PARTNERS IN PRETEND PLAY: ASSOCIATIONS WITH FAMILY AND PEER EXPERIENCE IN EARLY DEVELOPMENT

by

Stephanie C. Zerwas

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This dissertation was presented

by

Stephanie C. Zerwas

It was defended on

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and approved by

Susan B. Campbell, PhD, Professor, Department of Psychology

Carl Johnson, PhD, Associate Professor, Department of Psychology in Education

Celia Brownell, PhD, Associate Professor, Department of Psychology
Committee Chair

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This study investigated associations between family and peer experience and individual differences in children's social and solitary pretend play in early childhood. Participants included 655 children (330 male) and their mothers from the NICHD Study of Early Child Care. At 15, 24, and 36 months of age, children's solitary pretend play during a free play task and the mother-child relationship during a semi-structured play task were observed and coded. Children's social pretend play with an age- and gender-matched, familiar peer was observed during semi-structured play at 36 months. Results from hierarchical regression analyses supported the following predictive relations: 1) frequency and quality of children's solitary pretense was best predicted by children's cognitive competence at 15 months, by intrusive and insensitive maternal engagement in play at 24 months, and by peer experience in child care at 36 months; 2) children's social pretend complexity with a peer at 36 months was predicted by early positive-mother-child play, peer experience in child care, a positive relationship with a same-aged or older peer, and pretend-agent behaviors during solitary pretense. These results suggest that although children's solitary and social pretend play are related, the development of social and solitary pretense is differentially predicted by children's social experience with family and peers.

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INTRODUCTION

Children's pretend play fascinates. Pretend play behaviors range from drinking from an empty cup, engaging in a lively conversation with a stuffed panda, to adopting a superhero role with a group of playmates. What binds this collection of play behaviors together is their "as if" nature (Garvey, 1977; Fein, 1981; Harris & Kavanaugh, 1993). Pretending gives children the ability to escape or modify their current, experienced world, and slip into a fictional world of possibility and imagination. Furthermore, and perhaps most importantly, pretend play provides the structure for children to share this imaginary world with others.

Imaginative play has long been thought to provide a unique window on multiple aspects of children's developing minds. Researchers have used young children's pretend play to explore their grasp of symbolic representation prior to the use of linguistic symbols (Piaget 1945/1951; McCune, 1995; Nicolich, 1977; Tomasello, Striano & Rochat, 1999) and to measure their understanding of independent agency (Brownell & Carriger, 1990; Kavanaugh, Eizenman, & Harris, 1997; Watson & Fischer, 1977). Pretend play has also been theorized to play a central role in toddlers' and preschoolers' developing social-cognitive understanding and to drive the development of meta-representational thought (Leslie, 1987; Lillard, 2001). Research on individual differences in young children's pretend play has demonstrated that children who engage in more frequent and complex pretend play evidence greater understanding in tasks of affective perspective taking and "theory of mind" tasks such as false belief (Astington & Jenkins, 1995; Perner, Ruffman, & Leekam, 1994; Schwebel, Rosen, & Singer, 1999; Taylor & Carlson, 1999;Youngblade & Dunn, 1995).

Understanding the social correlates of children's pretend play sophistication would, therefore, provide insight into the role of social experience for children's developing social

cognitive awareness. Research has demonstrated the importance of children's relationships with their play partners for individual differences in the complexity of their pretense. When children play with sensitive mothers (Bornstein, et al., 1996; Fiese, 1990; O'Connell & Bretherton, 1984; Slade, 1987) and have positive, affectionate relationships with peer and sibling play partners, they engage in more complex social pretend play (Dunn & Dale, 1984; Howes, Matheson, & Wu, 1992; Youngblade & Dunn, 1995). Thus, the overarching purpose of this study was to investigate, from a longitudinal perspective, associations between children's social experience with mothers, siblings and peers and individual differences in the development of their solitary and social pretend play.

There is a surprising absence of longitudinal research on the development of pretend play (for exceptions see Haight & Miller, 1993 and Slade, 1987a). Hence, a primary goal of the current study is to examine how pretend play develops over the first three years of life. Consistent with past cross-sectional research (Belsky & Most, 1981; Watson & Fisher, 1977), children's pretend play should grow progressively more frequent and complex with development. However, little is known about whether individual differences in frequency and complexity are stable over age. When children demonstrate more frequent and complex pretense early in development will they also be more competent when pretending at later ages?

Children also engage in pretend play in many different contexts. They pretend alone, with their parents and with their siblings and peers. Although past research has found that the complexity of children's pretense is not stable across mother-child and solitary pretend play contexts (Bornstein et al., 1996; Fiese, 1990; O'Connell & Bretherton, 1984; Slade, 1987a; Slade, 1987b), no studies have examined longitudinal relations between individual differences in children's solitary pretense and the complexity of their social pretense with peers. Some features

of toddlers' and preschoolers' solitary pretend play may relate to their ability to engage socially with their partners in pretense. For example, by 24-months, toddlers are capable of directing their actions towards a passive recipient such as a doll (pretend-other) and creating scenarios in which a doll is acting on its own behalf (pretend-agent; Belsky & Most, 1981; Fenson, 1984; Lowe, 1975; Watson & Fischer, 1977). Pretend-other and pretend-agent actions may give children rudimentary experience in directing their pretend actions towards others and simulating the perspectives of another (Barresi & Moore, 1996; Harris, 2000) and could ultimately allow them to engage in more sophisticated social pretense with their peers.

The second goal of the study is to understand how mother-child play relates to individual differences in children's social and solitary pretend play across development. When children begin to pretend at 12 months, they are particularly dependent on their mothers to scaffold their interest and early skills in play by demonstrating, directing, and suggesting possible pretend activities (Beizer & Howes, 1992; Fiese, 1990; Howes et al., 1992; O'Connell & Bretherton, 1984; Smolucha & Smolucha, 1998). However, around children's second birthday, mothers begin to modify their engagement in the pretense. Instead of actively directing and modeling play activities, they are more likely to elaborate on pretend actions their 24-month-old toddlers initiate and to provide positive social support by nodding, smiling, commenting positively, and narrating their children's play (Beizer & Howes, 1992; Slade, 1987b). Furthermore, this type of verbal support and elaboration appears to contribute more to older children's play quality than do demonstrations and directions and by 28 months, mothers make fewer suggestions to their toddlers and are more likely to allow them to play without guidance (O'Connell & Bretherton, 1984).

It may be toddlers' burgeoning ability to interact socially in the pretense that underpins these transitions in maternal engagement. By their second birthday, children's pretend actions can be directed towards a passive recipient such as a doll or towards a real person, such as their mothers (Belsky & Most, 1981; Beizer & Howes, 1992;; Fein, Apfel, 1979a; Slade 1987b; Watson& Fischer, 1977). They also engage in pretend-agent play (Fenson, 1984; Lowe, 1975; Watson & Fischer, 1977) appear to understand others' pretend actions and transformations (Harris & Kavanaugh, 1993; Kavanaugh, Eizenman, & Harris, 1997; Walker-Andrews & Kahana-Kalman, 1999) and will direct their gaze to their play partner following a pretend action (Striano, Tomasello, & Rochat, 2001). When mothers appropriately adjust and modify their engagement commensurate with their toddlers' abilities, they may create an environment in which their children can pretend at more sophisticated levels.

Whereas the nature of maternal engagement in their toddler's pretend play may be a function of developmental change in children's competence, individual differences in the affective relationship between mothers and their children is also associated with children's social pretend play competence across the first three years. In mother-child dyads with positive, affectionate relationships, toddlers display more complex social pretense (Dunn & Dale, 1984; Slade, 1987b; Youngblade & Dunn, 1995). In contrast, maternal intrusiveness and questioning of children's pretend play are negatively related to toddlers' social pretend play complexity (Fiese, 1990). Mothers in affectionate dyads may be more skilled at being sensitive to their children's abilities when scaffolding their play attempts. Furthermore, children may also be more motivated to participate in mother-led pretense when they have a positive relationship with their play partner.

