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**ABSTRACT**

One of the purposes of this study was to develop a coding scheme based on Wertsch's theoretical extension of Vygotsky's ideas for describing parent-child interaction during exploration. This scheme was then applied to identify the most common patterns of parent and child situation definitions, negotiations of shared definitions, and questions related to novel objects. Participants in the study were 60 children 3 to 6 years of age and their parents. The children attended a preschool or an elementary school in one of two small cities in a southeastern state. Possible differences in these patterns due to age of the child, parent present and individual differences in the child's initial tendency to explore independently were examined. (PCB)

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Interaction During Exploration

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Describing Parent-Child Interaction

During Exploration: Situation

Definitions, Negotiations and Questions

Running head: INTERACTION DURING EXPLORATION

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## Describing Patterns of Parent-Child

## Interaction During Exploration

There is plenty of evidence that parents can and do influence the exploration of their infants and young children in important ways (see Henderson, 1984a for a review). Parents provide or do not provide opportunities and objects for exploration, act as a secure base for exploratory excursions, model attitudes of curiosity or disinterest, respond to child questions, and exhibit a variety of other behaviors that facilitate, inhibit or interfere with exploration.

Investigators have linked a number of social learning variables such as modeling and reinforcement by parents to exploration (e.g., Endsley, 1979; Henderson, 1984b), but these descriptions have generally failed to capture the collaborative nature of the parent-child interaction or to provide a broad theoretical conception for understanding parental influences. Henderson (1984b), hinted at a broader view by drawing an analogy between Vygotsky's notion of the zone of proximal development in adult-child collaboration in the solution of cognitive problems and parental influences on young children's exploratory behavior. He reported that some children increased their levels of exploratory behavior as parents helped them reveal potential not apparent in exploration done independent of external assistance. However, Henderson did not use Vygotskian concepts for describing the nature of parental assistance.

Wertsch (1983) has provided a Vygotskian framework that could be applied to parent-child interaction during exploration. The central concept in Wertsch's analysis is the "situation definition," the way a context is defined by those who operate in the setting. Given a situation involving novel objects, parents and children may define the "task" in different ways. For example, a child may have an overall schema for the task of independent investigation whereas the parent may see the situation as one in which parent-directed learning is appropriate. The match or mismatch in situation definitions may determine whether or not parent-child collaboration occurs to optimize the child's exploratory behavior.

A second, related component of Wertsch's extension of Vygotsky involves the "negotiation" of an "intersubjective

definition" of the situation. When child and parent situation definitions do not match, the parties must act to agree or compromise if effective collaboration in exploration is to occur. Either party might make a bid to get the other to adopt his or her definition of the situation.

The third relevant aspect of Wertsch's theoretical approach is related to the negotiation of the intersubjective definition. Following Vygotsky's reasoning, Wertsch argues that the basic means of negotiation is semantic mediation, the use of linguistic signs or speech. A type of speech that seems to be of particular importance in interaction during exploration of novel objects would be questions, both those asked by the parent and those asked by the child.

One purpose of the present study was to develop a coding scheme based on Wertsch's theoretical extension of Vygotsky's ideas for describing parent-child interaction during exploration. This system was then applied to identify the most common patterns of parent and child situation definitions and negotiations of shared definitions through verbal and nonverbal means and to examine possible differences in these patterns as a function of age, parent present, and individual differences in the child's initial tendency to explore independently.

## Method

### Participants

The 60 children 3-6 years of age ( $M = 57.7$  mos.,  $SD = 11.0$ ) and their parents were randomly selected from a group of 58 who were part of a study reported earlier. There were approximately equal numbers of boys and girls. The children were attending a preschool or an elementary school in one of two small cities in a southeastern state. Two age groups were determined by grouping 3 and 4-year olds and 5 and 6-year olds together. Children were identified as high, medium, or low in their tendency to explore independently on the basis of their responses to a set of five tasks from Henderson and Moore (1979) and Henderson (1984b): (a) preference for complexity of two-dimensional figures; (b) preference for hidden or apparent objects; (c) verbal and manipulatory exploration of small novel objects in 18 drawers in a box; (d) verbal and manipulatory exploration of a Banta box (Banta, 1970); and (e) verbal and manipulatory exploration of a

flat board covered with a variety of manipulanda. Factor scores derived from factor analyses of the dependent variables from the tasks were combined and the distribution of scores was trisected to categorize children.

