. That is to say, boys and girls neither differed significantly on the amount of pretend play, including all types of pretend play, nor differed significantly on their parents' beliefs or behaviors about pretend play. Literature suggested that girls' pretend play amount differed from that for boys'. Girls also engage in more abstract pretend play (Jones & Glenn, 1991; Johnson & Ershler, 1981). Boys engaged in more concrete pretend play than girls (Jones & Glenn, 1991; Matthews, 1977; McLoyd, 1980). Previous research also suggested that parents might hold different opinions toward pretend play for girls versus boys (Gleason, 2005; Lindsey, Mize, & Pettit, 1997). However, in this study none of these differences emerged. The non-significant result of gender effect may be due to a small sample as well as the unequal sample distribution (18 boys, 10 girls). But it may be equally due to the context in which the study took place. One study suggested that boys engaged in more pretend play than girls in a discovery classroom, which featured more opportunities for exploration than a regular classroom, while no gender differences were found in the formal education classroom, which was just the regular classroom (Johnson & Ershler, 1981). The outdoor environment itself might have promoted boys' interests and motivation to engage in pretend play. The costumes might also have promoted boys' pretend play amount. Since some of the costumes provided were purposely designed for outdoor pretend play, like capes, animal masks, and butterfly wings, they might have encouraged boys to engage in more pretend play because they could run with them in the outdoor environment. Boys' pretend play

amount may have caught up with the pretend play amount for girls' in such a context. It could also be possible that with the costumes boys were more likely to engage in abstract pretend play than they used to be, because they might have felt that the costumes helped them to explain what they were trying to pretend even without using the actual concrete objects. It also could be in an opposite direction that girls reduced their pretend play amount in outdoor environments due to the materials or props available compared to indoor environments. This speculation is worth pursuing in future studies given the value of pretend play for both boys and girls.

### **Home Factors**

Parents' beliefs predicted children's overall pretend play amount as well as social pretend play amount even when parents' behaviors were controlled. Parents' behaviors however failed to predict any kind of pretend play when parents' beliefs were controlled. When looking at parents' beliefs and parents' behaviors separately, significant relationships could be found for pretend play. From a theoretical perspective, according to the Bioecological theory, the microsystem will have a continuous influence on proximal process. Parents are usually significant influences in that system. Belief is something internalized, while behavior is more externalized. The results in this study suggested that it was beliefs, the internalized status, that had a larger impact on proximal process. This may be due to a greater influence from the value of pretend play that parents convey or it may also be due to measurement deficits that failed to capture parents' behavior very well. Further work needs to be done to refine the measurement to ensure it is accurately representing these proximal processes. Links between parent's

beliefs and children's social skills also need to be investigated in a larger sample to see whether pretend play is a real proximal process that transfers the impact of parents' beliefs to child outcomes.

From an empirical perspective, this finding is in accordance with previous studies that show parents' beliefs about children's pretend play have positive effects on children's actual pretend play amount (Gleason, 2005; Haight, et al., 1997).

### **Implications and Limitations**

The current study contributed to the literature in pretend play in that it provided empirical evidence for a direct link between pretend play and social skills. Specifically, this study investigated different types of pretend play and managed to support the long existed assertion that abstract and social pretend play were better than concrete and solitary pretend play in relating to children's social competence. Social pretend play has the most power in relation to all three social skills (i.e., assertive, cooperation, and self-control). Adults, either teachers or parents, need to consciously promote social pretend play when they know that children are capable of engaging in social pretend play. Abstract pretend play did not show significant prediction effects. However, it did have a significant correlation with children's assertiveness and cooperation. Although it is hard to decide at this point which leads to which or if it is bidirectional, the emergence of abstract pretend play is by its nature very inspiring in that it may be associated with positive social outcomes.

