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Day Care Experience and Free Play Behavior in Preschool Children

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Relation of early childrearing and later play behavior were examined. Forty 3-year-old children, half of whom went to day-care centers and half of whom did not, were observed during free play activity in preschool educational settings. Both cognitive and social aspects of play were considered. As regards the former, type of play—as classified by Smilansky's structural play scheme—level of play, and thematic unit were examined. As regards the second, social participation—as classified according by Parten's social play categories—was examined. Results showed that children who went to day care played symbolically, at high a level, with long thematic units, and in interaction with peers more than children who did not. Moreover, a greater number of children in the day-care group played symbolically and in more advanced forms than children in the other group. These results were discussed in the light of the importance for the child of playing with peers during early infancy and the consequent importance of giving the infant the opportunity to attend day care.

INTRODUCTION

A long time has passed since the first negative conclusions were reached concerning the disruptive effects of early nonmaternal care on psychological development (Belsky, 1986). Empirical data have yielded little conclusive evidence that early child care significantly affects the security of infant–parent attachment (Lamb & Stenberg, 1990). On the contrary, child care may even compensate for difficulties in this relationship (Howes, 1991). Moreover, research has shown that it is not day care attendance per se but the quality of attendance that affects child development (Howes, 1988a; Phyllips, McCartney, & Scarr, 1987), thereby suggesting a more cautious approach in drawing absolute conclusions. On the other hand, according to many studies on peer relationships (see, for an overview, Rubin, 1990) peer familiarity plays a critical role in improving child social competence. Day-care experience, which provides children with the opportunity to become familiar with their peers, can therefore have positive, rather than harmful, effects on child development.

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Despite two decades of intensive research, the importance of day care attendance remains poorly understood. Surprisingly little attention has been paid to the effects of this attendance on peer relationships, even though children attending day care typically have more experience with peers than children cared for exclusively by their parents. In studies carried out to date, day-care children have been found to be more advanced in social competence and cooperative behavior at later ages than non-day-care children (Aureli & Procacci, 1992; Clarke-Stewart, Umeh, Snow, & Pederson, 1980; Harper & Huie, 1985). Even less attention has been paid to the effects of early child care attendance on cognitive development, although Howes (1988b) found that elementary school skills such as decision making, problem solving, recall, and comprehension skills were predicted by high-quality stable child care.

This study was aimed at developing research into the relationship between day care attendance and sociocognitive development. Preschoolers' play activities were examined in order to see whether the experience of meeting peers in day care has a positive effect on the child's playing capacity at a later age. To this end, research on both play development and social peer competence is briefly discussed.

Play in childhood has generally been studied within the Piagetian theoretical framework, which adopts the notion of play as assimilation (Piaget, 1962). Although other non-Piagetian theories can be referred to in talking about play (Rubin, Fein, & Vanderberg, 1983), Piagetian theory has provided a general and parsimonious developmental scheme to describe play and, because "play is easier to define behaviorally than theoretically" (Rubin et al., 1983, p. 701), this scheme has been transformed in a taxonomy useful to investigate children's play behavior. According to it, three types of play are distinguished: (a) practice play that characterizes infant behavior and appears after a sensorimotor skill has been acquired; (b) symbolic play that emerges during the preoperational period and involves the use of symbols; and (c) games that emerge during the period of concrete operations and involve practice with rules.

Social aspects of play are taken into account by the Piagetian framework with regard to symbolic and with-rules activities. Research has shown that pretense play is solitary during the first 2 years and begins to be interactive in the latter part of the third year. By this time and until late kindergarten and the early elementary school years, most symbolic play is performed by the child in the group rather than alone. Pretend play in groups consists firstly of sociodramatic play, in which children enact family roles (e.g., mother–child, wife–husband) and later in fantasy play (Garvey, 1977; Garvey & Berndt, 1977) in which the roles enacted are far removed from everyday experience and are derived from the wider social and cultural world (e.g., policeman, Santa Claus), thereby placing greater demands on symbolic representation (Saltz & Brodie, 1982). Once children are able to master the conventional structure of the play, pretense play

becomes more solitary and group play consists primarily of games with rules (for an overview, see Rubin et al., 1983).