### Parent Sessions

Children and parents come to be videotaped while exploring a set of four toys at the child's school about one month after the original assessment. Toys were placed on the floor and parents were asked to allow the child to select one toy at a time and bring it to a table about 1.5 m from the toys. Parents and children were told to relax and act as if they might if the child received a new toy at home. They were also told the child could stop at any time and did not have to play with all toys. Sessions lasted 15 minutes or until the child stopped playing.

Two sets of toys were used in counterbalanced order in combination with counterbalanced parent session order. Three of the toys in each set were specially constructed toys labeled novel-perceptual toys were a 30-cm high windmill with two rotors and a plexiglass box 30 cm high and 10 cm wide and deep with a chute for dropping marbles in a small door in the front. These toys were covered with envelopes containing pictures and boxes holding novelty toys. The bizarre-perceptual toys were dark colored boxes with toy insects and skeletons on the outside and inside. One box contained a hidden recorder making strange noises and the other contained a devil's mask on a mannequin head. The novel-problem-solving toys were both constructed to require children to discover a way to remove novelty toys through a small opening. The novelty items in one toy could be dislodged from a crevice with a stick inserted in a wooden block beside the crevice. In the other problem-solving toys, novelty items could be removed from a 1 m long plexiglass duct by launching a 20 cm long wooden rod through the duct. The other toy was either a conventional set of blocks or a wooden puzzle.

### Coding System

The coding system developed has three parts: situation definitions, negotiations, and questions. Based on the extant literature on adult-child interaction during exploration and preliminary observations, the nine situation definitions categories described in Table 1 were developed. Each category was

operationally defined by clusters of parent and child verbal and nonverbal behavior. Coding was conducted for 15 second intervals, judged long enough to provide sufficient evidence to make an inference about the participants' situation definitions but short enough to preclude the presence of multiple changes in situation definitions. The guiding question used by coders was "what does the parent/child see as the general purpose or task and the role of the other participant during the interval?" Coders coded the predominant definition if more than one occurred in an interval. Mean agreements between two independent observers for 10 sessions was 82.1% and 82.3% for parent and child definitions, respectively, agreement or exceeded this level for subsequent checks on individual sessions.

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Insert Table 1 about here

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Negotiations were coded as attempts to change the apparent situation definition of the partner. Parents and children could attempt to guide or focus the other's behavior or could ignore or rebuff the behavior of the other. An attempt to code verbal versus nonverbal (physical) negotiations was unsuccessful. The only three negotiation combinations that occurred frequently enough to be reliably coded (at least 80% agreement) were "parent guide or focus/child focus", "parent guide or focus/child rebuff or ignore" and "child guide or focus/parent rebuff or ignore".

Questions asked by the child or parent that related to the novel toys were coded for five characteristics: the cognitive complexity of the question, the cognitive complexity of the response to the question, the appropriateness of the response, the semantic function of the question, and the syntactic form of the question. Statements that started "wh," "how," or inverted forms of same and had rising inflections were coded. Rhetorical and tag questions were not coded.

The complexity and appropriateness categories were designed to give an indication of whether or not the children and parents were communicating at similar levels in overall course of verbal communication. The system was based on a system for coding adult-child dialogue developed by Blank and Franklin (1980). The four levels of complexity assessed the level of conceptualization conveyed in the question or response. These levels are seen as

indicators of increasingly abstract or complex ways of codifying experience in linguistic terms.

For use in the context of questions during exploration, Blank and Franklin's system was adapted in two ways. First, Blank and Franklin (1980) distinguished utterances in terms of their "summoning power," the degree to which they demand a response. "Obliges" clearly demand a response from a listener whereas "comments" do not. We did not make this distinction because the types of questions we focused on uniformly would be obliges. Second, Blank and Franklin did not code the conceptual complexity of responses to initiations. We did so because given the Vygotskian emphasis on the negotiation of an intersubjective definition of a situation, matches or mismatches between complexity of initiations and responses might be particularly informative.