However, surprisingly, sensitive maternal engagement in pretense is unrelated to children's solitary pretend play complexity (Bornstein et al., 1996; Fein & Fryer, 1995; Fiese, 1990; O'Connell & Bretherton, 1984; Slade, 1987a) and little further research has been conducted to understand individual differences when children pretend alone (for an exception see Bornstein et al., 1996). The lack of relationship between maternal engagement and children's solitary play sophistication has led some researchers to conclude that perhaps maternal involvement, ultimately, "may contribute to other aspects of development, yet contribute little" to children's pretend play development (Fein & Fryer, 1995). No studies to our knowledge, though, have examined the relationship between maternal engagement and individual differences in solitary pretense longitudinally. Although maternal engagement may have little or no concurrent influence on children's solitary pretending, early positive mother-child interaction during play may lead to more complex solitary play at a later point in development. Fifteen to 24-month-old toddlers may be less inclined to pretend by themselves when they are accustomed to and dependent on a sensitive partner's assistance in scaffolding their play actions. However, after 24 months when toddlers produce and understand pretend without their mothers' guidance (Harris & Kavanaugh, 1993; O'Connell & Bretherton, 1984), their early experience with sensitive support in social pretense may result in more sophisticated solitary pretense.

Furthermore, children's opportunities for social pretend play are not restricted to play with their parents; children also pretend with their siblings and peers (Beizer & Howes, 1992; Dunn & Dale, 1984; Youngblade & Dunn, 1995). Even if sensitive maternal engagement in social pretense does not predict children's solitary pretense quality, it may still predict more complex and collaborative social pretense with peers. Research has suggested that maternal supportiveness and nurturance predicts preschoolers' more competent social play with peers

(Howes & Stewart, 1987) but no studies have examined whether these findings also extend to peer social pretense. Thus, we examine the longitudinal association of sensitive and affectionate mother-child play with children's developing solitary and social pretend.

The third goal of this study is to understand how social experiences with siblings and peers may be associated with developments in children's pretend play. The significant developments in 24-month-old toddlers' ability to understand others' play actions and engage in joint thematic play (Brownell & Brown, 1992; Eckerman, Davis, & Didow, 1989) ultimately allows them to interact with age-mates who are as skilled as they are and as a result, opens children up to possibilities for social pretense with play partners other than their mothers (Howes, Unger, & Seidner, 1989). In fact, by 28 months, children can communicate pretend scripts verbally to peer partners (Howes et al., 1992) and engage their peers in pretense with a shared theme such as a tea party (Howes, Unger, & Seidner, 1989). Moreover, children's social play with siblings and peers provides a fundamentally different experience than mother-child play because children cannot depend on a more advanced play partner to further the pretense (Dunn & Dale, 1984; Youngblade & Dunn, 1995).

A positive affective relationship between children and their siblings and peers appears to predict more complex social pretense. Children who are friends and enjoy each other's company (Howes, 1983; Howes et al., 1992) and sibling pairs who are affectionate with each other (Dunn & Dale, 1984; Youngblade & Dunn, 1995) engage in more sophisticated social pretense. Furthermore, familiar peers engage in more complex social pretend play than do acquaintances (Doyle, Connolly & Rivest, 1980; Howes et al., 1992; Matthews, 1977). The age of the play partner may also be an important factor in the development of pretending with peers. Research suggests that playing with an older sibling may be qualitatively different than mother-child social

pretend play (Dunn & Dale, 1984). Toddlers' pretense with older siblings is less likely to involve objects and more likely to be sustained through gestures and verbal comments (Dunn & Dale, 1984) and to include social role-playing (Youngblade & Dunn, 1995) than mother-child pretense, suggesting that in some situations, older siblings may lead children to play at more complex levels than do their mothers. Children's opportunities for interactions with age-mates could, therefore, constitute a unique social influence on the development of their pretend play.

Non-social factors are also related to children's early pretend play. Past research has found that the quality of solitary and social pretend play is associated with children's gender (Bornstein, et al., 1996; Taylor & Carlson, 1997) and cognitive competence (Belsky & Most, 1981), especially language competence (Borstein et al., 1996). Girls have been shown to engage in more complex solitary and social pretense (Bornstein, et al., 1996; Taylor & Carlson, 1997). The relation between gender and social pretense, though, may be mediated by girls' superior language competence (Hyde & Linn, 1988). In the current study, these influences are treated as covariates. Because children's linguistic skill predicts more complex social pretense (Garvey & Kramer, 1989; Bornstein et al., 1996; while more general cognitive competence predicts higher levels of solitary pretense (Belsky & Most, 1981), children's gender and cognitive competence will be controlled when examining possible relations between social experience and solitary pretend play development; children's gender and language competence will be controlled when studying individual differences in social pretend play.

Statement of Goals

In summary, we had three goals for this paper. First, we wished to examine solitary pretend play development longitudinally from 15 to 36 months. In keeping with past cross-

sectional research (Belsky & Most, 1981; Lowe, 1975; Watson & Fischer, 1977), we hypothesized that children would demonstrate more frequent and complex solitary pretend play at each successive age. In particular, we expected that by 24 months, children would begin to enact pretend-other and pretend-agent actions and by 36 months, these actions would increase in frequency. Furthermore, we also predicted that individual differences in the frequency and complexity of solitary pretending would be stable across all three ages. Across contexts, we expected that children who showed higher levels of solitary pretend play and more frequent pretend-other and pretend-agent actions at 36 months, would also demonstrate more complex social pretending with a peer.

Our second goal was to understand how mother-child interaction during play predicts children's solitary and social pretend play development. Consistent with the cross-sectional literature, we hypothesized that sensitive and positive mother-child play would not be concurrently related to children's solitary pretense. However, we hypothesized that early positive mother-child play at 15 months would predict more complex of solitary pretending later at 36 months. In addition, positive mother-child play at 15, 24, and 36 months was expected to predict more complex social pretending with a peer at 36 months.

The third goal of the study was to determine the association between experience with other children and children's solitary and social pretend play. In particular, we hypothesized that children would engage in more complex solitary and social pretending when they have more siblings and spend more time with peers in child care. Also, we hypothesized that children would engage in more complex social pretense at 36 months when they were well acquainted and friendly with their peer partner and when they played with an older peer.

To test these hypotheses, longitudinal data were obtained from the NICHD Study of Early Child Care. Children's solitary pretend play and mother-child interaction were assessed at three ages, 15, 24, and 36 months. Children also engaged in semi-structured play with a peer at 36 months of age and the complexity of their social pretense was later coded. In addition, data regarding children's experience with siblings and peers were also collected.

METHOD

Participants

Participants in the NICHD Study of Early Child Care were recruited from hospitals in or around Little Rock, AR; Irvine, CA; Lawrence, KS; Boston, MA; Philadelphia, PA; Pittsburgh, PA; Charlottesville, VA; Morgantown, NC; Seattle, WA; and Madison, WI. During a selected 24-hour sampling period in 1991, 8,986 women giving birth were interviewed in the hospital. Of these 5,416 agreed to be called upon their return from the hospital and met the following eligibility criteria: a) the mother was over 18 years of age b) she was conversant in English c) the family did not plan to move d) the child was not hospitalized for more than 7 days and did not have obvious disabilities, e) the mother did not have a known or acknowledged substance abuse problem, f) the mother lived more than hour away from the lab site or in an extremely unsafe neighborhood as determined by local police. When the infants were one month old, 1364 (58% of those contacted) with healthy newborns were enrolled in the study. The recruited families included 24% ethnic minority children, 11% of mothers had not graduated from high school, 14% were single mothers. The mothers' average age at the time of enrollment was 28.11 years (S.D. = 5.63).

The current study included two sub-samples of children from the larger study. The solitary pretend play sample (n=665, 330 male) was comprised of families who participated in solitary pretend play and mother-child interaction tasks at each of three child ages, 15, 24 and 36 months. Families were excluded if the children's cognitive performance had not been assessed at each age or if they had no experience with peers in child-care. Compared to the larger non-participating sample, children in this sample were more likely to be White, non-Hispanic, 88% versus 79%, $p<.001$, have older mothers, Ms: 29.5 (SD=5.06) versus 27.2 years, $p<.001$, who were more likely to have finished high school 97% vs. 89%, $p < .001$. They were also more likely to come from two parent families, 92% versus 80%, $p<.001$, with a higher income-to-needs ratio, Ms: 3.21 (SD=2.82) versus 2.35, $p<.05$ at the time of enrollment.