As regards the development of social competence with peers, research has shown that child behavior is influenced by the presence of the peer at a very early age (for an overview, see Rubin & Ross, 1982). The infant is likely to turn social contacts and gestures from the adult toward the peer (Mueller & Brenner, 1977) and to act on objects via imitation of peer actions about the same or similar objects (Mueller & Lucas, 1975). In the toddler period, interaction emerges in ritualized form, such as in run-and-chase, hide-and-seek, and offer-and-receive episodes. In these interactional routines, children are capable of enacting complementary roles and, subsequently, of reversing them (Ross, Goldman, & Hay, 1979). At the end of this period, these interactive skills are applied to a variety of play episodes that are structured like a game (Goldman & Ross, 1978) and are carried out according to a recognizable and mutually acknowledged "theme" (Brenner & Mueller, 1982). One of the major factors influencing the development of peer competence is peer familiarity. Research has shown that both the frequency and the quality of peer play are strongly affected by the company of a familiar partner (Doyle, Connolly, & Rivest, 1980; Rubenstein & Howes, 1976) and that increasing co-actor familiarity results in an increase of the amount and complexity of play (Matthews, 1977).

The third year of age thus seems to be critical in the development both of group play and social competence with peers. Because peer familiarity seems to be an important factor of influence, day-care attendance from 2 to 3 years of age can be assumed to play a part in this process. Day care provides children with a stable group of peers and stable play materials that allow them to perform group play very frequently. Moreover, it represents a normal part of the childrens' lives, allowing them to repeat and consolidate the experience day by day in a routinized manner. It is therefore plausible that attending day-care centers will positively affect the child's competence in group play activities and that this effect will continue when children enter preschool education (i.e., after 3 years of age). In preschool education, children will meet peers again and will be able to carry out play activities with them. Because these activities are more demanding than their earlier ones as regards shared topic and social means required for sharing, previous experience in a play group may help children to cope with their new conditions in a more mature way compared to children who have been denied this experience.

We expect that group symbolic play will be influenced most by day-care attendance, because it emerges in the late day-care period and becomes the most advanced form of play group in the early preschool years. Moreover, it is recognized as a very demanding form of play for younger children. According to Howes (1985), social pretend play requires the child to manipulate a symbolic transformation of the world and to communicate it to a partner, thereby repre-

senting an intersection of cognitive and social development. This intersection is difficult to achieve when the partner is an equally unskilled individual, such as a peer, and for this reason social pretend play strongly challenges the toddler's play competence. According to Howes, Unger, and Seider (1989), this challenge is better achieved by well-acquainted children, because they have at their disposal a ritualistic social framework that unacquainted children lack. We therefore expect day-care attendance, as an opportunity of meeting familiar peers, to help younger children in this enterprise.

Our study was carried out in Italy, where the public educational system offers two kinds of settings for families with children under 6, the first accepting children under 3 (day care centers) and the second accepting children from 3 to 6 (preschools). When these settings are private, they are organized like public centers, using special buildings and specialized teaching staff. There are no informal arrangements for younger children, like family day care where a neighborhood woman cares for several children in her own home. Unlike other countries, child care settings for children under 3 in Italy are organized on the basis of a single model.

According to the Italian model, day care centers are located in special buildings with rooms arranged for either routine or play activities. Play activity rooms are provided with materials that are in the most part freely available to the children. These rooms are usually organized as "activity centers," provided with similar types of materials (e.g., building blocks for construction or macrostructures for psychomotricity or adultlike miniature objects for sociodramatic play) in different spaces within the same room or in different rooms. Day care centers employ a relatively permanent teaching staff (one adult to five children). This staff is trained by experts in educational programs that aim to improve childrens' independence both in social participation and in play activities. Children are encouraged to work in small groups, in which peer interaction is facilitated and protected from the excessive interruptions usually occurring in larger groups. They are also encouraged to use specific materials within the specific center in order to promote engagement in a given activity and to avoid interference from other incongruent activities. Usually, same-age groups (comprising children under 1 year of age or 2-year-olds or 3-year-olds, respectively) are formed in each day-care center and are tutored by the same caregivers from the child's enrollment in the center to the exit. Mixed-age groups with mixed caregivers are also formed in some periods of the day (usually in the afternoon when fewer children attend day care). Peer-group stability is interrupted when the child is enrolled in preschool, as preschool is much more widespread in Italy than day care and children who come from the same day-care center usually enter different preschool classes.

