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HELENA RASKU-PUTTONEN

COMMUNICATION BETWEEN PARENTS AND CHILDREN IN EXPERIMENTAL SITUATIONS

UNIVERSITY OF JYVÄSKYLÄ, JYVÄSKYLÄ 1988

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ABSTRACT

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The purpose of the present study was (1) to investigate the claim that both verbal and nonverbal communication styles are related to the social and educational background of the parents, (2) to shed light on the discrepant findings of sex differences in family interaction, (3) to examine parent-child communication in different contexts, and (4) to attempt to describe interaction at different levels of analysis. Two experiments were carried out. The subjects in the first experiment were 40 Finnish first graders and their mothers or fathers. The subjects in the second experiment were 48 Finnish families with a four-year-old child. The families were divided into equal groups of lower and higher parental education. The first experiment was carried out in the laboratory and the second one in two stages: the first in a laboratory setting and the second in a laboratory setting or at home. The videotaped situations consisted of different cooperative tasks. The results showed that parental education is not of central importance in everyday communication. There were, however, differences between the two education groups in regard to parents' teaching styles and patterns of communication. The results of the first experiment showed that the parents with a higher education level explained the rules of the game in an exact fashion before playing. Moreover, the results of the second experiment replicated this finding in that the parents with higher education levels used more mental operational demands in teaching their child than did parents with a lower education level. Many parents with a higher education level also treated their child as an active participant in a problem-solving task by trying to stimulate the child with questions and pieces of information to enable the child to arrive at solutions and to correct mistakes. Only a few minor differences were found in the communication between mothers and fathers as well as between girls and boys. Instead, the particular nature of the tasks and the phase of the task was found to be essential to the forms of interaction.

Keywords: parent-child communication, family interaction, parental education, sex differences, situational factors.

LIST OF PUBLICATIONS

The present thesis is based on the following publications:

(i) Rasku-Puttonen, H. (1983). Parent-child communication in families of different educational backgrounds. Scandinavian Journal of Psychology, 24, 223–230.

(ii) Rasku-Puttonen, H. (1987). Parent-child communication as a function of parental education, sex of parent and child and situational factors. European Journal of Psychology of Education, 2, 261–281.

(iii) Rasku-Puttonen, H. (1987). Mothers' and fathers' communication with their preschool-aged children in experimental sessions. Reports from the Department of Psychology, University of Jyväskylä, 288.

(iv) Rasku-Puttonen, H. (1987). Patterns of adult-child communication in a problem-solving task. Reports from the Department of Psychology, University of Jyväskylä, 292.

The reports will be referred to by (i) to (iv) in the following text.

PREFACE

I want to express my deep gratitude to Professor Martti Takala for introducing me to the exciting field of developmental social psychology and for his guidance as well as for his continuous support and encouragement during this work.

I am also indebted to Dr. Paula Lyytinen for her invaluable advice and friendly support during all phases of my research work. In addition, I wish to thank Professor Lea Pulkkinen for her encouragement and interest in my work as well as Professor Isto Ruoppila, the present Head of the Department of Psychology. I am also grateful to Professors Rauni Myllyniemi and Jorma Kuusinen for their inspiring comments on the manuscript.

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I want to express my sincere gratitude to the families for devoting their time to taking part in the experiments.

Finally, I want to thank my husband and my sons, seven-year-old Tuomas and four-year-old Juha, for their patience throughout all.

Jyväskylä, September 1988

Helena Rasku-Puttonen

CONTENTS

I INTRODUCTION

A child acquires the knowledge and values of his[1] community mainly through interaction with other members of his culture. Both verbal and nonverbal communication are essential forms of this interaction.

Communication skills are assumed to develop through early interactive patterns between parent and child. When children are treated from early on as communicative partners, they experience an active role in interaction. In the process of acquisition of communicative competence, indirect interactions are also important for children (Rice 1984). While adults talk to other adults, children talk with other children, so the child has an opportunity to observe and try to interpret the real-world happenings.

Thus, a variety of experiences is essential in acquiring communicative competence as well as in individual development more generally (Doise & Palmonari 1984; Rice 1984). The younger the child the more important his family members are in this process. However, the environments that young children experience differ across cultures. In addition, parents vary in how much they talk, in what they say, and how equal the roles are that the parent and child occupy in interactions. The findings on different patterns of parent-child communication are evidence for different environments (Howe 1981; Wells 1985).

Because the family is embedded in larger networks of social systems, the general conditions of society affect the way parents carry out their parenting functions and hence impact on the

[1] He refers to both sexes

nature of parent-child interactions (Takala 1979, 1984, 1986). Bronfenbrenner (1979) proposed a hierarchical model of environmental organization. The model reflects the complexity of the human context. Bernstein (1961, 1974, 1977, 1980) attempted to link the different levels of society and the individual. His main purpose has been to explain why language usage is different in different social classes. When considering the determinants of interaction in the family, one of the starting points in this study was Bernstein's sociolinguistic theory.

During the last decade the system characteristics of the family have been emphasized. Social learning theory was originally applied to the family in the analyses of unidirectional effects from parents to children. The realization that children were active participants in interaction (Bell 1968), led to an increasing interest in reciprocal processes. In a social relationship, one both acts and reacts and the reaction may have been stimulated by one's own actions with subsequent repercussions produced by those actions (Cairns 1979). Attention has now shifted to circular processes, and families have gradually been conceptualized as systems with mutually dependent parts (Sameroff 1982, 1983; Maccoby & Martin 1983; Kaye 1985).

The goal of interactional research is the systematic description of the recurrent patterns within which the child functions. Trends in this direction can be seen for instance in studies comparing dyads and triads (Kreppner, Paulsen & Schuetze 1982) and in studies investigating triadic relationships among both parents and the child or the family as a whole (Lewis & Feiring 1982; Blechman & McEnroe 1985).

In spite of increasing interest in the role of the father in the family, most studies only investigate how mother-child dyads are influenced when the father is present or absent. The father's contribution to the social interactional structures revealed in family interaction has seldom been explored. The reason for this exclusion may be that the addition of participants in a design introduces a complexity which cannot be easily handled by available methodology.

Furthermore, most of the research on parent-child interaction has focused on infants. Since direct observation of older children is more difficult due to the complexity of the levels of their functioning, the infant's life experiences are rather limited and

more easily accessible to the scientist. However, it is important to study preschool-aged children because this is a critical period for the development of the extrasituational-cognitive form of communication (Lisina 1985). It should also be noted that participation in more complex interactions is dependent, among other things, on the level of cognitive development reached by the child.

In psychological research, the problem of different levels of explanation has been only occasionally recognized. Recently, for example, Doise (1986) has tried to consider this problem in a more systematic way. Integration of all the levels of explanation is very complicated, with the result being that analysis often needs to be conducted at each level. This study aimed at examining normal aspects of parent-child interaction, which are limited to simple situations.

The purpose of the present study was to investigate the often repeated claim that both verbal and nonverbal communication styles are related to the social and educational background of the parents, to shed light on the discrepant findings of sex differences in the family interaction, to examine parent-child communication in different contexts, and to attempt to describe interaction at different levels of analysis.

The following chapters will discuss the relationship between the parent and child mainly from the interactionalist point of view. Other relevant bodies of knowledge about preschool-aged children and the effects of development of certain family processes will also be presented if they touch on the present study. The factors that influence the families have been conceptualized and measured at a number of levels. The most common of these are the family's socioeconomic level and the sex of the parent and child.

1. External effects on family interaction

Since the family is one element contained in larger social systems, the general conditions of society affect the individual child through various psychological mechanisms. Takala (1979, 1984, 1986) has emphasized for the study of child development

that there are three general classes of contributing factors which are intimately interconnected. These classes are 1) living conditions, 2) activity structures and interaction patterns, and 3) goals, orientations and various aspects of parental awareness of parenthood. As a result of the complicated network of relationships, an integration of all the levels of description within a single study is infeasible.

The relationship between social class and communication in a family has been discussed by Bernstein (1961, 1974, 1977, 1980). Bernstein's main purpose has been to explain the differences in language usage in various social classes. The concept of code is most crucial in Bernstein's theory. Over the years the definition of this code has changed, from a linguistically based definition to one that involves the semantic system as well as the legitimacy and power features of speech. This code generates principles for recognition and also for realization. These two concepts are defined as follows: "Recognition rules create the means of distinguishing between and so recognising the speciality which constitutes a context, and realisation rules regulate the creation and production of specialised relationships internal to that context." (Bernstein 1980, p. 3.) If we consider the individual child, differences in code can be seen as differences in the principles of recognition and realization which the child employs.

In addition, Bernstein distinguishes between two forms of orientations to meaning. Most recently Bernstein (1980) makes a distinction between restricted and elaborated orientations. It is worth emphasizing that a coding orientation (elaborated/restricted orientation to meaning) is not inherent in an individual's position, whether it becomes so depends upon the distribution of power; " ... access to orientations is regulated by the principle constituting the social division of labour of production, which in its turn directly transforms and reproduces differential orientations in the family." (Bernstein 1980, p. 10.)

Children will differ in the way they interpret, organize, and act in the environment as they have developed various 'orientations to meaning'. These sets of structuring principles are, according to Bernstein, generated by the social class to which the child and his family belong. The child's code or orientation to meaning can be seen as resulting from both the social division of labour

outside and inside the family, and from the family's relation to the social relations of production. These different positions generate different interactional practices. The code acquired through the interactional practices of home and other significant institutions accomplishes the positioning of the subject in relation to other subjects.

Bernstein attempts to describe how sociolinguistic codes and orientations to meaning are generated, reproduced and changed both as a result of interactions in the family, the school and in production and as a result of more general structural features of society.

Linking the different levels of society and the individual (e.g. the micro- and macro-levels), requires that one finds the connecting concepts. According to Bernstein's thesis, orientation to meaning, recognition and realization rules, which constitute a code, are regulated by specialized interactional practices, which contain messages of power and control. The distribution of power and control are, therefore, inherent in the context and in the relationships between individuals. In his early work Bernstein described these interactional practices as a set of roles. Later, Bernstein has developed two new concepts, classification and framing, for viewing the structure of socialization. Classification refers to the degree of boundary maintenance between categories. Framing refers to the relationship between transmitter/s and acquirer/s in a specific context. These two concepts are exactly defined in Bernstein (1977, pp. 88–89).

The concepts of classification and framing are of great importance to the analyses of the structure of interactional practices. Dahlberg (1985) has tried to specify these concepts in relation to family socialization. Bernstein argues that power is made concrete through the principles of classification while control is effected through the principles of framing. In a family, through the distribution of power, there are different relationships between categories of family: for example, between parents and children, female and male, and so on. If the members of the family (the categories) are very differentiated, we can say that there is a strong classification. If the members are less strongly differentiated, the classification is weak. The principle of classification is communicated by means of the framing concepts.

In his recent work Bernstein (1977, 1980) has suggested that

three basic features regulate the social relationship between the transmitter/s and the acquirer/s, or more succintly, framing. According to Dahlberg (1985, pp. 83–84) these principles transformed to family-socialization can be written as follows:

"1) Hierarchical rules: These rules determine the hierarchical form of the transmission, or in other words, what is expected from the mother/father with respect to the child. Two different forms of hierarchical rules are (a) explicit, where the power relations are near to the surface of the communication, (b) implicit, where the power relations are masked and hidden. These hierarchical rules establish regulated discourse.

2) Sequencing rules: There are two forms (a) explicit, where the acquisition rules of the child's progression are distinctly stated, (b) implicit, where the rules for progression are known only by the mother and the father.

3) Criteria: There are two different forms (a) explicit, when the mother and/or the father make the child aware of what he/she has and has not done, (b) implicit, when the mother and/or the father more indirectly give the child an idea of what he/she has or has not done. Rules of sequencing and criteria constitute the discursive rules of instructional discourse."

From this point of view, the instructional discourse and the regulative discourse in which it is embedded constitute the pedagogic practice of the family. Families can vary not only in terms of the orientations to meaning of their socializing practices but also in terms of their classification and framing procedures, which regulate the performances to which orientations give rise.

The studies based on Bernstein's early description of linguistic codes contained contradictory findings. In order to examine how the parent's speech behavior is transmitted to their children during the process of socialization (e.g., Hess & Shipman 1965, 1968; Bee 1971), a few studies focused on mother-child interaction. Both the socioeconomic status and education level of mothers have been found to be related to the use of inquiry strategies (Bee 1971, Steward & Steward 1974; Laosa 1978; Sigel 1982). Middle-class mothers were also reported to give more praise and positive feedback (Bee 1971) than lower-class mothers. In addition, lower-class mothers used modeling and

demonstration techniques (Laosa 1978) in teaching their five-year-old children.

Although there have been some empirical studies of features of Bernstein's thesis, much of the later work in this area is mainly at the theoretical level. Dahlberg (1985), for example, has interviewed eight-year-old children and asked them to classify different occupations in order to explore the child's orientation to meaning. The results indicated that children whose parents have a high position in society have a tendency to produce context-independent rationales, while children whose parents have a low position have a tendency to produce context-dependent rationales. The results were in accord with Bernstein's assumptions.

Although the present study does not include the concepts developed by Bernstein, his later work is described here because it offers one possible explanation for differences in language usage of different social classes. Bernstein's thesis was formulated in a society with little social mobility, where the social distance between classes is quite large. Differences between social classes are not as marked in Finland as they are in England where it is very common that middle-class children get middle-class jobs, and working-class children working-class jobs (Willis 1983). However, many studies (Leimu, Oravainen & Saari 1978; Kuusinen 1985) have shown that the family's socioeconomic level is also the most critical factor in the choice of educational routes in Finland.

2. Sex differences in parent-child interaction

The majority of research on parent-child interaction has focused exclusively on mother-child rather than father-child relationships. This practice is due to theoretical assumptions about the mother's paramount influence on the child which has been derived from psychodynamic theories. The last decade has, however, seen an increasing interest in the father-child relationship. Much of this work has been motivated by an interest in the changing sex roles and the effects of those changes on the family functioning. Most studies of fathers are derived from the same theoretical assumptions as those of mothers and have focused

on the evaluation of attachment.

As a whole, maternal and paternal behaviors toward infants have been observed to have more areas of similarity than difference (Belsky 1980; Lytton 1980; Parke & Sawin 1980; Pedersen, Anderson & Cain 1980). Mothers and fathers do not differ from each other in sensitivity or in responsiveness. In addition, it has been reported that parents create a common family system that delineates their family from another (Clarke-Stewart 1980; Lytton 1980).

According to empirical findings (Clarke-Stewart 1980; Lytton 1980; Parke & Sawin 1980), while mothers tend to perform more caregiving activities, fathers tend to be more involved in active social play with their children. Although fathers possess the ability to function similarly to mothers, this finding does not mean that they do so on a routine basis. According to Belsky, Gilstrap and Rovine (1984) the behavior of mothers and fathers is strikingly different at home under everyday conditions. For instance, when infants were observed at the ages of 1, 3 and 9 months, mothers were found to more frequently respond to, stimulate, express positive affection toward, and take basic care of their infants than were fathers. For this reason the experiences infants have with their two parents are more different than similar on a day-to-day basis. Moreover, the parents' behavior has been found to change as the child matures (Clarke-Stewart 1980; Belsky et al. 1984).

Differences in play have been reported to be stylistic. Clarke-Stewart (1980) described her findings as follows: the fathers' play was more often physical, rapid, or even unpredictable, and gave a quick release of stimuli, whereas the mothers' play appeared to be verbal and perhaps didactic.

