

Prof.Dr. Rimmert van der Kooij

Taarloseweg 2a
NL-9481 TB Vries
NETHERLANDS

R.van.der.kooij@ppsw.rug.nl

SOCIAL PLAY OF KINDERGARTEN CHILDREN

1. Introduction.

The social change within the world of young children has been enormous the last fifty years. The main care taker of young children was the mother, who at the same time was the most important play mate of the young child (Sutton-Smith, 1979). The growing participation of mothers in the working process started in the North of Europe. The consequence of this development has been that children already at the age of 6 months were put together in groups within the day care centers. Also for older children the organisation patterns for playing together changed enormously as Zeiher (1990) demonstrated in Germany. One could raise the question, if the early starting co-education of children from different families during many hours per day is in accordance with the social competence of young children.

The question arises: "Does early co-education in groups appeal to unknown social 'nearer zones' as supposed in the theories of Leontjew and Vygotsky?" The most observed activity of young children is play behavior. When children are put together in groups at an early age as has been done in our changing

educational system, characterized by Heihnsohn & Knieper (1975) as "wage-education" (= other persons are paid for the educational job), what will be the consequence for the development? Will it be possible in the near future to imagine two toddlers completely being engaged with each other in a social cooperative role play?" The answer cannot be given without observing the social play. This fact implicates a number of questions:

- How do play interactions at an early age take place during play?
- Are adequate observation systems available for observing social play?
- Do young children prefer to play alone or together?
- Are former research results available in order to answer the question if changes in social play have taken place in the course of the last decades?
- Do educational influences exist upon the phenomenon of social play?
- Do fundamental drives exist in relation to the causation of social play?

In fact twenty years ago I met the same problem, when the question "How does the individual child play at different ages?" was unanswered and no information was available about play influencing factors. However, there is a difference in the situation around individual and social play. In the different theories about individual play it was possible to bring a number of opinions under one denominator. Is this also possible with social play? Let us consider the definitions, descriptions and concepts of social play first.

2. Definitions and main characteristics of the concept of social play.

Château (1954) gives as opinion, that young children do not play together, but they are only able to play "next to each other". From Elkonin (1980) we learn that play is "the activity in which is sought for establishing interhuman relationships without striving for direct, useful aims" (p.31). Hetzer (1972) describes social play as an activity during which the attention is not focused upon play activities, but upon the acting together and upon organisational measures. Garvey (1974) defines social play as "a state of engagement in which the successive, nonliteral behaviors of one partner are contingent on the nonliteral behaviors of the other partner" (p. 163). Social play means that the behavior of the two children must fit upon each other and it

must alternate. Smith (1977) only wants to talk about social play when two criteria are fulfilled: there must be interaction and there must be played. "Social interaction implies that the two or more participants are making appropriate responses to each other so that the sequence of interaction continues" (p. 133).

Some authors (Einsiedler, 1985; Williamson & Silvern, 1993) make a difference between social play and meta-play. During the last play form the children are not any longer engaged in a role, but they are communicating about play, like discussing the kind or type of play rules or indicating ways how to behave. What does research say about social play?

3. Social play: some research results before 1997.

The most cited and used observation system for social play is of Parten (1933). She designed the observation categories: solitary play, onlooking activities (one child observes the other), parallel play, associative (the children bring each other to play ideas, but do not cooperate) and cooperative play. Some of the conclusions she drew were:

- a. kindergarten children mostly play in groups of two children;
- b. two third of these groups consist of children of the same sex; also the majority of the favorite play mates are of the same sex type;
- c. playing the pretense play "father and mother" is the most occurring play type during kindergarten;
- d. playing with sand and construction play with clay, paper and painting are the most frequent parallel play types. Parten suggested that the development of the child manifests itself by the successive play types or by the play continuum: solitary play, parallel play, associative play, cooperative play. She also stated that an increment of complexity grew in social play as the child became older.

The conclusions of Parten are rejected by Barnes (1971) who did a replication study. He found more solitary play and less associative and cooperative play. He does not find support for the thesis of Parten that solitary, parallel and group play are successive phases in the child's development.