The simplest level of complexity of questions or responses involves matching the conceptualization directly to concrete, present experiences such as identification of objects or actions (e.g., "What if that?"; "What is it doing?"). The second level of complexity involves similar conceptualizations tied to experience but involves selection from or integration of multiple elements of the experience (e.g., "Where does it go?"; "Which one works better?"). Level 3 questions do not mirror direct perception, but instead take on directive functions or reorganize material in a broader context as in sequencing material or events or formulating a generalization (e.g., "What are you going to do first?"; "Are they round?"). The most complex level represents questions or responses that require logical reasoning, problem solving, and metacognitive awareness (e.g., "Why does this other wheel go around?").

The appropriateness or adequacy of a response to a question concerns how well the response fits into the overall course of a verbal communication. Essentially it is an indicator of the degree to which an utterance is responsive to a question given the context of the interaction. The categories adapted from Blank and Franklin (1980) were: (a) adequate - the response appropriately answers the speaker's question; (b) inadequate - a reply is offered but is unresponsive, irrelevant, or insufficient to meet the constraints established by the question; (c) no response; (d) request for clarification - a request to repeat the question in whole or part; (e) ambiguous - the response is unclear so that it

is impossible to judge whether or not it is adequate or a request for clarification; and (f) extension - the question is reflected back to the initiator. The "extension" category was added to Blank and Franklin's original system to handle attempts by the responder to reflect the question rather than answer it.

The "function" categories were adapted from Shatz (1979) and were used to classify questions according to the purpose the questioner intended for it in the context of the ongoing verbal and nonverbal aspects of the parent-child interaction. The categories were: (a) testing or requests for information - elicitation of specific information the initiator has and expects the responder to have or information the initiator does not have but wants (e.g., "What is this?"; "How does it work?"); (b) directive - requests for behavior or change in behavior (e.g., "Can you make it turn?"); (c) requests for classification - requests for repetition or amplification (e.g., "What?"); (d) challenge - requests to support or change a prior statement (e.g., "Are you sure that goes in there?"); (e) calling attention - requests for attention to the target of the initiator's behavior (e.g., "What is this bug called?"); (f) giving encouragement or expressing sympathy - comments on the participants attempt to complete an action, usually asked with positive emotion (e.g., "Isn't that easier?"); and (g) floor offer - a general question giving the target the opportunity to direct the interaction (e.g., "Well, what do we do now?").

Mean percent agreement for 12 sessions on the question variables (for parents and children, respectively) were 83.9/90.1 for question and response complexity, 93.2/93.0 for adequacy, and 87.3/97.3 for question functions.

## Results

### Situation Definitions

The mean frequency of occurrence of each of the nine situation definition categories for children and parents is presented separately for the two age groups in Table 2. The most common situation definitions were those that are indicative of direct involvement with novel objects. Both parents and children tended to see the situation as one where the child was to explore or learn and where the parent was to watch intently, collaboratively explore, or guide learning about novel objects.

Imaginary play and affiliative interactions were rare. The mean scores do not reveal the range of individual differences. For example, scores ranged from 0 to 40 parents for frequency of independent child exploration with parent active interest and for interactive exploration and 0-42 for parent-directed learning.

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Insert Table 2 about here

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Patterns of differences in situation definitions for the five most frequent and theoretically interesting categories (independent exploration with active interest, interactive exploration, parent-directed learning, child-directed activity, and passive watching) were examined in a 2 (age) x 3 (level of independent exploration) x 2 (parent) x 2 (parent vs. child) MANOVA with the last two factors as repeated measures. An overall effect for age,  $F(5,50) = 8.09$ ,  $p < .01$ , resulted from more use of the parent-directed learning definition in sessions with younger children ( $p < .01$ ) and the use of the interactive exploration in sessions with older children ( $p < .01$ ). The only other multivariate effect was for parent definitions versus child definitions,  $F(5,50) = 24.03$ ,  $p < .01$ . In sessions with both parents, children were more likely to define the situation as independent exploration with active interest ( $p < .01$ ), passive watching ( $p < .05$ ) or child-directed activity ( $p < .01$ ). Parent-directed learning definitions were more likely to be made by parents than by children ( $p < .01$ ). Although there was no multivariate effect for maternal versus paternal session, fathers evidenced more parent-directed learning definitions than mothers,  $F(1, 54) = 4.16$ ,  $p < .05$ .