Other areas where parental differences have been found include verbal interaction and the expression of affection. Although some studies have found that mothers tend to be involved in more verbal interchanges with their children than are fathers (Clarke-Stewart 1980; Lytton 1980; Stoneman & Brody 1981), the findings on expression of affection are inconsistent. While Clarke-Stewart (1980) reported no differences between fathers and mothers, Lytton (1980) found that the fathers displayed significantly more affectionate behavior to two-year-old children. In contrast, mothers have been found to smile and kiss their

young infants more frequently than fathers (Parke & Sawin 1980; Pedersen et al. 1980). It is important to note that the age of the child and the time of observation seem to be factors which may explain the variations in the behavior of parents.

Finally, there has been a cultural stereotype concerning fathers as disciplinarians. In accordance with these assumptions fathers have been reported to use more directly controlling language (imperatives, direct suggestions, and prompting questions) with their five-year-old children (McLaughlin, Shutz & White 1980). On the other hand, Lytton (1980) has found not only that mothers intervened in negative ways more often but also the mothers' command giving was more frequent than that of the fathers. However, children were found to comply more with fathers' directions. Moreover, differences were found among fathers in relation to punishment. Although most fathers never employed physical punishment at all, some fathers used it very often and the relative frequency of physical punishment was slightly higher for fathers than for mothers (Lytton 1980).

A major question here is how the child's sex may also affect parental behavior. The research on sex differences in family interaction has burgeoned in the 1970's and it is rather difficult to properly organize what is known about differences in treatment of boys and girls, that is, whether there are differences between same-sex and cross-sex pairs and whether there are differences in the behavior of boys and girls toward their parents.

Although the child's sex begins to differentiate parents' behavior immediately after birth, these differences in parent-child interaction need not be constant. It is assumed that there is an interaction between age and sex (Pedersen 1980; Huston 1983). Belsky and his colleagues (1984) observed no evidence of parents treating sons and daughters differently, at least not when observed at 1, 3, 9 months of age. The findings of Parke and Sawin (1980) indicated that fathers were more involved with their infant boys and mothers with infant daughters. In contrast, Bell and his colleagues (1981) found no differences in mother's treatment of four-year-old boys and girls, whereas fathers of boys and fathers of girls differed from each other in approval, disapproval, and with task facilitation and helping. Based on these findings it might be concluded that fathers are more responsible than mothers for sex-role identification.

There is also some indication that parents speak differently to same-sex offspring. According to Stoneman and Brody (1981) mothers spoke more utterances to their two-year-old girls while fathers spoke more and took more conversational turns with their sons than did the mothers. On the other hand, mothers and fathers have been observed to contribute equally to vocal exchange with their daughters (in age 1 to 5 years) (Liddell, Henzi & Drew 1987). With sons, however, fathers were found to contribute significantly more than mothers. Children directed more vocalizations to their mother than to their father. However, other investigators have found that mothers verbally stimulate their sons more than their daughters (Masur & Gleason 1980; Weitzman, Birns & Friend 1985). Differences were found, according to Weitzman and his colleagues, in teaching, action verbs, numbers, questioning, explicitness and directives.

Findings on the different treatment of boys and girls are not consistent. According to Huston (1983), there is wider variation between individuals in personal and social behaviors than in activities and interests.

In the early stages of inclusion of fathers in parent-child research, emphasis was placed on how mother-child dyads behaved in the presence or absence of the father and what this analysis revealed about the parental roles. With the gradual shift toward viewing the family as a system of several members in which both parents have equally relevant contributions to make, further studies have compared both mother-child and father-child dyads with mother-father-child triads.

Studies comparing the nature of interactions involving two-person and three-person interactions (Lamb 1976; Clarke-Stewart 1978, 1980; Pedersen, Anderson & Cain 1980; Stoneman & Brody 1981) are consistent with respect to the findings that at least under some circumstances, less interaction takes place for any particular pair when a third person is present. These findings do not necessarily imply that the child interacts less in a triad than in a dyad. Parents seemed to reduce their language output to accommodate an additional speaker in the conversation, whereas children remained remarkably consistent across situations (Stoneman & Brody 1981). In triadic situations mothers spoke more frequently, whereas fathers decreased

their conversational turns and the use of questions.

It has been postulated that at least in traditional families much of the father's interaction with children occurs in three-person settings (Pedersen et al. 1980). On the basis of the triadic history of father-child interaction patterns, Liddell, Henzi and Drew (1987) hypothetisized that father-child dyads and triads would have greater similarities, whereas mother-child dyads would differ from both. The findings were in accordance with the assumptions. Mother-child dyads were consistently different in patterns of vocal exchange, initiation of change, and child compliance.

There are many factors which explain the variations in the father' role. Among others, the employment situation has an effect on togetherness with the child in that father participation is less frequent when the mother is not employed (Russell 1983; Takala 1986). In addition, fathers are more active in families with fewer children especially when the children are young (Russell 1983). Father-child interaction patterns are believed to be different from each other as a function of their experiences of togetherness.

Parental behavior is obviously affected not only by the sex or the age of the child, but also other characteristics of the child such as temperament, the mood and other factors (Bates et al. 1982).

3. Situational factors in parent-child interaction

It is important to stress the need to analyze social situations in a discussion of the links between a person's competence and performance. In addition to the characteristics of the immediate social situations, more permanent features linked to the specific position of the subject within a set of social relations should be taken into consideration (Doise & Palmonari 1984).

Kurt Lewin's (1935) position implies that behavior is a function of the characteristics of the person as well as of how the person perceives his immediate environment. The most extensive attempt to specify the impact of the environment

on the individual is that of Roger Barker's (1963, 1978), who produced the concept of behavior setting. According to Barker, individuals are the medium on which a behavior setting molds the behavior of that individual. Environments make some activities possible and others difficult or impossible. Moreover, the individuals themselves may take roles that are more or less relevant to the setting.

Each situation defines certain social acts as relevant and meaningful. Furthermore, goals or motivations, rules and roles are of great importance to the behavior (Argyle 1979). In addition to knowing the rules, certain skills are necessary in order to take part in any situation. Argyle emphasized the need for analyzing all of these aspects in order to understand any sequence of social behavior.

Unfamiliar situations have been assumed to have an impact on the behavior of children and ethnic minorities (e.g., Bronfenbrenner 1979). In investigations of infants' preferences for one parent carried out in the early 1970's, inconsistent findings were often interpreted in light of the social context of interaction. While infants showed a preference for mothers over fathers in the laboratory, home observations of infants indicated no preferences for either parent in attachment behaviors (Lamb 1976, 1977). However, results on older children with their parents have revealed no differences in the behavior of family members observed at home compared to that in the laboratory (Henggeler & Tavormina 1980; Borduin & Henggeler 1981).

In the past situational variation has been investigated solely between laboratory and field contexts. Currently, laboratory and home environments are taken as certain representations of social situations. This approach avoids the old debate on the artificiality of the laboratory and considers the 'context' as an additional influence on behavior.

Many studies have shown that family interaction patterns are also influenced by the inherent characteristics of specific interaction tasks (Aragona & Eyberg 1981, Borduin & Henggeler 1981; Lyytinen, Rasku-Puttonen & Takala 1982; Weitzman et al. 1985). Conversation period is very often proceeded through question-answer chains with the initiatives mostly made by adults. In contrast, free play periods elicit various forms of verbal and nonverbal communication with some initiatives

remaining without responses. Weitzman and his colleagues (1985) observed that the type of activity exerted different effects on children and adults.

4. Methodological issues

Theoretical formulations within an interactional framework have presented great challenges for the development of new methodologies. With the growing accessibility of videotape and high-speed computers, researchers have increasingly employed microanalytic methods. In most instances, observational data are collected sequentially in a laboratory or in natural settings. This technique is not new. The work of Barker and his group (1963) pioneered this research strategy. They collected narrative accounts of social environments. The aim was to record the totality of behavior and relevant transactions as completely as possible. The fine-grained data necessary for a social interactional analysis can be achieved by focusing on a limited number of behaviors and processes of immediate interest.

A number of specialized coding systems have been developed. In a classical study by Raush (1965), a coding system with a finite number of categories was used to record sequences of behaviors and reactions. The use of sequential analyses represented a major step forward in the development of this approach.

The choice of the most meaningful level of analysis and of target behaviors is one of the more challenging problems in studies of parent-child interaction. The studies range from those based on highly molecular variables to those in which specific behaviors are clustered into more molar categories. The development of specialized coding technology and instruments as well as statistical techniques relevant to the analyses of such data, have been described by many authors (Cairns 1979; Gottman & Bakeman 1979; Sackett 1979; Martin 1981; Lyytinen et al. 1982; Browne 1986; Valsiner 1986).

Various available techniques for analysis have drawn criticism for some of their aspects. The criticism of the Markovian analysis is well-known and has focused among other things

on ignoring time spans longer than one event back in time. Lag-sequential analysis techniques are criticized for taking the elements of sequence out of temporal context (Valsiner 1986). Sequentially organized material has been reduced to time-free accumulated data, and then the researcher has proceeded further in an effort to explain the data. The sequence-structure analysis described by Valsiner is useful in such cases where a certain outcome can be reached through the use of alternative pathways. The application of the sequence-structure analysis can be highly descriptive.

So far reliance on observational data has been emphasized. It appears, however, that many researchers (e.g., Lytton 1980) collect information from a variety of data sources in order to minimize the problems of subject-as-informant as well as of observational data. It seems clear that no single approach is appropriate for all purposes.

In the following, only summaries of the different studies will be given, since they have been described in detail in (i) to (iv).

II EXPERIMENTS

5. The first experiment

5.1. Problems

Problem 1. Bernstein's (1961, 1974, 1977, 1980) main purpose has been to explain why language usage is different in different social classes. Bernstein's thesis attempts to show how sociolinguistic codes and orientations to meaning are generated, reproduced and changed as a result of interactions in the family and other institutions. Although Bernstein's thesis was developed under different social conditions from those in Finland, many findings (Leimu et al. 1978; Kuusinen 1985) have revealed that a child's choices of educational routes in Finland are also regulated by the family's socioeconomic level. The present experiment aimed at finding out in which forms of verbal and nonverbal communication the differences between educational levels existed. (i)

Problem 2. Parent-child interactions are likely to vary according to both the sex of the parents and the sex of the child. The findings on sex differences in family interaction have been discrepant (Huston 1983). The purpose of the first experiment was to shed more light on this question. (i)

5.2. Method

Subjects. The subjects were 40 first graders (age 7–8) and their mothers or fathers. On the basis of the parents' education level, the subjects were divided into equal groups of education and sex. The lower education group (LE) consisted of parents with only the basic compulsory education (9 years of school) while the higher education group (HE) had a university degree or at least professional training at college level (12–17 years of school). 13 families (25 %) of those contacted refused to participate, mainly for practical reasons.

The experiments were carried out at the Department of Psychology, at the University of Jyväskylä. The video-taped situations consisted of three cooperative tasks (a game, a conversation, and a design task).

Measures of communication:

1. Measures of linguistic aspects (frequencies)
   - unfinished sentences
   - simple use of conjunctions (and, that, when, or)
   - brief commands and questions (take it, isn't it?)
   - personal pronouns
   - demonstrative pronouns
2. Measures of communication styles
   - explicitness of the explanation of the rules in a game (a three-point scale)
   - checking the rule-following (0 = no control, 1 = control)
   - conversational turn-taking; cues given in the termination of one's conversational turn (1 = no cues given, 1 = cues given irregularly, 3 = cues given regularly)
   - control (frequencies)
   - support (frequencies)
3. Measures of nonverbal communication (frequencies)
   - looking, glancing, smiling
   - reciprocated smiling and looking
   - gaze avoidance
   - nonverbal encouragement
   - nonverbal control
   - illustrators, pictographs and deictics
   - body-manipulation.

5.3. Results

The results showed no outstanding differences between the HE and the LE group in nonverbal communication. Furthermore the linguistic aspects of speech were approximately similar in both groups. There were, however, a few differences related to the measures of communication styles. All the following results are significant (at least $p<.05$). The HE parents explained the rules of the game in an exact fashion before playing, while the LE parents did not introduce the game in advance to the child and gave information only as far as needed during the game. In addition, almost all of the HE parents and only a half of the LE parents checked that the child had learned the rules and followed them.

Additional differences were revealed in cue administration (e.g., gaze direction, head nod, intonation in the termination of one's conversational turn): the HE group presented cues for terminating their conversational turns more regularly than did the LE group. The LE parents, especially the fathers, exercised more control on the behavior of the child than did the HE parents. Unexpectedly, the LE fathers also supported their children more frequently than all the other mothers and fathers. Therefore, the results of this study indicate that a class-bound style of communication is revealed only in particular activities and in special contexts.

The verbal and nonverbal communication between mother and child were very similar to that between father and child. Only minor differences were found in the communication of girls and boys. The most outstanding difference was found in the amount of smiling. Girls smiled more often than boys in every situation.

The results indicate that particular nature of the tasks and situations affects the forms of interaction. Interaction most frequently proceeded in terms of question-answer chains in a conversation. Initiatives were made almost solely by parents. Although children made more initiatives on a design task than on a conversation task, parents still made initiatives twice as frequently as children irrespective of the task. Moreover, a design task elicited more variety in forms of verbal and nonverbal communication than the conversation task. For this reason, the selection of tasks and conditions for the sessions is of special importance.

6. The second experiment

6.1. Problems

On the basis of the findings in the first experiment, the study proceeded into more complex experimental settings. As a whole, the aim was to re-evaluate the former hypotheses through an analysis of the network of relationships which was more complicated than that of the first experiment. An attempt was made to intensify the data analyses in terms of a multilevel description of the data.

The first experiment's findings on education and sex differences were re-evaluated within the following problems.

Problem 3. Many studies have shown that family interaction patterns are influenced by the characteristics of interaction tasks (Aragona & Eyberg 1981; Borduin & Henggeler 1981; Lyytinen et al., 1982; Weitzman et al. 1985). The second experiment aimed at finding out which forms of parent-child communication were influenced by the type of activity engaged in during a social exchange and whether this influence was similar among parent-child groups from different educational backgrounds across both dyadic and triadic contexts. (ii)(iii)

Problem 4. It is hypothesized that unfamiliar situations have an impact on the behavior of children (Bronfenbrenner 1979). The differences between laboratory and home settings are believed to be different for mothers and fathers. The purpose of the present experiment was to find out whether the familiarity of the situation produced different effects on parent-child groups in the two educational groups with their children. (ii)(iii)

Problem 5. The claim that there are greater similarities between father-child dyads and triads compared with mother-child dyads and triads on the basis of triadic history of father-child interaction patterns (Liddell et al. 1987) was explored. In addition, the similarity of the effects of the presence or absence of another parent in the two educational groups in different contexts was examined. (ii)(iii)

Problem 6. A few results (Howe 1981; Wells 1985) have indicated that it is possible to identify different patterns of parent-child communication. The analysis of parent-child communication was aimed at intensifying the description by means of typologies. In addition, the purpose of the present esperiment was to find out whether the communication patterns were related to parental education, the sex of the parent and/or the sex of the child. (iv)

6.2. Method

Subjects. The experiments were conducted in two stages. In the first stage forty-eight families of 4-year-old children participated in the study. The subjects were divided into two groups on the basis of the parents' education, lower education (LE)(24) and higher education (HE)(24): 12 mother-child dyads (6 girls and 6 boys) and 12 father-child dyads (6 girls and 6 boys) were examined for each. The LE group consisted of parents with only the basic compulsory education or some professional training (9–12 years of school) and the HE parents had a university degree or professional training at college level (14–17 years of school). Approximately 55 % of those contacted agreed to participate.