Parents' beliefs and behavior about pretend play may have a significant influence on the amount of pretend play their children engaged in. Parents who are aware of the

benefits of pretend play may support their children engaging in pretend play. However, some parents may have a wrong idea about pretend play, and think it is a waste of time or it does not matter. It is researchers' as well as educators' responsibility to communicate to parents about potential benefits of pretend play. Only when parents' change their minds (beliefs), will children have a better chance to engage in pretend play.

The current study is based on observations in a natural situation in child-care centers, with 28 young children, aged 4 to 5 years old. The strength of this study is that all the data were collected in natural settings, so that children were more likely to behave in a typical manner compared to behaviors which might occur in a lab setting. There are certainly limitations in this study.

First of all, some limitations around the link between theory and study were identified. For example, even though pretend play was considered as a proximal process, the observations in the current study were neither based on children's daily life, nor in a regular circumstance. To be qualified as proximal process, behaviors are supposed to happen repeatedly on a daily basis. In the current study, pretend play was observed in an outdoor environment while costumes were available, which was not a regular circumstance for the group of children. However, from another perspective, costumes outdoors might have made the environment more like the typical indoor environment where children regularly engage in pretend play. In addition, although this study looked at how the influences in the home environment affect children's behavior in childcare, which was from a mesosystem perspective, it failed to look at how the context as a whole influenced child behavior and outcomes.

The second limitation was that only the proportions of pretend play were used in this study rather than overall frequency of pretend play. The main reason for this strategy was that children in different centers and on different days had unequal total times for their outdoor play. Thus, absolute amounts were not used to avoid bias in relation to the amount of time each child was observed. However, the absolute pretend play amount could be an important factor to examine. In a future study both the proportion and the absolute amount could be examined to give a more comprehensive idea about how much pretend play children engage in on a daily basis.

The third limitation was around the sample. With a sample less than 30 individuals, it is always hard to find moderation effects. However, from another perspective, if anything is found, then the effect size should be large. Another shortage regarding study sample was an uneven gender proportion, because the number of boys was almost twice that of girls. This could be the major reason for not finding any gender differences in this study.

Finally, there were some limitations about the measurement instruments. In the present study, pretend play coding and parent's belief and behavior questionnaire were self-developed. Although they were based on previous coding systems or questionnaires that were used in other studies, some modifications were made to better fit with our study goals. However, the revised version has not been tested for validation. In this study, the shared method effect was partly avoided by having parents and teachers report on different variables, and researchers observe pretend play. However, each variable was reported by a single group of individuals (e.g., teachers) and not by multiple reporters. As



mentioned before, questions about cooperation in the questionnaires were more like compliance to teachers, which may fail to capture the cooperation skills in other domains. In a future study, parents' ratings of social skills could be collected and combined with teachers' ratings. At last, the measurement of pretend play could be more elaborate in order to assess specific pretend play levels. Further differentiation of pretend play levels may show interesting connections to the independent and dependent variables.

### **Future Directions**

It is necessary to repeat this study in a larger sample in the future. It may also be better to observe children's pretend play under different physical contexts (e.g., indoor, outdoor, indoor with/without costumes, outdoor with/without costumes). It will be nice to construct a more elaborate coding system to code different levels of pretend play under each pretend play type. The validity of the coding system as well as parent questionnaire need to be further tested in a large study. Recall that emotion regulation was highly correlated with all the social skill variables. In the future, emotion regulation could be treated as covariate of pretend play to see whether pretend play could predict social skills above and beyond emotion regulation. Besides parents' beliefs and behavior, the parents' actual involvement could also be included in testing how this microsystem may affect child outcomes. Furthermore, from a contextual perspective, in future studies, another important microsystem—child-care center, and the significant others in that system—teachers, should also be taken into account. In addition, factors in the exosystem and the macrosystem of the children are having direct and indirect influences. It would be worth studying these larger scale forces to gain a more complete picture of what leads children

to develop pretend play and social skills, for instance, studies in different cultural backgrounds. The benefits of pretend play as a proximal process for young children make this an important topic for future work. In this sense, a longitudinal study that observes children at different ages may provide a better understanding of how proximal process may be linked to pretend play and social skills.