A similar analysis for the remaining four categories yielded only an overall effect for parent versus child definitions,  $F(4, 51) = 12.84$ ,  $p < .01$ . Children were more likely than parents to define the situation as one of imaginary play ( $p < .01$ ) or noninvolvement ( $p < .01$ ), although neither category occurred frequently.

The correspondence between parent and child situation definitions was addressed by tabulating the frequency of direct matches for each category. Means for each category are included in Table 2. Overall, matches occurred for about 80% of the time

units (frequencies across categories were 49.3 and 49.5 for younger and older children with mothers and 48.7 and 51.8 for the younger and older children with fathers, respectively).

A 2 (age) x 3 (level of independent exploration) x 2 (parent session) MANOVA of independent exploration with active interest, parent-directed learning, interactive exploration, child-directed actively and passive watching matches yielded only a multivariate effect of age,  $F(5, 50) = 7.61$ ,  $p < .01$ . Parent-directed learning definition matches were more likely to occur with younger children ( $p < .01$ ) whereas interactive exploration matches were more common in sessions with older children ( $p < .01$ ). A univariate effect for parent session for parent-directed learning matches,  $F(1, 54) = 5.23$ ,  $p < .05$ , indicated more matches in sessions with fathers than in sessions with mothers. A parallel MANOVA for the other four category matches revealed no significant multivariate or univariate effects.

### Negotiations

Because parent-child situation definition matches were the rule, there were few opportunities for negotiations. The most common type of negotiation was parent guide/child focus (mean frequencies of 3.9 and 4.5 for maternal and paternal sessions, respectively). The only other categories that could be coded were infrequent: parent guide/child rebuff or ignore (1.0 with mothers, 0.9 with fathers) and child guide/parent rebuff or ignore (1.0 and 0.9). No age, level of exploration, or parent session differences were found in a MANOVA of these scores.

### Questions

The mean proportion of questions and responses by level of conceptual complexity are presented in Table 3. For each set of scores, 2 (age) x 3 (level of independent exploration) x 2 (parent session) x 2 (parent vs. child) MANOVAs yielded only a multivariate effect of parent versus child,  $F(4, 49) = 6.98$ ,  $p < .01$ , for questions, and  $F(5, 48) = 39.74$ ,  $p < .01$ , for responses. In each case, children's language tended to be higher ( $p < .01$ ) at the lowest level of complexity (matching experience) and parents' language was greater for each of the three highest levels ( $p < .05$  in each case). Children also were more likely than parents to give no response to questions ( $p < .05$  in each case). Children also were more likely than parents to give no response to

questions ( $p < .01$ ). A univariate age x parent versus child interaction for re-ordering of experience responses,  $F(1, 52) = 5.27$ ,  $p < .05$ , resulted from a larger parent-child difference or younger children, though the difference was significant for both age groups.

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Insert Table 3 about here

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The mean proportions of exact matches in conceptual level of questions and responses were .47 when children asked their mothers questions, .28 when mothers asked questions, .38 when children asked their fathers questions, and .29 when fathers asked questions. A 2 (age) x 3 (level of independent exploration) x 2 (parent session) x 2 (parent vs. child) ANOVA of matches indicated a parent versus child main effect and a parent session x parent versus child interaction,  $F(1, 52) = 4.27$ ,  $p < .05$ . There was a higher proportion of matches ( $p < .05$ ) when children questioned than when parents responded but the difference was larger in the maternal session than in the paternal session.