Gesell (1954) has the opinion that associative play is characteristic for the four years old. He agrees with Parten the preference for groups of two and three children. The four year old is able to share properties with others and is able to wait for its play turn. But consequence and consistency often lack. The children provoke easily reactions from other play mates but their behavior is often characterized by egocentrism and dominance.

Hurlock (1971) in a review refers to Bridges (1929) who found an average interest in toys by four year olds which lasted 6,2 minutes. Van Alstyne (1932) concluded that the attention span during play was 12,3 minutes. In relation to social play she referred to Heinig (1931) who stated: "At about the age of four, interest in cooperative play becomes paramount" (p. 50). Waddle (1918) gives as opinion that pleasure in company increases, but the individual wishes seem to overrule. Hurlock also mentions the work of Hagman (1933) who in accordance with Parten states that four year olds show a clear preference for friends of the same sex.

Without mentioning quantitative data Braga & Braga (1975) describe that four year olds become more conscious of other children and that cooperative play increases. They also state that most children between four and five years hardly ever play alone.

Newson & Newson (1970) also give a number of characteristics of social competence after their observation of four year old children in an urban community of Nottingham. They give the typification that four year olds do not need an element of competition or of self-affirmation for the stimulation of their development. On the other hand the performances and the level of development partly are dependent on the stimulation of the environment. A four year old is impulsive and reacts upon almost everything which happens around him. He talks much, asks a lot. It is the opinion of the Newsons that the four year old has a good social insight and imitates very well. Play at this age is an absorbing and very serious activity.

On the base of an analysis of preschoolers in a free play situation Garvey & Hogan (1973) concludes that "spontaneous speech at this age reflects the murgence of the social understandings that underlie such acts as invitations, requests, insults and excuses" (p. 567).

Hendrickson (1981) shows the relation between the use of toys and material and the presence of social-interaction behavior in normal developing kindergarten children. Percentages are presented of solitary, parallel and cooperative play.

Vandell (1983) observed the free play of children in a day care center with three trough five year old children. She applied the following observation categories: "solitary and unoccupied behavior, positive behavior and vocalizations with peers, negative interaction with peers and total peer-directed behavior." Her conclusion was that the children showed much solitary play, but even more social play with peers (total peer directed behavior).

One can conclude that the opinions about social competence and the quality of social play differ among the different authors. A number of researchers disagree with the results and the interpretations of the development of social play (solitary -parallel-cooperative play). Smith (1978), Rubin, Maioni & Hornung (1976), Moore, Evertson & Brophy (1974), Ftenakis & Sperling (1982), Barnes (1971), Jennings (1975) and Einsiedler, Bosch & Treinies (1985) from their observations draw the conclusion that more solitary play of a child does not relate to less social competence or less cognitive skills. Smith (1978), Barnes (1971) as well as Rubin et al (1976) warn for the results of social play as presented by Parten (1933). Smith (1978) compares the results of his longitudinal study with Parten's cross-sectional investigation. He establishes less parallel and more solitary play than Parten does. He draws the conclusion that the activity level of a child is independent of the interaction with other children. The way a child plays does not provide any information about his or her social maturity. In this sense we come to the same conclusion about the relationship between individual play and level of development (Van der Kooij, 1977). Moore, Evertson & Brophy (1978) deny that the function of parallel play is a kind of medium in the development between solitary and group play.

The number of quantitative studies which enable some kind of comparison is rather limited, due to the variance of the chosen observation categories and age groups. Tizard, Philips & Plewis (1976) used the categories of Parten. They conclude that more than 50% of the play of four year olds consist of solitary and parallel play. 21 % consists of associative play and only 16% is cooperative play (see also table 2). Barnes (1971) came to a much lower percentage of cooperative play as Parten did. Rubin et al (1976) showed that four year old children spent most of their time in parallel and associative play (59%). The consistency in the presentation of Rubin about social play fails. Rubin, Fein & Vandenberg (1983) give as norm for four year olds: the production of social rather than nonsocial dramatic play. Parallel function play seems to be the most registered play activity in day care centers and kindergarten. Rubin et al refer to Hetherington, Cox & Cox (1979), Johnson & Ershler (1981), Rubin et al (1976) when they conclude that among four year olds between 8% and 14% of pretense play consists of parallel play.