The second stage involved half of these families; the sample was again balanced according to the parents' educational background and the sex of the child. All the families in the first stage agreed to participate again in the second stage.

Parents and children were given cooperative tasks (problem-solving tasks, a planning task, clay-modelling, a construction play) and the sessions were videotaped (30 min a session). In addition, parents and children were briefly interviewed. The experimental settings are displayed in Table 1.

Measures of communication: The aim of the data analysis was to achieve a multilevel description of interaction.

1. *General aspects of communication (global ratings)*
   - cooperation (1 = no cooperation, a person acts alone; 2 = little cooperation, a person follows the partner's action with his eyes; 3 = very cooperative, a person makes

TABLE 1. Experimental settings

Stage of the study	Setting	Videotaping of interaction: Tasks for dyads — Mother-child and father-child	Tasks for triads — Mother-father-child	Interview — Mother and father	Child
I	Laboratory (N = 48)	Problem-solving (model-building with blocks)		Parental education, family configurations	
				Questions about parent-child interaction	Questions about parent-child interaction
		Planning (a zoo or a playground)			
II	Laboratory (N = 12) Home (N = 12)	Problem-solving (paper-folding of a hat or a dog)	Free play tasks: Clay-modelling Construction play	Questions about parent-child interaction	

suggestions to achieve a shared goal)
- emotionality (1 = negative responses to the partner; 2 = neutral, task-oriented; 3 = positive, friendly responses to the partner)
- dyadic and triadic combinations for cooperation and emotionality were made on the basis of individual scores (on a four-point scale)
- adult's guidance (1 = no demands or directives; 2 = a few directives, flexible guidance; 3 = strictly instructed and directed)
- child's initiation (1 = no ideas of his/her own, dependent on the adult's initiative; 2 = a few ideas and plans for completing the task; 3 = many of his/her own ideas and plans for completing the task).
- combinations for dyads and triads for adult's guidance/child's initiation were on a six-point scale
- teaching style (0 = the child does not do what the parent wants; 2 = teaching is based on the child's senses; 2 = naming objects, events or actions (labelling); 3 = comparing and evaluating features, use of concepts; 4 = temporal ordering of acts in carrying out a task, reconstructing previous experiences from similar tasks).

For cooperation, emotionality and initiation/guidance only the combinations for dyads and triads were analyzed. With the exception of the teaching style, all the ratings were evaluated both at the beginning and at the end of each task (7 min for each task).

2. Particular aspects of social skills (sequential data)

Basic social skills of interaction:

- initiatives made by the child and the parent (frequencies, expressing the total number of interactive exchanges)
- acknowledgements in child-initiated and parent-initiated exchanges (proportions)
- child's nonverbal reactions to all the initiatives (proportions)
- child's nonverbal reactions to questions and suggestions (proportions)

Functions of communication (exchanges in communication):

- question-exchanges
- demand-exchanges
- suggestion-exchanges
- statement-exchanges.

The focus here was on exchanges initiated by parents. The measures were taken from a 5-minute segment of each task. The types of exchanges were analyzed as proportions of the total number of interactive exchanges.

Statistical analysis. A repeated measures analysis of variance was conducted for the measures of communication. The unit of analysis was families. Parental education and child's sex were between-family factors while parent's sex was a within-family factor. The repeated measures design was selected because the same variables were measured on several occasions for each family and this method requires fewer experimental units. The variability due to differences between subjects can be eliminated from the experimental error. Repeated measures were analyzed with the MANOVA approach. The homogeneity of dispersion matrices was tested using the multivariate generalization of Box's M test. A two-way analysis of variance was conducted when the MANOVA was not appropriate.

6.3. Results

6.3.1. The effects of task characteristics on parent-child communication (ii)(iii)

General aspects of communication (ii)

Parent-child dyads. The nature of the task in which parents and children were engaged was the paramount factor which influences the way parents and children communicate with each other. Although initiation/guidance was less frequent at the end than at the beginning of the planning task, the same tendency was not revealed during the problem-solving task. Cooperation appeared more often on the planning task than on the problem-solving task. The results indicated that parents and their daughters were more cooperative and they showed more emotionality towards one another than did parents and sons.

Inspection of the means showed that the HE dyads conveyed more initiation/guidance than the LE dyads. The analysis of teaching strategies revealed that mothers more often placed mental operational demands upon the girls, $F(1,44) = 9.97$, $p<.01$. F-values are presented in Appendix 1, and comparisons of ratings, in Appendix 10.

Mother, father and child. Cooperation and emotionality were quite similar both in the different educational levels and the child's sex groups (Appendix 2). Families were more cooperative at the beginning than at the end of the tasks of clay-modelling and construction play (Appendix 11). In addition, the family members showed more emotionality to each other on the clay-modelling. On both tasks more emotionality was found at the end than at the beginning of the tasks. There were changes in initiation/guidance within both of the tasks. In the clay-modelling, families with boys received higher means on initiation/guidance than families with girls while the reverse was true on the construction play.

Particular aspects of social skills (iii)

Basic social skills of interaction in parent-child dyads. The problem-solving task elicited more initiatives from fathers and the planning task more from mothers. No significant differences appeared between boys and girls nor between educational levels in the amount of initiatives (Appendices 3 and 12).

Acknowledgements were more often used by parent-daughter dyads than by parent-son dyads in the terminating of parent-initiated exchanges on the problem-solving and planning tasks. There were no significant differences between mothers and fathers nor between HE and LE groups. F-values are presented in Appendix 3 and comparisons of social skills in Appendix 13.

Girls were found to respond nonverbally to questions and suggestions more often than boys on the both tasks. The analysis of nonverbal reactions to all the initiatives revealed that children in same-sex pairs used them more than children in cross-sex pairs.

The differences between the two tasks were reflected in the fact that acknowledgments were more often made on the planning task in which the participants paid more attention to each other while nonverbal responses were more common on the problem-solving task, in which the material and its manipulation were of central importance.

Basic social skills of interaction in a triad. The HE parents used more initiatives in triads and mothers usually made them more often than fathers (Appendices 4 and 14). For acknowledgements in parent-initiated exchanges there appeared statistical interaction between parental education, parent's sex, child's sex and task. The use of nonverbal responses varied for the dissimilar tasks with different parent-child groups (Appendices 4 and 15). Children reacted nonverbally more often to mother's than to father's initiatives. In addition, daughters in the HE group and sons in the LE group more often reacted nonverbally.

Functions of communication in parent-child dyads. The results showed that different tasks elicited different language usage (Appendix 5). Questions were asked more on the planning task and suggestions and demands were used more on the problem-solving task. Demanding language was more common in the same-sex pairs when building a model with blocks. However,

on the planning task, both mothers and fathers made more demands upon the sons. Comparisons of functions are presented in Appendix 16.

The proportion of suggestions was low compared with questions and demands. Cross-sex dyads made suggestions more than same-sex dyads. The use of statement-exchanges was related to the child's sex. Parent-daughter dyads initiated more exchanges with statements than parent-son dyads.

Functions of communication in a triad. There appeared a rather complicated interaction between parental education, parent's sex, child's sex and task for question-exchanges and statement-exchanges (Appendix 6). The finding indicated that the relationship between questions and the task on the one hand and between statements and the task on the other hand was different for different parent-child groups.

6.3.2. Parent-child communication in familiar and unfamiliar situations (ii)(iii)

General aspects of communication (ii)

Parent-child dyads. The situational familiarity was analyzed by comparing the two identical tasks to each other at different stages of the study and by comparing families at home to those in the laboratory. Cooperation, emotionality and initiation/guidance differed from the beginning to the end of the same task in the differing settings. Both initiation/guidance and emotionality increased from the beginning to the end of the second problem-solving task. It is interesting to note that only for cooperation was it found that parents and children were rated higher on the second time. The effect of the phase of the task in initiation/guidance was revealed different for the HE and the LE groups, $F(1,22) = 5.04$, $p<.05$. Cooperation was better in the parent-child dyads of the LE group at the end of the second

problem-solving task, while the overall trend was generally decreasing, $F(1,22) = 12.75$, $p<.01$.

The teaching strategies of parents were rated in the two problem-solving tasks. Teaching was found similar on both tasks. The only effect that was revealed was a parental education effect, $F(1,20) = 4.89$, $p<.05$. The HE parents' teaching consisted of more mental operational demands than that of the LE parents' (Appendix 17). The setting had no effects on parents' teaching style.

The results indicated that the setting (home vs laboratory) exerted different effects on the mother-child and father-child dyads in the two educational groups. There was found interaction between setting, parental education, parent's sex and the phase of task for initiation/guidance, $F(1,20) = 5.42$, $p<.05$, and for cooperation, $F(1,20) = 8.51$, $p<.01$. Families in the laboratory were more similar to each other in initiation/guidance. The HE parent-child dyads particularly differed at home from those in the laboratory. Both mother-child dyads and father-child dyads had more initiation/guidance and less cooperation at home. In the HE group there were minor differences for mothers than for fathers in this respect.

Mother, father and child. The home vs the laboratory setting did not affect the overall scores of communication. According to the means, initiation/guidance increased towards the end of the task at home but decreased in the laboratory. As a whole, initiation/guidance varied more in the laboratory than in the home groups for both levels of education, $F(1,20) = 10.54$, $p<.01$.

For emotionality there appeared statistical interaction between parental education, setting, task and the phase of task, $F(1,20) = 4.44$, $p<.05$. Emotionality between family members always seemed to increase towards the end of the tasks in the LE group. The setting exerted different effects on education groups in that the HE group showed more emotionality towards each other in the laboratory while the LE group showed more at home.

Particular aspects of social skills (iii)

Basic social skills of interaction in parent-child dyads. The HE group girls and the LE group boys made more initiatives when the two problem-solving tasks were compared. Differences between boys and girls seemed to be greater when children were with their fathers than when with their mothers, $F(1,20) = 4.34$, $p<.05$. In addition, the results showed that fathers more often terminated parent-initiated exchanges with acknowledgements for daughters than fathers with sons, $F(1,20) = 4.39$, $p<.05$. Mother-daughter and mother-son dyads were quite similar in this respect.

Nonverbal reactions to questions and suggestions were more common for the HE group children, $F(1,20) = 5.39$, $p<.05$. The total amount was, however, very small. In addition, the results indicated that children in the same-sex pairs reacted nonverbally more often than children in cross-sex pairs on the two problem-solving tasks, $F(1,20) = 8.11$, $p<.01$.

The results showed that the stage of the study did not affect the selected aspects of social skills.

The analysis revealed a few effects of parental education and the setting on social skills. HE mothers made more initiatives in the laboratory and LE mothers more at home, $F(1,20) = 4.97$, $p<.05$. Fathers did not differ in this respect. At home, child-initiated exchanges were more often terminated with acknowledgements in father-child dyads, $F(1,20) = 4.40$, $p<.05$.

Basic social skills of interaction in a triad. There were no effects of setting. The only interaction was related to parents' education, $F(1,20) = 5.08$, $p<.05$. The results showed that the child-initiated exchanges were more regularly terminated by acknowledgements for the HE group in the laboratory and for the LE group at home.

Functions of communication in parent-child dyads. Questions were asked more on the first problem-solving task while demands were more often made on the second problem-solving task. Task familiarity, however, did not exert different effects on parent-child groups. Questions were more frequently asked in cross-sex dyads, $F(1,20) = 8.39$, $p<.01$. HE mother-child and LE father-child dyads asked more than other groups, $F(1,20) = 5.32$, $p<.05$.

Demanding language was more common in the same-sex pairs and the tendency was similar for the two problem-solving tasks, $F(1,20) = 14.98$, $p<.001$. Suggestions were more often conveyed in parent-son dyads of the LE group, $F(1,20) = 6.50$, $p<.05$.

No differences were found in interactive exchanges between educational groups at home or in the laboratory.

Functions of communication in a triad. The familiarity of the situation was not of central importance to functions of language in triads. The results revealed only one statistical interaction between parental education and setting, $F(1,20) = 5.81$, $p<.05$. HE parents made more suggestions at home and LE parents in the laboratory.

6.3.3. Parent-child communication in dyadic vs. triadic settings (ii)(iii)

General aspects of communication (ii)

The results indicated greater similarities for mother-child dyads and triads than for father-child dyads and triads (Appendix 7). Only in comparison of mother-child dyads and triads on construction play did interaction effects appear between parental education, the number of persons and phase of task and between child's sex, the number of persons and phase of task. At the beginning of the task, the HE group triads were more cooperative than the LE group triads while at the end the groups were quite similar to each other. In addition, at the end of the task mother and child were rated more cooperative by themselves than in a triad of mother, father and child.

According to the results at the beginning of the task, although the dyads of boys and girls were quite similar, triads with a girl were more cooperative. At the end of the task, triads of boys and girls were quite similar, while mother-daughter dyads seemed to be more cooperative than mother-son dyads. Comparisons are presented in Appendices 18 and 19.

There appeared many differences for father-child dyads compared with triads, and they occurred in every variable (Appen-

dix 7, and Appendices 18 and 19). Initiation/guidance became less at the end of the tasks. However, the trend was stronger for father and child by themselves than for the family together. In addition, the HE father-child dyads had higher scores of initiation/guidance than the LE father-child dyads. However, the LE triads had more initiation/guidance than the HE triads.

Fathers with children were more cooperative than the family together. Cooperation became better towards the end of the task in the HE father-child dyads and in the LE triads.

The results indicated also that the relationship between emotionality and phase of the task discriminated the two educational groups and dyads from triads. Emotionality increased towards the end of the task in HE father-child dyads but decreased in LE father-child dyads. For the triads, the trend for the most part increased.

Particular aspects of social skills (iii)

Basic social skills of interaction. Both mothers and fathers made fewer initiatives in the triads than in the dyads. The same tendency was not found for children. F-values are presented in Appendix 8 and comparisons in Appendix 20.

The child-initiated exchanges seemed to be terminated more regularly with acknowledgements in father-child dyads than in triads. The same finding was revealed in parent-initiated exchanges. Both the mother-initiated and father-initiated exchanges were more often terminated with acknowledgements in dyads with daughters. Comparison of the planning task with the construction task revealed that father-initiated exchanges were more often terminated with acknowledgements and slightly more with daughters than with sons in the HE group. In the LE group acknowledgements were more frequent with sons.

The analysis of the nonverbal reactions to all the initiatives revealed that the HE children reacted nonverbally slightly more often than the LE children in dyads whereas the opposite was true in triads. On the construction play task for the triads, children reacted nonverbally more often to mothers' than to fathers' initiatives.

Functions of communication. Questions were posed more often in dyadic situations and suggestions and statements in triadic situations (Appendices 9 and 21).

Demanding language was more common in the dyads of the HE group and in the triads of the LE group. Demand-exchanges were initiated more frequently by mothers on the construction task in triads and slightly more frequently by fathers in dyads.

For the statement-exchanges variable, there appeared to be interaction between parental education, parent's sex, child's sex and number of persons in comparison between the planning task and clay-modelling.