The mean proportions of responses by adequacy categories are presented in Table 4. Most questions that received responses were responded to adequately. A MANOVA showed effects of age,  $F(6, 47) = 4.55$ ,  $p < .01$  and parent versus child,  $F(6, 47) = 15.71$ ,  $p < .01$ . Extensions were more prevalent in the sessions of younger children ( $p < .01$ ). Parents responded with higher proportions of requests for clarification ( $p < .05$ ), and extensions whereas children were likely to respond to parent questions inadequately ( $p < .05$ ) or not at all ( $p < .01$ ).

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Insert Table 4 about here

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Not surprisingly, testing/request questions functions were most common for both children (.80) and parents (.69). A MANOVA of the function categories indicated only a parent versus child effect,  $F(7, 46) = 18.67$ ,  $p < .01$ , that resulted from univariate differences for six categories. Across parent sessions, children asked relatively more testing (.80-.69) and request for

clarification questions (.08-.03). Parents asked higher proportions of directives (.05-.02), attention-getting (.07-.04), floor offer (.07-.02) and challenge (.03-.01) questions.

#### Discussion

The coding system used in this study based on Wertsch's extension of some of Vygotsky's ideas provides a rich description of parent-child interaction during exploration. The system provides insights about the nature of parent and child perceptions of their collaborative exploration of novel objects, and how they use questions and responses to questions to mediate their collaboration.

The situation definition data suggest that the novelty of the objects had a powerful influence on how children and parents saw the situation. The predominant definitions were ones that focused the participants on exploration of and learning about those objects. Definitions of the situation as appropriate for imaginary play and affiliation were rare. Perhaps most important, both parents and children generally saw the interaction as one where the parent was to take on active role in exploration rather than act as a detached observer.

Although synchrony in situation definitions was the rule, the parent-child roles were not entirely symmetrical. Consistent with the Vygotskian notion of scaffolding in more algorithmic problem-solving tasks, parents, particularly those of younger children, were more likely to define the situation as calling for a didactic approach. In contrast, children appeared more likely to desire a more passive role for the parent. When differences in situation definitions required negotiations, parents were more likely to take the guiding role. Also, parents used questions and responses that seemed to be pegged at a level of cognitive complexity above that of the child and used proportionately more questions that functioned to direct or challenge the child. Parents also took more of a teaching stance through the use of extensions and requests for clarification in response to children's questions.

One of the most consistent findings was the absence of differences for the three groups defined by the children's level of exploration when exploring independently. When exploring collaboratively with parents, neither "low exploratory" children

nor their parents behaved in a way that distinguished them from "medium" or "high-exploratory groups". Parents adapted to the situations in such a manner as to engage in an active way even those children who tended to explore little when alone.

The behavior of mothers and fathers was largely indistinguishable except for a tendency for fathers to more frequently define the situation as one for parent-directed learning. The major age difference also centered on definitions of the situation as requiring more direction by parents of younger children. The nature of the "task," exploration of very novel objects, may have had a constraining effect on parent and developmental differences. Likewise, the present task and coding scheme might be more revealing with a sample involving a sample representing a wide variety of family constellations than the two-parent, intact middle-class families studied here.

Like any analogy, the analogy between the operation of adult-child interaction in the zone of proximal development in cognitive skill development and in exploration can be overextended. However, there are major similarities in the two domains. They include: (a) the importance of strategic action to efficient performance; (b) the need for the child and adult to each define the situation in a way that will lead to appropriate behavior; and (c) the need for the child and adult to negotiate a shared situation definition so that the child can benefit from the adult support (solve the problem or explore more) relative to independent task behavior (see Wertsch, 1983). The essential differences are that: (a) exploration is less explicitly goal-oriented than the solution of structured problems; (b) nonverbal cues are likely to be relatively more important in adult-child collaboration during exploration whereas verbal scaffolding is more important in structured problem solving; and (c) the adult's role in exploration is more like that of guide than the teacher/task-analyzer role more appropriate to interactions involving cognitive skills. The data presented here indicate that despite these differences, the analogy has heuristic value and extends the nature of adult-child interaction in the zone of proximal development to include "guided participation" in addition to didactic instruction (see Rogoff, in press).