4. Some conclusions about former results.

No uniformity in opinion about the main characteristics and about the quintessence of social play exists. A general accepted definition of social play cannot be given. Quantitative results do not show a clear trend during the past sixty years, starting with Parten in 1933. Theoretical backgrounds to the development of social play and the driving forces behind it are not presented.

In our own research into the development of individual play (van der Kooij, 1989) we came to the conclusion that play is a very complex phenomenon which justifies a multidimensional approach. The Parten observation categories seem to have blocked another approach. Howes' peer play scale (1980) which can be considered as one of the last elaborations of Parten (simple parallel play, parallel play with mutual regard, simple social play,

complimentary/reciprocal play with mutual awareness and complementary/reciprocal social play) is maybe one of the best observation systems for social play. However, types of meta play are not included. Also, scoring possibilities of often observed play behaviors like search (looking) for contact or reactions upon space fail. The observation categories used for social play neglect often mentioned aspects of social interactions as "bodily contact", "imitation" and "the way of taking initiative". The scoring of the kind and way of social contact during social play has not been taken into consideration.

Play must be evoked by basic mechanisms, forces or drives. None of the above mentioned investigations seem to reveal any information about the causes of social play. Only rarely the influence of the social environment upon the type and quality of social play is mentioned.

Taking into consideration this lack of information and knowing that at the age of four years the individual play already shows all the different play forms, we came to the formulation of our own research aims.

5. Goals of our study.

In the context of contrary results and opinions we decided to perform a new study of social play among young children varying in age between four and five years old, which would make it possible to compare former results with our own new collected data. We had four goals.

Our first aim is to make an inventory of the social play performances of kindergarden children and to compare them with former described results.

Our second goal was to observe the social play behavior from a different perspective compared to what was done before. This approach is comparable with our studies of the individual play (Van der Kooij, 1989). There we applied the research strategies of scoring the play behavior per time unit with the help of observation categories. Besides we developed the play intensity scale. With the help of this scale the quality of the play performance was judged as a kind of total phenomenon. For the judgment of the quality of the social play it seemed necessary to develop a kind of social play quality scale.

Our third goal was to look for possible educational influences upon the way children play socially. In former research we (Van der Kooij & Neukäter, 1989) looked for the influence of the educational style "control" (dominance) upon the individual play behavior. Within the context of that study it was possible to compose pairs of children from different "controlling" families in order to investigate the influence of the controlling behavior of parents upon the social play behavior of their kindergarten children.

Our fourth and last goal was to look for the degree of imitation in the observed social play. Through the play behavior of young children we (van der Kooij & Been, 1992) developed the (new) theoretical approach, based on modern cognitive psychology, that trial and error, repetitions in play behavior and imitation are fundamental drives in the play development. In terms of cognitive psychology they must be considered as inherited general production rules.

When the postulate of imitation as fundamental play drive is right (contrary to the opinion of Piaget, 1972) in the observation results of the social play one would expect a high correlation between the play performances of two children, which play solitary, parallel or together.

6. Design of our social play study.

In order to realize the aims of our study 40 children were pair wise observed in a standardized free play situation in the observation room of our institute. The age of the children varied between four and five years. The reason of pair wise observation was based upon the fact that a number of authors (Parten, 1933; Smith, 1977 and Rubin et al, 1983) registered that kindergarten children prefer to play in groups of two.

In order to investigate the possible influence of a controlling educational style upon social play, the observation pairs were composed (unknown for the observers of the play behavior) as follows:

1. six pairs of children from not-controlling parents;
2. seven pairs of children whose parents were considered to be controlling;
3. seven mixed pairs of children from controlling and not-controlling parents.

The observation categories for social play are on the one hand based upon the observation system of Parten (1933): solitary play, parallel play, associative play and cooperative play. On the other hand the categories of cooperative play with and without task sharing were used of Tizard et al (1976) and the category of meta-conversation was derived from Einsiedler (1985). We added the categories of conversation (verbal communication), reaction upon space and search for contact. In Figure 1 the description of the used social play categories are presented.

FIGURE 1

DESCRIPTION OF SOCIAL PLAY TYPE CATEGORIES

1. SOLITARY PLAY

The child plays with different material independent of other children. Play acts are fulfilled without any reference to what the other child does.