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**APPENDIX A**

**COSTUMES**







**APPENDIX B**

**PARENTS' BELIEFS ABOUT CHILDREN'S PRETEND PLAY**

**Parents' Beliefs about Children's Pretend Play**

*We are interested in your beliefs and ideas related to your child's pretend or make-believe play. As you complete this questionnaire please think about pretend play as a playful behavior in which your child plays with one thing but treats it as if it were something else, or your child takes on an imaginary role. Please remember that there are no 'right' answers to these questions, we are just interested in your views and experiences.*

**Part I: Beliefs on Pretend Play**

1. How important is pretend play to your child (circle one)?

- (a) not important at all
- (b) not very important
- (c) important
- (d) pretty important
- (e) very important

2. How much do you encourage/discourage your child from engaging in pretend play?

Discourage                      Neutral                      Encourage  
1e    2.....4.....5

3. If your child is repeatedly engaged in the same pretend/role play, when would you redirect your child's pretend play to a different activity?

- (a) After a day
- (b) After a week or two
- (c) After a month

- (d) After several months
- (e) I would not intervene no matter how long it continued

4. Please indicate how comfortable you would feel if your child engaged in pretend play in any of the following five scenarios. Please circle the degree of your feeling.

1= very uncomfortable, 2 = somewhat uncomfortable, 3 = neutral, 4 = comfortable, 5 = very comfortable

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| (a) During dinner at home with the family              | 1 | 2 | 3 | 4 | 5 |
| (b) When out at a restaurant or shopping               | 1 | 2 | 3 | 4 | 5 |
| (c) When close friends were present                    | 1 | 2 | 3 | 4 | 5 |
| (d) When guests (not close friends) were over          | 1 | 2 | 3 | 4 | 5 |
| (e) When visiting the home of someone without children | 1 | 2 | 3 | 4 | 5 |

5. Would you like your child to engage in more/less/the same amount of pretend play as s/he does now? Please explain.

6. Why do you think pretend play is/is not important to your child's development? Please explain.



7. I would begin to worry about my child's involvement in pretend play if...

8. Please circle which of the toys listed you have provided for your child. (Select all that apply):

- (a) dolls
- (b) stuffed animals
- (c) trucks/cars/vehicles
- (d) dress-up clothes
- (e) kitchen toys
- (f) play house, fort, or other pretend play structure.

Other: \_\_\_\_\_

9. Please circle which of the toys your child plays with regularly in their pretend play.

(Select all that apply):

- (a) dolls
- (b) stuffed animals
- (c) trucks/cars/vehicles
- (d) dress-up clothes
- (e) kitchen toys
- (f) play house, fort, or other pretend play structure.

Other: \_\_\_\_\_

10. Which toy does your child play with most when in pretend play?

\_\_\_\_\_

11. How frequently do **you** engage in **pretend play** with your child?

- (a) Daily or almost daily
- (b) Several times a week
- (c) Several times a month
- (d) Rarely

12. Who typically start the pretend play?

- (a) Your child
- (b) You
- (c) Another child or adult

13. How long do your pretend play interactions last?

\_\_\_\_\_minutes.

14. What types of pretend play does your child engage in outside of the child care setting? Please explain.

15. Use the following scale to describe how often your child (outside of school or child care) engages in pretend play alone, with other children, or with adults.