6.3.4. Patterns of parent-child communication (iv)

Identifying the patterns

The purpose was to elaborate the results of parent-child communication. The description was aimed at integration of different analysis levels. As the above results showed, there was a great variety in parent-child communication from task to task. In order for the task to be feasible, analysis of communication was restricted to one session. Analysis was focused on communication in the problem-solving task for the reason that actions and communication had a defined goal and thus, it was possible to expect great variation in the ways in which parent-child dyads would work towards the goal.

The problem-solving task consisted of model pictures and wooden blocks. There were two models and it was expected that one of them was difficult enough for a four-year-old child that the parents would have to give their help and advice. When faced with a difficult task, the parents were expected to try different strategies according to their experiences with their child in order to progress. The problems in model-building were assumed to vary in difficulty from one situation to another.

Certain strategies may work some of the time while the next time new action sequences may have to be developed. It would be expected that an adult would try out alternative ways of providing guidance.

It was realized that the differences in adult behavior may owe as much to differences between the children with whom they communicate as to stylistic differences in the parents themselves. Moreover, the reverse is true, and ultimately differences are very likely to emerge from the interaction between a particular pair of participants. Parent-child communication is certainly the product of interaction to which both the child and the adult contribute in varying degrees.

Using above framework, video-recordings were viewed. Attention was paid to the behavior and utterances of the child and adult especially at difficult points in the task (i.e., how they progressed from the beginning to the end of the task).

Because a number of dyads did not build following the instructions, the parent-child pairs were first grouped on the basis of the outcome, whether they realized the task in accordance with the instructions or not. Those dyads which built according to the models were then classified into four main groups and then into subgroups.

These patterns of communication could be regarded as an attempt to integrate multilevel descriptions.

Patterns of communication

Pattern 1. The child solves the difficult points and constructs the solutions on the basis of his own thinking (n=17).

Pattern 1a. Characteristic of this group was the fact that questions were employed in attempting to solve even the more problematic aspects of the task. The adult attempted to get the child to come up with the right answer himself by way of explanations using various concepts (e.g., below, thick, long, shorter) and through the use of comparisons between the model and the problem at hand. Advice was given in answer to the child's questions, in order to enable the child to arrive at the answer himself.

While some parents were more explicit in the use of one "style" where the most general route taken was to proceed through the use of questions (question ... clarifying questions ... explanations through concepts ... explanations with the help of pictures) other parents used several strategies of proceeding depending on the situation (attracting attention, question, suggestion to act, explanation, suggesting). Especially characteristic of this group was the fact that in different ways parents helped the child to ponder the solution to the problem, and let their children test possible ways of proceeding. Only when the adult noticed that there was no other way of making headway on the task, did he give more direct hints of the answer or point to the right block.

Pattern 1b. The parents proceeded to the solution through questions. These questions required the child to look at the model and to make comparisons (same, horizontally). Further, if after the parents attempted to explain the child did not solve the problem, then the adult gave increasingly more obvious clues, or in fact pointed to the right block. Several parents used a comparison of the right and the wrong blocks to clarify the situation.

Guidance in this group proceeded basically along the same lines as in the previous group. The difference was in the fact that parents in this group offered the correct answer more quickly than parents in the preceding group.

Pattern 1c. In this group the child did his building so independently that the adult's contribution remained minimal. It seemed sufficient for the parent to keep an eye on the work and give a word of encouragement every now and then. On rare problematic occasions the parent might interfere in the construction or 'adjust' the situation by suggesting to the child that he set the blocks correctly.

Pattern 2. Parent directing situation, child mainly obeying. Parent takes child's needs/abilities into account (n=25).

Construction on the easier parts of the tasks proceeded with the help of the adult's questions 'what do you do then?' and by means of suggestions. In problem points, the parents used questions which included the answer or they pointed out the right block.

Many parents provided the answer when the going was most

difficult by giving the child the correct block or proceeding to suggestions.

In this group while the parents asked the child to think of the solution, they still provided the correct answer quite soon afterwards. Although the guidance in the problem spots could be regarded as giving suggestions, many parents explained why the block chosen was not the right one, and some parents went through the model step by step.

Pattern 3. The parent directs the situation without sufficiently taking into account the child's abilities/needs. Guidance is stiff. The responsibility for the construction still lies mainly with the child (n=27).

In this group the most general mode of proceeding was admonition; the child being told what to do next, which was the right block and where it was to be put. The child's task was to obey.

In the easier places, some of the parents proceeded using questions. However, little time was given for consideration of the answer as the parent readily provided it. The questions were often such that they already contained the answer. When difficulties were encountered, parents often pointed out the error by comparing the construction to the model, and by giving direct hints as to the solution, for instance by suggesting or giving the child suitable blocks. Parents often contributed to the building themselves. To correct wrong choices, parents often said straight out 'no, not that one, what about this one?' while at the same time handing the child a suitable block.

Pattern 4. The parent directs the situation, for instance, by doing the building himself. The responsibility for the construction rests with the adult (n=7).

Difficulties arose for this group in the initiation of co-operation between child and adult with the child expressing doubts as to his abilities in building constructions with the help of models.

In several cases, the adults started to do the building themselves, instead of explaining to the child how they could cope with the task or in guiding the child in his building. Even in the cases where the child was involved in the construction, the parents gave them the appropriate blocks ready to be put into place, and actually told them where they should be put.

Pattern 5. The tasks were either only partially or not completed (n=20).

Pattern 5a. There were many kinds of pairs in this group. A common feature to all was the fact that a construction in accordance with the model was not achieved despite the parent's efforts. Several parents proposed the building of the model, tried to appeal to the child's imagination, built the model themselves or tried to get the child interested in the task by means of questions and comparisons of construction to the model. Nevertheless, most of the children built their own construction, which they would not abandon. In a few cases, wrong instructions from the adult caused the child to turn to his own construction.

In some instances the child was very involved with the model made with one parent, and was not willing to make any other. Even though the adult cajoled and tried to explain on the basis of the model what the model was supposed to be, the child would not give in. Many children experienced a decline in motivation for building of the model.

Pattern 5b. This group differs from the preceding group in that the adult does not attempt to get the child to build according to the model, or, if he does, then only at the beginning stages of the situation. In this group some of the children want to build according to their own wishes, and the parents allow this, some of the children ask for help, but when help is not concrete enough, the child's enthusiasm dies completely.

Patterns of communication in relation to parental education, parent's sex and child's sex

The results showed that all the mothers in Pattern 1 were HE mothers and no mother in Pattern 4 belonged to the HE group. Although a similar trend was found for fathers, the finding was not statistically significant. In addition, the distributions of mothers and fathers to the groups of patterns were approximately similar. The sex of the child was unrelated to the patterns.

The relationship between the patterns of communication and particular aspects of child communication (initiatives, acknowledgements, nonverbal reactions, interactive exchages) were also examined. The results, however, revealed no differences between groups of patterns in this respect.

III DISCUSSION

7. Summary of main results

Based on Bernstein's (1961, 1974, 1977, 1980) hypothesis, differences in verbal and nonverbal communication were assumed to exist between two education groups. The results indicated that parental education was not of central importance in everyday communication. There were, however, differences between the two education groups in regard to parents' teaching styles and patterns of communication.

The HE parents explained the rules of the game in an exact fashion before playing while the LE parents did not introduce the game in advance to the child and gave only as much information as necessary during the game. In addition, the HE parents usually checked that the child had learned the rules and followed them (i). This finding on differences in teaching was replicated in the second experiment (ii). The HE parents used more mental operational demands in teaching their child than did the LE parents. This result was revealed by a comparison of the two problem-solving tasks. Similarly, Sigel (1982, 1986) has reported that teaching strategies vary with social class. Sigel's findings indicated that more advanced cognitive development in children is related to a parental teaching style that is cognitively demanding. The causal direction of the associations between children's cognitive development and parents' teaching is, however, not clear. There are indications (Pellegrini, Brody & Sigel 1985) that the children's abilities influence the parents' teaching styles.

The patterns of communication were also found to be different in the two education groups (iv). Parents, who tried to encourage the child through questions and pieces of information to arrive at solutions and to correct mistakes independently (Pattern 1), belonged mostly to the HE group. No mother and only one father of the HE group was found in Pattern 4, characterized by parents concretely directing the situation and constructing most of the model themselves.

The above results can not be explained by the overrepresentation of any certain profession in the data. In the HE group, there were about 25 % of parents who had professions with teaching tasks. Although the results could be discussed in terms of the differences in communicative experiences and in the demands of verbal expression provided by the work and professional interests of the parents, the results of communication patterns are only preliminary in the respect that the stability of patterns across the situations were not examined in the present study.

The infrequent differences between parental education groups indicated that Bernstein's thesis did not agree with the empirical data. On the other hand, the measures did not exactly related to the concepts of sociolinguistic codes and orientations to meaning. Bernstein does not specify which forms of communication in which contexts contribute to individual differences in language usage. The results of the present experiments indicated that there were no differences in everyday interaction but the class-bound style was revealed in certain activities and in special contexts (i.e., merely within quite narrow bounds).

On the other hand, the differences were revealed in a very central domain, because parent-child interaction does include much teaching. Thus, the emergence of the differences in teaching styles and communication patterns deserves more attention. According to the model of the acquisition of communicative competence (Rice 1984), the child comes to know the different kinds of knowledge that he needs through interactions. Parents transmit their expectations, beliefs and knowledge in many ways, and also by means of teaching in these interactions. The complexity of the acquisition process raises an issue as to what extent cultural peculiarities and family's lifestyle are related to language. Differences are assumed among children in the extent to which

they learn social uses of language through direct participation or through observation. Children also differ in their social networks and in their exposure to varying types of language, such as conversation between adults of different status. As a consequence, in the empirical studies which aim at explaining differences in language it would be better not to consider merely a family's socioeconomic or educational level, but also the family's lifestyle and related things.

Another relevant issue of this study was related to the sex of the parent and child. Although research on sex differences in the family is voluminous, the findings are not consistent. Several methods have been used in studies of parents and children. The results may be based on questionnaires, interviews or observations of the activities, and interactional forms of the family. Contradictory findings may be due in part to different methods. Therefore, it is rather difficult to organize the knowledge on the differences between mothers and fathers in the treatment of boys and girls. One important finding was that mothers have been reported to be involved in more verbal interchanges with children both in dyadic and triadic situations (Stoneman & Brody 1981). Additional evidence was received from the results of the second experiment (iii). Mothers took more initiative both in the dyads and the triads than did fathers. However, as a whole, the differences between mothers and fathers were few (i, ii, iii, iv), as has been found earlier (Belsky 1980; Lytton 1980).

Although the sex of the child has been argued to be an important determinant of parents' communication with their children, the empirical findings were not consistent. In the first experiment there were only minor differences between boys and girls and the same conclusion could be drawn on the basis of the second experiment, too. However, a few differences were found: Girls smiled more often than boys (i). In the second experiment, both mothers and fathers with daughters were rated more cooperative and expressed more emotionality in dyads than the parent-son pairs (ii). Furthermore, parents with daughters more regularly terminated their interactive exchanges with acknowledgements (iii). These results, together with the finding that girls responded more often to suggestions and questions nonverbally (iii), could be interpreted in terms of socialization.

Generally, the expression of positive affection is associated with feminine characteristics, and through socialization, it is argued that girls are encouraged to become warm and responsive (Schaffer 1979). Obviously, girls are socialized to become providers of emotional milieux in their family.

In addition to a few individual effects caused by the sex of parents and child, there were also a few interactions between the child's sex and that of parents (iii). Since nonverbal reactions were more frequent in same-sex pairs, this finding may indicate something about shared meanings and closeness within mother-daughter and father-son dyads. Earlier findings (Stoneman & Brody 1981) have maintained that same-sex pairs make more utterances to each other. The results of this study showed that it depended on the demands of the task and the content of the utterances. Parents made more demands upon the same-sex child in the problem-solving tasks, while more questions and suggestions were made in cross-sex pairs. However, in the planning task, both mothers and fathers made more demands upon the sons. These findings were only in partial accordance with the results of Weitzman et al. (1985) who found that mother's questions and directives were made more frequently upon sons than daughters.

The findings on the comparison of dyads with triads supported earlier results (Lamb 1976; Pedersen, Anderson & Cain 1980; Stoneman & Brody 1981) where less interaction took place between any particular pair when a third person was present. Although both mothers and fathers made fewer initiatives in the triads than in the dyads, children did not decrease their number of initiatives. The results showed that the number of the persons present exerted unique effects on different parent-child groups. For example, HE children reacted nonverbally slightly more often than did the LE children in dyads, whereas the opposite case was true in triads (iii). In addition, HE father-child dyads had higher scores of initiation/guidance while in triads LE families employed more initiation/guidance (ii). Furthermore, demanding language was more common in the dyads of the HE group and in the triads of the LE group. Demand-exchanges were more frequently initiated by mothers in triadic situations but slightly more frequently by fathers in dyads (iii).

Comparisons of the dyads with triads indicated greater similarities between mother-child dyads and triads than for father-child dyads and triads. Father-child dyads were different in initiation/guidance, cooperation and emotionality. This finding was discrepant with the results of Liddell et al. (1987), who found that mother-child dyads differed from triads in many more aspects of communication than did father-child dyads. Liddell et al. hypothesized that the similarities between triads and father-child dyads occur because father-child interaction patterns develop mainly in triadic settings. Mothers are primary caregivers and they interact with children in dyadic settings, but fathers and their children have little opportunity to be alone together.

If the explanation given by Liddell et al. (1987) is plausible, contradictory findings could be discussed in terms of cultural differences. In Finland, most mothers are employed similar to other Northern countries where 80 % of mothers of smallchildren belong to the workforce. Furthermore, Finnish mothers are more often employed full-time than in other Northern countries (Lahikainen & Strandell 1988). Accordingly, Finnish mothers' and fathers' opportunities to interact with their children are theoretically equal.

The findings on differences between mother and father in comparisons of the dyads with triads can also be discussed in terms of power and exchange relationships within the family (Aldous 1977). Still another explanation may be related to parents' role concepts. If fathers feel that mothers are the child experts in the family, as they do according to Sandqvist (1987), they give center stage to their wives in triadic situations. In these experientally diverse contexts, children are assumed to have unique opportunities to observe and practice communication skills.

These results also supported the earlier findings regarding the impact of the task characteristics (Aragona & Eyberg 1981; Jones & Adamson 1987). The particular nature of the tasks and situations appeared to affect the forms of interaction (i, ii, iii). The type of activity engaged in during social exchanges was of central importance to parent-child communication. This finding was demonstrated by the differences in parent-child communication between the beginning and the end of the tasks and also between different kinds of tasks.

On the other hand, the effects were not parallel. Results indicated that the type of activity exerted unique effects on different parent-child groups, a finding which is in accordance with recent reports (Weitzman et al. 1985). Although the setting (home or laboratory) had no noteworthy influence on the overall scores of communication, it exerted different effects on mother-child and father-child dyads from the two education groups (ii)(iii). For example, the results showed that the HE parent-child dyads at home differed from those in the laboratory. For that group, both mother-child and father-child dyads used more initiation/guidance and less cooperation at home. In the HE group, there were more minor differences for mothers than for fathers in this respect. Another finding was related to the parent's initiative. HE mothers showed more initiative in the laboratory while LE mothers initiated more at home. Fathers in the two groups did not differ from each other. It might have been that the differences between settings were not large because of the equipment used in data collection. In addition, visits at home were brief and were made only once.

On the basis of these results, it is not possible to state anything general about the effects of context. Instead, when considering the impact of situational factors on communication it is important to take into account the fact that the effects were dissimilar with different groups of individuals.