Although this model is applied in different ways, especially in relation to the different geographic areas of the country, it is the only model Italian day care uses. Thus, in Italy one can distinguish between two main forms of childrearing:

one using the parental system only, often comprising other relatives and babysitters, and the other using day-care centers (Musatti, 1992). The current study is aimed at examining play behavior in preschool children who attended child care for most of their early years compared with children brought up only in the family.

METHOD

This study used previously transcribed observations (Aureli & Procacci, 1992) that were reanalyzed from a different perspective to answer questions requiring new coding.

Participants

Forty children, ranging in age from 38 to 42 months (mean age = 40.24 months), were observed in two first-year preschool classes. These classes were located in the same building in a popular neighborhood of Rome. Each class comprised 20 children, half of whom had been to day-care centers regularly for at lest 2 years (Group 1) and half of whom had not (Group 2). The day-care centers children had come from were organized in a similar manner as regards the indicators given in the earlier description of the Italian day-care model. All children came from low- to middle-class intact families (father occupational levels ranged from blue to white collar and mother educational levels ranged from diploma to school leaving certificate). The participants of each group were balanced by gender (11 girls and 9 boys).

Procedure

Children were observed in free play over a period of 4 weeks. A total of 20 consecutive minutes of observation (observational unit: 1-min interval) was obtained for each child. "Free play" means that the child was carrying out activities without any specific guidance from the teacher. The children began the activity spontaneously and carried on with play on the basis of their own choices. The child might play alone or with peers and might or might not address the teacher if she was present in the activity setting. The observations were made during the month of January, when the adaptation process to the new school could be considered complete. All the observations were conducted from 10 to 11 a.m., when teachers usually let the children play freely.

Transcription

Each session was transcribed by paper and pencil by a trained observer. After visiting the class a couple of times to become acquainted with the children, the observer sat in a corner of the classroom where he or she could see what the target child was doing and hear what it was saying, without interfering with the activities, but available to interact with the children when required.

The protocol used for the transcription was the Italian version (Camaioni, Bascetta, & Aureli, 1988) of the instrument used by the research group of the Oxford Preschool Research Project (Bruner, 1980; Sylva, Roy, & Painter, 1982) to register child behavior in educational contexts. It consists of a sheet divided into rows and columns. Each row corresponds to a 1-min interval. In the activity column, the observer transcribed literally what the child was doing and with whom. The trancription was made simultaneously with the observation. Not everything was written; only those behaviors relevant with respect to the requirements of the coding system (type of play, cognitive level, and social participation). In the language column the observer trancribed what the child was saying and to whom. Whenever language was difficult to register, namely because the observer was not near enough to the observed child, the observer was requested to register linguistic turns (i.e., who was talking to whom) by using symbols as arrows to mark the direction of talk (for transcription details, see Camaioni, Bascetta, & Aureli, 1988).

Coding Scheme

Child play in a free play context was examined. "Free play context" means that the adult may or may not be close to the children. When present, she refrained from intervening in the child activity and, when she intervened, she acted in a minimally intrusive or directive manner. It therefore provided an environmental context for children to act freely. If the child was engaged in an activity characterized by voluntary, spontaneous, pleasurable, and open-ended qualities, each interval minute of the activity was coded. Four aspects were coded.

Type of Play. This category refers to the degree of cognitive complexity of play. According to Smilansky's (1968) structural classification, which stemmed from Piaget's (1962) consideration of play as developing from the sensorimotor to representational stage, three codes were used:

- *Functional play:* Includes simple repetetive activities with or without objects. The child is engaged in using motor capabilities as regards either one's own body (i.e., running, jumping, sliding) or objects (i.e., moving cars, throwing the ball). The focus is on the pleasure of exercising already existing schemas.
- *Constructive play:* Includes manipulation of objects to construct or create something. Children are engaged in combining objects in order to construct a specific product (e.g., putting together some wooden or plastic blocks to make a train or a house). According to Piaget (1962), this kind of play involves sensorimotor skills and symbolic representations. It was therefore assigned a halfway position in our coding system.
- *Symbolic play:* Includes pretense activities in which objects, persons, and events acquire nonliteral meanings. The most common form of this type of play in early preschool years corresponds to an activity that seems to mimic

real-life activity (i.e., sociodramatic play). Another form of symbolic play, "games with rules," which is the fourth type of play in Smilansky's scheme and emerges in later preschool years, occurred very rarely in our observations. It was therefore included in the symbolic play category.