The social pretend play sample (n=400, 192 male) included children who had participated in both the peer and solitary play tasks at 36 months as well as mother-child interaction at each of three ages, 15, 24 and 36 months. Children were excluded if their language skills had not been assessed at 36 months or if they had no experience with peers in child-care. Compared to the larger non-participating sample, children in this sample were more likely to be White, non-Hispanic, 90% versus 79%, $p<.001$, and have older mothers, Ms: 29.8 (SD=4.99) versus 27.2 years, $p<.001$ who were more likely to have finished high school 99% vs. 89 %, $p < .001$. Children in the social pretend sample were also more likely to come from two parent families, 92% versus 80%, $p<.001$, with a higher income-to-needs ratio, Ms: 3.51 (SD=2.80) versus 2.35, $p<.01$ at the time of enrollment.

The social pretend play sample was demographically similar to the solitary pretend play sample with the exception that mothers in the social pretend sample were more likely to have

finished high school, 99% vs. 97%, and children were more likely to be White, Non-Hispanic, 92% vs. 88%.[1]

Overview of the Data Collection

At 15, 24, and 36 months, children's solitary pretend play was observed in the laboratory. At 36 months, children's social pretend was observed during peer interaction in a semi-structured play session. The study children's mothers reported on the quality of the peers' friendship and their length of acquaintance. The children also participated in a semi-structured interaction with their mother at home at 15 months and in the laboratory at 24 and 36 months from which measures of the quality of mother-child play were derived. Indices of children's cognitive development were obtained at 15 and 24 months using the Bayley Infant Development Scales and at 36 months using the Bracken Basic Concepts Scale. Children's language development was measured by the Reynell Developmental Language Scale (Reynell, 1990) administered during a lab visit at 36 months. At each age, mothers also reported on the number of siblings in the home and at 24 and 36 months, the amount of time children spent in child-care with peers available.

Measures

Pretend Play

Solitary Pretend. At 15, 24, and 36 months, children participated in a 15-minute solitary free play activity in the laboratory setting. The child's mother placed the child in the middle of a semicircle of toys and then sat down approximately three feet away from the child. The experimenter then engaged the mother in conversation. At 15 months and 24 months, the

[1] Parallel analyses were conducted with the smaller social pretend play sample. All results from this smaller sample of 400 families were in the same direction as the larger sample of 665.

following toys were included in the semicircle: doll, bottle, brush, kitchen items, wooden block, sticks, clothespin, seashell, plastic doughnut, toy telephones, a piece of cloth, a car with matching people, miniature horse, and miniature cat. At 36 months the toys included: a doll matched with the study child for gender and race, a toy bottle, kitchen items, craft sticks, a red bandanna, wooden blocks, a miniature car with people, toy plastic plates, three dinosaurs, barn set with animals. Mothers were instructed not to engage in play with their children. If children attempted to engage their mothers in play, the mothers were instructed to remain neutral and pleasant and respond, "Yes, I see" or "That's nice." The experimenter would also tell the child "I need to talk to mom right now. You and mom will get to do something later." If the child did not touch the toys, the experimenter would draw the child's attention by making eye contact with the child and tapping on a toy.

Children's play was videotaped and later coded at a central location according to procedures developed by Belsky & Most (1981). The *highest level of play* of 8 levels of pretend sophistication that children exhibited during this 15-minute period was recorded. The 8 play levels were ranked in accordance with cross-sectional findings on the developing nature of pretense over the first three years of life (Bornstein & O'Reilly, 1993; Tamis-LeMonda & Bornstein, 1991, 1994): 1) No pretense—simple manipulation of the toys, functional and relational actions, and enactive naming of the toys; 2) Pretend-self – a pretense act directed towards the self (e.g. drinking from an empty cup); 3) Pretend-other/agent—a pretense act directed towards or activating another (e.g. feeding a doll with an empty spoon or activating the doll to "drink"); 4) Pretend Sequence – the repetition of a pretense act with a small variation (e.g. feeding oneself with an empty bottle then feeding the doll) or connecting together different pretend schemes (e.g. put teddy bear in bed then kiss goodnight); 5) Substitution self—a pretense

act directed towards the self using an object to substitute for another (e.g. using a plastic bucket as a hat); 6) Substitution Other/Agent-- a pretense act directed towards or activating another using an object to substitute for another (e.g. using a stick as a spoon to "feed" a doll or activating the doll to feed him/herself); 7) Substitution Sequence—pretend sequence with one object substituted for another; 8) Double Substitution—using two objects together when both have been transformed (e.g. eating from a stick "spoon" after dipping it in the hat "bowl"). Reliabilities for *highest level of play* were .96 and .97 at 15 and 24 months, respectively.

In addition to recording the level of each pretend act, raters also coded the frequency of all pretend actions in 15-second intervals. The total frequency of all individual pretend actions was summed in a composite variable, *total pretend play*. Furthermore, the frequency of pretend actions directed to another (*pretend-other*) and actions that involved activating an object as an active agent (*pretend-agent*) were also recorded. Reliabilities for *total pretend play* were .99 at 15 and 24 months.

Peer Social Pretend. At 36 months, children engaged in semi-structured play with a familiar peer of the same gender. All peers were between 27 and 54 months of age. Siblings or other children participating in the study were excluded from the semi-structured play interaction. Mothers and/or child caregivers identified the familiar peer. The experimenter arranged a playtime where the children regularly played together, whether at home or in child care. At the beginning of the play session, children were invited to sit down inside a 3-foot x 5-foot cardboard "playroom" to provide a standardized play environment and prevent outside distractions. The experimenter placed each toy, one at a time, between the children, demonstrated how it worked and then left the room. The children played with a Magnadoodle for 4 minutes, a kitchen set for 5 minutes and two flashlights (one of which was broken) for 3

minutes. The toys were chosen to elicit a range of play interaction. Children's interactions were videotaped through a curtained opening into the playroom.

The resulting videotapes of children's behaviors during the interaction were centrally coded and ratings were averaged across the three toys. The study children were rated according to a 4-point global scale (Howes & Matheson, 1992) of *social play complexity*: 1) No social play—parallel activity with or without eye contact; 2) Simple social play—engaging in same or similar activity as peer with talking, mutual smiling, offering and receiving toys, and imitation of peer; 3) Complex social play – engaging in action-based role reversal with peer (run-chase, peek-a-boo) or joint activity in which one child expands on the other's activity or the children's actions become a game; 4) Complex pretend play – adopting pretend roles in play that are not explicitly named or both children participate in a pretend episode. The ratings of children's social play complexity were 2.27 on average and ranged from 1 to 3.67.

In addition, coders also rated the amount of *fantasy, pretend, and creative play* exhibited by the study child during the interaction on a 5-point scale (1=low). Behaviors rated were those that incorporated fantasy actions, role-playing, scripts, or the use of materials in creative and unusual ways (e.g. looking for monsters with the flashlight; shining the flashlight in peer's mouth and instructing the peer to say "Ah"). All intercoder reliabilities were assessed using procedures developed by Winer (1971). On average, children received a fantasy, pretend and creative play rating of 1.81 and their scores ranged from 1 to 4. Reliabilities were .96 for both *social play complexity* and *fantasy, pretend and creative play*.

The *fantasy* and *social play complexity* scales, $r(400) = .56$, $p < .001$, were combined to make a composite variable, *social pretend play complexity*. Because we wanted the composite variable to capture the social complexity of children's pretend play, we created a new variable in

which ratings were assigned to each study child based on a combination matrix of the variables *fantasy, pretend creative play* and *social play complexity*. Summing the two variables together would give children who engaged in complex social play but no pretense the same score as those who had high fantasy play but did not engage with their peer. Instead, both variables were standardized and a tercile split was performed on *fantasy, pretend and creative play* and a median split on *social play complexity*. The combination matrix resulted in six ratings for the *social pretend play complexity* composite (see Table 1). A rating of 1 was given to children low on both *fantasy* and *social play complexity*. A rating of 2 was given to scores low on *fantasy* and high on *social play complexity*. Children scoring in the middle on *fantasy* and low on *social play complexity* were given a score of 3. Those scoring high on *fantasy* and low on *social play complexity* were assigned a rating of 4. Children scoring in the middle on *fantasy* and high on *social play complexity* were given a score of 5 and those high on both *fantasy* and *social play complexity* were given a rating of 6. Thus, children low in fantasy play received the lowest scores. Intermediate scores were given to children low in social play but with moderate to high level of fantasy and children high in both social play and fantasy received the highest scores. The resulting matrix, therefore, ensured that a meaningful combination of *fantasy* and *social play complexity* was reflected in the resulting *social pretend play complexity* rating.