The findings for the situational factors indicated that Barker's conclusions (1963, 1978) are valid also in short-term structured situations. Obviously, persons perceive and make judgments on the situations and select the most appropriate behaviors. Individual interpretations and expectations may vary and different goals as well as the choice of means to attain these goals are reflected in the variations of behavior. In addition to context, even more occasional things influence communication.

Taken together, the results of this study indicated that parent-child communication is influenced by a set of variables and the issue of effects is very complex.

8. Evaluation of the methodology

As previously mentioned, theoretical formulations within an interactional framework have set great challenges for the development of new methodologies. Therefore, the next chapter will discuss in more detail the methodological issues of the present work.

Procedure. The use of a variety of data sources will minimize the problems of any single approach. However, interviews of parents on the representativeness of observable behavior remained limited and that information has been utilized only in discussions. Instead, the present study relies on this observation data and suffers from the well-known problems of such a source of information.

The procedures for this study were very carefully planned. The different tasks were selected to elicit a wide variety of verbal and nonverbal communication. The following issues deal mostly with the second experiment. The planning task, clay-modelling as well as the construction task were less structured than the problem-solving tasks which were definite-solution tasks, thus, requiring work along given instructions. Several tasks with different instructions provide a more representative picture of parent-child communication than any single situation. In order to make comparisons across situations ranging from the first stage to the second stage of the second experiment and from laboratory to a more natural setting, very similar tasks were used. Additionally, social interactional data were collected utilizing the same coding systems.

The samples were balanced according to parental education and sex of the parent and child. The data analysis is thus simpler.

Measures. The aim of the data analysis was to achieve a multilevel description of interaction. The results of the present study were based on global ratings (i)(ii), sequential data (iii) and qualitative measures (iv). The following discussion will examine the information differences at the various levels of analysis. Based on global ratings, the interaction between parents and children could be described more generally. When the global ratings are exactly defined, they reach a sufficient reliability. All the ratings were coded for the individuals in

order to account better for the possible variety within a group. The inherent interdependence of interactors was recognized, and thus the individual scores were combined into dyadic and triadic scores. In this way an attempt was made to treat the family as a system with mutually dependent parts. However, measures like global ratings tell very little about concrete communication between parents and children.

The next step was to analyze the data in more detail. Using categories of functions the flow of interaction was written into sequences. Due to serious problems surrounding the statistical techniques relevant to the analyses of sequential data, other appropriate measures were used. The results (iii) revealed differences between parent-child dyads in the use of interactive exchanges. Some parent-child dyads employed many question-exchanges, whereas others conveyed many demand-exchanges. The major weakness of this analysis was the fact that the particular context to which certain interactive exchanges were related was not possible to trace. For this reason the analysis was not able to proceed further.

The aim of the next step was to intensify the analysis of parent-child communication by identifying different patterns of communication. The resulting patterns could be taken as an attempt to integrate multilevel descriptions. Because the analysis of videotape-recordings is very laborious and time-consuming, this last step was limited to a single task. Thus, there was no possibility to evaluate the stability of the patterns across situations.

It is, however, possible to evaluate the temporal stability of other observational variables. Although many changes in communication could be argued to be due to instability, the variety of these changes was revealed even within global ratings, which have been proved to have more cross-time stability than frequency-count measures (e.g., Clarke-Stewart & Hevey 1981; Waters 1978). As evidence of stability, we could take the findings where variations could be found generally between and within the tasks. There were no outstanding differences between the two stages of the study. Thus the variations are assumed to be due to the demands of immediate situations.

The analyses of many aspects of communication were aimed at providing a representative picture of parent-child communica-

tion. Other approaches may be appropriate as well.

Statistical techniques. A repeated measures analysis of variance was conducted for the majority of the variables. The repeated measures design was selected because the same variables were measured on several occasions for each family and the method required fewer experimental units. By means of this method, it was possible to take into account that the same child was in interaction with both his mother and his father. The MANOVA approach appeared to be superior for this data and the research purposes of the present work. The interpretation of the interactions between many variables was often very complicated which might be regarded as a disadvantage. On the other hand, interaction effects between many factors may well evidence the complexity of the phenomenon under study.

9. Generalization of the results

During the last decade, the importance of ecological validity has been emphasized and natural settings have been preferred to laboratory ones. The results of the experiments carried out in the present work can, of course, be generalized only to particular tasks in which the parents and children participated.

Related to the experiments the major question is to what extent the principles or processes revealed in the laboratory continue to operate in a similar fashion in a person's more typical environment. On the basis of parents interviews more help and guidance was given to the child and less misbehavior and disagreements were present than was typical (the majority of mothers and nearly every second father were of this opinion). This finding could be interpreted as an indication that these kinds of observational periods are representative of one type of family interaction where people behave in a socially desirable and child-centered way.

One of the main results indicated that parental education was not of central importance in everyday communication. It could be assumed that the communication elicited by the laboratory experiments tells us little about the competence of parents and children as a whole. It is not possible for

an experiment to grasp the complexity of an individual's environment. While an experiment is not a perfect picture of reality, it may more strongly express the aspect of the socially real (e.g., Doise 1986). A few differences in teaching and patterns of communication indicated that the class-bound style is revealed through particular activities and in special contexts. One advantage of experimentation is the possibility to create situations which elicit different social relations. Of particular importance is to occasionally test the findings for ecological validity, for example, to consider links between the experimental situation and social context (Patterson & Reid 1984; Doise 1986).

Certainly, it would seem of primary importance to examine family interaction at home. However, there are still many events which are too private or too uncommon to be efficiently assessed by the researcher. In order to get a representative picture of family interaction through the observational approach, videotape-recordings had to be made of long duration, which produces a huge amount of material for analysis. A prospective longitudinal study is, however, required if we are to try to understand the development and changes in communication or interaction patterns between parents and children. Very little is known about the entity of interactional events in the family, its relationship to later social adjustment, and social interactional patterns outside the family.

In conclusion, it seems clear that collection of multivariate data, using multivariate methods and carrying out multivariate analyses has started, but as Clarke-Stewart (1988) states researchers must go on struggling to develop theories and models of effects. Models of parent-effect systems in which mothers, fathers, children, and contexts all interact with each other in complex ways over time are needed. The present study was an attempt in this direction.

Tiivistelmä: Vanhempien ja lasten kommunikointi strukturoiduissa tilanteissa

Tutkimuksen tarkoitus on 1) selvittää väitettä, jonka mukaan kielellisen ja ei-kielellisen kommunikoinnin tyylit vaihtelevat vanhempien sosiaalisen taustan mukaan, 2) tutkia sukupuolten välisiä kommunikoinnin eroja perheessä, 3) analysoida erilaisten tehtävien ja tilanteiden vaikutuksia vanhempien ja lasten kommunikointiin sekä 4) kehittää ja kokeilla vuorovaikutuksen kuvausmenetelmiä.

Tutkimus koostuu kahdesta kokeesta. Ensimmäisessä selvitettiin koulua aloittavien lasten ja heidän äitinsä tai isänsä (n= 40) kielellistä ja ei-kielellistä kommunikointia. Vanhempien koulutuksen mukaan parit jaettiin runsaasti koulutettujen ja vähän koulutettujen ryhmään. Koe toteutettiin laboratorio-oloissa. Vuorovaikutuksen aikaansaamiseksi vanhempia ja lasta pyydettiin osallistumaan tehtäviin (peli, keskustelu, askartelu), jotka olivat strukturoituja. Tehtävät valittiin aiempien tutkimusten ja esikokeiden perusteella. Tavoitteena oli, että ne soveltuisivat yhtä hyvin tytöille kuin pojille ja yhtä hyvin äideille kuin isillekin sekä virittäisivät monipuolisesti kielellistä ja ei-kielellistä kommunikointia. Vanhempien ja lasten vuorovaikutus kuvanauhoitettiin. Tutkimuksen kohteena oli toisaalta äidin ja lapsen, toisaalta isän ja lapsen kommunikointi sekä aikuisten koulutustaustan yhteydet heidän omaan ja lastensa kommunikointiin.

Toiseen kokeeseen osallistui 48 perhettä, joissa oli 4-vuotias lapsi. Koe suoritettiin kahdessa vaiheessa. Ensimmäisellä kerralla kaikki perheet osallistuivat laboratoriokokeeseen. Kokeen toiseen vaiheeseen osallistui puolet perheistä (n = 24). Näistä puolet (n = 12) osallistui kokeeseen toistamiseen laboratoriossa, puolet (n = 12) kotona.

Vuorovaikutustehtävät (rakentelu, keskustelu, paperintaitto, muovailu ja vapaa leikki) olivat toimintarakenteeltaan erilaisia. Mallin mukaan rakentamisessa (kahdet mallikuvat) ja paperintaitossa (hatun taittaminen toisen ja koiran taittelu toisen vanhemman kanssa) oli selkeä päämäärä, johon tuli pyrkiä. Sen sijaan keskustelu, muovailu ja leikkitilanne olivat vähemmän strukturoituja tehtäviä. Keskustelua varten oli kaksi materiaalia, toinen oli eläinpuistoa kuvaava kartta ja toinen leikki-

puistoa kuvaava piirros toimintamahdollisuuksineen. Vanhempaa ja lasta pyydettiin suunnittelemaan, mitä he leikkipuistossa tekisivät ja muistelemaan kokemuksiaan vastaavista paikoista. Leikkipuistoon liittyi tarina kissanpojasta, joka oli eksynyt ja piti etsiä puistosta. Muovailua ja leikkitilannetta varten annettiin materiaalia, mutta instruktiossa korostettiin että perhe saisi päättää mitä he haluavat tehdä.

Toiseen kokeeseen perheet osallistuivat sekä pareittain että ryhmänä. Dyadisia tehtäviä olivat rakentelu, keskustelu (kokeen I vaihe) ja paperintaitto (kokeen II vaihe). Triadien tehtävät olivat muovailu ja vapaa leikki (kokeen II vaihe). Toisessa kokeessa vanhempia ja lasta haastateltiin lyhyesti. Tavoitteena oli selvittää tilanteen vaikutuksia vanhempien ja lasten käyttäytymiseen. Tietoja on käytetty ainoastaan tuloksia arvioitaessa.

Tulosten analysoinnin tavoitteena oli kehittää ja kokeilla tarkkuustasoltaan erilaisia vuorovaikutuksen kuvausmenetelmiä. Kuvanauhoitukset mahdollistivat hyvinkin yksityiskohtaisen analysoinnin. Yleisarviointien avulla pyrittiin kokonaisvaltaiseen vanhempien ja lasten kommunikoinnin kuvaukseen. Lisäksi ensimmäisessä kokeessa kirjattiin tiettyjen kielellisen ja ei-kielellisen kommunikoinnin piirteiden esiintymistiheyksiä. Vuorovaikutuksen etenemisen kuvaamiseksi laadittiin kuvausjärjestelmä, jonka luokitteluyksikkönä oli akti, ts. lause tai kommunikaation kannalta keskeinen ei-kielellinen toiminta. Vuorovaikutus kirjattiin sekvensseiksi, joissa aktit olivat siinä järjestyksessä kuin ne todellisuudessa esiintyivät. Vuorovaikutusketjujen analysointi toisessa kokeessa kohdistui erityisesti siihen, miten ketjut aloitettiin ja miten ne päättyivät. Lisäksi analyysin tavoitteena oli kommunikaatiotyylien identifioiminen. Laaditun typologian varassa vanhempien ja lasten kommunikoinnista oli eroteltavissa erilaisia tyylejä, joissa yhdistyi toisaalta aikuisen ohjaustavat ja toisaalta lapsen asema vuorovaikutukseen osallistujana. Kommunikaatiotyylien analysointi kohdistui vain rakentelutehtävään. Tutkimuksessa arvioidaan eri tarkkuustasolla toteutettujen analyysien merkitystä kommunikaation kuvaamisessa.

Ongelmanasetteluun vaikuttivat Bernsteinin (1961, 1974, 1977, 1980) teoria ja tutkimustulokset, joiden mukaan vanhempien ja lasten kielenkäyttö vaihtelee sosioekonomisten tekijöiden funktiona. Tässä tutkimuksessa sosioekonomisia tekijöitä edustaa vanhempien koulutus. Ensimmäisen kokeen tulosten mukaan

useimmissa puheen piirteissä ja ei-kielellisten ilmausten käytössä ei ollut koulutusryhmien välisiä eroavuuksia. Toisen kokeen tulokset osoittivat, että koulutustaso ei ollut yhteydessä vanhempien ja lasten arkipäivän kommunikointiin. Koulutuksella oli kuitenkin vaikutusta kommunikointiin, joka koski toimintaohjeiden tarkkuutta ja niiden kontrollointia sekä puheenvuorojen vaihtoa (koe 1). Runsaasti koulutetut vanhemmat selittivät pelisäännöt tarkemmin ja myös kontrolloivat yleisemmin sääntöjen noudattamista kuin vähän koulutusta saaneet vanhemmat. Toisessa kokeessa havaittiin, että runsaasti koulutetut vanhemmat käyttivät opetustyylejä, jotka edellyttivät lapselta vaativampia ajattelutoimintoja kuin vähän koulutettujen vanhempien käyttämät opetustyylit (koe 2).

Myös kommunikaatiotyyleissä havaittiin koulutusryhmien välillä eroja (koe 2). Kommunikoinnin tyyli, jolle oli ominaista se että ongelmakohdissakin edettiin kysymysten avulla, selittämällä ja vertailemalla mallia ja rakennelmaa niin että lapsi itse oivaltaisi oikean ratkaisun, oli yleisempi runsaasti koulutettujen kuin vähän koulutusta saaneiden parien keskuudessa. Sitä vastoin aikuisjohtoinen tyyli, jolle oli ominaista se että lapseen kohdistuvat odotukset olivat vähäisiä ja pääpaino oli enemmän tavoitteen saavuttamisessa kuin yhteistyössä, oli harvinainen runsaasti koulutettujen ryhmässä. Kommunikoinnin tyylien osalta ei voida arvioida, onko analyysillä tavoitettu jotain pareille laajemminkin ominaisesta kommunikoinnin tavasta, koska tyylien pysyvyyttä tehtävästä toiseen ei selvitetty.

Koulutusryhmien välisten erojen vähäisyys viittaa siihen, että Bernsteinin esittämät oletukset eivät ole yleisesti päteviä. Näyttäisi siltä, että erot tulevat esille silloin, kun on kyseessä erityiset kommunikoinnin tehtävät. Olisikin tarpeen eritellä lähemmin, millä vanhempien kommunikoinnin piirteillä ja missä tilanteissa on merkitystä lasten kielenkäytön erojen syntyyn. Toisaalta käsitys kielenkäytön erojen kytkeytymisestä yksinomaan vanhempien sosiaaliseen asemaan lienee suppea. Sen sijaan kulttuuriin liittyvät ominaispiirteet ja perheiden elämäntyyliin liittyvät tekijät laajemmin voisivat olla yhteydessä lasten kommunikatiivisen kompetenssin kehitykseen, etenkin jos korostetaan vuorovaikutuskokemusten tärkeyttä tässä prosessissa.