Level of Play. An activity can be performed at different levels as regards its cognitive requirements. According to Miller, Galanter, and Pribram (1960), an activity episode can be defined as a test-operate-test-exit cycle of planning in which a person has a definite goal, uses multiple actions in order to achieve it, and ceases to act when the goal is achieved. In elaborating this notion to define intentional actions, Bruner (1981) identified the elements of this cycle as comprising "aim, option of means, persistence and correction and a terminal stop order" (p. 41). In our study, these elements were considered to be relevant for deciding the cognitive level at which a play activity episode was carried out.

- *High level.* Defined by the presence of the following three criteria: (a) the intention to carry out a specific activity (e.g., the child goes and takes materials that are appropriate to a given activity, such as plastic blocks and then places this material on the table); (b) the utilization of means appropriate to accomplish the activity (e.g., the child begins to put together some blocks to make a train, then chooses other pieces suitable for the same project, usually commenting on the activity being carried out "This piece goes here and then this one") and (c) the completion of the activity through successive steps (e.g., the child brings its project to the conclusion without distracting, usually saying "I made a train" when the end was reached).
- *Medium level.* Comprises at least one of these criteria.
- *Low level.* None of these criteria are present.

Thematic Unit. The theme category detects how long children are able to engage in a given activity episode. A play activity that continues for longer than a 1-min interval was considered a theme (an activity lasting only 1 min does not constitute a theme and therefore was not counted). To assign a thematic unit, the stages of both preparing and replacing the appropriate materials were considered (e.g., laying the table before feeding the doll or putting blocks in the proper box after constructing). When an activity was interrupted for no more than 1 min (e.g., the child goes somewhere else and asks a peer for something or looks around) this was not considered as ending the activity theme. The following categories were used:

- *Brief thematic unit.* The child continues the selected activity for 2- or 3-min intervals.
- *Long thematic unit.* The child continues the selected activity for at least 4-min intervals.

Social Participation. Social participation involves the social component of childrens' play. Children can carry out an activity either alone or with peers. In the case of peer activity, children can share the material of the activity without sharing the way in which it is utilized or they can share this material in cooperative form to accomplish a common purpose. According to Smith's (1978) reduced version of Parten's (1932) classical social participation scheme, the following categories were used.

- *Solitary.* Play occurs when the child is alone.
- *Parallel.* Play occurs when the child is in close proximity to but not interacting with peers.
- *Group.* Play is carried out by the child jointly with peers. Children interact with each other during the activity shared, each of them adjusting own actions to the other's actions. For this reason peer interaction during play was detected by this category only.

RESULTS

Coding of transcriptions was carried out by two independent coders. Reliability was computed by separate analyses of the complete data set. The values obtained were 97.5% for play type, 96.4% for play level, 98.7% for thematic unit, and 96.6% for social participation. Cases of disagreement were resolved through discussion. The number of intervals in each play category was used as a play measure. Because in most cases not all intervals were devoted to play (e.g., the child might be unoccupied for several minutes, or could be occupied in nonplay activities such as routines), the total of the child's play intervals was different for each child. Interval frequencies were therefore transformed into percentages to capture the relative weight of each code for each child and to compare the obtained values.

Type and level of play, thematic unit, and social participation of all children were analyzed. Moreover, symbolic play was analyzed in more detail as regards these dimensions. In this case, only those children who were observed playing symbolically were considered.

Type and Level of Play

A similar number of day-care and non-day-care children played in the different types and different levels of play. As regards play type, functional play was carried out by 15 versus 17 children, respectively; constructive play by 9 versus 9; and symbolic play by 14 versus 12. As regards play level, 13 versus 14 children, respectively, played at low level; 14 versus 17 at medium level, and 13 versus 11 at high level.