## References

- Banta, T. J. (1970). Tests for the evaluation of early childhood education: The Cincinnati-Autonomy Test Battery (CATB). In J. Hellmuth (Ed.), Cognitive studies (pp. 424-490). New York: Brunner/Mazel.
- Blank, M., & Franklin, E. (1980). Dialogue with preschoolers: A cognitive-based system of assessment. Applied Psycholinguistics, 1, 127-150.
- Endsley, R. C., Hutcherson, M. A., Garner, A. P., & Martin, M. J. (1979). Interrelationships among selected maternal behaviors, authoritarianism, and preschool children's verbal and nonverbal curiosity. Child Development, 50, 331-339.
- Henderson, B. B. (1984a). The social context of exploratory play. In T. D. Yawkey & A. D. Pellegrini (Eds.), Child's play: Developmental and applied (pp. 171-201). Hillsdale, NJ: Erlbaum.
- Henderson, B. B. (1984b). Parents and exploration: The effect of context on individual differences in exploratory behavior. Child Development, 35, 1237-1245.
- Henderson, B., & Moore, S. G. (1979). Measuring exploratory behavior in young children: A factor-analytic study. Developmental Psychology, 15, 113-117.
- Rogoff, B. (in press). Adult assistance of children's learning. In T. E. Raphael (Ed.), Contexts of school-based literacy. New York: Random House.
- Shatz, M. (1979). How to do things by asking: Form-function pairing in mothers' questions and their relation to children's responses. Child Development, 50, 1093-1099.
- Wertsch, J. V. (1983, April). The zone of proximal development: Some contextual issues. Paper presented at the meeting of the Society for Research in Child Development, Detroit.

Table 1

Situation Definition Categories

Major Question: What does the parent/child seem to see as the predominant purpose/task in the interval and the role of the other participant?

<u>Category</u>	<u>Description and Indicators</u>
Passive Watching	<p>Defines situation as one of parent maintaining presence or general caretaking as child plays.</p> <p><u>Parent:</u> sits idly watching as child acts, probably at some distance from child. May look around room, may appear to be bored, even to point of sleep. Generally verbally unresponsive or quiet, resists child attempts to get parent involved.</p> <p><u>Child:</u> child explores without attempts to engage parent; if parent tries to get involved, child rebuffs.</p>
Independent Exploration with Active Interest	<p>Defines situation as one where other is to explore while parent/child shows interest with undivided or nearly undivided interest.</p> <p><u>Parent:</u> watches child's activity closely, probably stays close to table/object, responsive to child with eye contact, smiles or approval ("unhuh," "yes," etc.). May say something, but only as adjunct to child's activity, not to direct it.</p> <p><u>Child:</u> child engages in relatively independent exploration but is aware of parent interest.</p>
Parent-directed	<p>Situation is defined as one where parent is to act as teacher or guide as child learns about object.</p> <p><u>Parent:</u> directs exploration by attention-getting activities, by pointing out novel features, providing information, asking information questions or otherwise attempting to make interval a "learning experience."</p> <p><u>Child:</u> follows parent directions and indicates information is being processed (e.g., by repeating information, answering questions, or manipulating as directed).</p>

Table 1, Continued.

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<u>Category</u>	
Imaginary Play	<p>Situation defined as one where objects are props in fantasy play.</p> <p><u>Parent:</u> takes role in fantasy play with objects only secondarily involved.</p> <p><u>Child:</u> takes role in fantasy play.</p>
Interactive Exploration	<p>Defines situation as one where each participant actively explores objects in parallel.</p> <p><u>Parent:</u> visually and/or tactually explores objects as child does so.</p> <p><u>Child:</u> explores objects as parent does without any attempt to exclude parent who is exploring in parallel.</p>
Affiliation	<p>Situation is defined as one where participants can interact without regard to novel objects.</p> <p><u>Parent:</u> engages child in conversation unrelated to the novel objects.</p> <p><u>Child:</u> responds to parents discussion or initiates discussion without regard to objects.</p>
Noninvolvement	<p>Situation is essentially undefined with neither participant doing anything.</p>
Child-directed	<p><u>Parent:</u> remains relatively passive as follows child instructions.</p> <p><u>Child:</u> takes lead, gives orders, treats parent as peer.</p>
Housekeeping	<p>This category was used when parent or child was getting a new toy or putting explored toys away.</p>