2. PARALLEL PLAY

The child plays close to his/her play mate and sometimes uses the same toy(s). There is no attempt to influence or modify each other's play. The child is mainly engaged in handling the material and not in making contact with the other child.

3. ASSOCIATIVE PLAY

The one child brings the other one upon ideas and they influence each other, but the children continue with their own play acts.

4. COOPERATIVE PLAY WITHOUT A CLEAR TASK SHARING

The children perform their own task, which could have been done as well by one of them. Both try to attain a common goal.

5. COOPERATIVE PLAY WITH A CLEAR TASK DIVISION

Both children have an active though different role of about the same importance.

6. META CONVERSATION

The children talk about the situation or about the objects without fulfilling pretense acts.

7. CONVERSATION

The children talk with each other about other topics than the play situation.

8. REACTION UPON SPACE

Every reaction upon space, one-way-screen or video cameras which is independent of the play.

9. CONTACT SEARCH

The one child attracts the attention of the other one at a moment when there is no mutual contact.

The social play categories must be scored per second and per child.

Our social play scale (comparable with the individual play intensity scale) pretends to measure a number of aspects as described in the literature (see 3.). It was completed with a number of

aspects which we found in our own pilot studies as being of importance for characterizing social play. The social play scale must be administered only one time after the total observation period. The social play scale is a four point scale with eight items. The minimum score is 8, the maximum score 32. For a description of the scale see Figure 2.