Differences in two groups were found as regards the percentage of intervals in each code. Figure 1 shows that symbolic play was more frequent ($t = 2.49$, $p =$

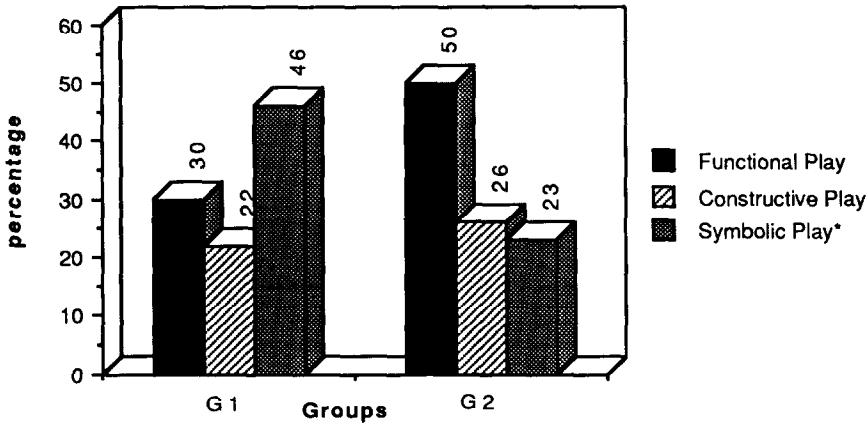


Figure 1. Functional, constructive, and symbolic play in day-care (G 1) and non-day-care (G 2) children.

.02) in children who went to day-care centers (Group 1) than in children who did not (Group 2). Moreover, the most frequent type of play was symbolic in Group 1 and functional in Group 2.

Figure 2 shows that play was performed at a high level more frequently in Group 1 than in Group 2. Moreover, most play time was spent at high level by Group 1 and at medium level by Group 2.

Children in the two groups were therefore capable of both playing in the most advanced form, such as symbolic play, and in the most advanced way, that is, at

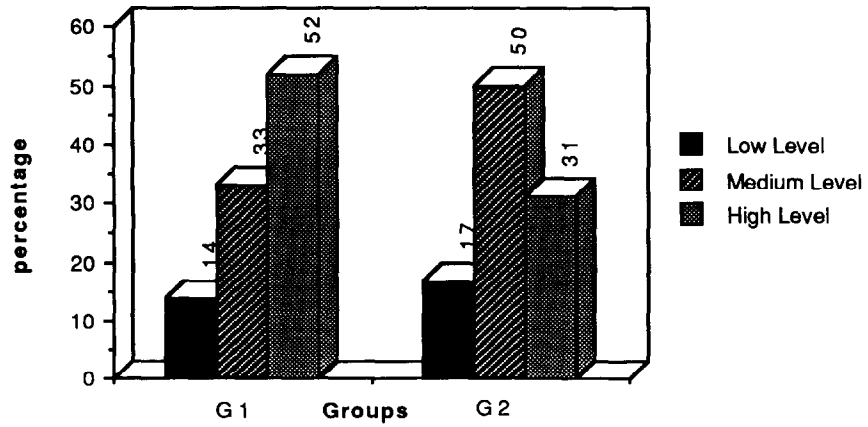


Figure 2. Low, medium, and high play level in day-care (G 1) and non-day-care (G 2) children.

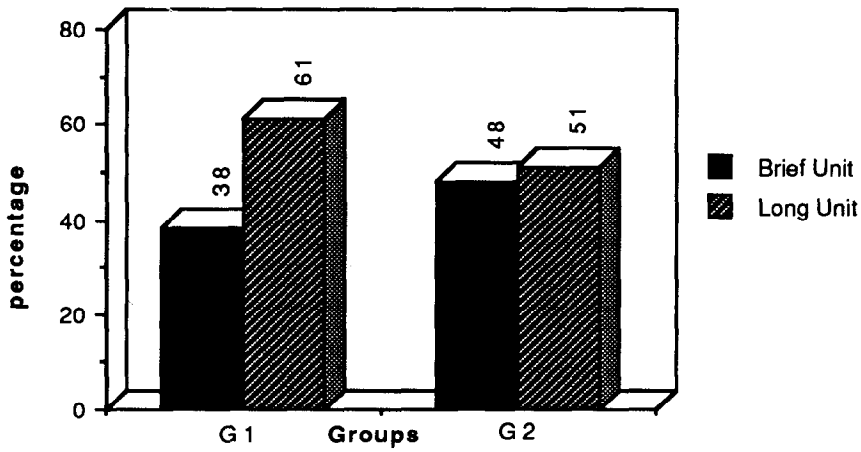


Figure 3. Length of play thematic units in day-care (G 1) and non-day-care (G 2) children.

high level. However, children who went to day care did so more frequently than children who did not. Moreover, unlike the other children, they showed a preference for these ways of playing over the less advanced ones.