Tutkimuksessa tarkasteltiin myös vanhempien ja lapsen sukupuolen yhteyttä kommunikointiin. Tulosten mukaan äitien ja

isien kesken oli vain vähän eroja (koe 1, koe 2). Äidit tekivät enemmän aloitteita kuin isät sekä dyadisissa että triadisissa tilanteissa (koe 2). Erot tyttöjen ja poikien kesken olivat vähäisiä sekä ensimmäisessä että toisessa kokeessa. Tytöt kuitenkin hymyilivät enemmän kuin pojat (koe 1) ja vanhempien ja tyttöjen parit arvioitiin toisiaan kohtaan emotionaalisemmiksi kuin vanhempien ja poikien parit (koe 2). Vuorovaikutusketjut päättyivät useammin vahvistavaan reaktioon vanhempien ja tyttöjen pareilla (koe 2). Lisäksi havaittiin, että tytöt reagoivat jonkin verran poikia useammin tehtyihin ehdotuksiin ja kysymyksiin ei-kielellisesti (koe 2).

Tulosten mukaan äitien ja tyttöjen kesken sekä isien ja poikien kesken reagoitiin toisen tekemiin aloitteisiin useammin eikielellisesti kuin vastakkaista sukupuolta olevien kesken (koe 2). Tehtävästä riippuen kommunikoinnin sisällöt myös vaihtelivat siten, että äitien ja tyttöjen sekä isien ja poikien kesken esitettiin enemmän toimintakehotuksia ongelmanratkaisutehtävissä kuin vastakkaista sukupuolta olevien kesken. Sitä vastoin viimeksi mainitut esittivät toisilleen enemmän kysymyksiä ja tekivät enemmän ehdotuksia tehtävän ratkaisemiseksi kuin samaa sukupuolta olevat. Nämä tulokset viittaavat siihen, että vanhemmat ovat vaativampia samaa sukupuolta olevaa lasta kohtaan ja käsittelevät varovammin vastakkaista sukupuolta olevaa lasta. Toisaalta kuitenkin sekä äidit että isät esittivät kehotuksia ja vaatimuksia enemmän pojille kuin tytöille keskustelutehtävässä.

Tulokset osoittivat selvästi, että erilaiset kontekstit vaikuttavat eri tavoin vanhempien ja lasten kommunikointiin. Vaikutukset olivat erilaisia koulutuksesta ja sukupuolesta riippuen (koe 2). Vertailtaessa dyadeja triadeihin vahvistuivat aikaisemmat havainnot siitä, että aikuiset vähentävät puhettaan, kun tilanteeseen tulee lisää henkilöitä. Sen sijaan lasten aloitteiden määrä ei muuttunut. Tulos kuitenkin heijastaa myös sitä, että kyseessä oli erityinen tilanne, jossa toimitaan lapsikeskeisellä tavalla.

Vertailtaessa dyadisia tilanteita triadisiin havaittiin, että isälapsi –parit erosivat useammin triadin vuorovaikutuksesta kuin äiti-lapsi –parit (koe 2). Tulosta voidaan tulkita siten, että isät kokevat äidit asiantuntijoiksi lapsia koskevissa asioissa ja näin ollen antoivat heidän ohjata tilannetta.

Tutkimuksessa vahvistuivat myös aikaisemmat käsitykset tehtävien asettamien vaatimusten vaikutuksista käyttäytymiseen (koe 1 ja koe 2). Vanhempien ja lasten kommunikoinnissa tapahtui muutoksia paitsi tehtävästä toiseen siirryttäessä myös tehtävän alusta loppuun. Lisäksi vaikutukset olivat erilaisia riippuen sukupuolesta ja vanhempien koulutuksesta. Myös ympäristön (koti vs. laboratorio) vaikutukset olivat erilaisia koulutuksen ja sukupuolen mukaan. Kaiken kaikkiaan kodin ja laboratorion väliset erot olivat pienet. Ilmeisesti tutkijat tutkimuslaitteineen aiheuttivat vierauden tunnetta, joka ei lyhyen käynnin aikana häviä. Toisaalta voidaan pohtia sitä, miten monia käyntejä ja miten pitkäaikaista kontaktia edellyttäisi se, että perheen vuorovaikutus ei häiriintyisi ainakin jossain määrin ulkopuolisten läsnäolosta.

Vanhempien ja lasten vuorovaikutus muotoutuu monen tekijän yhteisvaikutuksesta. On selvää, että eri tilanteissa henkilöt tekevät arviointeja ja tulkintoja tapahtumista aikaisempien kokemustensa perusteella ja sovittavat toimintansa tilanteen vaatimusten mukaan. Tulkintojen ja arviointien erilaisuus, eri tavoin asetetut tavoitteet ja keinot tavoitteeseen pääsemiseksi näkyvät erilaisina toimintoina näinkin lyhytkestoisissa, strukturoiduissa tilanteissa.

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APPENDICES

Appendix 1. The effect[1] of parental education, sex of parent and child, and task on general aspects of dyadic communication

MANOVAs:

Initiation/guidance:
Parental education, $F(1,44) = 10.28$, $p < .01$
Task, $F(1,44) = 10.75$, $p < .01$
Phase of task, $F(1,44) = 32.74$, $p < .001$
Task x Phase of task, $F(1,44) = 19.42$, $p < .001$
Child sex x Parent sex x Task x Phase of task, $F(1,44) = 7.63$, $p < .01$

Cooperation:
Child sex, $F(1,44) = 7.18$, $p < .01$
Task, $F(1,44) = 14.85$, $p < .001$
Phase of task, $F(1,44) = 13.52$, $p < .001$

Emotionality:
Child sex, $F(1,44) = 10.41$, $p < .01$
Task, $F(1,44) = 18.24$, $p < .001$
Task x Phase of task, $F(1,44) = 4.81$, $p < .05$
Parental education x Task x Phase of task, $F(1,44) = 8.74$, $p < .01$

Appendix 2. The effect of parental education, child sex, and task on general aspects of triadic communication

MANOVAs:

Initiation/guidance:
Phase of task, $F(1,20) = 4.87$, $p < .05$
Task, $F(1,20) = 4.28$, $p < .05$
Child sex x Task, $F(1,20) = 4.28$, $p < .05$

Cooperation:
Phase of task, $F(1,20) = 5.83$, $p < .05$

Emotionality:
Task, $F(1,20) = 4.62$, $p < .05$
Phase of task, $F(1,20) = 4.92$, $p < .05$

Appendix 3. The effect of parental education, sex of parent and child, and task on measures of basic social skills of dyadic interaction

MANOVAs:

Parent-initiated exchanges:
Task, $F(1,44) = 15.41$, $p < .001$
Parent sex x Task, $F(1,44) = 4.64$, $p < .05$

Acknowledgements in child-initiated exchanges:
Task, $F(1,44) = 8.67$, $p < .01$

Acknowledgements in parent-initiated exchanges:
Child sex, $F(1,44) = 8.21$, $p < .01$

[1] Only significant effects are mentioned

Task, $F(1,44) = 27.88$, $p < .001$

Child's nonverbal reactions to questions and suggestions:
Child sex, $F(1,44) = 4.29$, $p < .05$
Task, $F(1,44) = 18.94$, $p < .001$

Child's nonverbal reactions to all the initiatives:
Child sex x Parent sex, $F(1,44) = 5.00$, $p < .05$
Task, $F(1,44) = 79.78$, $p < .001$

Appendix 4. The effect of parental education, sex of parent and child, and task on measures of basic social skills of triadic interaction

MANOVAs:

Child-initiated exchanges:
Task, $F(1,20) = 6.02$, $p < .05$

Parent-initiated exchanges:
Education, $F(1,20) = 5.15$, $p < .05$
Parent sex, $F(1,20) = 17.63$, $p < .001$

Acknowledgements in parent-initiated exchanges:
Task, $F(1,20) = 4.87$, $p < .05$
Parent sex x Task, $F(1,20) = 6.48$, $p < .05$
Education x Child sex x Parent sex x Task, $F(1,20) = 5.98$, $p < .05$

Child's nonverbal reactions to questions and suggestions:
Education x Child sex x Parent sex, $F(1,20) = 5.38$, $p < .05$
Education x Child sex x Parent sex x Task, $F(1,20) = 4.67$, $p < .05$

Child's nonverbal reactions to all the initiatives:
Parent sex, $F(1,20) = 6.30$, $p < .05$
Task, $F(1,20) = 11.35$, $p < .01$

Appendix 5. The effect of parental education, sex of parent and child, and task on measures of exchanges in dyadic communication

MANOVAs:

Question-exchanges:
Task, $F(1,44) = 114.76$, $p < .001$

Demand-exchanges:
Child sex, $F(1,44) = 4.32$, $p < .05$
Parent sex, $F(1,44) = 4.12$, $p < .05$
Child sex x Parent sex, $F(1,44) = 9.20$, $p < .01$
Task, $F(1,44) = 83.37$, $p < .001$
Child sex x Parent sex x Task, $F(1,44) = 6.16$, $p < .05$

Suggestion-exchanges:
Child sex x Parent sex, $F(1,44) = 5.78$, $p < .05$
Task, $F(1,44) = 19.65$, $p < .001$
Child sex x Task, $F(1,44) = 6.69$, $p < .01$

Statement-exchanges:
Child sex, $F(1,44) = 6.62$, $p < .01$

Appendix 6. The effect of parental education, sex of parent and child, and task on measures of exchanges in triadic communication

MANOVAs:

Question-exchanges:
Task, $F(1,20) = 4.34$, $p < .05$
Education x Child sex x Parent sex x Task, $F(1,20) = 9.70$, $p < .01$

Demand-exchanges:
Task, $F(1,20) = 9.98$, $p < .01$

Statement-exchanges:
Parent sex, $F(1,20) = 4.44$, $p < .05$
Education x Child sex x Parent sex x Task, $F(1,20) = 6.74$, $p < .05$

Appendix 7. The effect of parental education, child sex, and number of persons on general aspects of communication

MANOVAs:
For mother-child dyad and clay-modelling

Initiation/guidance:
Phase of task, $F(1,20) = 13.78$, $p < .001$

Cooperation:
Phase of task, $F(1,20) = 7.47$, $p < .01$

Emotionality:
Phase of task, $F(1,20) = 7.03$, $p < .05$

For mother-child dyad and construction play

Initiation/guidance:
Phase of task, $F(1,20) = 5.98$, $p < .05$

Cooperation:
Number of persons, $F(1,20) = 7.19$, $p < .01$
Education x Number of persons x Phase of task, $F(1,20) = 4.38$, $p < .05$
Child sex x Number of persons x Phase of task, $F(1,20) = 4.38$, $p < .05$

Emotionality:
Phase of task, $F(1,20) = 9.61$, $p < .01$

For father-child dyad and clay-modelling

Initiation/guidance:
Phase of task, $F(1,20) = 11.99$, $p < .01$
Number of persons x Phase of task, $F(1,20) = 4.66$, $p < .05$

Cooperation:
Phase of task, $F(1,20) = 4.18$, $p < .05$
Education x Phase of task, $F(1,20) = 4.18$, $p < .05$

Emotionality:
Education x Child sex, $F(1,20) = 4.22$, $p < .05$
Education x Number of persons x Phase of task, $F(1,20) = 11.41$, $p < .01$

For father-child dyad and construction play

Initiation/guidance:
Number of persons, $F(1,20) = 5.91$, $p < .05$
Education x Number of persons, $F(1,20) = 5.14$, $p < .05$
Phase of task, $F(1,20) = 10.08$, $p < .01$

Number of persons x Phase of task, $F(1,20) = 6.14$, $p < .05$

Cooperation:
Education, $F(1,20) = 6.05$, $p < .05$
Education x Child sex, $F(1,20) = 4.50$, $p < .05$
Number of persons, $F(1,20) = 7.08$, $p < .05$
Education x Number of persons x Phase of task, $F(1,20) = 19.03$, $p < .001$

Emotionality:
Education x Number of persons x Phase of task, $F(1,20) = 10.31$, $p < .01$

Appendix 8. The effect of parental education, sex of parent and child, and number of persons on measures of basic social skills of interaction

MANOVAs:

Parent-initiated exchanges during planning and clay-modelling:
Parent sex, $F(1,20) = 8.48$, $p < .01$
Number of persons, $F(1,20) = 139.29$, $p < .001$

Parent-initiated exchanges during planning and construction play:
Parent sex, $F(1,20) = 12.01$, $p < .01$
Number of persons, $F(1,20) = 172.59$, $p < .001$

Acknowledgements in parent-initiated exchanges during planning and clay-modelling:
Child sex x Parent sex, $F(1,20) = 6.30$, $p < .05$
Number of persons, $F(1,20) = 30.35$, $p < .001$
Education x Child sex x Parent sex x Number of persons, $F(1,20) = 8.44$, $p < .01$

Acknowledgements in parent-initiated exchanges during planning and construction play:
Number of persons, $F(1,20) = 21.86$, $p < .001$

Acknowledgements in child-initiated exchanges during planning (with father) and construction play:
Number of persons, $F(2,19) = 4.40$, $p < .05$

Child's nonverbal reactions to questions and suggestions during planning and construction play:
Education x Child sex x Parent sex, $F(1,20) = 4.87$, $p < .05$

Child's nonverbal reactions to all the initiatives during planning and clay-modelling:
Education x Number of persons, $F(1,20) = 4.42$, $p < .05$

Child's nonverbal reactions to all the initiatives during planning and construction play:
Parent sex x Number of persons, $F(1,20) = 5.58$, $p < .05$

Appendix 9. The effect of parental education, sex of parent and child, and number of persons on measures of exchanges in triadic communication

MANOVAs:

Question-exchanges during planning and clay-modelling:
Number of persons, $F(1,20) = 6.74$, $p < .05$

Question-exchanges during planning and construction play:
Number of persons, $F(1,20) = 18.13$, $p < .001$

Demand-exchanges during planning and clay-modelling:
Education x Number of persons, $F(1,20) = 4.15$, $p < .05$

Demand-exchanges during planning and construction play:
Parent sex x Number of persons, $F(1,20) = 5.07$, $p < .05$