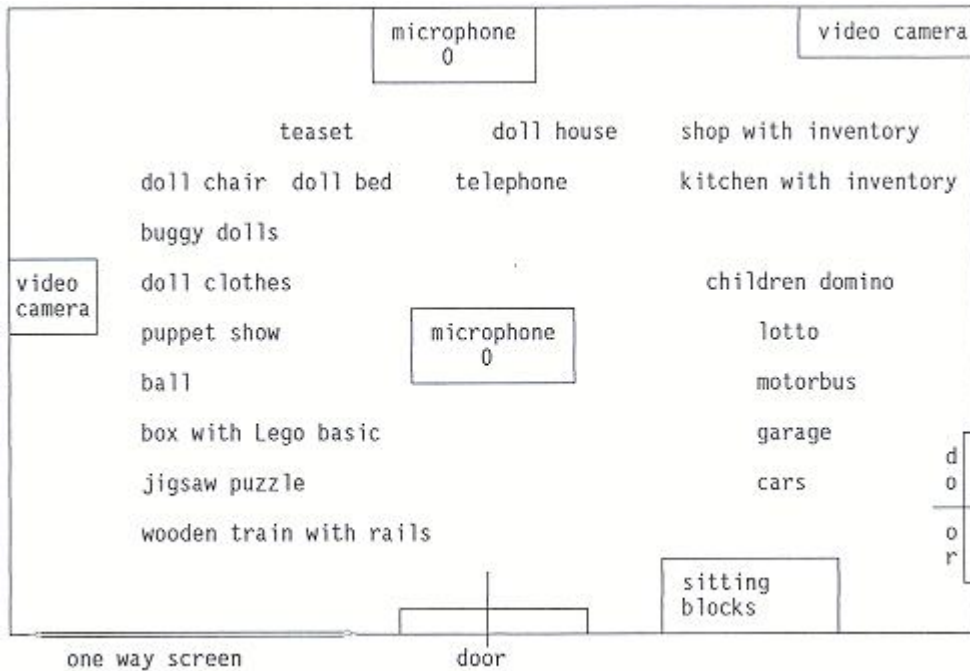
Figure 2
SOCIAL PLAY QUALITY SCALE

1. INITIATIVE IDEAS	one child takes all the initiatives	one child takes almost all the initiatives	one child takes some more initiatives	the children take about the same initiatives
2. SHARED FANTASY	the one child cannot follow the inventions of the other	mostly the one child cannot follow the other child	mostly the children can follow each other	the children can follow each other completely in their fantasy
3. VERBAL CONTACT	the children do not speak with each other	the children some times say a single word towards each other	the children some times say something towards each and react upon each	the children say a lot towards each other and react upon the words of each other
4. BODILY CONTACT	the children never touch each other	the children touch each other some times by accident	the children touch each other some times purposeful	the children touch each other regularly in order to explain something
5. VISUAL CONTACT	the children do not look at each other	the children some times involuntarily look at each other	the children look sometimes openly at each other	the children look often at each other
6. COOPERATION	the children act completely separately	the children cooperate rarely	the children cooperate some times: they are focussed upon the same	the children help and support each other and arrange something together
7. IMITATION	the children imitate each other in every thing	the children imitate each other in many occurrences	the children sometimes imitate each other	the one child does not imitate the other child
8. NEGATIVE CONTACT	the children hinder each other in every initiative	the children hinder each other in many occurrences	the children hinder each other sometimes	the children do not hinder each other

Every pair of children was observed during 20 minutes in which a standardized set of toys was offered. As guideline for the composition of the toy set we referred to Michelet (1978) and to our own stock-taking of toys in a number of preschools.

The childrens play was recorded by two video cameras operated at distance. The parents were offered the observation of the childrens play from behind a one way screen. The children knew that the parents could watch and that they were within reach. Figure 3 shows the operationalization of our design, included the toy set.

Figure 3
Fitting up of the play room



7. Results.

The social play behavior of forty children (20 pairs) was recorded on video tape and scored with help of the social observation categories as described in figure 1. The results are presented in table 1.

Table 1

Observation results of the social play categories
N = 40 (20 pairs); age of the children: 48 - 60 months

	solit. play	paral. play	ass. play	coop. play	co.pl. no t.s.	conv.	meta conv.	react. space	cont. sear.
tot. time	13441	4643	1158	5780	8268	276	298	539	107
tot. aver.	336	116	38	145	207	132	57	151	27
stand. dev.	335	146	98	197	193	88	75	186	40
% play time	28%	10%	3%	12%	17%	11%	5%	13%	2%

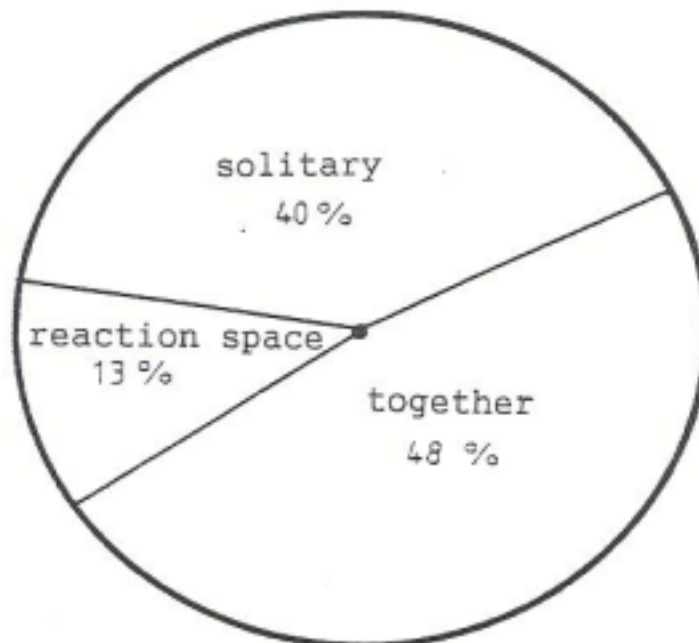
- tot. time = number of seconds that all children showed the play type
- tot. aver. = average playing time per play type
- stand. dev. = standard deviation of the mean
- % play time = percentage of the total play time spent to the play type
- solit. play = solitary play
- paral. play = parallel play
- ass. play = associative play
- coop. play = cooperative play
- co.pl. no t.s. = cooperative play, no task sharing
- conv. = conversation (verbal communication)
- meta conv. = meta conversation
- react. space = reaction upon space
- cont. sear. = looking for contact

The variance in the social play behavior as expressed in the standard deviation is rather large. This means that there are quite a few individual differences between the children. This makes it difficult to characterize the obtained results as the representative image of the social play of four and five year olds.