Thematic Unit

As regards thematic units, more day-care children (18) than non-day-care children (13) performed long units (i.e., activity episodes lasting over 3 min); whereas more children not in day care (14) than day-care children (10) performed brief units (i.e., activity episodes lasting 2 or 3 min). As regards the relative proportion of the units, Figure 3 shows that long thematic units were more frequent than brief in Group 1, whereas they were the same in Group 2. Children who went to day care were thus capable of performing the activity they had chosen for a longer time than children who did not.

Social Participation

The last assessed dimension of play was the social one. Solitary play was performed by a similar number of children in day care and those not in day care (11 vs. 13), parallel play was performed by less day-care than non-day-care children (14 vs. 20), and cooperative play by more day-care than non-day-care children (17 vs. 13). As regards the percentage of intervals spent in each code, Figure 4 shows that solitary play was as frequent in the day-care group (Group 1) as in the non-day-care group (Group 2), parallel play was more frequent in Group 2, and play with peers was more frequent in Group 1. Thus children's social participation to play differed in the two groups as regards the most advanced form (i.e., cooperative play).

Taken as a whole, these results show that children attending day care are

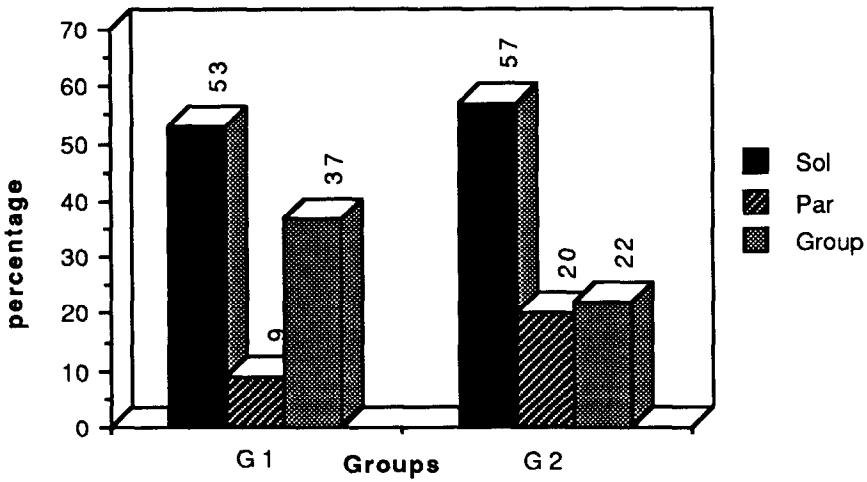


Figure 4. Solitary, parallel, and group play in day-care (G 1) and non-day-care (G 2) children.

capable of playing in symbolic manner, at high level, with long thematic units, and in interaction with peers to a greater extent than non-day-care children.

Symbolic Play

Table 1 shows that almost the same number of day-care and non-day-care children played at symbolic level (14 vs. 12) but that day-care children spent more time on average at this level (61.71% vs. 37.58%). Twice the number of day-care children compared to non-day-care children performed symbolic play at a high level (9 vs. 5) and with long thematic units (11 vs. 5). Moreover, they spent more time on average at high level than the other children (85.55% vs. 66.66%). As regards the social dimension of symbolic play, twice the number of day-care compared to non-day-care children play in groups (8 vs. 4) and for twice as long on average (30.47% vs. 16.08%). No substantial difference was found in symbolic play performed by children when they were alone.

Children of the two groups were therefore capable of playing at the symbolic level. However, they differed regarding the quality of play. Children who went to day care played at a higher degree of complexity than those who did not regarding both internal (thematic units and cognitive level) and external (social interaction) aspects of play.