Mother-Child Interaction

Children and their mothers participated in a semi-structured interaction task in the home at 15 months of age and in the laboratory at 24 and 36 months of age. Mothers and their children were seated on the floor and given three boxes each containing a different age-appropriate toy (Vandell, 1979). At 15 months and 24 months, the three boxes contained: 1) a picture book; 2) a toddler kitchen; and 3) a toy house with toy people. At 36 months, the three boxes held: 1)

drawing paper and stencils; 2) dress-up clothes and a cash register; and 3) plastic Duplo blocks and a laminated picture of a constructed Duplo model. At each age, the experimenter instructed mothers to help their children play with the toys from all three containers and to divide the time among the toys as they wished. Mothers' and children's behaviors were videotaped and later coded at a central location by coders who were blind to the mothers' and children's demographic characteristics and performance on other tasks.

Maternal Sensitivity. At each age, mothers' behaviors toward their children were rated. At 15 and 24 months, a composite variable of maternal sensitivity was created by combining 4-point ratings of mothers' sensitivity to their children's non-distress signals, her positive regard and her intrusiveness (reversed) using an observational instrument designed for the larger study. Internal consistency (Cronbach's alpha) was .70 and .74, at each age respectively. Reliability ratings were determined using procedures described by Winer (1971). At 15 and 24 months intercoder reliabilities were .79 and .85 for maternal sensitivity, respectively. At 36 months, maternal behavior was rated according to 7-point qualitative scales adapted from Egeland & Heister (1993). A 36-month maternal sensitivity composite was created which included ratings of her respect for children's autonomy, her supportive presence and hostility (reversed). Internal consistency was .78 (Cronbach's alpha). At 36 months, intercoder reliabilities were .84 for maternal sensitivity (see NICHD Study of Early Child Care Network, 1999, for full descriptions of the scales).

Children's Positive Engagement. Children's behaviors during the mother-child interaction tasks were also coded. At 15 and 24 months children's positive mood and engagement with their mothers during the interaction were rated on global 4-point scales (1=uncharacteristic to 4=characteristic). Reliabilities were .69 and .70 for positive mood and .70 and .71 for

engagement at 15 and 24 months respectively. At 36 months children's behaviors were rated on 7-point scales developed by Egeland & Heister (1993). Ratings of children's affection and enthusiasm towards their mother were coded. Intercoder reliabilities for ratings of affection and enthusiasm were .65 and .67, respectively.

The variables of maternal sensitivity and children's positive mood and engagement at 15 and 24 months were combined to create a dyadic composite of *positive mother-child play.* At 36 months, the *positive mother-child play* composite consisted of maternal sensitivity and children's enthusiasm and affection. Reliabilities (Cronbach's alpha) for *positive mother-child play* were .58, .64, .64 at 15, 24 and 36 months, respectively.

Peer and Sibling Experience

Peers. At 36 months, the study children's mothers or caregivers reported on the length of the children's acquaintance with the peers who participated with them in the dyadic play assessment (see above) as well as their relationship quality. Children's peers were rated as a: 1) Best Friend; 2) Close Friend; 3) Just a Friend; 4) Acquaintance; and 5) Not a Friend (M = 3.65; SD= .84). The peers' mothers also reported the age of the peer in months. On average children's peers were 39 months of age and ranged from 27 to 54 months.

At 21, 23, 33, and 34 months the amount of children's experience with peers in child-care was assessed through either telephone interviews or direct conversations with the children's mothers. Mothers reported on the *number of hours* the children spent in child care each week and the *number of children* in their child care arrangements. In this sample maternal report of the number of children in child care is reliably related to the number observed by live coders (at 24 months $r(665) = .79$, $p<.001$ and at 36 months, $r(665) = .78$, $p<.001$). A composite variable, *peer availability,* was created by computing the number of hours in which children had two or

more peers available. Data for 24-month and 36-month *peer availability* was taken from the closest time point with existing data. Twenty-four month *peer availability* consisted of 223 values from 23 months and 442 values from 21 months. Thirty-six month *peer avail*ability consisted of 245 values from 34 months and 420 values from 33 months.

Siblings. During a telephone interview at 15, 24 and 36 months, mothers also reported the *number of children in the household*, including the study child. At 15 and 24 months, the number of children in the home ranged from 1 to 10 and at 36 months, the number ranged from 1 to 8. For the purposes of data analysis, the variable *number of children in the household* was truncated at 4 for each age.

Control Variables

Cognitive Development. At 15 and 24 months, children's mental development was assessed using the Bayley Scales of Infant Development at the laboratory visit (Bayley, 1969; Rhodes and Bayley, 1984). The Bayley Scales are a standardized psychometric measure of infant intelligence. The Mental Development Index (MDI) assesses sensory-perceptual acuities and discriminations; memory, learning and problem solving; early verbal communication and the ability to form generalizations and classifications. At 36 months, children's school related knowledge was assessed by administration of the Bracken Basic Concepts Scale: School Readiness Composite during a home visit (Bracken, 1984). This composite determines the child's knowledge of the following basic concepts: color, letter identification, number/counting, comparisons and shape. The variable showed high internal consistency (Cronbach's alpha = .93).

Language Development. At 36 months, children's language development was assessed using the Reynell Developmental Language Scales administered during the laboratory visit

(Reynell, 1990). The Reynell Developmental Language Scale consists of two 67-item scales: Verbal Comprehension and Expressive Language. These scores are correlated r (665) = .50, $p<.001$ and were summed to create a composite measure of children's language competence (Cronbach's alpha = .72).

Demographic Composite. At 1, 15, 24, and 36 months the families' income-to-needs ratio was assessed. The income-to-needs ratio measures the total family income relative to the number of household members, and a higher score reflects greater financial resources. The family's total income (not including governmental assistance) is divided by the appropriate poverty threshold (U.S. Department of Labor, 1994) for each household size. Maternal education was collected during an interview at 1 month and captures the number of years of schooling mothers had completed at the time of the child's birth. These two variables were then standardized and summed to create a *Demographic Composite* for each time point (Cronbach's alpha = .68) for which higher scores reflected greater maternal education and family income.

RESULTS

Results are presented in three sections. First, to address questions about the early development of pretend play, analyses regarding children's solitary and social pretend play and the stability of pretend play across 15, 24 and 36 months and across context at 36 months are reported. Second, concurrent and longitudinal predictions of solitary pretend play at 15, 24, and 36 months are presented. The third section examines the correlates of social pretense at 36 months and presents analyses of the longitudinal relations between children's social pretend play with peers and experiences with mothers, siblings and peers, and in solitary pretense.

Development of Pretend Play

Age Differences. Table 2 presents means and standard deviations of the solitary and social pretend measures at each age. A repeated measures ANOVA was performed on the measures of solitary pretend acts with age as the factor. Because parametric analyses violated the assumption of sphericity (the equality of the variances of the differences between ages), we examined all effects using the Geisser-Greenhouse correction recommended by Winer (1971). There was an effect of age for the frequency of *total* pretend play actions, F (1.86, 1223.86) = 202.31, p <.001. Furthermore, the *highest level of pretense*, and the frequency of *pretend-other* and *pretend-agent* pretend actions also showed a significant age effect F (1.90, 1247.14) = 142.31, p<.001; F (1.76, 1155.51) = 291.85, p <.001; F (1, 665) = 325.48, p <.001, respectively. Post hoc analyses (Bonferroni correction) revealed that *total* solitary pretend acts increased in frequency from 15 months to 24 months (p<.001) and then decreased at 36 months, p <.001. The *highest level of play* that children demonstrated increased significantly at each age, p <.001. Children's *pretend-other* acts increased significantly (p<.001) at 24 months and then decreased at 36 months (p<.001), as *pretend-agent* acts became more frequent, p<.001.

Stability of Pretend Play across Age and Context

Zero-order correlations were conducted to identify associations among measures of solitary pretend play at 15, 24, and 36 months and social pretend complexity at 36 months and are presented in Table 3. The *total* frequency and *highest level* of solitary pretend play acts were positively correlated at each age. When children engaged in more solitary pretend play acts, they were also more likely to show higher levels of pretense. *Total pretend play* and *highest level of pretend play* also remained modestly stable over time, with the exception of the *highest level* demonstrated at 15 and 36 months which were unrelated, r (665) = .06, ns. The *total* frequency

of pretend play acts at 36 months was modestly correlated with peer *social pretense complexity*, r (400) = .12, $p < .05$. Children who engaged in more frequent pretense by themselves at 36 months were more likely to demonstrate more complex pretense when playing with a peer.