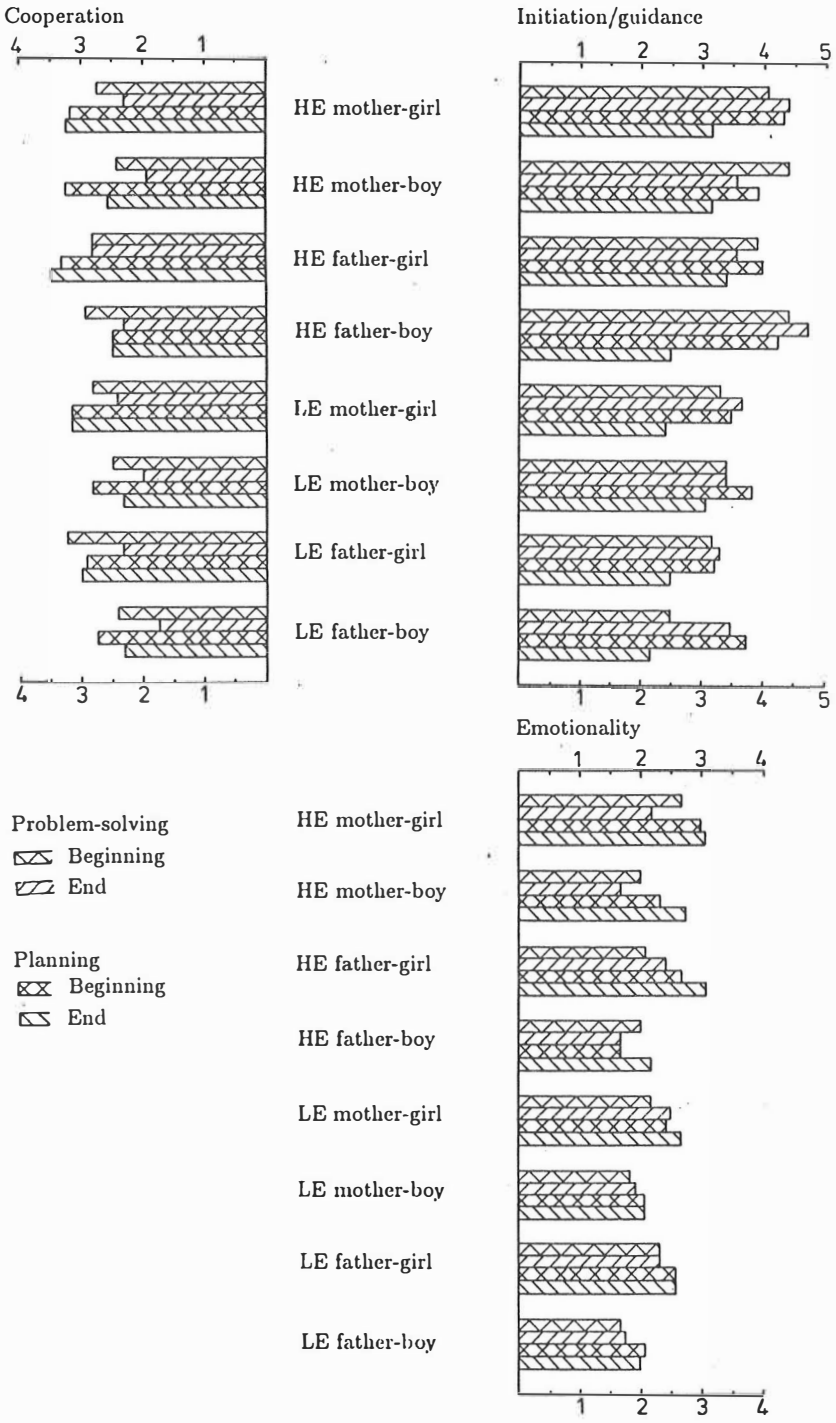
Suggestion-exchanges during planning and clay-modelling:
Number of persons, $F(1,20) = 7.62$, $p < .01$

Suggestion-exchanges during planning and construction play:
Number of persons, $F(1,20) = 6.24$, $p < .05$

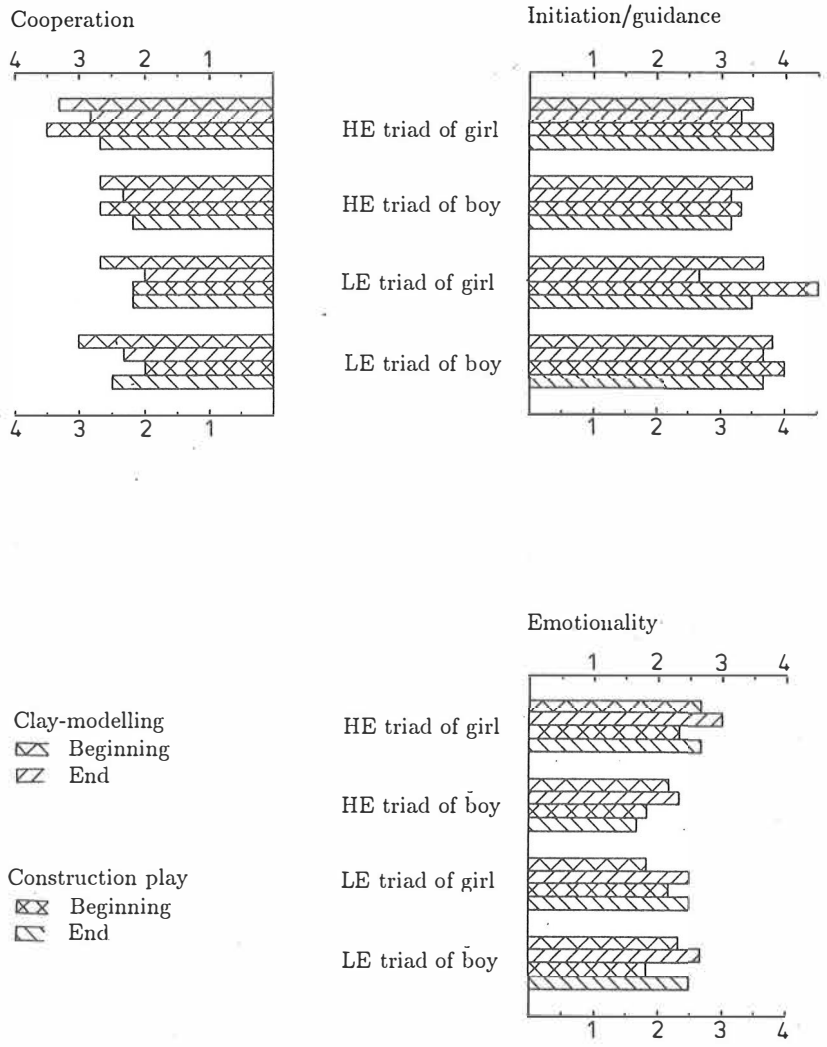
Statement-exchanges during planning and clay-modelling:
Education x Parent sex, $F(1,20) = 4.56$, $p < .05$
Education x Child sex x Parent sex, $F(1,20) = 5.08$, $p < .05$
Number of persons, $F(1,20) = 7.28$, $p < .01$
Education x Child sex x Parent sex x Number of persons, $F(1,20) = 4.58$, $p < .05$

Statement-exchanges during planning and construction play:
Parent sex, $F(1,20) = 5.97$, $p < .05$
Education x Parent sex, $F(1,20) = 8.35$, $p < .01$
Number of persons, $F(1,20) = 13.46$, $p < .01$

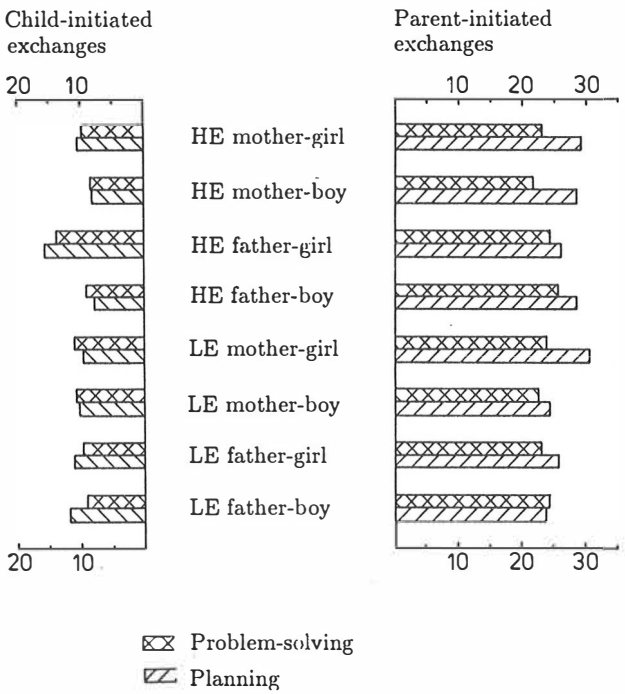
Appendix 10. Comparison (HE vs LE education group, mother-child vs father-child dyad, parent-girl vs parent-boy dyads, problem-solving vs planning task) of ratings in general aspects of dyadic communication.



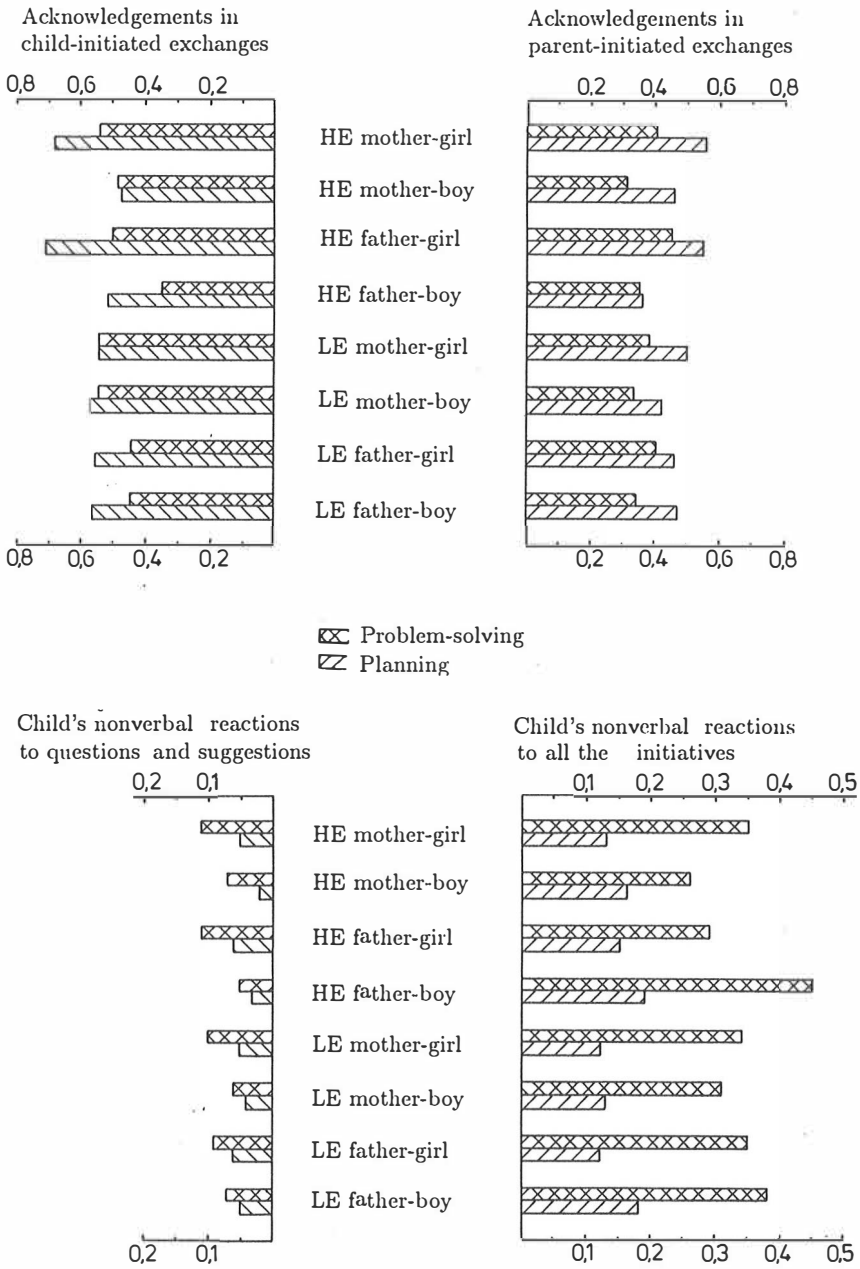
Appendix 11. Comparison (HE vs LE education group, triads of girl vs boy, clay-modelling vs construction play) of ratings in general aspects of triadic communication.



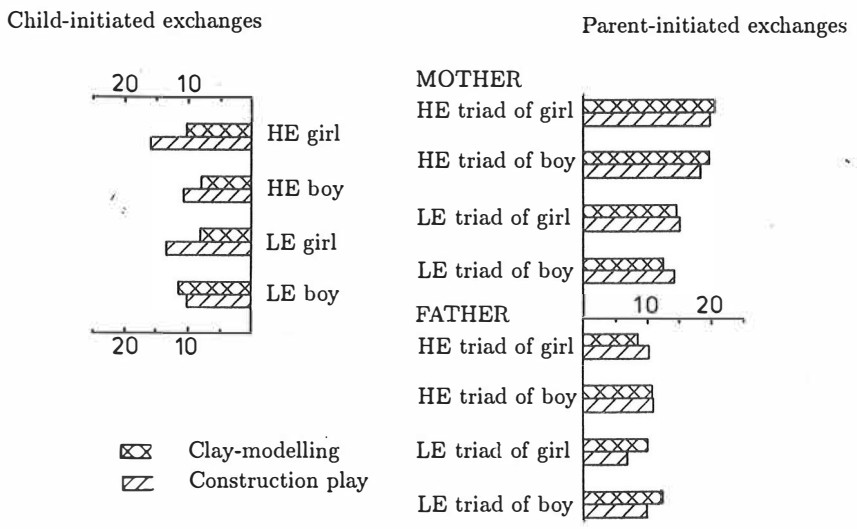
Appendix 12. Comparison (HE vs LE education group, mother vs father, girl vs boy, problem-solving vs planning task) of frequencies of parent-initiated and child-initiated exchanges in dyads.



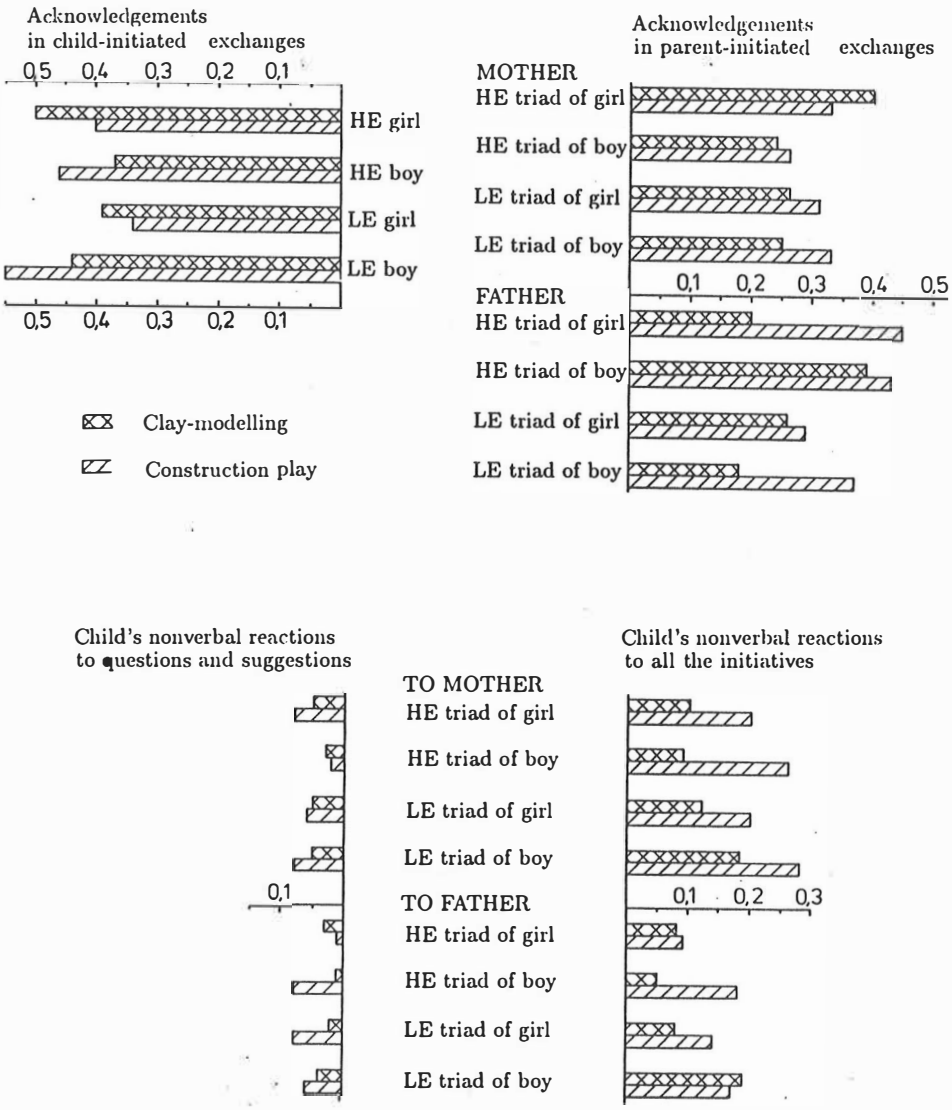
Appendix 13. Comparison (HE vs LE education group, mother- child vs father-child dyad, parent-girl vs parent-boy dyad, problem-solving vs planning task) of percentages of responses in categories of basic social skills of dyadic interaction.