DISCUSSION

The results of this study show significant differences in the play behavior of preschoolers with different types of upbringing in infancy. Regarding the social

TABLE 1
Symbolic Play in Children Who Went to Day-Care Centers and Who Did Not

	Symbolic Play			High Level in Symbolic Play			Long Units in Symbolic Play		Solitary Symbolic Play			Group Symbolic Play		
	N	$\bar{x}_a$	*ds*	*N*	$\bar{x}_b$	*ds*	*N*	Unit Number	*N*	$\bar{x}_c$	*ds*	*N*	$\bar{x}_d$	*ds*
Day-care children	14	61.7	31.5	9	85.3	18.3	11	12	9	38.2	37.2	8	30.4	37.6
Non-day-care children	12	37.5	27.1	5	66.6	27.1	5	5	11	26.8	34.3	4	16.0	28.3

N = number of children.
$\bar{x}_a$ = average percentage of symbolic play calculated on the total of play intervals.
$\bar{x}_b$ = average percentage of high-level symbolic play calculated on the total of symbolic play intervals.
$\bar{x}_c$ = average percentage of solitary symbolic play calculated on the total of solitary play intervals.
$\bar{x}_d$ = average percentage of group symbolic play calculated on the total of group play intervals.

aspects of play, the incidence of group play was greater in children who had been to day care than in children who had not, whereas parallel play was less frequent. Solitary play did not differ in the two groups. Parten (1932) suggested that solitary activity was the least mature form of social play. However, Rubin and Maioni (1975) found that preschoolers' role-taking skills are not related to solitary play and are negatively related to the incidence of parallel play. According to Rubin, Maioni, & Hornung (1976, p. 418), children who play by themselves may wish to explore the internal potential of the activity being performed without considering its possible social usage, whereas children who play alongside, but not with, others may wish to play in a social manner without being able to. Therefore "parallel, and not solitary, is indicative of the least mature level of a social-cognitive play hierarchy for 3- and 4-year-olds."

In our study, day-care children differed from non-day-care children in both parallel and group play but not in solitary play. Following Rubin and colleagues' account, this means that they are more capable than the other children of using the opportunity provided by preschool for meeting peers and are therefore more advanced in the sociocognitive play hierarchy. How is this outcome related to their earlier peer experience? Being effective in meeting peers requires taking the peer's point of view into account and using this capacity to act in a cooperative manner. As is well known, perspective taking is a milestone in the child's sociocognitive development, marking the passage from egocentrism to decentration, and, far from being an abrupt and definite developmental outcome, it is increasingly constructed by the child from an early age. As Bruner (1983) pointed out, repetitive involvement in social interaction episodes, which consist primarily of ritualized parent–infant games, constrain the child to assume interactional roles and to reverse them on the proper occasions, thereby helping the child to achieve the capacity of taking its own and the partner's perspective into account.

Three-year-olds are capable of participating successfully in joint activity with the adult and they are therefore credited with cooperative skills. However, these skills fail to be used with a peer. In peer joint activity the partners are at the same level of social competence and therefore no "scaffolding" (i.e., no social support usually provided by the adult) is available for the child to tune its own behavior to the peer's behavior. The child has to rely primarily on its own competence. This reliance is further challenged when the agemate is an unfamiliar child, as in the case of a peer in a new educational setting. Thus, peer joint activity in early preschool reveals itself to be a difficult enterprise even for a skilled 3-year-old. Repeated experience of meeting peers at an earlier age can help children in this enterprise. Early meetings with peers in day care allow the children to build up a repertoire of social behaviors that are effective in the peer group, thereby providing them with the kind of abilities specifically designed to deal with this situation. These abilities can be used later, when the children are enrolled in preschool, compensating for the difficulty of cooperating with unfamiliar peers by means of previous peer social experience.

This line of reasoning follows the hypothesis that peer competence lies within the peer system rather than deriving from the attachment relationship (Howes, 1991). If this hypothesis is correct, and there is some evidence for it (Andersson, 1989; Howes, 1988; Macrae & Herbert-Jackson, 1976; Schindler, Moely, & Frank, 1985), competence with peers needs a specific social context to be built up (i.e., a peer group). As our results show that day-care children are more capable of playing with peers than non-day-care children, the peer group clearly needs to be easily and frequently available for the child to be effective in promoting peer competence. Certainly, even children who do not go to day care meet other children in their early life, but these encounters lack the systematicity typical of peer interaction in day care and consequently do not allow children to practice social skills long enough to take advantage of peer presence. This practice is very important in the toddler period when the child advances from mere contacts with peers to complementary and reciprocal interactions. Thus, children who attend day care, where intensive exchanges with peers are experienced day by day, are expected to be capable of playing in groups more often and better than children who meet their peers only occasionally.