From an educational perspective (taken into consideration the force within our society of co-educating young children in day care centers) it seemed interesting to take together the observation results of all those categories in which the children showed a kind of common activity (associative play, two cooperative play forms, conversation and meta-conversation). This computation resulted in an average time of 569,5 seconds per child with a standard deviation of 334,6". During 47,5% of the total playing time the children "played together" or they communicated with each other. Summarizing the observation results of solitary play, parallel play and contact search this resulted in a percentage of 39,9% (average time 497,0 seconds per child with a standard deviation of 323,7"). In figure 4 the results are visualized.

FIGURE 4

MAIN PLAY TYPES



The percentage of reaction upon space can be considered as a kind of dependence on the direct situation. Before further interpreting these data it seems desirable to compare our findings with former research results as mentioned in paragraph 3. It is difficult to compare our observation results and the former mentioned ones, because most of them (except Einsiedler, 1985) were done in the kindergarten where the children played in groups of changing size. In order to make our results comparable with the investigations of Parten (1933), Barnes (1971), Rubin et al (1976) and Tizard et al (1976) we reduced the number of categories. Our categories of cooperative play with and without task sharing are taken together as well as conversation, meta-conversation and search for contact. The category "reaction upon space" is not taken into consideration and therefore omitted. Table 2 represents the content of this "historical" comparison. It was impossible due to the lack of detailed information (means and standard deviations) to compute differences.

TABLE 2

**Comparison of observation results from 1998 with former research findings
The numbers express rounded off percentages of different play types**

	Parten 1933	Barnes 1971	Rubin* 1976	Tizard 1976	1998
solitary play	17%	27%	17%		32%
parallel play	32%	24%	33%		12%
sol.+ par. play	49%	51%	51%	50%	44%
associative play	23%	19%	26%	21%	3%
cooperative play	16%	6%	7%	16%	33%
onlook. behavior	12%	24%	16%		21%

* Rubin et al (1976) provide percentages of middle and lower class children. The percentages in this table are averages of the two groups.

The cautious interpretation of this comparison shows that there are differences between the obtained results. It seems as if the percentages of solitary play and cooperative play (32% and 33%) is much higher than in any other investigation. In our opinion the questions about the co-education of young children raised in the introduction should be taken into reconsideration. The high percentage of solitary play seems to confirm the opinion of Piaget who considers kindergartden children as "egocentric".