In general, children's pretend play acts become progressively more complex across development. As children became capable of engaging in *pretend-agent* actions at 36 months, they began to decrease their frequency of *pretend-other* actions. Furthermore, individual differences in children's *total* solitary pretend play frequency and *highest level* of play are modestly stable across time and context. The *total* frequency of children's solitary pretense is concurrently related to their *social pretend play complexity* with a peer at 36 months.

Concurrent and Longitudinal Prediction of Solitary Pretend Play

We examined relations between solitary pretend at 15, 24, and 36 months and possible concurrent and longitudinal social experience predictors (see Table 4). It was hypothesized that early positive mother-child play would predict higher quality solitary pretense at later ages. Furthermore, children who had access to play partners such as siblings or peers were predicted to engage in more frequent and complex solitary play.

Preliminary Analyses

Zero-order correlations between *total* frequency and *highest level* of solitary pretense and demographic characteristics, gender, cognitive development, positive mother-child play, sibling and peer availability at each time point were computed (see Table 4; for intercorrelations among predictors see Table 5). *Demographic characteristics* were unrelated to children's solitary pretend play at each age. Gender was significantly related to the *total* frequency and the *highest*

level of pretend play actions at each age, with the exception of 24-month *highest level* of solitary pretend. In general, girls were more likely than boys to engage in more frequent and higher levels of solitary pretend play acts.

At 15 months, children's solitary pretend play acts were modestly related to their cognitive development. Children who scored higher on the Bayley Mental Development Index demonstrated more frequent (*total)* and *higher levels* of pretend actions during solitary play. *Positive mother-child play* and *sibling availability* at 15 months were unrelated concurrently to children's solitary pretend play, but children's 24-month solitary pretend play was modestly predicted by *positive mother-child play* at 15 months. However, surprisingly, the association was negative; less sensitive and engaged mother-child play at 15 and 24 months predicted more frequent *total* solitary pretense by children at 24 months. Children also engaged in *higher levels* of solitary pretense at 24 months when *mother-child play* was concurrently negative.

Because we were surprised by these counter-intuitive findings and because the composite of mother-child dyadic play included both maternal and child contributions, follow-up analyses examined relations between 24-month solitary pretense and the individual components of positive mother-child play (see Table 6). Relations between mother-child play and solitary pretend competence appear to be carried by maternal sensitivity whereas the children's involvement in mother-child play was unrelated to their solitary pretend. When mothers were more insensitive and intrusive with their 15 and 24 month-olds during play, their children engaged in more *total* pretend actions at 24 months. Similarly, mothers who were insensitive and intrusive with their 24 month olds had children who engaged in *higher levels* of pretense at the same age.

At 36 months, only peer experience in child care was modestly correlated with the *highest level* of pretense that children demonstrated during solitary play, r (665) = .10, p<.05. When children had more experience with peers at 36 months, they engaged in higher levels of solitary play at the same age.

Predicting Solitary Pretend Play Frequency and Quality

To determine whether experiences with family, siblings and peers predicted children's solitary pretend play frequency and complexity after controlling for family demographics, gender and cognitive competence, a series of hierarchical regression analyses was conducted. In each analysis the demographic composite was entered first followed by gender and the concurrent measure of cognitive development. Concurrent and longitudinal positive mother-child play were entered next as a block and concurrent sibling and peer availability were entered last. Tables 7, 8, and 9 present findings for the regression analyses of solitary pretend play frequency and complexity at 15, 24 and 36 months, respectively, including percentage of the variance explained by each block (cumulative R^2) and the beta weights for each variable entered.

15-month solitary pretend. As shown in table 7, gender, cognitive competence and number of siblings all independently predicted children's *total* frequency of solitary pretend, F (5, 660) = 12.73, p <.001 and *highest level*, F (5, 660) = 6.40, p < .001. Girls and children who had higher mental development index scores engaged in more frequent and higher levels of solitary pretend.

24-month solitary pretend. As shown in table 8, the frequency of children's solitary pretense at this age was independently predicted by gender and mother-child play at 24 months, F (7, 558) = 8.08, p <.001. Girls and children who experienced concurrent intrusive and

insensitive parenting engaged in more *total* solitary pretense acts. The regression analysis for the *highest level* of pretense demonstrated during solitary play was not significant, F (7, 558) = 1.67, ns.

36-month solitary pretend. As shown in table 9, gender independently predicted both children's *total* solitary pretend play frequency F (8, 657) = 3.29, p <.01 and their *highest level* of solitary pretense complexity, F (8, 657) = 3.88, p <.01. Furthermore, experience with peers also independently predicted the *highest level* of solitary pretend. Girls engaged in more *total pretend play* and *higher level*s of solitary pretense, and children with more experience playing with peers in child care engaged in *higher levels* of solitary pretend play.

In sum, girls engaged in more frequent and complex solitary pretend at almost every age in the first three years. Higher mental development index scores predicted 15-month-olds' solitary pretense frequency and complexity. Maternal sensitivity during play at 24 months predicted less frequent solitary pretend play; children engaged in more frequent solitary pretend when their mothers were more intrusive and insensitive when playing with them. By 36 months, however, the complexity of children's solitary pretense was unrelated to cognitive and family factors and was instead modestly predicted by their concurrent experience with peers. The more time children spent with age-mates at 36 months, the more likely they were to engage in higher levels of pretense at the same time point. However, experience with siblings did not predict solitary pretend play at any age. Thus, 15-month solitary pretend play was predicted by cognitive functioning, 24-month solitary pretend play frequency was predicted by maternal behavior during mother-child play, and 36 month solitary pretense was predicted by the amount of experience with other children in child care.

Concurrent and Longitudinal Prediction of Social Pretend Play

In addition to predicting children's solitary pretend play competence, we also examined relations between *peer social pretend play complexity* at 36 months and concurrent and longitudinal social experiences. It was hypothesized that children would engage in more complex social pretense with a peer when they had positive play interactions with their mothers, played with an older peer with whom they were friendly and well-acquainted, and had more opportunities for play with siblings and peers. It was also hypothesized that when children practiced pretend actions during solitary play that might facilitate social interaction such as pretend-other or pretend-agent actions, they would engage in more complex social pretense with a peer.

Preliminary Analyses

Table 10 shows the zero-order correlations between social pretense complexity at 36 months and demographic characteristics, gender, language competence, longitudinal and concurrent positive mother-child play, peer relationship variables, average playmate availability across 24 and 36 months and solitary play behaviors. Children's gender and language competence were both related to *children's social pretend play complexity*. Furthermore, gender and language competence were also inter-correlated, r (400) = .23, p<.001. Girls and children who had greater language competence engaged in more complex social pretense with peers. Girls also had better language skills.

Positive mother-child play at 15 months was positively related to individual differences in children's *social pretend play complexity*. When children had positive interactions with their mothers during play early in development, they engaged in more complex social pretense with their peers at 36 months. The age of the peer and the friendship between the peer and study child

were also related to the complexity of their social pretense together. Although friendship quality and length of acquaintance were positively correlated, r (400) = .40, p <.001 only friendship quality was significantly related to children's social pretend play complexity. Peer availability in child care was also related to children's social pretense complexity while sibling availability was not. When children spent more hours with two or more peers available they engaged in more *complex social pretense* with a peer.

Predicting Social Pretend Play Complexity

We next conducted a series of hierarchical regression analyses to determine whether experience with family and peers independently predicted children's *social pretend play co*mplexity at 36 months after controlling for demographics, gender and language competence. Because positive mother-child play at 24 and 36 months, the length of acquaintance between peers and other-directed solitary pretend actions were unrelated to social pretense complexity they were excluded from further analyses. Sibling availability and pretend-agent solitary play were marginally related to social pretend complexity with a peer (p<.10) and hence were included in the predictive analyses.

See table 11 for the hierarchical regression analysis of social pretend play complexity including the cumulative explained variance for each block (cumulative R^2) and beta weights for each variable entered, F (9, 391) = 6.71, p<.001. The demographic composite was entered first followed by blocks for gender and then language competence. Fifteen-month positive mother-child play was then entered, followed by characteristics of the peer interaction, then peer availability, and then pretend-agent actions during solitary play. Gender and language competence each independently predicted individual differences in children's social pretend play

complexity while demographic factors were not significant. Girls and children with better language skills engaged in more complex pretend play. When demographics, gender and language competence were controlled, 15-month positive mother-child play still significantly predicted social pretend play complexity. When children had early positive social interactions with their mothers, they were likely later to engage in more complex social pretend interactions with their peers.