Regarding the cognitive aspects of play, the two groups differed in symbolic play, which was performed to a greater extent by children who went to day care than by children who did not, and in more sustained manner. In particular they differed in group symbolic play. Whereas almost the same number of children in the two groups were able to play symbolically in the solitary condition, only half of the number of children not attending day care were able to do so in interaction as compared to the day-care children, and for only half the time. How is this result related to early child care attendance? Play has usually been studied from a structural point of view as an activity revealing internal modes of dealing with the world. Within this perspective, social aspects have been regarded as external rather than internal components of play and as unable to influence play development. Given the structural assumption, play development is considered to depend primarily on the child's intellectual level. However, interacting with a peer seems to enlarge the child's capacity to deal with the external world and, because play represents an important aspect of this increasing capacity, play behavior may be affected by this interaction as well. As is well known, children, at the end of their first year, tend to select the object being manipulated by the peer and manipulate it in their turn. Later, they generate object-centered joint activity, carried out with increasingly mature interactional forms such as specularity, complementarity, and reciprocity. Finally, they become able to share nonliteral meanings. Therefore peer presence affects the chiid's cognitive development and this influence may also be at work also in making up play competence. Functional play can be carried out by imitating a peer's bodily movements and constructive play by adjusting one's own actions on the object being constructed to the momentary peer's actions. In both cases, peer presence allows the child to discover and experiment new affordances of play. As regards symbolic play, the

need to cooperate with another unskilled partner constrains the child to be more explicit with regards to its own subjective meanings, thereby improving ability to reflect on them. The relation between cognitive and interactional skills has been studied by previous research, which found that the use of pretense in group play favors cooperative skills (Fonzi & Tassi, 1988; Singer & Singer, 1977). According to our results, however, it is day-care attendance that favors symbolic play. Therefore a more reciprocal influence between interactive and cognitive skills in group play development may be hypothesized.

Sociodramatic play, the earliest form of social pretense play, can particularly profit from the availability of an interacting peer, given the need to assume relational roles. In our study, not all 3-year-old children in both groups were found to play symbolically with their peers and this confirms the Howes et al.'s (1989) play sequence, according to which social pretense play is a later achievement compared to both social nonpretense play and solitary pretense play. However, social pretense play was observed in twice as many children who went to day care as children who did not. Experience of meeting familiar peers in a period critical for integrating social and cognitive skills can therefore be considered to favor this process, confirming Howes et al.'s claim regarding the importance of peer familiarity for the development of social pretend play.

A final warning about the interpretation of our results needs to be made. Research has shown that families that choose to raise their children exclusively at home are different in some respects from families that choose day care (Howes & Olenick, 1986; Scarr & McCartney, 1983). If no control is made for children's family background, family factors may come to be confused with child care factors. In our study, family demographic variables (e.g., family income, job and education of parents) were controlled, but other more subtle variables such as family values about child learning and development were not controlled. However the latter only seems to affect the choice of child care (i.e., high- vs. low-quality child care) rather than the relation between child care and social development (Phillips, McCartney, & Scarr, 1987). Social competence in child care is influenced by variables belonging to the child care structure, such as child–staff ratio (Clarke-Stewart & Gruber, 1984), caregiver stability (Clarke-Stewart & Gruber, 1984), small grouping of peers (Howes & Rubinstein, 1985), and specialized caregiver experience (Howes & Olenick, 1986). The day care centers that the children we observed came from were very similar regarding these parameters.

In conclusion, we believe that future investigations of child play have to consider the role of the peer social system in the development of play behavior and that more attention has to be devoted to child play in day care, which provides a unique opportunity for children to enter this system. With respect to parental attitudes and social policies, we believe that it is important to recognize that early child experience in a social context, which is very different from the family, far from damaging child development, as has been suspected in the recent

past, helps the child to acquire and manage those skills that belong specifically to that context.

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