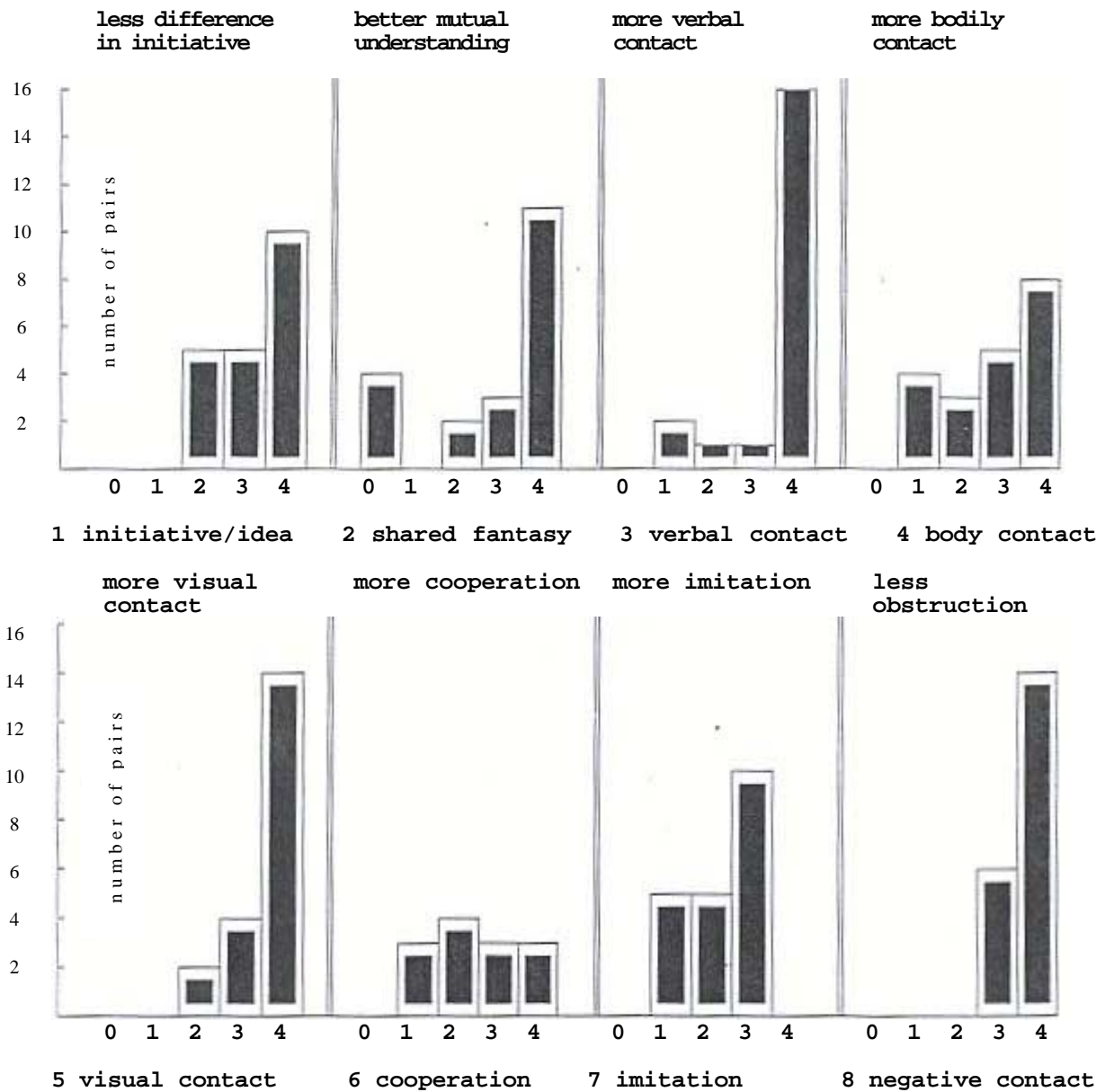
Another deviating image provides our low percentge of parallel play. This last difference can be evoked by our interpretation of what parallel play exactly is. We fear that some of the social play behaviors are scored by us as solitary play, whereas other researchers tend to label the activity as parallel play. A reinforcement of this tendency can be the social context; most other research was done in kindergarten settings where it seems that parallel play happens more often than our an "artificial" laboratory situation. Besides Parten (1933) remarks that sand, clay and drawing materials where often toys which evoked parallel play.

The category "associative play" is difficult to score objectively; an interpretation of the world of thought of the children is implicated. This category is only scored when it was completely clear that the one child was affected in his actions by the other one.

The second goal of our study was to judge the social play with help of our social play quality scale. Figure 5 contains the results of the quality

Figure 5

Results of the social play quality scale



of the observed social play. We draw a number of conclusions:

- a. there is no large difference in the play initiatives of the children;
- b. half of the pairs can follow each other in their fantasy;
- c. the children have a lot of verbal contact with each other;
- d. the number of physical contacts differs greatly from pair to pair;
- e. the children look a lot at each other;
- f. the degree of imitation differs per group;
- g. there is hardly any negative contact between the children. This last fact can be dependent on the rather short observation period of twenty minutes and on the lack of familiarity with each other (they met for the first time).

It seems of interest to compare the results obtained with the social play categories and by the social play quality scale. The observation results showed that 48% of the total playing time the children were focused upon each other (Figure 4 "together"). This is comparable with the scale results from which became clear that half of the children were focused upon the same and that a lot of verbal and visual contact existed. The quantitative observation category results and the qualitative social play scale seem to complete each other.

Our third goal concerned the possible influence of the degree of control (dominance) upon the showed social play activities. With the use of multivariate variance analysis (MANOVA) we investigated if there were significant differences between the composed pairs (no dominance, dominance and mixed dominance). After a first computation the results seemed too much influenced by some zero-values and by extremely high values in some observation categories. Therefore, a logarithmic transformation is applied, which is specially intended for time observations in order to avoid values close to zero (see Winer, 1970).

The first step was to investigate whether there was a difference between the play behavior of the three groups of children. The applied MANOVA procedure showed no difference in play behavior between the groups of children.