Children also pretended at a more complex level with peers when they had more experience with peers available in child care and their play partner was their same age or older. The age of the peer, the quality of their friendship, and the total time spent with peers available in child care all significantly predicted children's social pretense complexity. In addition, pretend-agent behaviors that children practiced in solitary pretense independently predicted peer social pretense complexity. When children engaged in actions that involved activating a toy as an agent during their pretend play alone, they were also more likely to take part in complex social pretense with their peers.

To determine whether the positive prediction of peer age was accounted for by more complex social pretense with same age or older peers versus younger peers, follow-up analyses compared the social pretense complexity during play with peers at these ages. Children's peers were divided into three groups, children younger (< 36 months), the same age (36-39 months) or older (≥ 40 months) than the study child. A one-way ANOVA with age as the factor showed significant differences in social pretend complexity, F (2,398) = 6.55, p <.01. Post-hoc analyses (Bonferroni correction) revealed that when children played with peers who were younger they showed significantly less complex social pretense (M=3.00, SD = 1.78) than they did when playing with children their same age, (M=3.77, SD= 1.80), p <.01, or older (M=3.81, SD=1.86),

p <.01. However, there were no significant differences in social pretense complexity when children played with children their own age or older. Thus, children engaged in more *complex social pretense* when they were friends and when they played with peers who were at least as old as they were.

Follow-up analyses examined the specific relations of gender, language competence and positive mother-child play with children's social pretend complexity with a peer. Because gender was moderately correlated with language competence r (400) = .23, p<.001, a follow-up hierarchical regression analysis (see Table 11) examined a possible mediating role for language in the relationship between gender and social pretend play complexity. In this analysis, the demographic composite was entered first followed by language competence, and then gender, to determine whether gender would still predict social pretense complexity after controlling for language competence. Gender and language competence remained significant independent predictors, F (3, 397) = 5.87, p <.001, which suggested that gender difference between boys' and girls' social pretend play complexity cannot be explained entirely by girls' superior language competence. Girls pretended with peers at a more complex level than boys regardless of their more advanced abilities at expressing themselves and understanding others.

Follow-up analyses also examined whether the relative contributions of mothers and children to positive mother-child play at 15 months could differentially predict children's social pretend complexity at 36 months (see Table 12). Is positive mother-child play predicting children's social pretense with peers because of maternal or child contributions to the interaction? A regression analysis was conducted with the blocks of predictors in the same order described previously except for the positive mother child block (see table 12), F (10, 390) = 6.03, p <.001. For this analysis, the components of mother child interaction at 15 months, maternal

sensitivity and child positive mood and engagement, were entered as separate variables in a block for positive mother-child play. Although maternal sensitivity and positive child engagement are correlated, $r(400) = .45$, $p<.001$, collinearity diagnostics did not suggest that problems with multicollinearity were biasing the model (Mean VIF = 1.29). When demographics, gender and language were controlled, neither maternal sensitivity nor children's positive mood and engagement during play independently predicted 36-month social pretense complexity. Thus, it was the dyadic interaction between mother and child that was related to social pretend play development.

DISCUSSION

The overarching goal of this study was to evaluate concurrent and longitudinal relations between social experience and the development of children's pretend play. We found that children's solitary pretense became more frequent and complex with development and individual differences in solitary pretend play were moderately stable between 15 and 36 months and across context at 36 months. Individual differences in solitary and social pretend play were also related to children's social experiences. At 24 months, children's solitary pretend play was more frequent when mothers were more intrusive and insensitive, but at 36 months solitary pretending was more complex when children had more experience with peers. Children's social pretend with peers at 36 months was more complex when they had positive interactions with their mothers at 15 months, played with a friend at least their age, had spent more time with peers in child care and had engaged in more frequent pretend-agent play during their solitary pretense.

There are limitations that prohibit firm conclusions from these results. While one of the strengths of this study is its large and diverse sample, the power gained from the size of sample also allows for the detection of relationships that, although statistically significant, are very

modest. Furthermore, though the use of a longitudinal dataset allows some inferences about possible causal relationships between variables, the correlational nature of these data make it impossible to infer the true direction of effects. Despite these notes of caution, the use of this data presents one of the first opportunities to study children's pretend play from a longitudinal perspective and to examine the unfolding relations between solitary and social pretense.

Because so few studies have studied children's pretend play longitudinally, our first aim was to examine the stability and continuity of children's pretend play between 15 and 36 months. This study is the first to demonstrate that individual differences in solitary pretense show moderate continuity over the first three years of children's lives. Specifically, children who engaged in more frequent solitary pretend play at 15 months also did so at 24 and 36 months. Individual differences in the complexity of children's solitary pretense were also stable between 15 and 24 months and between 24 and 36 months. That is, 15-month-olds who pretended at more advanced levels of solitary pretend also did so at 24 months and 24-month-olds who showed more complex levels of solitary pretend also did so at 36 months. This study is also the first to demonstrate consistency in pretend when children are playing alone and with peers. At 36 months, children who demonstrated more frequent solitary pretense also engaged in more complex social pretense with a peer. Thus, solitary pretend play is a relatively stable phenomenon during the first three years and by 36 months it is also modestly related to social pretend.

We also wished to study longitudinally how children's solitary pretend play changes from 15 months to 36 months. Consistent with past cross-sectional research (Belsky & Most, 1981; Bornstein & O'Reilly, 1993 ; Tamis-LeMonda & Bornstein, 1991; Watson & Fisher, 1977), children's solitary pretense grew significantly more complex at each time point between 15 and

36 months. In particular, when 15-month-olds first began to pretend, their pretend actions directed towards animate replicas (pretend-other) were limited but by 24 months their pretend-other actions had quadrupled. At 36 months, children also began to engage in pretend-agent behaviors in which they activate a toy as an agent such as making the doll drink or causing the teddy bear to run. Importantly, engaging in pretend-agent behaviors when playing alone independently predicted more complex social pretense with peers.

Toddlers' ability to enact pretend-other and pretend-agent actions in solitary pretense both reflects their developing social cognitive competence and provides them an opportunity to practice actions which could further advance their social skills and understanding. The convergence between children's abilities to produce pretend–other actions in solitary pretense and to understand others' pretense actions (Harris & Kavanaugh, 1992; Kavanaugh, Eizenman & Harris, 1997) in the third year of life suggests that toddlers' second birthdays are an important watershed in the development of pretense abilities and understanding. However, toddlers' developing abilities to produce and understand pretend play are not completely developed by this age. At 36 months, the additional ability to engage in pretend-agent play in solitary play may give preschoolers more opportunities to rehearse imagining others' perspectives and ultimately, predicts more complex and collaborative social pretense with peers (Barresi & Moore, 1996; Harris, 2000). The relationship between solitary pretend-agent play and collaborative social pretense with peers may also be an expression of a more general underlying understanding of mind (Smith, 2002).

These significant developments in children's pretend competence interact synergistically and reciprocally with their family and peer experience across the first three years. Prior to 24 months, children's earliest pretend play is particularly dependent on a more advanced play

partner, such as a parent, to scaffold their engagement in social pretense. Therefore, children's interactions with their mothers at this age may be an especially important social experience for their developing competence in social pretend play. In fact, our results demonstrate 15-month-olds who had positive experiences with a sensitive adult play partner later engaged in more complex social pretense with their peers at 36 months. Mothers introduce novice pretenders to the ways in which partners can stipulate pretend actions, communicate them to partners, and motivate appropriate responses (Beizer & Howes, 1992; Fiese, 1990; Howes et al., 1992; O'Connell & Bretherton, 1984). When children are introduced to the world of collaborative fantasy and imagination through early positive dyadic play with their mothers, they are better at sharing this world with their peers later in development.

Maternal behavior around 24 months also appears to be related to the frequency of children's solitary pretend play. Given the well-replicated finding that maternal engagement is unrelated to the development of children's solitary pretend (Bornstein et al, 1996; Fein & Fryer, 1995; Fiese, 1990, O'Connell & Bretherton, 1984; Slade, 1987a;), we were surprised that children's experience with intrusive and insensitive mothering at 24 months concurrently predicted more frequent solitary pretend play. Mothers were rated intrusive and insensitive if they allowed their children little autonomy when they structured the play to fit their own agenda or theme, or when they insisted on particular uses for toys. Intrusive and insensitive mothers may be particularly unresponsive to children's significant developments in producing and understanding pretend actions at this age. Therefore, 24-month-old children may be particularly motivated to pretend alone if it represents their only opportunity for play in which they can create a pretend world that is primarily their own and utilize their newly emerging pretend skills. However, because this study is the first to find an association between intrusive and insensitive

parenting and solitary pretend behavior, further research is necessary to replicate the finding and test our motivational hypothesis. Dunn (personal communication) speculated, for example, that when children are first starting to pretend, so-called intrusive mothers may also be more effective in modeling and explicitly teaching particular scripts or pretend actions that the inexperienced child can carry into solitary play.