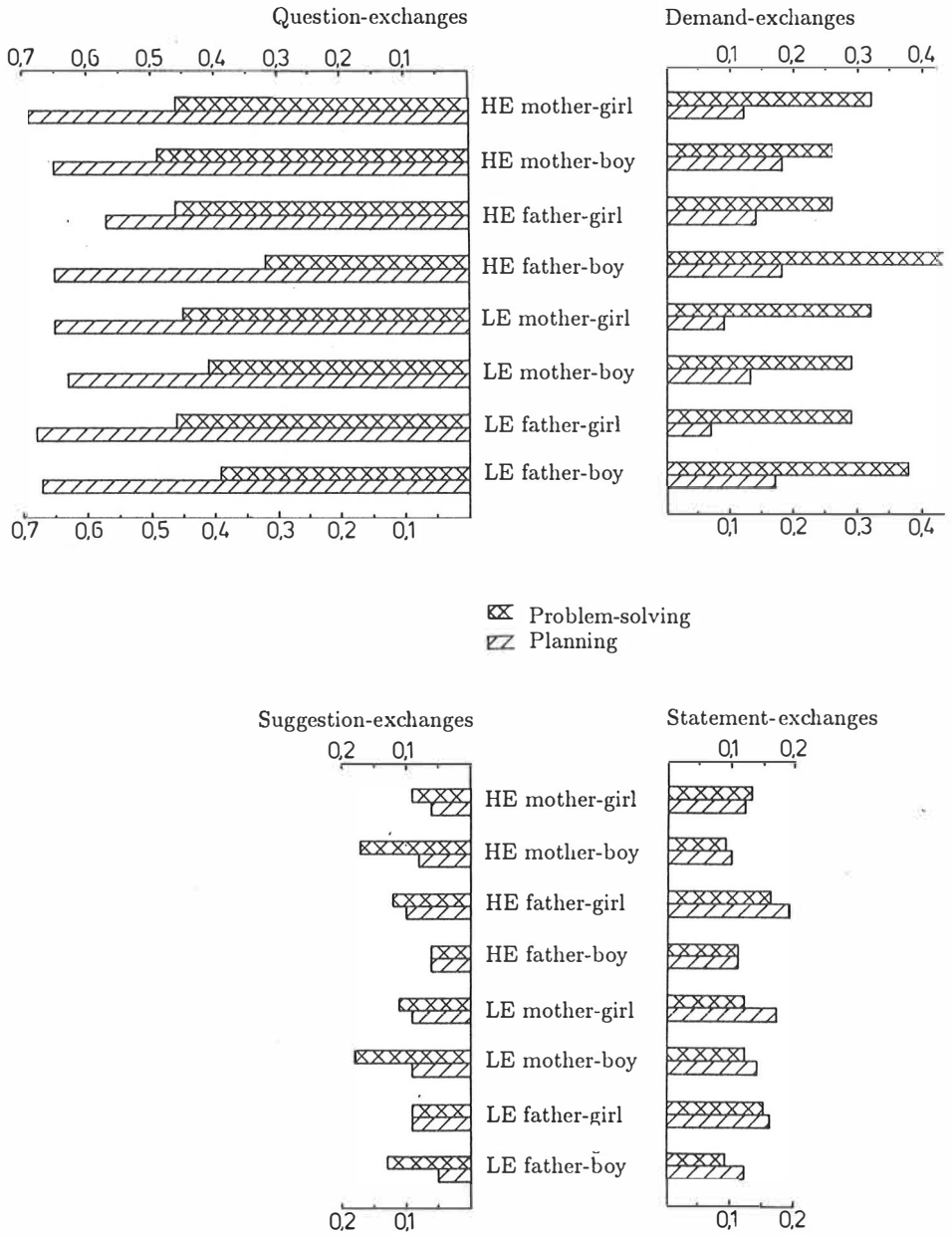
Appendix 14. Comparison (HE vs LE education group, mother vs father, girl vs boy, clay-modelling vs construction play) of frequencies of parent-initiated and child-initiated exchanges in triads.



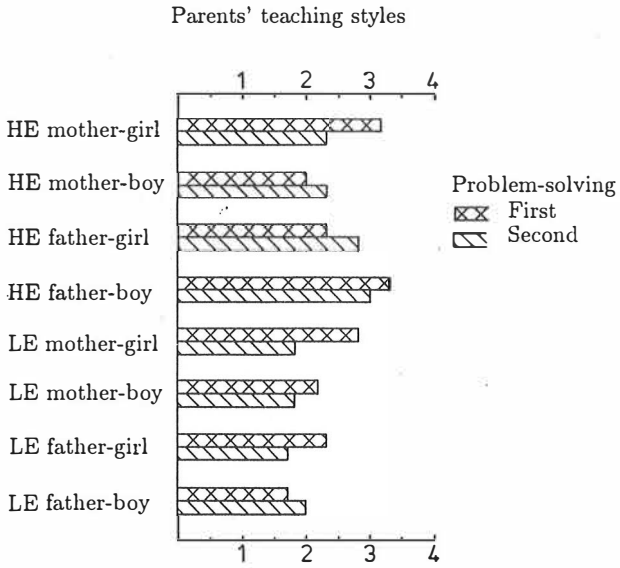
Appendix 15. Comparison (HE vs LE education group, mother vs father, girl vs boy, clay-modelling vs construction play) of percentages of responses in categories of basic social skills of triadic interaction.



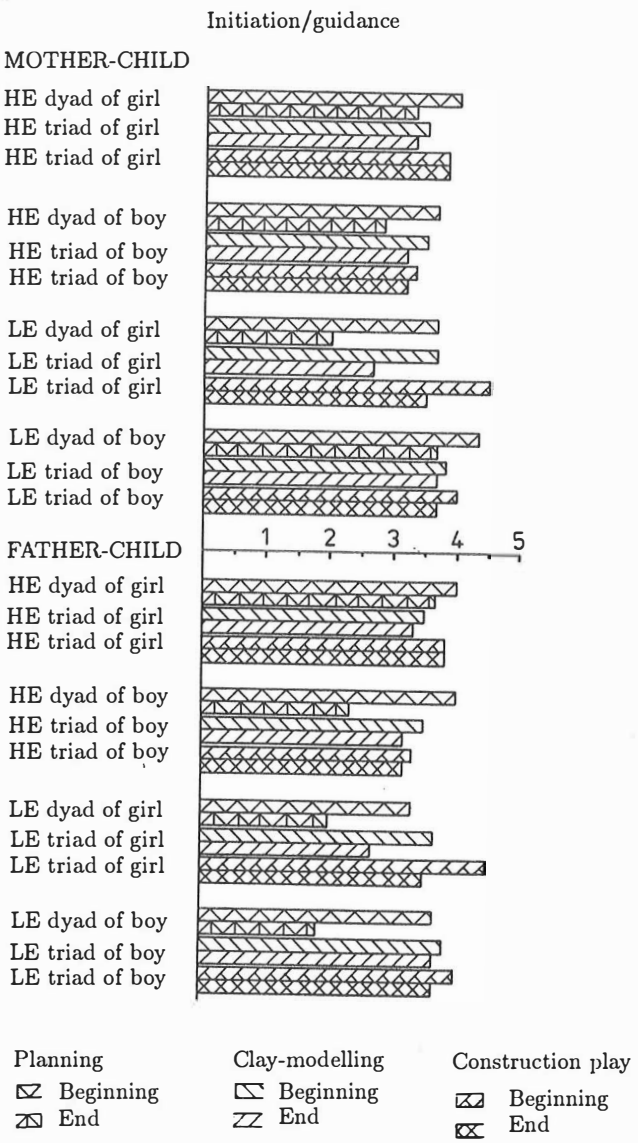
Appendix 16. Comparison (IIE vs LE education group, mother-child vs father-child dyad, parent-girl vs parent-boy dyad, problem-solving vs planning task) of percentages of utterances in categories of functions of dyadic communication.



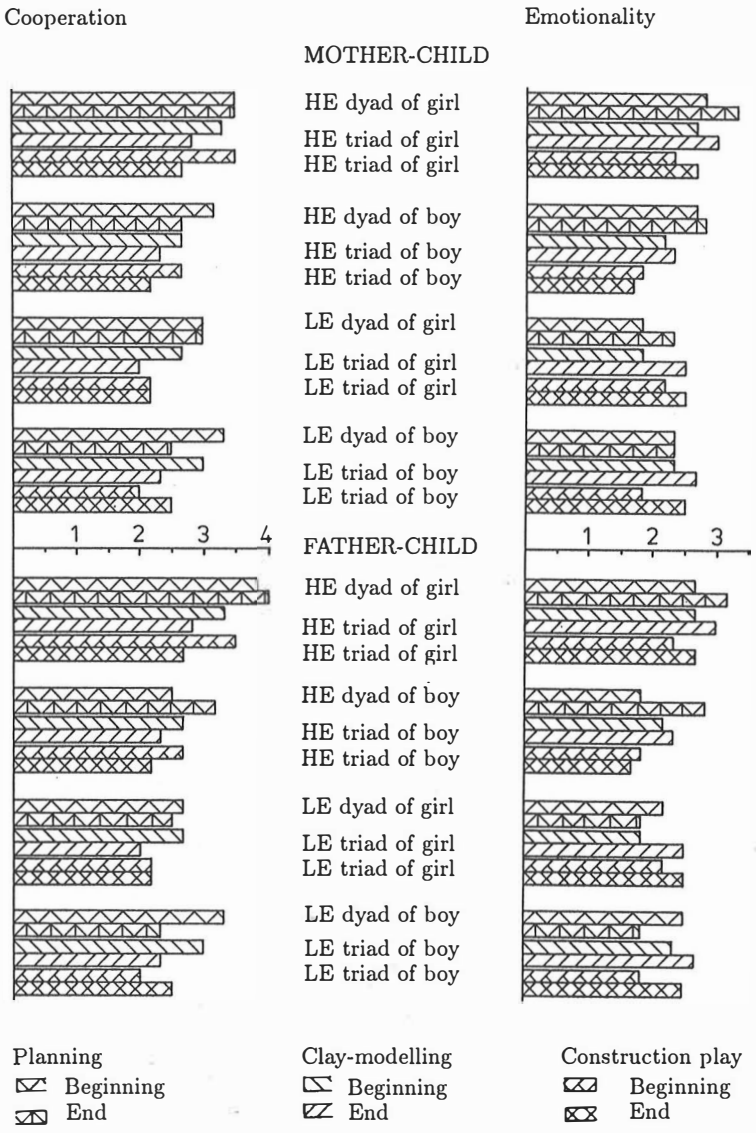
Appendix 17. Comparison (HE vs LE education group, mother vs father, parent-girl vs parent-boy dyad, the first vs the second problem-solving task) of ratings in teaching.



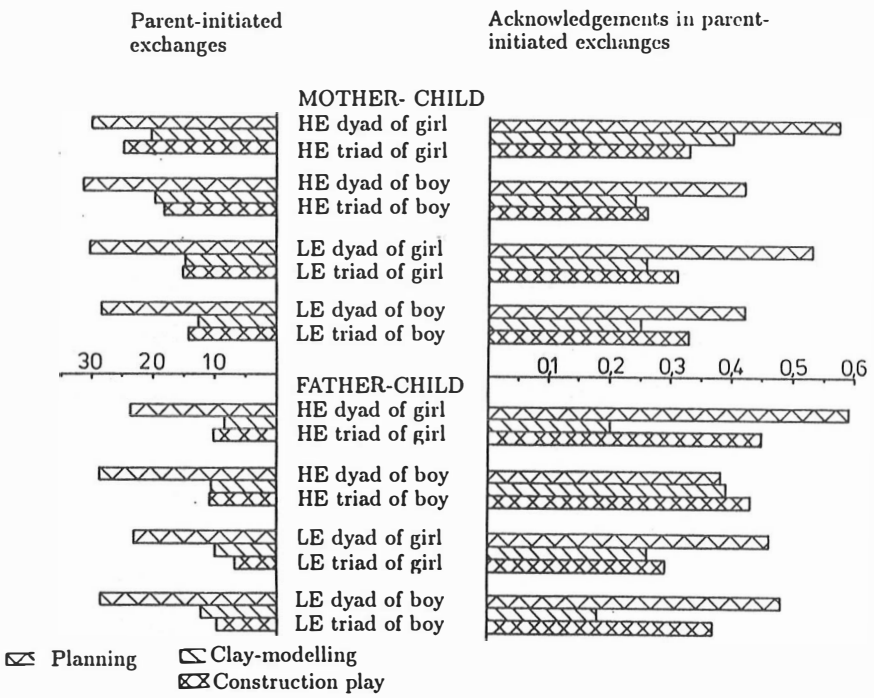
Appendix 18. Comparison (HE vs LE education, mother-child dyad vs triad, father-child dyad vs triad) of ratings of general aspects of communication.

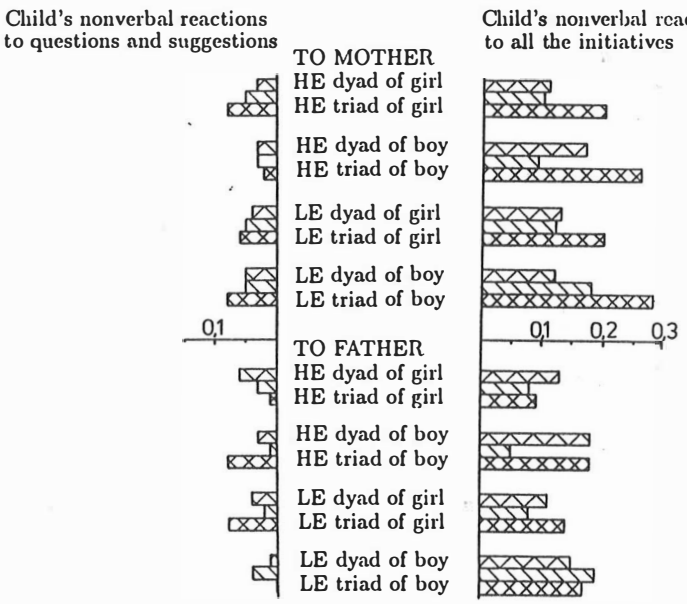


Appendix 19. Comparison (HE vs LE education group, mother-child dyad vs triad, father-child dyad vs triad) of ratings of general aspects of communication.



Appendix 20. Comparison (HE vs LE education group, mother-child dyad vs triad, father-child dyad vs triad) of frequencies of parent-initiated exchanges and comparison of percentages of responses in categories of basic social skills of interaction.





Appendix 21. Comparison (HE vs LE education group, mother-child dyad vs triad, father-child dyad vs triad) of percentages of functions of communication.