1 = rarely, 2 = several times a month, 3 = several times a week, 4 = daily or almost daily, 5 = multiple times per day

- |   |   |   |   |   |   |
|---|---|---|---|---|---|
| (a) alone                                     | 1 | 2 | 3 | 4 | 5 |
| (b) with other children (friends or siblings) | 1 | 2 | 3 | 4 | 5 |
| (c) with adults                               | 1 | 2 | 3 | 4 | 5 |

## Part II: Demographic information

1. Child's gender: \_\_\_\_\_ Child's birthday: \_\_\_\_\_
2. How would you describe your child's race/ethnicity? (circle all that apply)
  - a. African American/Black
  - b. Asian or Pacific Islander
  - c. Caucasian/White
  - d. Latino/Hispanic
  - e. Other (*Please specify.*) \_\_\_\_\_
3. What is your relationship to your child (e.g. mother, father)? \_\_\_\_\_
4. What is your current age? \_\_\_\_\_
5. What level of school have you completed? (Please check)
  - a. Some High School \_\_\_\_\_
  - b. High School Degree \_\_\_\_\_
  - c. Attended College \_\_\_\_\_
  - d. 2 Year College Degree \_\_\_\_\_
  - e. 4 Year College Degree \_\_\_\_\_
  - f. Post-graduate Work \_\_\_\_\_
  - g. Graduate Degree \_\_\_\_\_
6. What is your current marital status? (Please check)  
\_\_\_\_\_ Married, living together  
\_\_\_\_\_ Married but separated  
\_\_\_\_\_ Not married, living with partner  
\_\_\_\_\_ Divorced  
\_\_\_\_\_ Single, never married  
\_\_\_\_\_ Widowed

7a. How many individuals, including you and your child, are currently living in your household? \_\_\_\_\_

7b. Please list the first name (or initial), age, and the relationship to your child for every person currently living in your household, including you and your child.

| FIRST Name (or initial) | Age | Relationship |
|-------------------------|-----|--------------|
|                         |     |              |
|                         |     |              |
|                         |     |              |
|                         |     |              |
|                         |     |              |

*Below are questions about your family's income and resources. We appreciate you answering the following questions as accurately as you can. We know these are very personal questions, but this information is very important as it helps us better understand your child's environment.*

8. What is your total MONTHLY income (before taxes)? Please check the category that is closest to your family's total MONTHLY income:

- |   |   |
|---|---|
| <input type="checkbox"/> Less than \$200/mo | <input type="checkbox"/> \$3,000-\$3,999/mo |
| <input type="checkbox"/> \$200-\$499/mo     | <input type="checkbox"/> \$4,000-\$4,999/mo |
| <input type="checkbox"/> \$500-\$999/mo     | <input type="checkbox"/> \$5,000-\$5,999/mo |
| <input type="checkbox"/> \$1,000-1,499/mo   | <input type="checkbox"/> \$6,000-\$6,999/mo |
| <input type="checkbox"/> \$1,500-1,999/mo   | <input type="checkbox"/> \$7,000-\$7,999/mo |
| <input type="checkbox"/> \$2,000-\$2,499/mo | <input type="checkbox"/> \$8,000-\$8,999/mo |
| <input type="checkbox"/> \$2,500-\$2,999/mo | <input type="checkbox"/> \$9,000-\$9,999/mo |
|   | <input type="checkbox"/> more than \$10,00  |

9. Are you currently receiving any form of public assistance (circle one)? Yes No

(If yes, check all that apply)

\_\_\_\_\_ Temporary Assistance for Needy Families (TANF)

\_\_\_\_\_ Assistance with some or all of your rent or housing

\_\_\_\_\_ WIC

\_\_\_\_\_ Food Stamps

\_\_\_\_\_ Child Care subsidy

\_\_\_\_\_ Other

Thank you for completing this questionnaire. If you are interested in receiving information about our findings once the study is completed, please fill out the information below.