However, consistent with past research, we found that mother-child play quality was unrelated to the complexity of children's solitary pretense. That is, even though children with more intrusive mothers pretended more *often* on their own, they did not do so at higher levels of complexity. Furthermore, by 36 months, children who experienced intrusive and insensitive mothering at 24 months do not demonstrate more frequent solitary pretend play. One should not conclude, however, that maternal engagement in play is of "little consequence" in the development of children's pretense (Fein & Fryer, 1995). More complex social pretending with a peer was predicted by 15-month-olds' positive engagement with sensitive mothers in play. Thus, maternal involvement in children's play may be of lasting consequence for the development of social pretend play, particularly with peers.

Interactions and relationships with peers also constitute a powerful social influence on the development of both children's solitary and social pretend play. Twenty-four-month-olds are less dependent on a more skilled partner to advance their pretense (Harris & Kavanaugh,1993; Howes & Matheson, 1992) and their social world broadens to include multiple opportunities for pretense with age-mates. Social pretend play with friendly peers gives children important experiences in navigating pretense without the maternal scaffolding that has supported them thus far. As this study shows, when children have more chances to play with peers in child care, they engage in more complex solitary and social pretending at 36 months. Howes (1988) has also

demonstrated that preschoolers who began child care at an earlier age later engaged in more complex cooperative social pretend with peers, but this study is the first to illustrate that the number of hours spent with peers predicts peer social pretense complexity independent of children's affective relationship and level of acquaintance with their peer playmate. More research is necessary, though, to understand which social play behaviors mediate the association between peer experience and peer social pretense. Are children with more peer experience in child care better at the social skills necessary for initiating pretense with peers? Or are they better at the social understanding needed to respond appropriately to their peers' pretend actions and to negotiate pretend themes?

Contrary to our hypotheses, though, having more siblings and knowing the peer play partner for a longer period of time were not related to children's pretend play development. However, the number of children in the household does not capture the affective quality of siblings' interactions or their similarity in ages, factors that have been important in studying the role of sibling relationships for the development of social understanding, more generally (Dunn, 2003). Similarly, children might be well-acquainted with a peer yet not engage in frequent interactions or enjoy their playtime together.

Instead, the affective relationship and the age of the peer play partner appear to be important characteristics for children's social pretense with peers. A positive and friendly relationship with a same-aged or older peer predicts children's more complex social pretend play involvement. Children may be more motivated to engage in pretense with a friend and a positive affective relationship may reduce the cognitive resources necessary to initiate and maintain thematic pretend play. Furthermore, peers of at least the same age bring similar social skills and abilities to the interaction and thus can be equal partners in the co-construction of social pretense.

Further research on the role of peer experience in preschool and middle childhood is necessary but peer interactions with age-matched, friendly peers are likely to continue to be an important influence on the later development of children's pretense and possibly, their more general understanding of narrative (Harris, 2000).

In addition to social experience, we also found that children's cognitive development at 15 months concurrently predicted more frequent and complex solitary pretend play, and children's language competence at 36 months predicted higher quality social pretend play with a peer. Some researchers have speculated that children's facility with language and pretense represents an underlying capacity for symbolic representation (McCune-Nicolich, 198; McCune-Nicholich, 1995). Furthermore, greater facility in language may allow children the ability to communicate, "This is make-believe" to their peers by tagging their behaviors as pretense and to negotiate possible themes (Garvey & Kramer, 1989; Harris & Kavanaugh, 1993). Girls consistently engaged in more frequent and developmentally advanced solitary pretense and more complex social pretense with a peer. This finding replicated past work that also shows gender differences in children's solitary pretense and extended the finding to peer social pretense (Bornstein et al., 1996; Lowe, 1975; Taylor & Carlson, 1997).

Follow-up analyses examined whether the relationship between gender and social pretense was mediated by girls' higher language competence. Results showed that girls' more complex social pretend play could not be explained by their advanced language skills. It may, however, be a function of greater interest in the toys that we provided for solitary and social pretense such as dolls and kitchen sets (Connor & Serbin, 1977; Maccoby, 1988; Rubin & Howe, 1985). Taylor (1999) has also suggested that girls and boys may be on a different timetable in the development of their fantasy play with boys becoming more interested in pretense at older

ages. Because the gender difference in children's pretend play development is well-replicated and little understood, longitudinal research is necessary to determine whether boys' and girls' developmental timetables and behaviors during pretend play differ and whether gender differences in solitary and social pretend play will persist through middle childhood.

Pretend play was originally conceived as a solitary activity that grew more and more social (Piaget, 1945/1962). In a 1981 review of pretend play development, Fein asserted "It is unlikely that parents play pretend games with their children or model such games…" (p. 1106). More recently, researchers have demonstrated that even very early pretending occurs in a social context (for a reviews see Smolucha & Smolucha, 1998 and Kavanaugh, 2002) and some have argued that prior to 36 months, pretend play is "inherently…. and exclusively a social activity" (Striano, Tomasello, & Rochat, 2001). Individually, though, these conflicting positions only tell half the story of children's introduction to the world of pretense and imagination. Understanding the early development of children's pretend play requires investigating how children's growing abilities to engage in and understand pretense are interwoven and intertwined with their experiences with both family and peers.

APPENDIX A. TABLES

Table 1
Social Pretend Play Complexity Matrix

	Social Play Complexity	
	Low (<.14)	High (≥.14)
Fantasy, Pretend, Creative Play		
Low (<-.25)	1	2
Middle (-.25 ≤ x < .36)	3	5
High (≥ .36)	4	6

Table 2

Means and Standard Deviations for Solitary (n=665) and Social Pretend Play Measures (n=400)

	Child Age		
	15 Month Means (SD)	24 Month Means (SD)	36 month Means (SD)
Solitary Pretend			
Total Pretend Play[1]	6.2 (5.7)[a,b]	14.2 (9.9)[c]	12.3 (8.5)
Pretend Other	2.3 (3.2)[a,b]	8.2 (6.3)[c]	4.4 (4.5)
Pretend Agent	0.0 (0.0)[b]	0.0 (0.0)[c]	3.7 (5.4)
Highest Level of Play[2]	3.2 (1.5)[a,b]	4.0 (1.3)[c]	4.5 (1.7)
Social Pretend			
Social Pretend Complexity[3]	. . .	. . .	3.6 (1.8)

[1]Frequency of pretend actions [2] Highest level of 8 [3] Complexity rating (1-6)

[a]15 mo. sig diff than 24 mo. [b]15 mo. sig diff than 36 mo. [c] 24 mo. sig diff than 36 mo.

Table 3
Inter-correlations among Solitary (n=665) and Social Pretend Play (n=400) Variables

	1	2	3	4	5	6	7
Solitary Pretend Play							
15-Month							
1. Total Pretend	…						
2. Highest Level of Pretend	.53***	…					
24-Month							
3. Total Pretend	.21***	.16***	…				
4. Highest Level of Pretend	.04	.11**	.39*	…			
36-Month							
5. Total Pretend	.13***	.10**	.17**	.14***	…		
6. Highest Level of Pretend	.12**	.06	.14**	.16***	.38***	…	
Social Pretend Play (36 mos.)							
7. Social Pretend Complexity	.05	.06	.08	.10	.12*	.10	…

*p<.05; **p<.01; ***p<.001

Table 4

Inter-correlations among Solitary Pretend Play and Concurrent and Longitudinal Predictors (n=665)