In order to discover the effect of the educational attitude of control (dominance) upon the child's social play behavior the children were divided into two groups. In the first group the boys and girls are taken together of parents with a "control" attitude, in the second group the children of "not controlling" parents. In the results of MANOVA only a significant difference in parallel play could be discovered, as shown in table 3.

Table 3

**MANOVA (multivariate variance analysis)
variable: parallel play**

effect of:	MS	DF	F	signif. of F
group	1,82	1	2,31	.13
educational style	3,62	1	4,57	.04
interaction	2,02	1	2,55	.12
mistake	0,79	36		

Children educated with less rules (non controlling parents) show significant less parallel play than boys and girls raised by parents with a controlling attitude.

Finally we checked if an interaction effect existed between the two conditions: group classification and degree of control by the parents. Also in this computation no significant results were found.

The last goal of our study concerned the imitation of the play behavior as measured with help of the social play observation categories. That means the computation of correlations between the behavior of children in each pair. Table 4 shows the results.

Table 4

Correlations of the individual play behavior of the children per play type. N = 40; age of the children: 48 - 60 months

	solit. play	paral. play	ass. play	coop. play	co.pl. no t.s.	conv.	meta conv.	react. space	cont. sear.
tot. time	.97	.98	.97	.99	.99	.99	.99	.94	.09

solit. play = solitary play
 paral. play = parallel play
 ass. play = associative play
 coop. play = cooperative play with task sharing
 co.pl. no t.d. = cooperative play, no task sharing
 conv. = conversation (verbal communication)
 meta conv. = meta conversation
 react. space = reaction upon space
 cont. sear. = looking for contact

The expectation of a high correlation means a level of at least .85. The results in table 5 show an extreme high correlation between the play behavior patterns of the two paired children. The only exception for the high correlation is found within the category "search for contact". The definition of this category (compare Figure 2) will make clear that there cannot be a high correlation within this category, because this behavior is almost always shown by one of the children. Further manipulations with MANOVA showed that no other underlying factors could be found. This means that the different observation categories are independent and do not influence each other.

8. Discussion.

In the first place this study must be considered as an attempt to develop observation methods for the stock taking of the social play of kindergartden children between four and five. For older children it may be necessary to adapt the observation categories. In our opinion the social play quality scale does not need large adaptations for older boys and girls.

The observation results with our two methods (observation categories and social play quality scale) show a clear image of the social play. We want to emphasize again that our results are obtained in a laboratory situation and not in the pre-schools as was the case with quite a few other researchers.

The consequences for the establishment of pre-school education will depend on the weight given to the presented results. Some educators will put an accent upon the rather high percentage of "playing together" (compare Figure 4), whereas other professionals will accentuate the rather high percentage of solitary play.

The tendency towards uniforming the educational situation of pre-school children as has been done in Sweden (cf Barnstugeutredning, 1972) shows another desire for the organization of the pre-school child than the results of an investigation among parents of toddlers in the Netherlands (Van der Kooij, Ahuis & Kalhorn, 1991). From this study it became clear that the parents preferred family day care over day care centers. One of the main reasons for the

preference of family day care was the individual attention the parents and guest parents thought the children could be offered. The educational attitude of parents is traditionally (Schaefer, 1959; Krohne, 1988) characterized by two dimensions: dominance (control) and emotional warmth. A significant higher score on both educational style dimensions was recorded among guest parents compared with natural parents. Our study showed that a difference in educational attitude of parents on the control dimension did not influence the quality of social play.

The discussion about the most favourable educational situation for young children at least in relation to play can be considered as completely open. However, we must bear in mind that the social competence of children is not dependent on the shown quality of social play as Einsiedler (1985) stated.

Last but not least we want to underline the registered similarity in showed play activities of the children (see Table 4). We consider the results of this high similarity as a support for our new developed theoretical thoughts, that imitation must be considered as one of the fundamental drives in the play development. The difference between on the one hand very high correlations in play activities (Table 4) and on the other hand the lower imitation scores on the social play quality scale (Figure 5) can be interpreted as the consequence of the difference between irreflexive and reflexive imitation. The last one seems to be scored with the quality scale, the first one by the high correlations between the spontaneous activities. This last fact supports our new theoretical view upon play, in which we consider the phenomenon of imitation as a too much neglected factor in play theories and research.

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