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Table 2

Frequency of Parent and Child Situation Definitions During Exploration by Age

Situation Definition	Maternal Session			Paternal Session		
	Child	Mother	"Matches"	Child	Father	"Matches"
<u>Younger Children</u>						
Passive Watching	0.9	0.3	0.0	1.8	1.1	0.6
Independent Exploration with Active Interest	21.0	16.9	15.5	22.3	17.5	16.2
Parent-Directed Learning	11.6	17.9	10.8	14.1	22.4	13.9
Imaginary Play	1.4	0.7	0.6	1.5	0.5	0.5
Interactive Exploration	14.4	14.5	13.9	11.4	11.1	11.0
Affiliation	1.0	0.9	0.9	0.7	0.6	0.6
Noninvolvement	1.0	0.4	0.4	0.6	0.2	0.2
Child-Directed Activity	1.7	1.0	0.9	1.4	0.7	0.7
Housekeeping	6.4	6.6	6.1	5.4	5.1	5.0
<u>Older Children</u>						
Passive Watching	1.7	0.5	0.2	0.4	0.3	0.0
Independent Exploration with Active Interest	19.5	15.7	14.5	22.3	17.5	13.8
Parent-Directed Learning	7.9	14.1	7.7	9.3	15.1	9.2
Imaginary Play	0.6	0.1	0.1	1.5	1.2	1.0
Interactive Exploration	19.3	20.3	18.6	19.8	19.7	19.0

Table 2, Continued

Situation Definition	Maternal Session			Paternal Session		
	Child	Mother	"Matches"	Child	Father	"Matches"
<u>Older Children</u>						
Affiliation	1.0	1.1	0.9	0.9	0.8	0.8
Noninvolvement	0.5	0.2	0.1	0.4	0.2	0.2
Child-Directed Activity	2.6	1.2	1.2	1.3	1.0	1.0
Housekeeping	6.7	6.4	5.9	7.0	6.8	6.6

Table 3

Proportions of Cognitive Complexity Levels of Questions and Responses to Questions by Session and Initiator Responder

Age and Complexity Level	Maternal Session		Paternal Session	
	Child	Mother	Child	Father
<u>Younger Children</u>				
I. Matching Experience	.41/.63	.28/.39	.40/.65	.23/.34
II. Selective Analysis	.38/.11	.45/.38	.44/.12	.50/.40
III. Reordering Experience	.19/.03	.21/.12	.12/.03	.23/.13
IV. Reasoning about Experience	.02/.02	.05/.06	.03/.01	.04/.02
No Response	-./.20	-./.06	-./.17	-./.11
<u>Older Children</u>				
I. Matching Experience	.33/.63	.23/.41	.36/.60	.25/.37
II. Selective Analysis of Experience	.47/.13	.23/.41	.36/.60	.25/.37
III. Reordering Experience	.13/.03	.16/.06	.14/.02	.18/.08
IV. Reasoning about Experience	.06/.02	.04/.03	.05/.02	.05/.05
No Response	-./.19	-./.12	-./.17	-./.17

initiations above diagonal, responses below

Table 4

Adequacy of Responses to Questions by Session and Responder

Age and Response Category	Maternal Session		Paternal Session	
	Child	Mother	Child	Father
<u>Younger Children</u>				
Adequate	.68	.63	.69	.62
No Response	.20	.06	.17	.11
Ambiguous	.04	.06	.06	.03
Request for Clarification	.02	.03	.02	.03
Inadequate	.06	.02	.05	.04
Extension	.00	.20	.00	.14
<u>Older Children</u>				
Adequate	.70	.75	.67	.62
No Response	.19	.12	.17	.17
Ambiguous	.07	.04	.06	.04
Request for Clarification	.01	.02	.02	.07
Inadequate	.04	.03	.06	.03
Extension	.00	.04	.00	.07