	Solitary Pretend					
	15 Month		24 Month		36 Month	
	Total	**High Level**	**Total**	**High Level**	**Total**	**High Level**
Control Variables						
Demographic Composite	-.04	.04	-.05	-.04	-.05	-.03
Gender (Female =2)[1]	.27***	.19***	.24***	.05	.15***	.17***
Cognitive						
Bayley MDI (15 mo.)	. 13**	.10*	.07	.04	.08	.07
Bayley MDI (24 mo.)	…	…	.02	.02	.00	.05
Bracken BCS (36 mo.)	…	…	…	…	.01	.01
Positive Mother-Child Play						
15 mo.	-.04	.00	-.09*	-.05	.07	.03
24 mo	…	…	-.09**	-.10*	.03	-.02
36 mo.	…	…		…	.02	-.04
Number of Siblings						
15 mo.	.03	-.05	.02	.00	-.02	-.02
24 mo.	…	…	.01	-.01	-.01	-.05
36 mo.	…	…	…	…	-.03	-.05
Hours with Peers Available						
24 mo.	…	…	.07	.03	.07	.04
36 mo.	…	…	…	…	.00	.10*

*p<.05; **p<.01; ***p<.001 [1] Point bi-serial correlation

Table 5

Inter-correlations among Solitary Pretend Play Predictors (n=665)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Control Variables															
Demographic Composite															
1. 15 month	…														
2. 24 month	.73***	…													
3. 36 month	.69***	.75***	…												
4. Gender	-.01	.01	-.02	…											
Cognitive															
5. Bayley 15 mo.	.05	.08*	.07	.13***	…										
6. Bayley 24 mo.	.22***	.25***	.20***	.18***	.46***	…									
7. Bracken 36 mo.	.20***	.24***	.24***	.20***	.26***	.49***	…								
Positive Mother-Child Play															
8. 15 mo.	.07	.22***	.18***	.04	.16***	.23***	.21***	…							
9. 24 mo.	.03	.26***	.22***	.07	.20***	.32***	.26***	.32***	…						
10. 36 mo.	.02	.25***	.28***	.10**	.13**	.30***	.35***	.26***	.38***	…					
Number of Siblings															
11. 15 mo.	-.02	-.18***	-.11***	.02	-.03	-.18***	-.24***	.00	.00	-.04	…				
12. 24 mo.	-.01	-.21***	-.15***	.00	-.04	-.18***	-.26***	-.02	-.01	-.06	.89***	…			
13. 36 mo.	-.03	-.16***	-.16***	.00	-.04	-.17***	-.25***	-.04	.03	-.05	.76***	.88***	…		
Hours with Peers Available															
14. 24 mo.	.07	.00	-.06	-.03	.03	.02	-.07	-.04	-.02	-.07	.00	.02	-.01	…	
15. 36 mo.	.07	.00	-.04	-.04	.03	.00	-.07	-.07	-.03	-.05	-.02	.01	-.04	.65***	…

*p<.05; **p<.01; ***p<.001

Table 6

Inter-correlations among 24 month Solitary Pretend Play and Individual Components of 15 and 24 month Positive Mother-Child Play (n=665)

	Solitary Pretend 24 Month	
	Total	**Highest Level**
Positive Mother-Child Play		
15 months		
Maternal Sensitivity	-.13**	-.08*
Sensitivity to Non-Distress	-.11**	-.03
Positive Regard	-.05	-.07
Intrusiveness (reversed)	-.13**	-.09*
Positive Child Involvement	-.01	.01
Positive Mood	.00	.03
Engagement	-.02	-.02
24 months		
Maternal Sensitivity	-.11**	-.11**
Sensitivity to Non-Distress	-.08*	-.10*
Positive Regard	-.08*	-.07
Intrusiveness (reversed)	-.09*	-.09*
Positive Child Involvement	-.03	-.06
Positive Mood	.00	-.05
Engagement	-.06	-.06

*p<.05; **p<.01; ***p<.001

Table 7

Predictive Analyses of Frequency and Complexity of Solitary Pretend Play at 15 months (n= 665)

	15 month Solitary Pretend Play			
	Total Pretend Play		Highest Level	
	B	R^2	*B*	R^2
Predictors				
Gender	.27***	.07	.19***	.04
Cognitive		.08		.04
Bayley MDI (15 mo.)	.10*		.08	
Positive Mother-Child Play		.09		.04
15 months	-.07		-.02	
Playmate Availability		.09		.05
Number of Siblings	-.01		-.04	
F	15.71***		7.77***	

* p<.05; **p<.01; ***p<.001

Table 8

Predictive Analyses of Frequency and Complexity of Solitary Pretend Play at 24 months (n= 665)

	24 month Solitary Pretend Play			
	Total Pretend Play		Highest Level	
Predictors	*B*	R^2	*B*	R^2
Gender	.24***	.06	.05	.00
Cognitive		.06		.00
Bayley MDI (24 mo.)	-.02		.01	
Positive Mother Child Play		.08		.02
15 mo.	-.08*		-.03	
24 mo.	-.09*		-.11**	
Playmate Availability		.08		.02
Number of Siblings	.02		-.00	
Hours with Peers Available	.07		.02	
F	9.42***		.08	

*p<.05; **p<.01; ***p<.001

Table 9

Predictive Analyses of Frequency and Complexity of Solitary Pretend Play at 36 months (n= 665)

	36 Month Solitary Pretend Play			
	Total Pretend Play		Highest Level	
	B	R^2	*B*	R^2
Predictors				
Gender	.16***	.02	.17***	.03
Cognitive		.02		.03
Bracken BCS (36 mo.)	-.02		-.03	
Positive Mother-Child Play		.03		.03
15 mo.	.07		.04	
24 mo.	.00		-.02	
36 mo.	.01		-.05	
Playmate Availability		.04		.05
Number of Siblings	-.04		-.05	
Hours with Peers Available	.07		.10**	
F	3.42**		4.41***	

*p<.05; **p<.01; ***p<.001

Table 10

Inter-correlations among 36 month Social Pretend Play Complexity and Concurrent and Longitudinal Predictors (n=400)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Social Pretend Play														
1. Social Pretense Complexity	…													
Control Variables														
2. Demographics	.05	…												
3. Gender	.14**	.01	…											
4. Language- Reynell	.16**	.25***	.23***	…										
Positive Mother-Child Play														
5. 15 months	.16**	.15**	.09	.24***	…									
6. 24 months	.08	.22***	.09	.30***	.30***	…								
7. 36 months	.04	.26***	.11**	.38***	.24***	.36***	…							
Peer Relationship														
8. Peer Age	.16**	.01	.03	.04	.06	.01	.01	…						
9. Friendship Quality	.10*	.08	-.01	.08	-.05	.13*	.10*	.00	…					
10. Length of Acquaintance	.02	.02	.01	.04	-.01	.06	.07	.00	.40***	…				
Playmate Availability														
11. Number of Siblings	-.09	-.09	.04	-.10*	.00	.07	.01	-.04	.01	.13*	…			
12. Hours with Peers Available	.10*	-.02	-.06	-.08	-.09	-.10	-.12*	-.13***	.00	-.09	-.04	…		
Solitary Pretend Play (36 mos.)														
13. Pretend Other	.01	-.02	.21***	.02	.06	.03	.02	.06	.03	-.15**	-.01	-.06	…	
14. Pretend Agent	.08	-.03	-.19**	-.06	-.07	.02	.04	-.01	.06	-.03	-.06	.01	-.14***	…

*p<.05; **p<.01; ***p<.001

Table 11
Predictive Analyses of Social Pretend Play at 36 months (n = 400)

36 Month Social Pretend Play

	Complexity			**Complexity**	
	B	R^2		*B*	R^2
Predictors			**Predictors**		
Gender	.14**	.02	Language	.16**	.02
Language	.13*	.04	Gender	.11*	.04
Positive Mother-Child Play		.05	F	5.87**	
15 months	.13*				
Peer Interaction		.08			
Peer Age	.15**				
Peer Friendship	.10*				
Playmate Availability		.11			
Number of Siblings	-.08				
Hours with Peers Available	.15**				
Solitary Pretend Play		.12			
Pretend Agent	.11*				
F	6.92***				

*p<.05 ; **p<.01; ***p<.001

Table 12
Predictive Analyses of Social Pretend Play with Components of Mother-Child Play at 36 months (n = 400)

	36 Month Social Pretend Play	
	Complexity	
	B	R^2
Predictors		
Gender	.14**	.02
Language	.13**	.04
Positive Mother-Child Play		.05
Maternal Sensitivity (15 months)	.08	
Child Positive Mood and Engagement (15 months)	.07	
Peer Interaction		.08
Peer Age	.15**	
Peer Friendship	.10*	
Playmate Availability		.11
Number of Siblings	-.08	
Hours with Peers Available	.15**	
Solitary Pretend Play		
Pretend Agent	.11*	.12
F	6.03***	

*p<.05; **p<.01; ***p<.001

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