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Email: \_\_\_\_\_

## APPENDIX C

### TABLES

Table 1: Mean, Standard Deviation, Range, and Skewness for all Variables

|  | Mean (SD)     | Range     | Skewness |
|--|---------------|-----------|----------|
| Pretend Play Amount                                  | .21 (.14)     | 0 - .54   | 0.465    |
| <i>Concrete Pretend Play Amount</i>                  | .28 (.27)     | 0 - 1     | 0.8      |
| <i>Abstract Pretend Play Amount</i>                  | .73 (.31)     | 0 - 1     | -1.407   |
| <i>Social/Solitary Pretend Play</i>                  | .81 (.32)     | 0 - 1     | -1.994   |
| <br>   |               |           |          |
| Social Skill Rating System total                     | 38.11 (13.54) | 16 - 59   | -0.103   |
| <i>Cooperation</i>                                   | 12.81(4.79)   | 4 - 20    | -0.308   |
| <i>Self-control</i>                                  | 12.07(4.77)   | 4 - 20    | 0.49     |
| <i>Assertiveness</i>                                 | 13.22(5.06)   | 5 - 20    | -0.277   |
| <br>   |               |           |          |
| Child Behavior Questionnaire<br>(temperament)        | 166.46(9.67)  | 150 - 195 | 0.943    |
| <i>Impulsivity</i>                                   | 52.96(8.83)   | 36 - 69   | -0.215   |
| <br>   |               |           |          |
| Emotion Regulation Checklist<br>(emotion regulation) | 78.93(11.14)  | 57 - 96   | -0.212   |
| <br>   |               |           |          |
| Parents' Beliefs                                     | 8.0 (1.31)    | 5.6 - 10  | -0.239   |
| Parents' Behavior                                    | 6.62 (1.17)   | 3 - 8     | -1.116   |

Table 2: Pearson Correlations between Pretend Play and Social Skills

|                          | 1       | 2       | 3      | 4      | 5        | 6        | 7        | 8 |
|--------------------------|---------|---------|--------|--------|----------|----------|----------|---|
| 1. Pretend Play          | 1       |         |        |        |          |          |          |   |
| 2. Concrete Pretend Play | -0.005  | 1       |        |        |          |          |          |   |
| 3. Abstract Pretend Play | 0.435*  | -0.435* | 1      |        |          |          |          |   |
| 4. Social Pretend Play   | 0.504** | 0.421*  | 0.359+ | 1      |          |          |          |   |
| 5. SSRS total score      | 0.348   | -0.257  | 0.424* | 0.438* | 1        |          |          |   |
| 6. Cooperation           | 0.292   | -0.22   | 0.476* | 0.378+ | 0.914*** | 1        |          |   |
| 7. Assertive             | 0.472*  | -0.208  | 0.443* | 0.422* | 0.965*** | 0.86**   | 1        |   |
| 8. Self-Control          | 0.194   | 0.006   | 0.256  | 0.416* | 0.898*** | 0.681*** | 0.817*** | 1 |

\*\*p &lt;.01.

\*p &lt;.05.

+p &lt; .1



Table 3: Regression of Pretend Play on Social Skills

|                       | Self-control      | Assertive | Cooperation       |
|-----------------------|-------------------|-----------|-------------------|
| Abstract pretend play | -.061             | .024      | .146              |
| Social pretend play   | .547 <sup>+</sup> | .599*     | .471 <sup>+</sup> |
| Concrete pretend play | -.261             | -.447     | -.351             |

\*p &lt; .05.

+p &lt; .1

Table 4: Pearson Correlations between Pretend Play and Home Factors

|                          | 1       | 2       | 3                  | 4                  | 5                  | 6 |
|--------------------------|---------|---------|--------------------|--------------------|--------------------|---|
| 1. Pretend Play          | 1       |         |                    |                    |                    |   |
| 2. Concrete Pretend Play | -0.005  | 1       |                    |                    |                    |   |
| 3. Abstract Pretend Play | 0.435*  | -0.435* | 1                  |                    |                    |   |
| 4. Social Pretend Play   | 0.504** | 0.421*  | 0.359 <sup>+</sup> | 1                  |                    |   |
| 5. Parents' Beliefs      | 0.314   | 0.274   | 0.149              | 0.48               | 1                  |   |
| 6. Parents' Behavior     | -0.044  | 0.033   | 0.304              | 0.353 <sup>+</sup> | 0.363 <sup>+</sup> | 1 |

\*\*p &lt; .01.

\*p &lt; .05.

<sup>+</sup>p < .1.